Board of Education Regular Meeting

Tuesday, January 14, 2025 6:30 PM
Beman Middle School, 1 Wilderman's Way, Middletown, CT 06457

I.	**Call to Order**	**Speaker(s):** Sheila Daniels
II.	**Salute to the Flag**	**Speaker(s):** Sheila Daniels
III.	**Adoption of Agenda**	**Speaker(s):** Sheila Daniels
IV.	**District Highlights**	**Speaker(s):** Jessie Lavorgna
IV.A.	Holiday on Main Awards	**Speaker(s):** Jessie Lavorgna
IV.B.	Igniting Inquiry Conference Goes National	**Speaker(s):** Jessie Lavorgna
IV.C.	Toshiba American Foundation Grant for MHS Ag Science	**Speaker(s):** Jessie Lavorgna
IV.D.	Upcoming District Events	**Speaker(s):** Jessie Lavorgna
V.	**Public Session**	**Speaker(s):** Sheila Daniels
VI.	**Communications**	**Speaker(s):** Sheila Daniels
VI.A.	Report of Student Representative	**Speaker(s):** Dania Rabah
VII.	**Consent Agenda**	**Speaker(s):** Sheila Daniels
VII.A.	Minutes of December 10, 2024	**Speaker(s):** Sheila Daniels
VII.B.	Overnight Field Trip Request Beman Robotics to State Competition	**Speaker(s):** Erin Scholes
VII.C.	Out of State Field Trip Request - Bean Robotics to National Competition	**Speaker(s):** Erin Scholes
VII.D.	Grants Status Report	**Speaker(s):** Natalie Forbes
VII.E.	Policy #6162.51 Student Privacy - Second Reading	**Speaker(s):** Deborah Kleckowski
VII.F.	Policy #1600 Possession of Deadly Weapons - Second Reading	**Speaker(s):** Deborah Kleckowski
VII.G.	Policy #4131 Professional Development - Second Reading	**Speaker(s):** Deborah Kleckowski
VII.H.	Policy #5118 (a) Nonresident Attendance - Proposed Deletion	**Speaker(s):** Deborah Kleckowski
VII.I.	Budget Committee	**Speaker(s):** Harold Panciera
VII.J.	Curriculum Committee	**Speaker(s):** Debra Guss
VII.K.	Facilities Committee	**Speaker(s):** Susan Owens
VII.L.	Policy Committee	**Speaker(s):** Deborah Kleckowski
VIII.	**Department Reports**	**Speaker(s):** Sheila Daniels
VIII.A.	Financial Report	**Speaker(s):** Natalie Forbes

VIII.A.1. Action on Line Item Transfer Report	**Speaker(s):** Natalie Forbes
VIII.B. Facilities Department	**Speaker(s):** Marco Gaylord
VIII.C. Personnel Report	**Speaker(s):** Harry Snyder
VIII.D. Transportation Report	**Speaker(s):** Mark Langton
IX. **Superintendent's Report**	**Speaker(s):** Dr. Vazquez Matos
IX.A. Conclusion and Recommendations of the IAQ Assessment and Evaluation	**Speaker(s):** Dr. Vazquez Matos
X. **Action Items**	**Speaker(s):** Sheila Daniels
X.A. FY 25 CT Grown for CT Kids Grant Award	**Speaker(s):** Randall Mel
X.B. New Course Approval The Psychology of Wellbeing	**Speaker(s):** Stacey McCann
X.C. Policy #5145 Section 504 of the Rehabilitation Act of 1973 - First Reading	**Speaker(s):** Deborah Kleckowski
X.D. Policy # 5141.5 Suicide Prevention and Intervention - First Reading	**Speaker(s):** Deborah Kleckowski
X.E. Policy #4118.51 Social Media -First Reading	**Speaker(s):** Deborah Kleckowski
X.F. Policy # 4152.6 Family Medical Leave - First Reading	**Speaker(s):** Deborah Kleckowski
XI. **Future Agenda Items**	**Speaker(s):** Sheila Daniels
XII. **Proposed Executive Session**	**Speaker(s):** Sheila Daniels
XII.A. Discussion Concerning Tentative Agreement Reached with The Middletown Federation of Teachers (Proposed for Executive Session)	**Speaker(s):** Sheila Daniels
XIII. **Possible Action Concerning Tentative Agreement Reached with the Middletown Federation of Teachers**	**Speaker(s):** Sheila Daniels
XIV. **Proposed Executive Session**	**Speaker(s):** Sheila Daniels
XIV.A. Superintendent Mid-Year Evaluation	**Speaker(s):** Sheila Daniels
XV. **Adjournment**	**Speaker(s):** Sheila Daniels

Board of Education Regular Meeting
Tuesday, December 10, 2024 6:30 PM Eastern

Beman Middle School
1 Wilderman's Way
Middletown, CT 06457
https://www.youtube.com/@MiddletownStream

Liz Crooks:	Absent
Sheila Daniels:	Present
Rakim Grant:	Present (6:38PM)
Callie Grippo:	Present
Debra Guss:	Present
Adam Hayn:	Present
Deborah Kleckowski:	Present
Susan Owens:	Absent
Harold Panciera:	Present

Present: 7, Absent: 2.

I. Call to Order
Ms. Daniels called the meeting to order at 6:32 PM.

II. Salute to the Flag
Ms. Dania Rabah led the Pledge of Allegiance.

III. Adoption of Agenda
A motion to adopt the agenda was made. This motion, made by Deborah Kleckowski and seconded by Debra Guss, Carried.
Rakim Grant: Absent, Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea,Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 3

IV. District Highlights

IV.A. Beman Cross Country Achievements
Ms. Jessie Lavorgna introduced Ms. Elisha DeJesus. Ms. DeJesus provided a brief overview of the fall sports season. She introduced Coach Steve McKeever and Coach Tracey Quinn from Beman Middle School. Mr. McKeever introduced 2 student athletes. Maddie placed 8th in States and Alden also placed 20th in States with over 300 runners. Both students will compete in the Junior Olympics. Both students will participate in Nationals this weekend, which will be held in Indiana.

IV.B. HBCU College Fair

Dr. Wathen recognized the students that took the time to tour the HBCU. 19 students participated, including 9 seniors. Those seniors received 18 acceptances to various colleges. Ms. Wathen thanked all the staff that helped prepare the students for the trip.

IV.C. Onsite Decision Week

Ms. Vicki Thong and Dr. Wathen hosted 9 universities for Onsite Decision Week. This program has been in effect for the last 6 years and has grown from 3 universities to 9 in just the first 3 years. Each December they invite admissions representatives to interview MHS students with the hopes that they will receive acceptances on the spot. They have targeted a variety of students, but the students who are best served are the ones who doubt themselves but want to go to college. They have found that this is the confidence boost they need to believe they can and should go to college. This year the week resulted in 56 acceptances. Many students received merit scholarships during their interview as well.

IV.D. Upcoming District Events

Middletown/Middlesex Parent Leadership Training Institute (OLTI) is recruiting for their next cohort. The holiday Recess will begin with an early dismissal on December 20, 2024. No school from December 23 - January 1. Students return to school on January 2.

V. Public Session

Chair Daniels explained the rules of Public Session. There were no comments from the public.

VI. Communications

VI.A. Report of Student Representative
Student Representative Dania Rabah addressed the Yondr pouches. She explained the challenges students are facing while not having their phones.

VII. Consent Agenda
A motion was made to approve the Consent Agenda. This motion, made by Deborah Kleckowski and seconded by Harold Panciera, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

VII.A. Minutes of November 12, 2024

VII.B. MHS Ultimate Frisbee to Regional Tournament

VII.C. Fall Sports Report

VII.D. Grants Status Report

VII.E. Budget Committee

VII.F. Curriculum Committee

VII.G. Facilities Committee

VII.H. Policy Committee

VIII. Department Reports

VIII.A. Financial Report

Mr. Miranda reviewed the financial report. The finance office is watching different lines for any surpluses that could be moved. Ms. Guss and Mr. Miranda discussed the Special Education budgeting and how the costs can vary greatly from month to month.

VIII.A.1. Action on Line Item Transfer Report

Mr. Miranda discussed the 3 transfers this month.

A motion was made to approve the Line Item Transfer Report. This motion, made by Debra Guss and seconded by Adam Hayn, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

VIII.B. Facilities Department

Mr. Gaylord shared that 25 more HVAC units were cleaned. The first small snowfall clearing event went well. A grant was received to replace the gymnasium floor at Farm Hill.

VIII.C. Personnel Report

Mr. Harry Snyder shared the data from ESS regarding substitute coverage. He discussed the open vacancies and steps being taken to fill the vacancies. Mr. Hayn asked about the open paraprofessional positions. Mr. Snyder discussed plans to increase recruiting along with the challenges. Ms. Kleckowski asked about Spanish and Science vacancies. Ms. Cannata clarified which positions were being filled currently.

VIII.D. Transportation Report

Mr. Langton reviewed the after-school busing at the elementary level. Ms. Guss asked about conduct reports. Mr. Langton explained the conduct reports. He shared that behavior on the bus should match behavior in the classroom.

IX. Superintendent's Report

IX.A. Safety and Security Updates

Dr. Vázquez Matos gave an overview of the presentation.

Mr. Gaylord reviewed the Indoor Air Quality (IAQ) new requirement for 2024-2025, as well as the takeaways. He reviewed the IAQ Assessment Categories. Tools for Schools is now mandatory. The is the EAP's guide for managing IAQ in schools. Key takeaways are to plan now, budget, update internal IAQ/HVAC policies, procedures and programs and to prepare for public input. Mr. Gaylord also shared which HVAC projects the AVAC Air Quality Grant will fund.

The district continues to improve cameras, access control systems, lock sets, security staff and SRO's, Alertus, Scholarchip, Sandy Hook Promise and Securly, safety/security meetings and All Hazard Plan.

IX.B. Yondr Update

Middletown Public Schools is now a phone-free district. Dr. Vázquez Matos reviewed the timeline of the policy from mid-2023 to the present. The intention of implementing a phone-free district is to create distraction-free classrooms, to minimize the negative effects of inappropriate device use and to encourage meaningful face-to-face connections. There has been fair and consistent implementation. Beman Middle School has reported successful implementation of the Yondr pouches. Dr. Brooks is confident that this initiative will contribute to a more positive and productive school climate at MHS. Dr. Vázquez Matos thanked the staff for their support of the initiative.

X. Action Items

X.A. PIMF Grant
Dr. Vázquez Matos explained that this grant is to improve professional development.

A motion to approve the PIMF Grant was made. This motion, made by Debra Guss and seconded by Callie Grippo, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

X.B. 2025 Board of Education Meeting Dates
A motion to approve the 2025 Board of Education Meeting Dates was made. This motion, made by Harold Panciera and seconded by Callie Grippo, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

X.C. Policy # 6162.51 Student Privacy - First Reading
A motion to approve Policy #6162.51 Student Privacy - First Reading was made. This motion, made by Adam Hayn and seconded by Callie Grippo, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Liz Crooks: Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

X.D. Policy #1600 Possession of Deadly Weapons - First Reading
A motion was made to approve Policy #1600 Possession of Deadly Weapons - First Reading. This motion, made by Deborah Kleckowski and seconded by Harold Panciera, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Liz Crooks: Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

X.E. Policy # 4152.6 (a) Family and Medical Leave - First Reading
Ms. Kleckwoski asked that this item be tabled due to new legislation from the State regarding paid sick leave.

X.F. Policy #4131 - Professional Development - First Reading
A motion was made to approve Policy #4131 - Professional Development - First Reading. This motion, made by Deborah Kleckowski and seconded by Debra Guss, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Liz Crooks: Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

X.G. Policy # 5118 (a) Nonresident Attendance - Proposed Deletion
A motion was made to approve Policy # 5118 (a) Nonresident Attendance - Proposed Deletion. This motion, made by Deborah Kleckowski and seconded by Adam Hayn, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

XI. Future Agenda Items
Ms. Kleckowski would like to discussion the grading policy.

XII. Proposed Executive Session

XII.A. Discussion of confidential attorney client privileged written communication (policy considerations regarding legal counsel)
A motion to enter Executive Session for the purpose of discussing confidential attorney client privileged written communication (policy considerations regarding legal counsel) invite Dr. Vazquez Matos, was made. This motion, made by Deborah Kleckowski and seconded by Harold Panciera, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

XII.B. Discussion of confidential attorney client privileged written communication (Legal advice regarding Procedures for Complaints involving Students & Personnel, Bullying and School Climate Considerations)
A motion to enter Executive Session for the purpose of discussing confidential attorney client privileged written communication (Legal advice regarding Procedures for Complaints involving Students & Personnel, Bullying and School Climate Considerations) and invite Dr. Vazquez Matos was made. This motion, made by Deborah Kleckowski and seconded by Debra Guss, Carried.
Liz Crooks: Absent, Susan Owens: Absent, Sheila Daniels: Yea, Rakim Grant: Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea
Yea: 7, Nay: 0, Absent: 2

XIII. Adjournment

Move at 9:37 PM to adjourn. This motion, made by Deborah Kleckowski and seconded by Adam Hayn, Carried.

Liz Crooks: Absent, Susan Owens: Absent, Liz Crooks: Yea, Sheila Daniels: Yea, Rakim Grant, Yea, Callie Grippo: Yea, Debra Guss: Yea, Adam Hayn: Yea, Deborah Kleckowski: Yea, Harold Panciera: Yea

Yea: 7, Nay: 0, Absent: 2

OVERNIGHT & OUT-OF-STATE FIELD TRIP REQUEST FORM

All overnight and out-of-state field trips require the approval of the Board of Education 60 days in advance of the departure date. All foreign travel field trips must be submitted for Board approval 90 days in advance of the departure date. The following information must be forwarded electronically and in TRIPLICATE (hard copies) 30 days prior to the Board meeting which summarizes the trip. NOTE: A Narrative must be attached justifying this field trip to the school curriculum and/or mission statement. No financial commitments are to be made until Board approval. **This form must be typewritten and ALL items filled in or marked N/A.**

Name of School: Beman Middle School Date of Request: 12/5/24

Name of Club or Activity: Beman Vex Robotics Team

Trip To: Iowa West Field House. 5 Arena Way Council Bluffs, Iowa 51501 Purpose: Robotics CREATE National Competition

Number of Students Participating: 5-15 depending on results from regular (invitation only event)

Number of students eligible to go on the field trip: Will only be taking eligible students

Dates of Trip: From: March 23, 2025 To: March 27, 2025 # of school days missed: 4

Names of Teachers and Chaperones:

1. Erin Scholes	5.
2. Sydney White	6.
3.	7.
4.	8.

Number of Non-Chaperone Adults going on trip:

Transportation: Bus Van Train x Plane Car Other

Are fund-raising activities planned: If so, describe:

Amount of money raised through fundraisers:

Lodging: X Hotel/Motel Camp Private Home

Insurance Arrangements for Staff and Students: Offered to parents, but optional

Cost per Student: $ Cost of hotel room, and flights Cost per Teacher and/or Chaperone: $ 0

Cost per Nurse: $ *(if necessary)* Cost per Paraprofessional: $ *(if necessary)*

If Travel Agencies are engaged, at least three quotations need to be provided with documentation attached to this form:

a. c.

b. d. Other

Name of teacher making request: Erin Scholes

Approved by Department Head at secondary level: _____

Approved by Principal: _____

Authorized by Chief Academic Officer: _____

Superintendent Approval: _____ Date: 12/18/24

MIDDLETOWN HIGH SCHOOL
COVER FIELD TRIP REQUEST FORM

DATE OF TRIP: March 23-27, 2024 **TODAY'S DATE: 12/5/24**

TEACHER IN CHARGE OF TRIP: Erin Scholes

GROUP/CLASS: Beman Robotics Team 99088

CHAPERONES ATTENDING: Erin Scholes

CHAPERONES CELL PHONE: 847-507-1354

NUMBER OF STUDENTS ATTENDING: 5-15

DID YOU SUBMIT NURSES FORM: Yes

DESTINATION:
Iowa West Field House

5 Arena Way

Council Bluffs, Iowa 51501

DESCRIBE PURPOSE & HOW IT CONNECTS TO YOUR CURRICULUM:
Robotics CREATE National Competition

TRANSPORTATION: Students' Parent will be traveling with them. We will meet at the airport, fly to Omaha, ride to the hotel, then walk to and from the event. Students will be staying with their parent at the hotel.

DEPARTURE TIME FROM SCHOOL: NA

DESTINATION DEPARTURE TIME: NA

RETURN TIME TO SCHOOL: NA

PROJECTED COST FOR EACH STUDENT: Cost of a hotel room and cost of flights

What will you do to assist students who have a financial burden:
Beman Robotics Team Student Activity Account

TEACHER/ADVISOR SIGNATURE: EPSchl **DATE: 12-5-24**

FIELD TRIP REQUEST FORM

(Please refer to field trip procedures on page 3)

Today's Date: __12___/__5___/_2024_____ Person Requesting Authorization: ___Erin Scholes_____

Date of Trip: ___3__/__23-27___/__2024____ Origin/School: ___Beman Robotics_____

Destination: _Iowa West Field House___ Purpose of Trip: __Middle School Robotics States_____

Total Number of Students: __5-15_____ Total Number of Adults: __7-17_____ Number of Yellow Buses: _
No buses needed_____

Departure Time From School: _____ Destination Departure Time: _____ Return Time To School:_____

*****Departure for school buses 9:15 A.M. and return at or before 1:30 P.M*****

Total Time Estimated: _____ x $78.68/hr. x buses: _____ Price Before Terminal Charge=_____

****Terminal charges = (See Note below)****

Bill To: * no Bus needed *

NOTE: Terminal Charges are 1 hour of maintenance (½ hr each side of the charter), this will be charged by DATTCO and included in its field trip CONFIRMATION, which will be forwarded to the school secretary and the Field Trip Organizer.

Reunification Plan: *See Page 2*

Total Adult Supervisors (chaperones) Names/Telephone Numbers: *See Page 2*

Field Trip Organizer/Lead Name: (Signed): ___Erin Scholes_____

E-mail (Required): __scholese@mpsct.org_____

Cell Phone Number (Required): (_847_)__507__-_1354____

******By signing above you guarantee that you have the funds for this field trip******

1. School bus trips will return to school by 1:30 P.M. or after 4:30 P.M. (in town trips).
2. Submit form to BOE Transportation Department.
3. Do not call the bus company for trips.
4. Requests must be in writing 5 school days before the field trip date.
5. Bus capacity is 77 passengers – (3 to a seat)
6. If any of the rules are not adhered to, your trip will be disapproved.
7. Only Dattco can determine if a trip is drop off and pick up.
8. Additional 1 hour terminal charges (1/2 hr. each side of charter).

Approved by: _____ DATE: 12/10/24
Building Principal/(Activity Director-MHS Only)

Transportation Dept. Signature: _____ DATE: _____

Reunification Plan: a reunification plan provides staff and students with a back-up plan in the event groups or Individuals are separated because of unforeseen events (blocked entrance/exit, manmade or natural disasters, lost staff or students, etc.).
Please include:

Communication plan (how will you, the lead, communicate with staff/students at the field trip site and Central Office):
Cell phone / communication with chaperones/use of GroupMe app to communicate with all team members and adults

Staff/student accountability (in what way will the presence of staff and students be accounted for throughout the trip, head count, call-in, etc.):
Head count before all departures and at each arrival location. Check-in throughout the day, monitoring of schedule and student locations, head count before departure from venues

Alternate parking or meeting site (consider where you would meet if the original plan is no longer viable):

To exit the field trip site: We will follow the plans and directions of the host venue
Multiple exits are accessible, meeting point at bus drop off

For shelter (inclement weather): We will follow the plans and directions of the hosts

Identification of on-site security and first aid: Security and first aid will be present - provided by hosts

Identification of field trip co-leader name and telephone number: n/a

Total Adult Supervisors (chaperones) Names/Telephone Numbers:

Name	Cell Phone Number	Name	Cell Phone Number
Erin Scholes	847-507-1354		
Sydney White	8609488125		

Other notes:

BOE Central Office Phone: (860) 638-1401
BOE Transportation Office Phone: 860 638-1418 *DATTCO Phone: 860 635-8234*

Provide Copies To: Transportation Department, Principal and Teacher

FIELD TRIP PROCEDURES

1. More than one member of the faculty chaperoning the field trip must have a cellular phone in order to remain in direct contact with the school at all times as well as to communicate with one another in the event a group is separated.

2. One member of the faculty will be designated to call the school at least two times during the time the students and staff are on the field trip, i.e. upon arrival, some time during the trip, or right before the buses depart for school.

3. A primary and secondary plan for evacuation and regrouping of students in cases of emergency must be developed and shared with adult supervisors and chaperones. For example, a primary site for meeting must be established and, in which, all adults involved with the trip are informed, i.e. bus where attendance will be taken. A secondary site for meeting must be established in the event that the primary site is not accessible (see Reunification plan, page 2).

4. A briefing must be held with the school administrator and the staff member in charge of the trip to discuss emergency plans if the field trip site is evacuated or one or more members of the group are separated.

5. Buses will be ready to depart at the assigned time. Students, Staff, and Chaperones must be assembled and ready to go.

6. A master list of students, staff, and chaperones attending the trip must be updated and left with the school administrator prior to leaving the building the day of the trip. All teachers must have copies of the students' emergency cards with them during the field trip.

7. The trip coordinator must meet with the school nurse prior to the trip to ensure that all medical information regarding students is conveyed to staff involved with the field trip.

   The regular school nurse can inform you of the need for a nurse to attend a field trip. Nurses providing health services during the field trip shall complete a timesheet for the total number of hours worked during the trip, mark the timesheet *"Field Trip"*, and submit to payroll for processing

8. The regular classroom teacher can inform you of the need for a paraprofessional to attend a field trip. The paraprofessional(s) attending the field trip shall complete a timesheet for the total number of hours worked during the trip, mark the timesheet *"Field Trip"*, and submit to payroll for processing.

9. The field trip request form must be completely filled out with contact phone numbers in the event of emergency and submitted in the timeline described in district *Field Trip Regulations and Procedures, # 6153.*

Office of Innovation & Grants

Unlocking the Potential in ALL Students

Natalie Forbes, Director of Innovations & Grants
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311 Hunting Hill Ave, Middletown, CT 06457
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Board of Education Report
1.14.25
Grants Report

The following grants were confirmed in December 5, 2024 – January 8, 2025:

Grant Title	Funder	SY25	SY24
Alliance Grant	CSDE	$8,663,935	$7,119,476

Respectfully submitted,
Natalie Forbes, Director of Innovation & Grants

STUDENT PRIVACY

In accordance with federal law, the Middletown Board of Education (the "Board") adopts, in consultation with parents, the following provisions related to student privacy.

I. Definitions

A. *"Invasive physical examination"* means any medical examination that involves the exposure of private body parts, or any act during such examination that includes incision, insertion, or injection into the body, but does not include a hearing, vision, or scoliosis screening.

B. *"Parent"* includes a legal guardian or other person standing in loco parentis (such as a grandparent or stepparent with whom the child lives, or a person who is legally responsible for the welfare of the child).

C. *"Personally identifiable information"* includes, but is not limited to,

1. the student's name;

2. the name of the student's parent or other family members;

3. the address of the student or student's family;

4. a personal identifier, such as the student's social security number, student number, or biometric record;

5. other information that, alone or in combination, is linked or linkable to a specific student that would allow a reasonable person in the school community, who does not have personal knowledge of the relevant circumstances, to identify the student with reasonable certainty; or

6. information requested by a person who the educational agency or institution reasonably believes knows the identity of the student to whom the education record relates.

D. *"Personal information"* means individually identifiable information including—

1. a student's or parent's first and last name;

2. a home or other physical address (including a street name and the name of a city or town);

3. a telephone number; or

4. a Social Security identification number.

E. *"Survey"* includes an evaluation, but does not include a survey or evaluation administered to a student in accordance with the Individuals with Disabilities Education Act (20 U.S.C. § 1400 et seq.).

II. Student Surveys

A. Surveys Funded in Whole or in Part by the U.S. Department of Education:

1. The administration shall make available for inspection by parents all instructional materials, including teacher's manuals, films, tapes or other supplementary material which will be used in connection with any survey, analysis, or evaluation funded in whole or in part by the U.S. Department of Education.

2. The administration shall obtain the prior written consent of the parent or student (if the student is an adult or an emancipated minor), prior to requiring a student to submit to a survey, analysis, or evaluation funded in whole or part by the U.S. Department of Education that reveals information concerning any of the following topics:

a. political affiliations or beliefs of the student or the student's parent;

b. mental or psychological problems of the student or the student's family;

c. sex behavior or attitudes;

d. illegal, anti-social, self-incriminating, or demeaning behavior;

e. critical appraisals of other individuals with whom respondents have close family relationships;

f. legally recognized privileged or analogous relationships, such as those of lawyers, physicians, and ministers;

g. religious practices, affiliations, or beliefs of the student or of the student's parent; or

h. income (other than that required by law to determine eligibility in a program or for receiving financial assistance under such program).

3. If a student is *not required* to submit to a survey, analysis, or evaluation that reveals information concerning any of the topics in Section II.A.2 above, the administration shall provide parents with notice of the district's intent to distribute such survey and, upon written request, shall permit the parent or student (if an adult or emancipated minor) to opt out of participation.

B. Surveys Funded by Sources Other than the U.S. Department of Education:

1. Third Party Surveys

a. Prior to distributing any third party survey, the administration shall give notice to parents of the district's intent to distribute a survey on behalf of a third party.

b. Upon request, the administration shall permit parents to inspect any third party survey before it is administered or distributed by a school to a student. The administration shall grant reasonable access to the survey within a reasonable period of time after a parental request is received.

c. Student responses to third party surveys that contain personally identifiable information shall be considered student records, and shall be subject to the district's Confidentiality and Access to Student Records Policy and any administrative regulations or procedures governing the confidentiality of student records.

2. Confidential Topic Surveys

a. The provisions of this subsection apply to any survey (sponsored by the school district or a third party) which contains questions pertaining to one or more of the following items ("Confidential Topic Surveys"):

i) political affiliations or beliefs of the student or the student's parent,

ii) mental or psychological problems of the student or the student's family,

iii) sex behavior or attitudes,

iv) illegal, anti-social, self-incriminating, or demeaning behavior,

v) critical appraisals of other individuals with whom respondents have close family relationships,

vi) legally recognized privileged or analogous relationships, such as those of lawyers, physicians, and ministers,

vii) religious practices, affiliations, or beliefs of the student or of the student's parent,

viii) income (other than that required by law to determine eligibility in a program or for receiving financial assistance under such program.).

b. At the beginning of the school year, the administration shall give direct notice to parents of affected students of the district's intent to distribute a Confidential Topic Survey(s). Such notice shall include the specific or approximate dates during the school year of such distribution.

c. Upon request, the administration shall permit parents to inspect any Confidential Topic Survey before it is administered, distributed or used by a school to or with a student. The administration shall grant reasonable access to the Confidential Topic Survey within a reasonable period of time after a parental request is received.

d. Student responses to any Confidential Topic Survey that contain personally identifiable information shall be considered student records, and shall be subject to the district's Confidentiality and Access to Student Records Policy and any administrative regulations or procedures governing the confidentiality of student records.

e. Upon written request, the administration shall permit the parent or student (if an adult or emancipated minor) to opt out of participation in any Confidential Topic Survey described in this subparagraph.

III. Collection of Personal Information

A. The provisions of this subsection apply to any instrument designed to collect personal information from a student for the purpose of marketing, selling or otherwise distributing such information or providing that information to others for that purpose.

B. At the beginning of the school year, the administration shall give direct notice to parents of affected students (or to the students aged eighteen (18) or older or emancipated minors) of the district's intent to collect, disclose or use personal information collected from students for the purpose of marketing, selling or otherwise distributing such information or providing that information to others for that purpose. Such notice shall include the specific or approximate dates during the school year of such collection, disclosure or use of personal information.

C. Upon written request, the administration shall permit parents to inspect an instrument designed to collect personal information of students before it is administered or distributed by a school to a student. The administration shall grant reasonable access to the instrument within a reasonable period of time after a parental request is received.

D. Upon written request, the administration shall permit parents (or students aged eighteen (18) or older or emancipated minors) to opt out of participation in the collection, disclosure or use of personal information obtained from students for the purposes of marketing, selling or otherwise distributing the personal information to others for that purpose.

E. The provisions regarding the collection, disclosure and/or use of personal information do not apply to personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to, students or educational institutions, such as the following:

1. college or other post-secondary education recruitment, or military recruitment*;

2. book clubs, magazines, and programs providing access to low-cost literary products;

3. curriculum and instructional materials used by elementary schools and secondary schools;

4. tests and assessments used by elementary schools and secondary schools to provide cognitive, evaluative, diagnostic, clinical, aptitude, or achievement information about students;

5. the sale by students of products or services to raise funds for school-related or education-related activities;

6. student recognition programs.

*Note: Notwithstanding the foregoing, the district will permit parents and students over the age of eighteen (18) or emancipated minors to prevent

disclosure of secondary school students[2]' names, addresses and telephone numbers to military recruiters and institutions of higher education, in accordance with the district's Confidentiality and Access to Student Records Policy.

IV. Non-Emergency Invasive Physical Examinations and Screenings:

A. The provisions described in this subparagraph shall apply to any non-emergency, invasive physical examinations/screenings conducted by the school district, when such examinations/screenings meet the following conditions:

1. they are required as a condition of attendance;

2. they are administered by the school and scheduled by the school in advance;

3. they are not necessary to protect the immediate health and safety of the students; and

4. they are not required by state law.

B. At the beginning of the school year, the administration shall give direct notice to parents of affected students (or the affected student if eighteen (18) or older or an emancipated minor) of the district's intent to conduct non-emergency invasive physical examination(s)/ screening(s) described. above, except for hearing, vision or scoliosis screenings. Such notice shall include the specific or approximate dates during the school year of the administration of such the non-emergency invasive physical examination(s)/ screening(s).

C. Upon written request, the administration shall permit parents of affected students or the affected students (if adults or emancipated minors) to opt out of participation in the non-emergency invasive physical examination(s)/screening(s) described in this subparagraph.

V. Complaint Procedure

Parents or students (if adults or emancipated minors) who believe that their rights under this policy have been violated may file a complaint with:

Student Privacy Policy Office
United States Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920

Legal References:

Family Educational Rights and Privacy Act (FERPA), U.S.C.

§ 1232g; 34 CFR Part 99

Protection of Pupil Rights Amendment, 20 U.S.C. § 1232h

UNITED STATES DEPARTMENT OF EDUCATION, STUDENT PRIVACY POLICY OFFICE, Protection of Pupil Rights Amendment (PPRA), SPPO-21-01 (issued November 24, 2020), *available at* https://studentprivacy.ed.gov/sites/default/files/resource_document/file/20-0379.PPRA_508_0.pdf.

Policy adopted: March 25, 2003
Policy readopted: June 20, 2006
Policy revised: October 13, 2020
Policy revised:

Model Notification of Rights Under the Protection of Pupil Rights Amendment ("PPRA")

[Note: Districts must send this notification to parents and/or eligible students annually, at the beginning of the school year, and within a reasonable period of time after any substantive change to its PPRA policies.]

The Protection of Pupil Rights Amendment (PPRA), 20 U.S.C. § 1232h, affords parents and eligible students (*i.e.* students over 18 or emancipated minors) certain rights with respect to the administration of student surveys, the collection and use of personal information, and the administration of certain physical exams. These rights include:

1. the right of a parent to inspect, upon request, a survey created by a third party before the survey is administered or distributed by a school to a student;

2. the right of a parent to inspect, upon request, any survey concerning one or more of the following confidential topics:

    a. political affiliations or beliefs of the student or the student's parent;
    b. mental or psychological problems of the student or the student's family;
    c. sex behavior or attitudes;
    d. illegal, anti-social, self-incriminating, or demeaning behavior;
    e. critical appraisals of other individuals with whom respondents have close family relationships;
    f. legally recognized privileged relationships, such as those with lawyers, doctors, physicians, or ministers;
    g. religious practices, affiliations, or beliefs of the student or the student's parent; or
    h. income, other than as required by law to determine eligibility for certain programs or for receiving financial assistance under such programs;

3. the right of a parent to consent before a student is required to submit to a survey that concerns one or more of the confidential topics (see #2, above, a-h) if the survey is funded in whole or in part by a program of the U.S. Department of Education;

1. the right of a parent or eligible student to receive notice and opt out of a student's participation in a survey that concerns one or more of the confidential topics (see #2, above, a-h) if the student is not required to submit to such survey, whether the survey is funded in whole or in part by a program of the U.S. Department of Education or some other source;

2. the right of a parent to inspect, upon request, any instructional material used as part of the educational curriculum. Instructional material means any

instructional content that is provided to a student, regardless of its format, including printed or representational materials, audio-visual materials, and materials in electronic or digital formats (such as materials accessible through the Internet) but does not include academic tests or academic assessments;

3. the right of a parent to inspect, upon request, any instrument used in the collection of personal information from students gathered for the purpose of marketing, selling or otherwise providing that information to others for that purpose. Personal information means individually identifiable information including, a student or parent's first and last name, a home or other physical address; a telephone number or a social security number;

4. the right of a parent whose student(s) is scheduled to participate in the specific activities provided below to be directly notified of the specific or approximate dates of the following activities, as well as the right of a parent or eligible student to opt-out of participation in these activities:

    a. activities involving the collection, disclosure, or use of personal information collected from students for the purpose of marketing or selling that information (or otherwise providing that information to others for that purpose);
    b. the administration of any survey containing confidential topics (see #2, above, a-h) if the survey is either not funded as part of a program administered by the United States Department of Education or is funded by the United States Department of Education but the student is not required to submit to such survey; or
    c. any non-emergency, invasive physical examination or screening that is required as a condition of attendance, administered by the school, scheduled by the school in advance, and unnecessary to protect the immediate health and safety of a student. Such examinations do not include a hearing, vision, or scoliosis screening or other examinations permitted or required by State law.

Parents and eligible students may not opt-out of activities relating to the collection, disclosure, and/or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing education products or services for, or to students or educational institutions, such as the following:

    a. college or other post-secondary education recruitment, or military recruitment;
    b. book clubs, magazines, and programs providing access to low-cost literary products;
    c. curriculum and instructional materials used by elementary and secondary schools;

d. tests and assessments used by elementary and secondary schools to provide cognitive, evaluative, diagnostic, clinical, aptitude, or achievement information about students;
e. the sale by students of products or services to raise funds for school-related or education-related activities; and
f. student recognition programs.

To protect student privacy in compliance with the PPRA, the **Middletown** school district has adopted policies regarding these rights. Parents and/or eligible students who believe their rights have been violated under the PPRA may contact:

Student Privacy Policy Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920

POLICY REGARDING POSSESSION OF DEADLY WEAPONS OR FIREARMS

I. Definitions:

A. **Deadly Weapon** means "any weapon, whether loaded or unloaded, from which a shot may be discharged, or a switchblade knife, gravity knife, billy, blackjack, bludgeon, or metal knuckles." Conn. Gen. Stat. § 53a-3 (6).

B. **Firearm** means "any sawed-off shotgun, machine gun, rifle, shotgun, pistol, revolver or other weapon, whether loaded or unloaded from which a shot may be discharged." Conn. Gen. Stat. § 53a-3 (19).

C. **Peace Officer** means "a member of the Division of State Police within the Department of Emergency Services and Public Protection or an organized local police department, a chief inspector or inspector in the Division of Criminal Justice, a state marshal while exercising authority granted under any provision of the general statutes, a judicial marshal in the performance of the duties of a judicial marshal, a conservation officer or special conservation officer, as defined in section 26-5, a constable who performs criminal law enforcement duties, a special policeman appointed under section 29-18, 29-18a or 29-19, an adult probation officer, an official of the Department of Correction authorized by the Commissioner of Correction to make arrests in a correctional institution or facility, any investigator in the investigations unit of the office of the State Treasurer, an inspector of motor vehicles in the Department of Motor Vehicles, who is certified under the provisions of sections 7-294a to 7-294e, inclusive, a United States marshal or deputy marshal, any special agent of the federal government authorized to enforce the provisions of Title 21 of the United States Code, or a member of a law enforcement unit of the Mashantucket Pequot Tribe or the Mohegan Tribe of Indians of Connecticut created and governed by a memorandum of agreement under section 47-65c who is certified as a police officer by the Police Officer Standards and Training Council pursuant to sections 7-294a to 7-294e, inclusive." Conn. Gen. Stat. § 53a-3 (9).

Real Property means the land and all temporary and permanent structures comprising the district's elementary and secondary schools, and administrative office buildings. Real property includes, but is not limited to, the following:

classrooms, hallways, storage facilities, theatres, gymnasiums, fields and parking lots.

A. **School-Sponsored Activity** means "any activity sponsored, recognized or authorized by a board of education and includes activities conducted on or off school property." Conn. Gen. Stat. § 10-233a(h).

II. Prohibition of Deadly Weapons and Firearms

In accordance with Conn. Gen. Stat. § 29-28(e) and § 53a-217b, the possession and/or use of a deadly weapon or firearm on the real property of any school or administrative office building in this district, on school transportation, or at a school-sponsored activity, is prohibited, even if the person possessing the deadly weapon or firearm has a permit for such item.

III. Peace Officer Exception

A peace officer engaged in the performance of his or her official duties who is in lawful possession of a deadly weapon or firearm may bring such item on the real property of any school or administrative office building in this district, on school transportation, or to a school-sponsored activity.

IV. Other Exceptions

Persons in lawful possession of a deadly weapon or firearm may possess such item on the real property of any school or administrative office building in this district, on school transportation, or to a school-sponsored activity, if:

A. The person brings the deadly weapon or firearm on the real property of any school or administrative office building, on school transportation, or to a school-sponsored activity for use in a program approved by school officials. In such case, the person must give school officials notice of his/her intention to bring such item, and the person must receive prior written permission from school officials.

B. The person possesses the deadly weapon or firearm on the real property of any school or administrative office building, on school transportation, or at a school-sponsored activity pursuant to a written agreement with school officials or a written agreement between such person's employer and school officials.

C. An armed security officer employed by the Board of Education to provide security services pursuant to Conn. Gen. Stat. § 10-244a engaged in the performance of his or her official duties who is in lawful possession of a deadly weapon or firearm may bring such item on the real property of any school or administrative office building in this district, on school transportation, or to a school-sponsored activity.

V. Consequences

A. Unless subject to one of the exceptions listed above, any person who possesses a deadly weapon or firearm on the real property of an elementary or secondary school in this district, or administrative office building, on school transportation, or at a school-sponsored activity, whether or not the person is lawfully permitted to carry such deadly weapon or firearm, will be reported to the local police authorities once school officials become aware of its possession.

B. A student who possesses and/or uses any deadly weapon or firearm on the real property of an elementary or secondary school in this district, or administrative office building, on school transportation, or at a school-sponsored activity in violation of this policy shall be disciplined in accordance with Board of Education Student Discipline Policy.

A. The Board of Education reserves the right to forbid anyone caught possessing a deadly weapon or firearm on the real property of its school buildings or administrative office buildings, on school transportation, or at a school-sponsored activity, from using any and all school facilities.

Legal References:

Connecticut General Statutes § 10-233a
§ 10-244a
§ 29-28(e)

§ 53a-3
§ 53a-217b

Policy Adopted:September 15, 1998
Policy Revised: May 11, 2004
Policy Revised: January 14, 2014
Policy Revised: January 12, 2021
Policy Revised:

Personnel - Certified/Non Certified
Professional Development

Professional development is viewed by the Board of Education (the "Board") as a continuous systematic effort to improve educational programs in the Middletown Public Schools through (1) staff involvement in organized program planning, implementation and evaluation efforts, and (2) activities to upgrade the skills, knowledge and ability of educators to improve student learning.

All certified employees shall be provided opportunities for the development of increased competence beyond that which they may attain through the performance of their assigned duties.

In-Service Training Program

The Board will provide an in-service training program for its teachers, administrators and pupil personnel who hold the initial educator, provisional educator or professional educator certificate. Such program will provide such teachers, administrators and pupil personnel with information on all topics required by Conn. Gen. Stat. § 10-220a(a), and any other law requiring the Board to provide in-service training. The Board will allow any paraprofessional or non certified employee of the Board to participate, on a voluntary basis, in any in-service training program provided to certified staff on the topics mandated by Conn. Gen. Stat. § 10-220a(a).

Professional Development and Evaluation Committee

The Superintendent of Schools, on behalf of the Board, will establish a professional development and evaluation committee. Such professional development and evaluation committee shall consist of (1) at least one teacher selected by the exclusive bargaining representative for such employees, (2) at least one administrator selected by the exclusive bargaining representative for such employees, a paraeducator and (3) such other school personnel as the Superintendent of Schools, on behalf of the Board, deems appropriate. The duties of the committee shall include, but not be limited to:

a) participation in the development of a teacher evaluation and support program for the Middletown Public Schools, pursuant to Conn. Gen. Stat. § 10-151b, and
b) the development, evaluation and annual updating of a comprehensive local professional development plan-for certified employees of the Board.

The comprehensive local professional development plan developed by the committee shall (1) be directly related to the educational goals prepared by the Board pursuant to Conn. Gen. Stat. § 10-220(b), (2) be developed with full consideration of the priorities and needs related to student

social-emotional learning and restorative practices, in accordance with the provisions of Conn. Gen. Stat. § 10-148a and student academic achievement outcomes as determined by the State Board of Education, (3) provide for the ongoing and systematic assessment and improvement of both teacher evaluation and professional development of the Board's professional staff members, including personnel management and evaluation training or experiences for administrators, and (4) be related to regular and special student needs and may include provisions concerning career incentives and parent involvement.

Professional Development Activities

The Board will offer professional development activities to (i) certified employees as part of its comprehensive local professional development plan developed by the professional development and evaluation committee or (ii) for any individual certified employee. Such professional development activities may be made available by the Board directly, through a regional educational service center or cooperative arrangement with another board of education, or through arrangements with any professional development provider approved by the Connecticut Commissioner of Education and shall be consistent with any goals identified by the certified employees and the Board.

Professional development activities should respond directly to the educational needs of the student body, including, but not limited to, the following: (a) content areas such as language arts, including reading, writing, speaking, listening, viewing and enacting; math, social studies and science; (b) methodological areas such as motivation, teaching techniques, including the use of computers in the classroom and classroom management; and second language acquisition; and (c) affective areas of interpersonal relations of students and faculty, student growth and development and staff communication, problem solving, and decision making.

Professional Development Program Certified Staff

Each certified employee shall annually participate in a program of professional development, of not fewer than eighteen hours in length, of which a preponderance is in a small group or individual group settings. The professional development program shall:

1. be a comprehensive, sustained and intensive approach to improving teacher and administrator effectiveness in increasing student knowledge achievement;
2. focus on refining and improving various effective teaching methods that are shared between and among educators;
3. foster collective responsibility for improved student performance;
4. be comprised of professional learning that (a) is aligned with rigorous state student academic achievement standards, (b) is conducted among educators at the school and facilitated by principals, coaches, mentors and distinguished educators, as described in Conn. Gen. Stat. § 10-145s, or other appropriate teachers, (c) occurs frequently on an

individual basis or among groups of teachers in a job-embedded process of continuous improvement, and (d) includes a repository of best practices for teaching methods developed by educators within each school that is continuously available to such educators for comment and updating; and

5. include training in culturally responsive pedagogy and practice.

Each program of professional development shall include professional development activities, as discussed above. The principles and practices of social-emotional leaning and restorative practices shall be integrated throughout the components of the program of professional development described in sections 1 through 5, above.

The Superintendent is to report annually to the Board on the professional development program, with recommendations for changes as needed.

Professional development Program Non Certified Staff

(a) For the school year commencing July 1, 2023, and each school year thereafter, each paraeducator employed by a local or regional board of education shall participate in a program of professional development. Each local and regional board of education shall make available, annually, at no cost to its paraeducators, a program of professional development that is not fewer than eighteen hours in length, of which a preponderance is in a small group or individual instructional setting. Such program of professional development shall (1) be a comprehensive, sustained and intensive approach to improving paraeducators effectiveness in increasing student knowledge achievement, (2) focus on refining and improving various effective instruction methods that are shared between and among paraeducators, (3) foster collective responsibility for improved student performance, (4) be comprised of professional learning that (A) is aligned with rigorous state student academic achievement standards, (B) is conducted among paraeducators at the school and facilitated by principals, coaches, mentors, distinguished educators, as described in section 10-145s, or other appropriate teachers, (C) occurs frequently on an individual basis or among groups of paraeducators in a job-embedded process of continuous improvement, and (D) includes a repository of best practices for instruction methods developed by paraeducators within each school that is continuously available to such paraeducators for comment and updating, and (5) include training in culturally responsive pedagogy and practice. Each program of professional development shall include professional development activities in accordance with the provisions of subsection (b) of this section. The components of such program of professional development described in subdivisions (1) to (5), inclusive, of this subsection shall integrate the principles and practices of social-emotional learning and restorative practices throughout, but may not otherwise include mandated trainings such as trainings regarding blood-borne pathogens, the policies and procedures of the Department of Children and Families and sexual harassment.(b) Local and regional boards of education shall offer professional development activities to paraeducators as part of the plan developed pursuant to subsection (b) of section 10-220a or for any individual paraeducator. Such professional development activities may be made available by a board of education directly, through a regional educational service center or cooperative arrangement with another board of education or through arrangements with any professional

development provider approved by the Commissioner of Education and shall be consistent with any goals identified by the paraeducators and the local or regional board of education.
Conn. Gen. Stat. § 10-148d

Amended by P.A. 23-0159, S. 10 of the Connecticut Acts of the 2023 Regular Session, eff. 7/1/2023.Added by P.A. 22-0118, S. 257 of the Connecticut Acts of the 2022 Regular Session, eff. 7/1/2022.

Training and Orientation Programs for Teacher Evaluation and Support Program

The Board shall provide training for all evaluators and orientation to all certified Board employees relating to the provisions the Board's teacher evaluation and support program adopted pursuant to Conn. Gen. Stat. § 10-151b. Such training shall provide instruction to evaluators in how to conduct proper performance evaluations prior to the use of the Board's teacher evaluation and support program. Such orientation shall be completed by all certified personnel, below the rank of Superintendent, before the certified employee receives an evaluation under the teacher evaluation and support program.

Legal Reference: Connecticut General Statutes
10-151h Training and orientation programs for educators re teacher evaluation and support program.
10-148a Professional development for certified employees.
10-220a In-service training.

Policy adopted: September 15, 1995
Policy revised: February 12, 2002
Policy readopted: June 22, 2004
Policy revised: September 8, 2015
Policy Revised:

MIDDLETOWN PUBLIC SCHOOLS
Middletown, Connecticut

PROPOSED DELETION

Students

Nonresident Attendance

Non-resident students are those enrolled in the Middletown Public Schools who reside with their responsible parent or guardian outside the limits of the Middletown School District. (Geographic limits of the City)

I. Conditions for qualifications:

Students who reside in a town that has an agreement with the Middletown Board of Education for the provision of a program of studies not available in the district of residence.

Current Examples:

-- Special education pupils from neighboring communities
-- Vocational agriculture pupils of neighboring communities

II. Tuition obligation: A tuition fee shall apply to all nonresident students.

A. The annual tuition rate for any non-resident student shall be determined according to established agreement's between sending communities.

1. Special Education Students: Estimated annually by the Middletown Board of Education based upon estimated actual cost per pupil.

2. Vocational Agriculture Pupils: Determined annually by the Middletown Board of Education in conformity with Connecticut General Statutes 10- 65(b) as amended by PA 93-410.

B. Tuition Payments:

1. Tuition payments that are made by public agencies, i.e., sending school districts, shall be made following estimated billing issued by the Middletown Board of Education at a mutually convenient time, which shall reflect any correction factor of the preceding year in the case of high school tuition, and following the final billing in June each year, which shall reflect ADM (actual days of membership) costs for those who accumulate less than a full year of membership credit.

Students

Nonresident Attendance (continued)

2. Tuition payments that are made by individuals in the case of nonresidents, as defined in IB above, shall be made at the time of enrollment, or on September first and prior to the start of the second semester in January. The rate shall be the prevailing estimated high school rate divided into two installments.

III. Waiver of nonresidence status:

The Superintendent of Schools or his/her designee may waive nonresidence status and consider students as resident students statistically when the following conditions prevail:

-- When a high school student who has completed one semester of the academic year or is in his/her senior year moves to a neighboring community and his/her academic interests would be best serve by remaining as a student in his/her school of enrollment for the balance of the particular school year.

-- When an elementary or middle school level student moves to a neighboring community after completing three semesters and his/her best interests would be served by remaining as a student in his/her school of enrollment for the balance of the particular school year.

-- Decisions of the Superintendent of Schools concerning the waiver of nonresidence status may be appealed to the Board of Education in writing. Board action on such appeals shall be revealed in writing promptly.

IV. General conditions:

All non-resident students or those whose nonresidency is waived shall conform to ordinary student-school requirements and regulations, and in no case shall the Middletown School District assume transportation responsibility for these students.

Legal Reference: Connecticut General Statutes
10-253 Children placed out by commissioner of human resources or other agency. Exceptions.
10-65 Grants for construction, and operation, vocational agriculture centers. Tuition charges.

Regulation approved: April 16, 1996
Regulation reviewed: June 7, 2005

Office of the Superintendent
Cultivating the Brilliance in Each Student

Alberto Vázquez Matos, Ed.D., Ph.D., Superintendent of Schools
superintendent@mpsct.org | (860) 638-1401
311 Hunting Hill Avenue, Middletown, CT 06457
www.middletownschools.org

Middletown Board of Education
Budget Committee Meeting Minutes
December 9, 2024

Present: Dr. Vazquez- Matos, Superintendent of Schools
Mr. Eduardo Miranda, Director of Finance
Mrs. Sheila Daniels, Chairperson of the Board of Education
Mr. Harold Panciera, Chairperson of the Budget Committee
Mr. Mike Skott, I.T. Support

I. The meeting was called to order at 5:32 p.m.

II. The minutes were approved for October 7, as the meeting scheduled for November 18 was cancelled.

III. Mr. Miranda reported on the line - item transfers for the month. There were few, as it is still early in the school year.

He took questions regarding the line items, and why some showed projections for a surplus or deficit that seemed large. He made it clear that uncertainty is common throughout the year, especially in the areas of Special Education tuition and transportation.

IV. Dr. Matos has started the budget process earlier this year, and plans to hold a community meeting in order to get input from citizens. The Chair of the Board, and the Chair of the Budget Committee will meet with Dr. Matos each month in order to collaborate on meeting our needs in critical areas.

V. Dr. Matos and Mr. Miranda reminded everyone that the Board of Education's fixed costs are going up in about a year due to contract negotiations with four unions. Salaries and benefits will be more expensive.

VI. Dr. Matos commented on the capital expenses for improving our school buildings. The referendum to make improvements to Macdonough School was approved on November 5 by the voters. However, at least $150,000 will be needed to make sure Keigwin School is ready to take the Macdough students for at least two years. The Superintendent and the Mayor's offices continue to hold monthly meetings in order to find a way to get money for this , and other pressing needs.

Middletown Public Schools

Office of the Superintendent

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VII. Dr. Matos reported also on the unfunded mandates that the state issues to all school districts. Two examples would be improvement of air quality ($131,000) and menstrual pad dispensers in schools ($ 21,000). He continues to work with our state congressional delegation to reduce these financial burdens placed on the city.

VIII. There were no other budget questions , and no suggestions for the January meeting.

IX. Meeting dates for 2025 were approved, and will be sent to the full Board. They are:

January 13	February 10
March 10	April 14
May 12	June 9
September 8	October 13
November 10	December 8

January 12, 2026

X. Meeting was adjourned at 6: 17.

MIDDLETOWN BOARD OF EDUCATION
CURRICULUM COMMITTEE
December 5, 2024
Zoom

5:30 PM

Board of Education (BOE) Committee Members Present	**Also Present**
Debra Guss, Committee Chair Liz Crooks, Committee member Adam Hayn, Committee member Harold Panciera, BOE member	Dr. Stacey McCann, Assistant Superintendent of Teaching and Learning Megan Hanly, Steam Director K-12 Scot Peaslee, Steam Department Head (6-12) DeLita Rose-Daniels, Community member Gisella Gandulla, Community member

1. **Call to order and Introductions**: Committee Chair Debra Guss called the meeting to order at 5:37 p.m. and introductions were made.

2. **Proposed Course "The Psychology of Wellness"**: Mr. Peaslee then provided an overview of a proposed new half-year Psychology elective course for Middletown High School ("MHS") 11th and 12th grade students, highlighting that the course is designed to help students better manage current psychological challenges as they prepare to graduate from MHS and will examine the link between body & mind to determine ways to improve wellbeing through actions based on scientific research. Mr. Peaslee then reviewed the potential units of study in more detail. A discussion followed, including, among other things, the importance of incorporating culturally relevant content into the class, how best to ensure a diverse group of students are encouraged to take the class and the timeline for introducing the class. The Committee members expressed their support for the new course.

3. **Adjournment**: Committee Chair Debra Guss then adjourned the meeting at 6:14 p.m.

MIDDLETOWN BOARD OF EDUCATION
POLICY COMMITTEE
Meeting Minutes
Tuesday, December 17, 2024
In Person Meeting 5:30 P.M.

Board of Education Policy Committee Members participating:

Deb Kleckowski, Policy Committee Chair
Liz Crooks, BOE Member
Shelia Daniels, Chair of Board of Education
Also participation:
Dr. Alberto Vazquez Matos, Superintendent
Marco Gaylord, Executive Director of Operations
Jennifer Cannata, Assistant Superintendent
Jill Power, Operations Administrative Secretary

The Meeting was called to order by Deb Kleckowski at 5:36P.M.

1. **Introductions**

2. **Policy #5145 Section 504 of the Rehabilitation Act of 1973**

Marco Gaylord discussed that this policy has just gone through a legal review. Discussion was had about who the ADA coordinator is for students and personnel. Vacianna Spaulding is the contact person for students and Jennifer Cannata is the contact person for personnel. After discussion the Board moved this policy to its first reading at the Board meeting on January 14th, 2024.

3. **Policy #5141.5 Suicide Prevention and Intervention**

Dr. Alberto Vazquez Matos stated that we do have an inside crisis team to assist with students who are feeling suicidal or who make comments as such. Liz Crooks asked if outside personnel would include a mental health professional/doctor. Dr. V mentioned that we will use our inside crisis team to help those students in need and a wellness check will be done if necessary. Sometimes that could be a counselor or the Police Department. If they see fit they then will call 411. Deb questioned the optional language on page 2. After discussion we will be removing the optional language because we do not have a student assistance program. We have a crisis team. Jennifer Cannata also mentioned that all students have the Suicide hotline phone number on their ID badges and staff get QPR training which helps them recognize the signs of suicide. Marco also mentioned that we have Securely which is an online platform that will flag certain words students type into a search bar. So if a student types something suicide related it will get flagged and then the team will research it. After discussion the Board moved this policy to its first reading with removing the optional language on page two at the Board meeting on January 14th, 2024.

4. **Policy #4118.51 Social Media**

Marco discussed that this policy is about Social Media for personnel. Liz Crooks asked if there is somewhere where it states that teachers and staff should not be friends with students on social media. There is a statement in the regulation mentioning this for staff. After discussion the Board moved this policy to its first reading at the Board meeting on January 14th, 2024.

5. **Bylaws of the Board Discussion**

A discussion was had about looking and replacing some of the Bylaws that we have currently. Some need to be updated, replaced and if needed, removed. We will start to look at each Bylaw and go through them to fix anything needed. Starting in January we will review these policies.

6. **Policy #4152.6 Family and Medical Leave**

This policy was pulled at the December Board meeting because there are going to be some changes to the Connecticut State Law coming in January. The Board did not want to pass through the policy before the changes.

The next policy committee meeting will take place on January 21st, 2024.

ADJOURNMENT

The meeting was adjourned at 6:36 P.M.

Respectfully submitted,

Marco Gaylord

Executive Director of Operations

Object Code - Summary	Expenditure 2023-2024	Appropriation 2024-2025	Appropriation Adjustment	Encumbrance	Current Expenditure	Current Balance	Projected Surplus/Deficit	Projected Expenditure
CERTIFIED SALARIES								
51109 CERTIFIED*CURR WRITING	43,294.50	81,820.00	-	-	27,102.25	54,717.75	30,000.00	51,820.00
51110 CERTIFIED*REG	35,591,312.69	37,071,168.00	-	-	15,536,059.79	21,535,108.21	275,000.00	36,796,168.00
51112 UNKNOWN ATTRITION CERTIFIEI	-	(946,085.00)	-	-	-	(946,085.00)	-	(946,085.00)
51115 CERTIFIED*OTH ADDL/STIPEND	5,193.45	6,992.00	-	-	983.53	6,008.47	-	6,992.00
51309 SALARIES: INTERVENTIONISTS	1,851.80	-	-	-	-	-	-	-
51310 SALARIES: SUBS-DAILY*REG	55,524.26	-	-	-	-	-	-	-
51315 SALARIES: SUBS-LT*REG	249,959.71	100,000.00	-	-	75,174.04	24,825.96	(80,000.00)	180,000.00
51316 SALARIES: SUBS-BLDG*REG	191,625.78	299,208.00	-	-	90,776.62	208,431.38	65,000.00	234,208.00
51410 SALARIES: ADMINISTRATOR*RE(	5,326,476.12	5,659,271.00	-	-	3,203,238.85	2,456,032.15	50,000.00	5,609,271.00
51501 LONGEVITY: CERTIFIED	395,200.00	383,200.00	-	-	180,600.00	202,600.00	22,000.00	361,200.00
51716 SALARIES: MENTOR	10,172.28	21,222.00	-	-	4,521.00	16,701.00	5,000.00	16,222.00
51718 SALARIES: TUTOR	150,220.50	198,850.00	-	-	51,009.25	147,840.75	50,000.00	148,850.00
51721 SALARIES: STIPENDS-NON TRB	637,483.25	689,474.00	-	-	181,347.66	508,126.34	15,000.00	674,474.00
51900 OTHER SALARIES	137,917.00	-	-	-	-	-	-	-
51901 NON-CONTRACTED CERTIFIED	71,962.39	60,000.00	-	-	50,446.80	9,553.20	-	60,000.00
51921 SALARIES: CLASS COVERAGE	209,012.43	100,000.00	-	-	83,829.70	16,170.30	(25,000.00)	125,000.00
TOTAL CERTIFIED SALARIES	**43,077,206.16**	**43,725,120.00**	**-**	**-**	**19,485,089.49**	**24,240,030.51**	**407,000.00**	**43,318,120.00**
CLASSIFIED SALARIES								
51116 CLASSIFIED*REG	8,700,708.51	9,478,540.00	-	-	4,702,856.54	4,775,683.46	(150,000.00)	9,628,540.00
51112 UNKNOWN ATTRITION CLASSIFIE	-	(238,835.00)	-	-	-	(238,835.00)	-	(238,835.00)
51117 CLASSIFIED*TEMP	10,673.26	-	-	-	675.16	(675.16)	(675.00)	675.00
51118 CLASSIFIED*OT	270,196.88	253,000.00	-	-	109,272.82	143,727.18	-	253,000.00
51200 SALARIES OF SEASONAL TEMP	124,250.31	50,000.00	-	-	63,316.19	(13,316.19)	(30,000.00)	80,000.00
51416 ATHLETIC EVENT WORKERS	61,830.23	53,000.00	-	-	30,413.33	22,586.67	-	53,000.00
51418 SUBS-SECRETARIES	33,589.87	10,000.00	-	-	12,873.31	(2,873.31)	(25,000.00)	35,000.00
51903 FAMILY ENGAGEMENT	220,935.20	29,367.00	-	-	14,344.65	15,022.35	-	29,367.00
51920 SALARIES: STUDENT VOCATION	3,640.00	6,000.00	-	2,730.00	1,855.00	1,415.00	1,500.00	4,500.00
TOTAL CLASSIFIED SALARIES	**9,425,824.26**	**9,641,072.00**	**-**	**2,730.00**	**4,935,607.00**	**4,702,735.00**	**(204,175.00)**	**9,845,247.00**
PARAPROFESSIONALS/AIDES								
51210 SALARIES: AIDES/PARAS*REG	4,544,842.30	5,162,752.00	-	-	2,064,047.90	3,098,704.10	165,000.00	4,997,752.00
51112 UNKNOWN ATTRITION PARAS	-	(154,883.00)	-	-	-	(154,883.00)	-	(154,883.00)

Object Code - Summary	Expenditure 2023-2024	Appropriation 2024-2025	Appropriation Adjustment	Encumbrance	Current Expenditure	Current Balance	Projected Surplus/Deficit	Projected Expenditure
51217 SAL: STUDENT ENGAGEMENT S	177,975.33	-	-	-	-	-	-	-
51503 LONGEVITY: PARAS	16,100.00	17,100.00	-	-	14,700.00	2,400.00	-	17,100.00
51713 SALARIES: LUNCH/DUTY AIDES	286,704.24	431,742.00	-	-	130,560.38	301,181.62	65,000.00	366,742.00
51112 UNKNOWN ATTRITION DUTY AID	-	(21,587.00)	-	-	-	(21,587.00)	-	(21,587.00)
51714 SALARIES: FOOD SVC CLERICAL	55,394.51	-	-	-	-	-	-	-
51717 SALARIES: BUS MONITOR	3,286.25	10,000.00	-	-	-	10,000.00	5,000.00	5,000.00
TOTAL PARAPROFESSIONALS/AIDES	**5,084,302.63**	**5,445,124.00**	**-**	**-**	**2,209,308.28**	**3,235,815.72**	**235,000.00**	**5,210,124.00**
EMPLOYEE BENEFITS								
52010 EMPLOYEE BENEFITS	12,324.04	-	-	-	-	-	-	-
52100 GROUP LIFE INSURANCE	213,667.00	220,000.00	-	-	242,646.00	(22,646.00)	(22,646.00)	242,646.00
52205 FICA	728,655.10	684,570.00	-	-	322,628.82	361,941.18	(80,000.00)	764,570.00
52210 MEDICARE	902,675.89	909,573.00	-	-	421,503.96	488,069.04	(30,000.00)	939,573.00
52300 RETIREMENT CONTRIB	85,921.14	91,145.00	-	-	49,505.55	41,639.45	-	91,145.00
52500 TUITION REIMB	-	3,000.00	-	-	-	3,000.00	-	3,000.00
52600 UNEMPLOY COMPENSATION	52,239.00	50,000.00	-	-	21,798.00	28,202.00	-	50,000.00
52700 WORKERS COMPENSATION	509,870.01	692,021.00	-	443,929.50	243,290.93	4,800.57	4,800.57	687,220.43
52831 HEALTH INS*CERTIFIED/PARAS	9,355,471.00	9,183,370.00	-	2,466,163.98	6,717,206.02	-	-	9,183,370.00
52832 HEALTH INS*CLASSIFIED	5,482,858.00	6,044,035.00	-	-	6,044,035.00	-	-	6,044,035.00
52840 DENTAL INSURANCE	958,518.43	1,033,278.00	-	317,757.43	675,520.57	40,000.00	40,000.00	993,278.00
52950 DISABILITY INSURANCE	30,920.59	30,500.00	-	7,396.09	23,603.91	(500.00)	(500.00)	31,000.00
52960 UNUSED SICK BENEFIT	24,877.76	25,000.00	-	-	21,640.48	3,359.52	3,359.52	21,640.48
52961 UNUSED VACATION PAYOUT	-	25,000.00	-	-	-	25,000.00	25,000.00	-
52990 OTHER POST EMPLOYEE BENEF	417,501.00	420,092.00	-	-	420,092.00	-	-	420,092.00
52991 ACA HEALTH INSURANCE	30,449.70	30,000.00	-	-	-	30,000.00	-	30,000.00
TOTAL EMPLOYEE BENEFITS	**18,805,948.66**	**19,441,584.00**	**-**	**3,235,247.00**	**15,203,471.24**	**1,002,865.76**	**(59,985.91)**	**19,501,569.91**
PURCHASED SERVICES								
53010 PURCHASED PROF SVCS	189,631.51	16,350.00	-	8,222.02	8,077.98	50.00	-	16,350.00
53020 LEGAL SERVICES	150,693.65	175,000.00	-	59,570.26	119,292.39	(3,862.65)	-	175,000.00
53040 NURSING SERVICES	40,112.50	50,000.00	-	49,500.00	19,800.00	(19,300.00)	(19,300.00)	69,300.00
53070 TESTING / SCORING	19,164.00	21,700.00	-	-	21,700.00	-	-	21,700.00
53200 PROF EDUC SERVICES	449,049.13	142,000.00	-	107,388.55	79,128.31	(44,516.86)	(78,000.00)	220,000.00
53205 EMPLOYEE TRNG/DEV SVCS	1,000.00	550.00	-	-	-	550.00	-	550.00

Object Code - Summary	Expenditure 2023-2024	Appropriation 2024-2025	Appropriation Adjustment	Encumbrance	Current Expenditure	Current Balance	Projected Surplus/Deficit	Projected Expenditure
53220 INSERVICE - PROF MTGS/DEVEL	59,967.45	52,790.00	(355.00)	115.25	32,263.83	20,055.92	-	52,435.00
53240 FIELD TRIPS	22,385.59	22,200.00	2,000.00	3,734.88	7,834.27	12,630.85	-	24,200.00
53251 STUDENT ACTIVITIES	8,306.84	12,000.00	-	-	1,976.63	10,023.37	2,000.00	10,000.00
53300 PURCH PROF SVCS: TECH	159,480.33	86,785.00	-	25,754.00	48,843.12	12,187.88	-	86,785.00
53310 PURCH PROF SVCS: AUDIT	30.00	30,000.00	-	30,000.00	3,000.00	(3,000.00)	(3,000.00)	33,000.00
53400 PURCH PROF SVCS: OTHER	533,115.70	203,384.00	-	216,133.34	163,149.94	(175,899.28)	(330,000.00)	533,384.00
53500 PURCH PROF/TECH SERVICES	32,384.95	35,239.00	-	-	28,789.46	6,449.54	-	35,239.00
53530 PURCH PROF SVCS: POLICE	25,251.04	13,000.00	-	-	5,376.40	7,623.60	(8,000.00)	21,000.00
53540 PURCH PROF SVCS: SPORTS OF	44,936.52	70,700.00	-	-	20,574.63	50,125.37	20,000.00	50,700.00
54010 PURCH PROPERTY SVCS	66,734.44	123,248.00	-	26,007.15	85,538.17	11,702.68	-	123,248.00
54103 SNOW PLOWING/SANDING	16,100.00	25,000.00	-	14,300.00	5,700.00	5,000.00	-	25,000.00
54300 REPAIRS & MAINTENANCE	735,773.14	891,780.00	(300.00)	273,508.16	438,313.82	179,658.02	-	891,480.00
54303 MAINT: GROUNDS	21,517.97	46,500.00	-	6,262.66	32,758.34	7,479.00	-	46,500.00
54304 ELEVATOR MAINTENANCE	55,477.75	50,000.00	-	20,166.06	21,833.91	8,000.03	-	50,000.00
54411 WATER/SEWER	99,500.82	114,662.00	-	58,463.91	56,198.09	-	-	114,662.00
54420 RENTAL OF EQUIPMENT&VEHIC	1,131.83	5,000.00	-	-	4,738.81	261.19	-	5,000.00
54421 DISPOSAL	156,347.79	155,800.00	-	83,104.59	72,695.41	-	-	155,800.00
54424 LAWN CARE	10,110.00	15,000.00	-	-	313.34	14,686.66	-	15,000.00
54440 RENTALS	673.68	700.00	-	-	336.84	363.16	-	700.00
55010 PURCHASED SERVICES	711,296.48	934,751.00	-	73,041.28	697,820.84	163,888.88	25,000.00	909,751.00
55100 PUPIL TRANSPORTATION	4,014,310.98	6,532,299.00	-	108,456.46	5,630,914.15	792,928.39	790,000.00	5,742,299.00
55105 TRANSPORTATION*SUMMER	126,997.12	157,690.00	-	-	120,621.18	37,068.82	37,068.82	120,621.18
55109 TRANSPORT*SPED OUT OF TOW	1,301,342.19	1,380,000.00	-	917,640.50	717,868.00	(255,508.50)	(255,000.00)	1,635,000.00
55190 TRANSPORT*HOMELESS	256,466.71	250,000.00	-	133,212.50	56,779.50	60,008.00	-	250,000.00
55191 TRANSPORT*DCF	47,785.00	-	-	-	-	-	-	-
55205 PROPERTY/CASUALTY INSURAN	341,821.00	341,821.00	-	-	341,821.00	-	-	341,821.00
55206 ATHLETIC INSURANCE	28,281.00	28,281.00	-	-	28,281.00	-	-	28,281.00
55300 COMMUNICATIONS/TELEPHONE	237,679.70	264,900.00	-	81,428.59	187,906.49	(4,435.08)	(4,435.00)	269,335.00
55301 POSTAGE	30,013.60	27,400.00	-	-	7,520.59	19,879.41	-	27,400.00
55303 SECURITY MONITORING	90,716.55	90,000.00	-	-	72,035.64	17,964.36	-	90,000.00
55304 SUBSCRIPTIONS/LICENSES	74,602.73	90,720.00	4,284.00	2,557.24	73,472.04	18,974.72	-	95,004.00
55400 ADVERTISING	281.38	800.00	-	-	-	800.00	(65.00)	865.00
55500 PRINTING	21,134.69	17,800.00	-	3,201.14	6,675.91	7,922.95	-	17,800.00
55510 COPYING	88,618.60	114,000.00	-	-	111,480.00	2,520.00	-	114,000.00

Object Code - Summary	Expenditure 2023-2024	Appropriation 2024-2025	Appropriation Adjustment	Encumbrance	Current Expenditure	Current Balance	Projected Surplus/Deficit	Projected Expenditure
55800 TRAVEL/CONFERENCES	89,872.04	111,550.00	-	4,508.31	12,115.89	94,925.80	10,000.00	101,550.00
TOTAL PURCHASED SERVICES	**10,360,096.40**	**12,701,400.00**	**5,629.00**	**2,306,276.85**	**9,343,545.92**	**1,057,206.23**	**186,268.82**	**12,520,760.18**
SUPPLIES & MATERIALS								
56100 SUPPLIES*GENERAL	20,596.86	10,000.00	-	-	142.49	9,857.51	-	10,000.00
56104 SUPPLIES*MAINTENANCE	155,630.27	209,000.00	-	54,265.29	66,896.82	87,837.89	10,000.00	199,000.00
56106 SUPPLIES*FOOD	260.00	390.00	-	38.75	231.25	120.00	-	390.00
56110 INSTRUCTIONAL SUPPLIES	356,714.62	428,004.00	(7,129.00)	44,463.87	192,317.58	184,093.55	30,000.00	390,875.00
56115 COMMON CORE MATERIALS	18,132.28	20,503.00	-	280.95	4,284.46	15,937.59	-	20,503.00
56120 ADMINISTRATIVE SUPPLIES	67,883.16	70,677.00	-	12,301.35	32,064.87	26,310.78	-	70,677.00
56121 COPY PAPER	50,502.46	51,625.00	-	9,564.80	19,049.38	23,010.82	-	51,625.00
56210 NATURAL GAS	616,610.08	763,250.00	-	488,733.28	211,516.72	63,000.00	50,000.00	713,250.00
56220 ELECTRICITY	1,044,827.62	1,337,034.00	-	1,000,021.15	553,428.85	(216,416.00)	-	1,337,034.00
56230 BOTTLED GAS	12,276.73	11,950.00	-	6,844.49	3,255.51	1,850.00	1,850.00	10,100.00
56240 FUEL OIL	268,478.19	295,879.00	-	244,440.18	51,438.82	0.00	-	295,879.00
56260 DIESEL FUEL	229,004.19	240,000.00	-	143,415.17	96,584.83	(0.00)	-	240,000.00
56265 GASOLINE (VEHICLES)	131,355.14	104,490.00	-	67,380.87	35,569.13	1,540.00	-	104,490.00
56270 PROPANE	29,065.54	50,000.00	-	45,746.35	4,968.77	(715.12)	(715.00)	50,715.00
56300 FOOD SUPPLIES	1,410.92	3,280.00	-	-	520.00	2,760.00	1,500.00	1,780.00
56400 BOOKS AND PERIODICALS	7,358.30	7,700.00	-	1,479.69	4,713.08	1,507.23	-	7,700.00
56410 TEXTBOOKS	24,314.61	14,310.00	-	-	7,200.30	7,109.70	-	14,310.00
56420 LIBRARY MATERIALS	31,103.74	20,090.00	-	3,030.92	6,692.88	10,366.20	-	20,090.00
56500 SUPPLIES*TECHNOLOGY RELAT	218,781.24	206,094.00	1,000.00	58,604.02	55,987.12	92,502.86	-	207,094.00
56900 SUPPLIES*OTHER	179,863.75	186,035.00	(6,600.00)	55,168.11	69,572.67	54,694.22	5,000.00	174,435.00
56910 CUSTODIAL SUPPLIES	203,050.83	211,500.00	-	134,233.84	77,188.06	78.10	-	211,500.00
TOTAL SUPPLIES & MATERIALS	**3,667,220.53**	**4,241,811.00**	**(12,729.00)**	**2,370,013.08**	**1,493,623.59**	**365,445.33**	**97,635.00**	**4,131,447.00**
PROPERTY								
57300 NEW EQUIPMENT	24,721.25	28,000.00	-	919.36	456.43	26,624.21	-	28,000.00
57330 FURNITURE AND FIXTURES	14,992.08	4,500.00	6,400.00	6,150.00	3,358.26	1,391.74	-	10,900.00
57340 TECH REL HW/EQUIP	1,606.33	2,129.00	-	70.40	987.48	1,071.12	-	2,129.00
57390 OTHER EQUIP/PROPERTY	3,091.98	3,100.00	-	-	1,231.59	1,868.41	-	3,100.00
TOTAL PROPERTY	**44,411.64**	**37,729.00**	**6,400.00**	**7,139.76**	**6,033.76**	**30,955.48**	**-**	**44,129.00**

Object Code - Summary	Expenditure 2023-2024	Appropriation 2024-2025	Appropriation Adjustment	Encumbrance	Current Expenditure	Current Balance	Projected Surplus/Deficit	Projected Expenditure
MISCELLANEOUS								
58100 MEMBERSHIPS & DUES	90,319.36	115,420.00	700.00	2,190.00	86,651.70	27,278.30	5,000.00	111,120.00
58901 EDUCATIONAL SUPPORT	23,321.95	32,155.00	-	969.28	28,967.13	2,218.59	-	32,155.00
58903 PROF DEV IMPROVEMENT	25,101.38	29,000.00	-	-	355.00	28,645.00	-	29,000.00
58904 WESLEYAN PUB SCHL COLLAB	5,000.00	5,000.00	-	-	-	5,000.00	-	5,000.00
58906 AFTER SCHOOL PROGRAM	4,185.00	1,650.00	-	-	477.96	1,172.04	-	1,650.00
58908 RECRUITMENT	19,199.71	19,100.00	-	2,000.00	5,581.35	11,518.65	-	19,100.00
TOTAL MISCELLANEOUS	**167,127.40**	**202,325.00**	**700.00**	**5,159.28**	**122,033.14**	**75,832.58**	**5,000.00**	**198,025.00**
TUITION								
55600 TUITION MAGNET (REGULAR ED	935,967.00	600,174.00	-	-	490,192.02	109,981.98	85,000.00	515,174.00
55610 TUITION TO OTHER DISTR IN ST	231,834.48	168,000.00	-	86,150.00	42,934.46	38,915.54	30,000.00	138,000.00
55630 TUITION TO PRIVATE SOURCES	4,662,580.08	4,930,000.00	-	3,203,007.63	2,284,062.03	(557,069.66)	(780,000.00)	5,710,000.00
TOTAL TUITION	**5,830,381.56**	**5,698,174.00**	**-**	**3,289,157.63**	**2,817,188.51**	**(408,172.14)**	**(665,000.00)**	**6,363,174.00**
GRAND TOTAL	**96,462,519.24**	**101,134,339.00**	**-**	**11,215,723.60**	**55,615,900.93**	**34,302,714.47**	**1,742.91**	**101,132,596.09**

Definitions:	
Expenditure	The amount of funds spent
Appropriation	City funds allocated for the fiscal year
Encumbrance	Commitment to spend funds for a particular item at some point in the future
Current Balance	The amount of funds remaining after accounting for expenditures and encumbrances
Projected Surplus	Expected excess of funds
Projected Deficit	Expected amount of additional funds needed
Projected Expenditure	The amount of funds expected to be spent by year end
Attrition	Anticipated savings due to position vacancies

Middletown Board of Education
BOE Transfer of Funds

Date Range: 01-Dec-2024 to 09-Jan-2025 For FY 2025

Account	Description	Original Budget	Budget Adjust	Total Budget	From	To
Journal#: 39450 Date: 12-Dec-2024						
From 1010-960-2212-170-51109-00000	CURR: NAT/PHYS SCI*CURR WRITING	5,000.00		5,000.00	410.00	
To 1010-100-1000-170-56110-00000	CURR: NAT/PHYS SCIENCE*INSTR SUPPL	10,000.00		10,000.00		410.00
	curriculum writing complete for SY, moved to cover additional safety compliance consultant services					
	Total Transfer for CURRICULUM				410.00	410.00
Journal#: 39463 Date: 31-Dec-2024						
From 1010-940-2610-000-56210-00000	OPER/BLDGS: NATURAL GAS	150,000.00		150,000.00	18,000.00	
To 1010-940-2630-000-54010-00000	CARE/UPKEEP GROUNDS: PURCH PROP SVCS	28,000.00		28,000.00		18,000.00
	TRANSFER FOR TREE REMOVAL AT SPENCER SCHOOL FOR SAFETY CONCERNS					
	Total Transfer for Facilities				18,000.00	18,000.00
Journal#: 39446 Date: 04-Dec-2024						
From 1010-062-1000-360-56110-00000	MHS: TECH EDUC*INSTR SUPPL	19,750.00		19,750.00	760.00	
To 1010-062-1000-360-54300-00000	MHS: TECH EDUC*REPAIRS & MAINT	2,000.00		2,000.00		760.00
	Transfer for unexpected repair to Haas Mini-Mill for Aerospace					
Journal#: 39462 Date: 30-Dec-2024						
From 1010-062-1000-360-56110-00000	MHS: TECH EDUC*INSTR SUPPL	19,750.00		19,750.00	3,000.00	
To 1010-062-1000-360-53240-00000	MHS: TECH EDUC*FIELD TRIPS	6,150.00		6,150.00		3,000.00
	Ensure equitable access for diverse students participating in 14 state, regional, and national Engineering and					
Journal#: 39465 Date: 02-Jan-2025						
From 1010-062-1000-320-56900-02123	MHS: F&C EDUC*SUPPL OTH*HN	500.00		500.00	400.00	
To 1010-062-1000-320-54300-00000	MHS: REPAIRS/MAINT*F&C					400.00
	REPAIR MACHINS IN FAMILY CONS SCIENCE (BOUFFARD)					
	Total Transfer for MHS				4,160.00	4,160.00

Middletown Board of Education
BOE Transfer of Funds

Date Range: 01-Dec-2024 to 09-Jan-2025 For FY 2025

Account	Description	Original Budget	Budget Adjust	Total Budget	From	To
Journal#: 39466 Date: 03-Jan-2025						
From 1010-012-1000-150-56115-00000	MOODY: LIT & READ*COMMON CORE MATL	2,850.00		2,850.00	149.86	
To 1010-012-2220-440-55304-00000	MOODY: LIBR/MEDIA*SUBSCRIPTIONS	1,000.00		1,000.00		149.86
	CO paid the Follett invoice ended up being a little bit more. Line transfer to cover the balance.					
	Total Transfer for Moody School				149.86	149.86
Journal#: 39447 Date: 10-Dec-2024						
From 1010-054-1000-170-56110-00000	BMS: NAT/PHYS SCIENCE*INSTR SUPPL	7,700.00		7,700.00	700.00	
To 1010-054-2213-171-53220-00000	BMS: STEM*IN SVC-PROF MTG/DEV	1,500.00		1,500.00		700.00
	Transfer money from science to STEM for professional development.					
	Total Transfer for WWMS				700.00	700.00
	*** Grand Total To Transfer				23,419.86	23,419.86

BOE Monthly Human Resources Report

Tuesday, January 14, 2025

Monthly HR Update

- Staffing: Time Period – December 1 – December 31, 2024

New Hires – 10

- **Certified: 5**

- **PE & Health Teacher – (Beman)**
- **World Language (Spanish) Teacher– (Beman)**
- **World Language (Spanish) Teacher – (Beman)**
- **DEI Director – (District)**
- **Music Teacher (Strings) – (Beman)**

New Hires continued on next page

Monthly HR Update

- Staffing: Time Period – December 1 – December 31, 2024

New Hires – continued

- **Non-Certified: 5**

- **ML Interventionist – (MHS)**
- **Strings Teacher – (Keigwin)**
- **Pre K Paraeducator – (Snow)**
- **Building Sub – (Adult Ed)**
- **Duty Aide – (Moody)**

New Hires continued on next page

Monthly HR Update

- Staffing: Time Period – December 1 – December 31, 2024

Separations –

- **Retirements: 0**
- **Resignations: 11**
- **Certified staff: 6**

- **Math Teacher – (Beman)**
- **World Language (Spanish) Teacher – Beman)**
- **MSELI Coordinator – (MHS)**
- **Social Studies Teacher – (Beman)**
- **School Psychologist – (Bielefield)**
- **Principal – (Beman)**

separations continued on next slide

Monthly HR Update

- Staffing: Time Period – December 1 – December 31, 2024

- **Resignations: continued**

- **Non Certified: 5**

- **BCBA – (Farm Hill)**
- **Instructional Aide – (Moody)**
- **Academic Interventionist – (Lawrence)**
- **Paraeducator – (Farm Hill)**
- **Duty Aide – (Moody)**

Monthly HR Update

- Staffing: Time Period – December 1 – December 31, 2024
- Vacancies – 68
- Certified: openings – 14

- **Aerospace Instructor – (MHS)**
- **School Psychologist – (Snow)**
- **School Psychologist – (Macdonough)**
- **School Psychologist – (Lawrence)**
- **School Psychologist – (Bielefield)**
- **World Language Teacher – (Beman)**
- **Principal – (Beman)**
- **Special Ed Teacher (2) – (MHS)**

Vacancies continued on next slide

Monthly HR Updates

- Staffing: Time Period – December 1 – December 31, 2024

- Vacancies – (continued)

- Social Studies Teacher – (Beman)
- Bilingual Teacher – (District)
- Science Teacher - Chemistry – (MHS)
- Math Teacher – (Beman)
- MSELI Coordinator (Social Worker) – (MHS)

- Classified Vacancies – 54

- Board Certified Behavioral Analyst – (Farm Hill)
- Family Engagement Liaison; FEL – (MHS)
- SEL Interventionist – (MHS)
- MTC Tutor – (MTC)

Vacancies continued on next slide

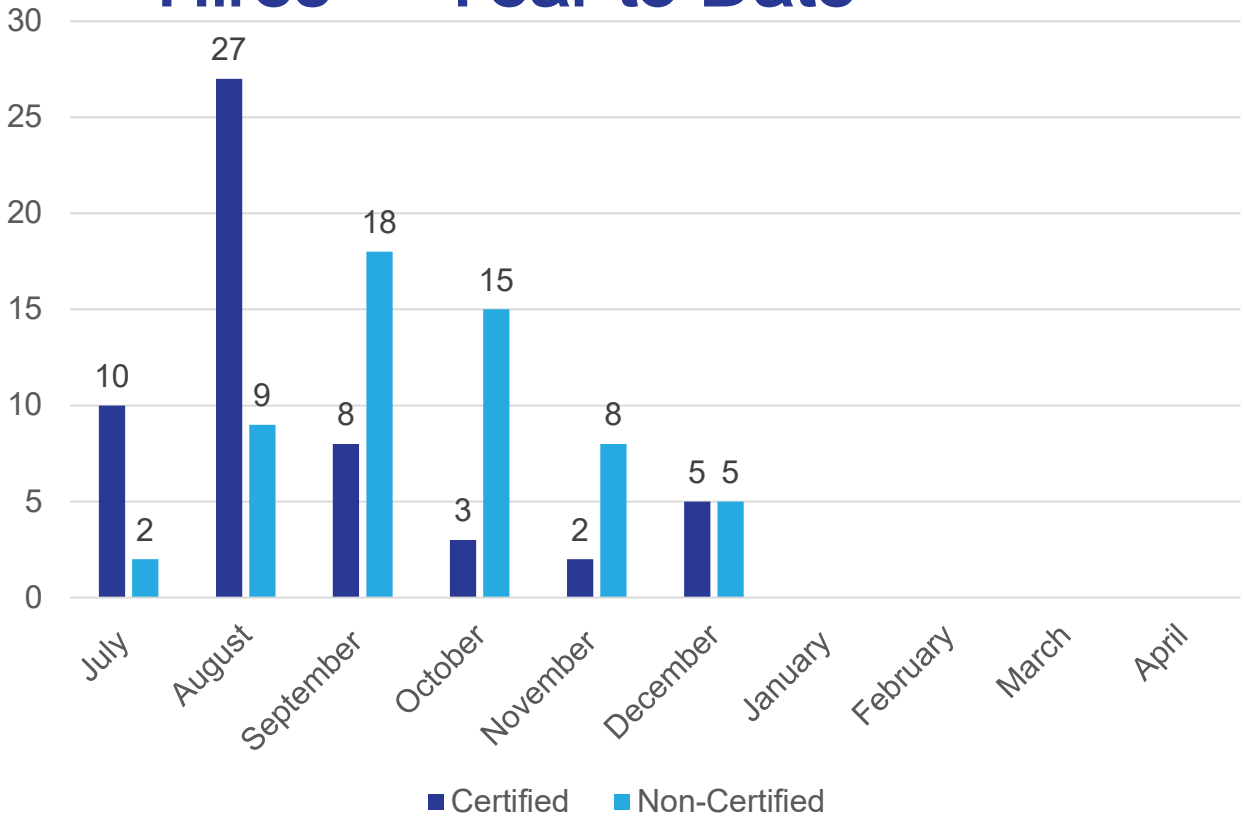
Monthly HR Updates

- Staffing: Time Period – December 1 – December 31, 2024

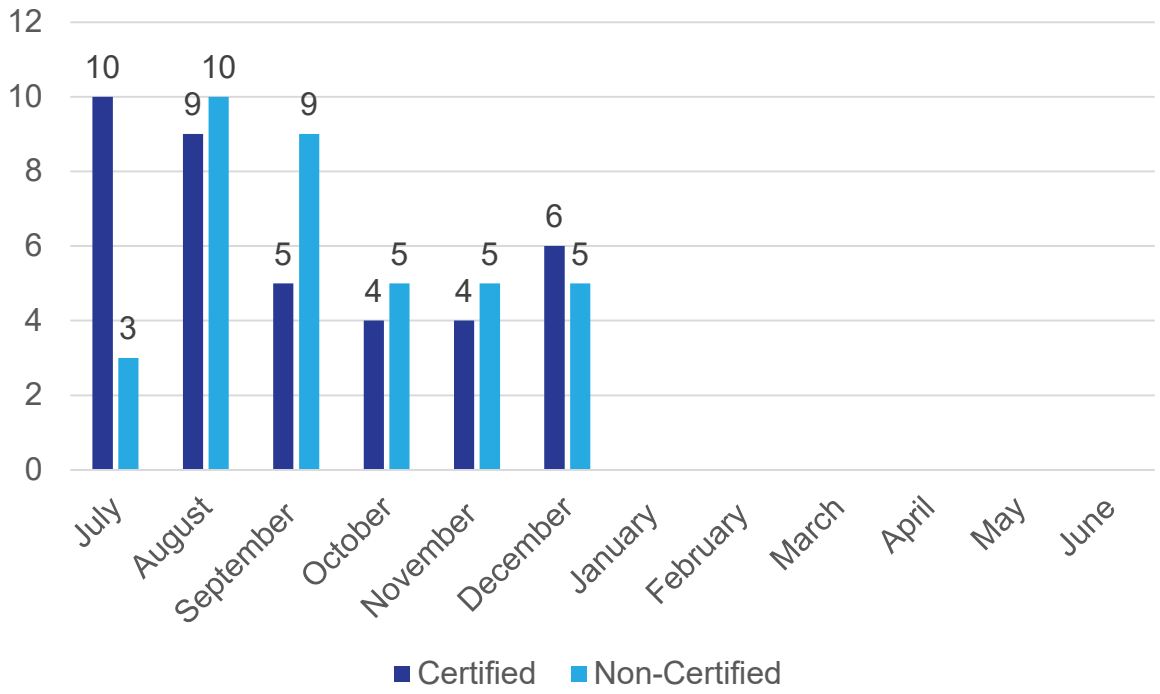
- Vacancies – (continued)
- Hall Monitors – (MHS)
- Campus Security Officer – (Beman)
- Expulsion Tutor – (District)

- Paraeducator Vacancies – 46
- MHS – 13
- Beman – 9
- Snow – 5
- Wesley – 3
- Bielefield – 2
- Farm Hill – 4
- Spencer – 4
- Macdonough – 1
- Moody – 4
- Lawrence - 1

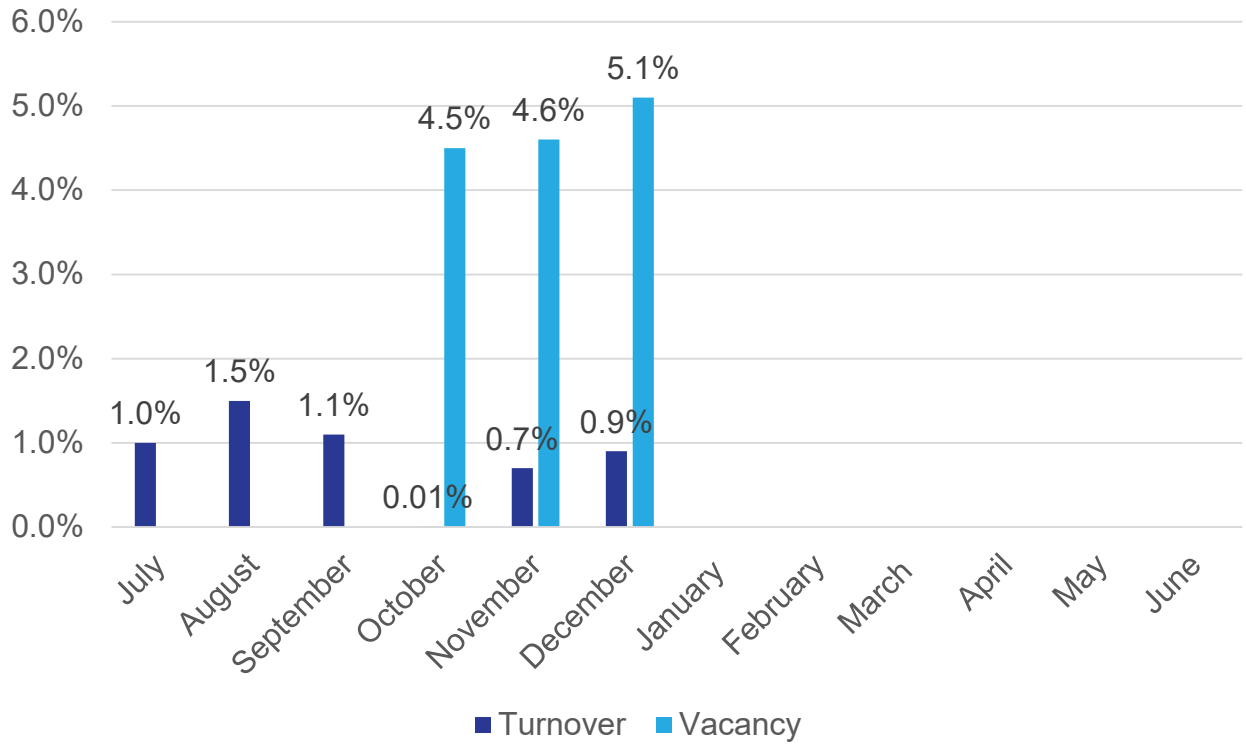
Hires – Year to Date



Separations Year to Date



Turnover and Vacancy Rate % Year to Date



MIDDLETOWN PUBLIC SCHOOLS

"Unlocking the Potential in ALL Students"

Mark Langton, Transportation Manager
311 Hunting Hill Avenue, Middletown, CT 06457 Telephone: (860) 638-1417
Email: langtonm@mpsct.org, Web: www.middletownschools.org

TRANSPORTATION REPORT
December 2024
School Year 2024-2025

2024 – 2025 SCHOOL YEAR										
CATEGORY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
NEW STUDENTS	41	32	28	27						
SCHOOL TRANSPORTATION CHANGES	78	39	30	28						
BUS DRIVER COMPLAINTS	0	0	0	0						
BUS CONDUCT REPORTS: Total	83	77	63	57						
BUS ACCIDENTS	2	2	0	2*						

*12/9/24: Bus #001 School bus scraped another bus as it attempted to swing around it to leave the school parking lot. No injuries reported. Minor scratch on the bus was reported.

*12/16/24: Bus #011 School bus was waiting at a traffic light and was hit by a grey sedan on the left side. Conditions were slick with snow flurries. Bus sustained minor damages. No injuries were reported.

Bus Conduct Reports - Breakdown:

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
High School	4	0	3	2						
Middle School	16	22	25	13						
Elementary	63	55	35	42						

2023 – 2024 SCHOOL YEAR										
CATEGORY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
NEW STUDENTS	54	42	33	20	39	21	24	16	19	
SCHOOL TRANSPORTATION CHANGES	63	37	28	17	34	16	20	26	10	
BUS DRIVER COMPLAINTS	0	3	0	1	3	0	1	2	0	
BUS CONDUCT REPORTS	17	56	34	26	43	35	45	20	32	
BUS ACCIDENTS	2	0	0	1	0	0	1	0	2	

Uniform Indoor Air Quality Assessment and Evaluation Report Conclusions 2024

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Dusty ceiling air diffusers in a first floor office abutting the ICM suite and in the second floor vocal room should be cleaned. Dusty/dirty ceiling tiles in the kitchen prep area adjacent the server should be cleaned or removed and replaced.
- The visual survey noted water impacted ceiling tiles in limited areas (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going.
- The damaged HVAC duct insulation should be repaired or removed and replaced in third floor storage closet C 311.
- The "rubber" odor in the second floor fitness room should be further investigated.
- The small gap in the exterior window sealant material at classroom 105 should be sealed.

Bielefield

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials and exterior wall and soffit materials.
- "Dirty" ceiling air diffusers in the nurse's office, teachers' lounge, classroom 13 and the gymnasium should be cleaned. Repair or replace the damaged ceiling diffuser in classroom 13.
- The visual survey noted water impacted ceiling tiles throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures located in the kitchen, boiler room and in two custodial closets adjacent the boiler room and media center. Clean the water-stained walls in the kitchen near the exterior door and in the boiler room adjacent the chimney and conduct further investigation to find the water source.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Clean the exterior garage light fixture and remove the exterior entrances and roof soffit overhangs mud dauber wasp nests.
- Investigate the cause of the leaking toilet in classroom 3 toilet room and take corrective action.
- Caulk or re-caulk exterior window caulking compound that is damaged/missing at classrooms 29 and 30.

Farm Hill

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials and leaking pipe joints and valves.
- "Dirty" ceiling air diffusers in the kitchen, toilet rooms, the media center and the gymnasium should be cleaned. Install a new ceiling diffuser in the media center where the missing one is located.
- The visual survey noted water impacted ceiling tiles throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going. Remove and replace or clean the pipe insulation above the suspended ceiling tiles in classroom 104 where suspect mold growth was noted. Investigate this piping to see if a localized pipe leak is on-going.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout and in the attic mechanical rooms. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the main office exterior bird's nest and exterior entrance canopies mud dauber wasp nests.

Keigwin

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing/replacing roofing materials, windows, HVAC equipment, interior of perimeter walls that have cracks and deteriorated exterior brick walls.
- "Dirty" ceiling air diffusers in the corridor adjacent the main office, conference room, boys' locker room, auditorium, former art room, band room and rooms 29 and 30 should be cleaned.
- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures located in the band area mechanical room, adjacent corridor and practice room, kitchen, rooms 22, 25 and 34. Clean the water-stained walls in rooms 17, 22, 28, and 38, and areas abutting the courtyard and investigate for the possible cause of staining.
- Clean or remove and replace the water-stained/possible mold impacted HVAC insulation above the suspended ceiling in the corner of the media center adjacent room 35, penthouse and second floor mechanical rooms' HVAC insulation and overhead pipe insulation in the custodian's storage room. These should be cleaned or removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrances and soffits/eaves mud dauber wasp nests.

Lawrence

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials and exterior wood siding/soffits/roof eaves.
- The visual survey noted water impacted ceiling tiles in limited locations (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going.
- "Dirty" ceiling air diffusers in classrooms 16 – 21 should be cleaned.
- Clean the art room water-stained fluorescent light fixture. Clean the water-stained bulletin board in classroom 16 and investigate for the possible cause of water damage.
- Reconnect the teachers' lounge HVAC duct (above suspended ceiling).
- Investigate the cause of the leaking toilets in classrooms 6 and 23 toilet rooms and take corrective action.
- Repair/reconnect downspouts that are disconnected from their associated gutters and repair or remove and replace damaged downspouts.
- Clean up/remove the rodent droppings on top of limited suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrances and soffit/eaves wasp nests. Remove the bird nests in the exterior damaged wood siding/soffits/roof eaves and repair (close the nest entrances). Remove bird feeders and boxes throughout.

Macdonough

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, replacing/repairing roofing materials, window systems, deteriorated exterior brick walls and sealing toilet room floor drains.
- "Dirty" ceiling air diffusers in the library, the nurse's toilet room, elevator room, art room, and room 211 should be cleaned. The cafeteria HVAC mechanical closet should be cleaned.
- The odor in the first floor custodial closet should be investigated. Consider installing/improving a dedicated air exhaust in this closet.

- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Middletown is in the process of planning a School renovation/demolition project. Consider removing water damaged plaster and sheetrock as part of the project.
- Reconfigure and extend the emergency generator exhaust piping to be compliant with the building code.

Middletown High School

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials.
- "Dirty" ceiling air diffusers in various locations throughout the School and in the sports complex locker room building and stadium structure locker rooms, coach offices and elevator room should be cleaned. The ceiling air return grille in the corridor custodial closet adjacent classroom 322 should be cleaned.
- The visual survey noted water impacted ceiling tiles in limited locations (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/ceiling decks to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures located in boys' team room 1 and in the two kitchen electrical rooms. Clean the fluorescent light fixtures located in the first floor northeast stairwell and in the corridor between the stage and the band room Clean the water-stained walls in the boiler room and the walls and ceilings in the sports complex locker room building and stadium structure elevator room and investigate for the possible cause of staining.
- Repair/reconnect the VOAG greenhouse disconnected downspout.
- Clean up/remove the rodent droppings were noted in multiple locations above suspended ceiling tiles throughout the school and on the floors of the corridor between classrooms 105 and 106. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the mud dauber wasp nests and paper wasp nests at exterior

entrances, roof soffit overhangs and on an VOAG exterior window.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials, repairing roof drain seals, leaking pipe valves, and possible window systems (courtyard #1).
- "Dirty" ceiling air diffuser in the custodial closet and toilet rooms adjacent classroom 18, the cafeteria, and the toilet rooms adjacent classroom 9 should be cleaned.
- The odor suspected to be coming from an old floor drain in the custodial office (adjacent the boiler room) should be investigated.
- The visual survey noted water impacted ceiling tiles throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- The gym teacher's office that was constructed in a former locker/shower room area adjacent to the gymnasium should have an HVAC air supply and return system/ ductwork installed.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion.

Spencer

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing/replacing roofing materials and exterior soffit/eaves/canopy/wall materials.
- "Dirty" ceiling air diffusers in kindergarten 1 (missing diffuser also), kindergarten 3 toilet room, classroom 13, classroom 16, the janitors' closet between classrooms 9 and 10, gymnasium/auditorium stage and server room should be cleaned. Replace the missing ceiling diffuser in kindergarten 1. Remove and replace the rusted ceiling diffuser in the corridor custodial closet adjacent classroom 16.
- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures located in classrooms 10 and 11 and media center. Clean the water-stained walls in the gymnasium storage room and investigate for the possible cause of staining. Clean/repair the water damaged windowsills and unit ventilator in classroom 8 and investigate for the possible cause of water damage.

- Clean or remove and replace the media center HVAC equipment room and kindergarten 2 water-stained fiberglass pipe insulation and investigate for the possible cause of water damage.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrance canopy mud dauber wasp nests. Remove the bird nests in the exterior perimeter soffits throughout the School and repair soffits (close the nest entrances).

Wesley

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing/replacing roofing materials, fascia board and masonry façade materials.
- Repair/reconnect downspouts that are disconnected from their associated gutters.
- A "dirty" ceiling air diffuser in the reading room adjacent classroom 5 should be cleaned.
- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures in the gymnasium storage room and custodial storage room. Clean the band room closet water-stained walls and investigate for the possible cause of staining.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrances, roof soffit overhangs and front roof canopy mud dauber wasp nests. Remove the bird nests in the exterior damaged wood fascia at roof eaves and repair (close the nest entrances).

Snow

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, replacing/repairing roofing materials and repairing cracked block walls in the gymnasium and classroom 108. Conduct further investigation into the wall staining in the auditorium stage.
- The School is scheduled to have a roof replacement and gutter installation project in the summer of 2025.
- Repair the broken HVAC unit that services the cafeteria.

- Clean up/remove the rodent droppings on top of the suspended ceilings in the corridor adjacent classroom 214, classroom 132 and in the gymnasium lobby as well as the dead bugs inside ceiling light fixtures in gym storage room 117.
- The visual survey noted water impacted ceiling tiles throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going.
- Repair the damaged kitchen exterior wall.
- Caulk or re-caulk the exterior wall expansion joints that are missing or have deteriorating caulking compounds.

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

Beman Middle School
1 Wilderman's Way
Middletown, Connecticut 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

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LIST OF APPENDICES

Appendix A School Diagrams
Appendix B Tools for Schools Checklists

LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Beman Middle School (the School) at 1 Wilderman's Way, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	8 December 2024
Professional's project #:	140305401	Construction Dates:	2021
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	Three (Approximately 160,000 Square Feet)
Email:	mmyers@langan.com		
Property Address:	1 Wilderman's Way		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Middle School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspectors, Matthew A. Myers (M.Sc. in Industrial Hygiene), Jared Gorborino and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 8 December 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles exhibited evidence of dried, historic water staining at approximately eight (8) locations in eight rooms throughout the School (seven are on the third floor and one on the second floor). No visible suspect mold growth was noted.
- John Giuliano, the School's Custodial Lead, and an additional custodian reported that occasionally a perimeter window in classroom 105 leaks during heavy rain events.
- "Dirty" ceiling air diffusers were observed in a first floor office abutting the ICM suite and in the second floor vocal room. The kitchen prep area adjacent the servery had visibly dusty/dirty ceiling tiles.
- The heating, ventilation and air conditioning (HVAC) duct insulation is damaged in third floor storage closet C 311.
- A "rubber" odor was observed in the second floor fitness room and it is suspected to be coming from the flooring materials.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- The exterior visual assessment noted a small gap in the window sealant material at classroom 105.
- Solid waste containers (e.g., dumpsters) were not observed near the School HVAC air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with gas fired boilers and the School also has air conditioning throughout. There are rooftop units and supply and return air ducts throughout. Middletown reported that the HVAC system is also capable of dehumidification.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas throughout the School. Art and science rooms were observed in the School. Storage areas throughout the School and science rooms also have flammable cabinets. A kiln was noted in the closet of classroom 304 and it has a dedicated exhaust.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Thirteen (13) locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of

common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

No evidence of pest infestations (rodent/bird droppings, dead animals, bird/insect nests, etc.) were observed during the visual survey.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.*

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Dusty ceiling air diffusers in a first floor office abutting the ICM suite and in the second floor vocal room should be cleaned. Dusty/dirty ceiling tiles in the kitchen prep area adjacent the server should be cleaned or removed and replaced.
- The visual survey noted water impacted ceiling tiles in limited areas (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going.
- The damaged HVAC duct insulation should be repaired or removed and replaced in third floor storage closet C 311.
- The "rubber" odor in the second floor fitness room should be further investigated.
- The small gap in the exterior window sealant material at classroom 105 should be sealed.

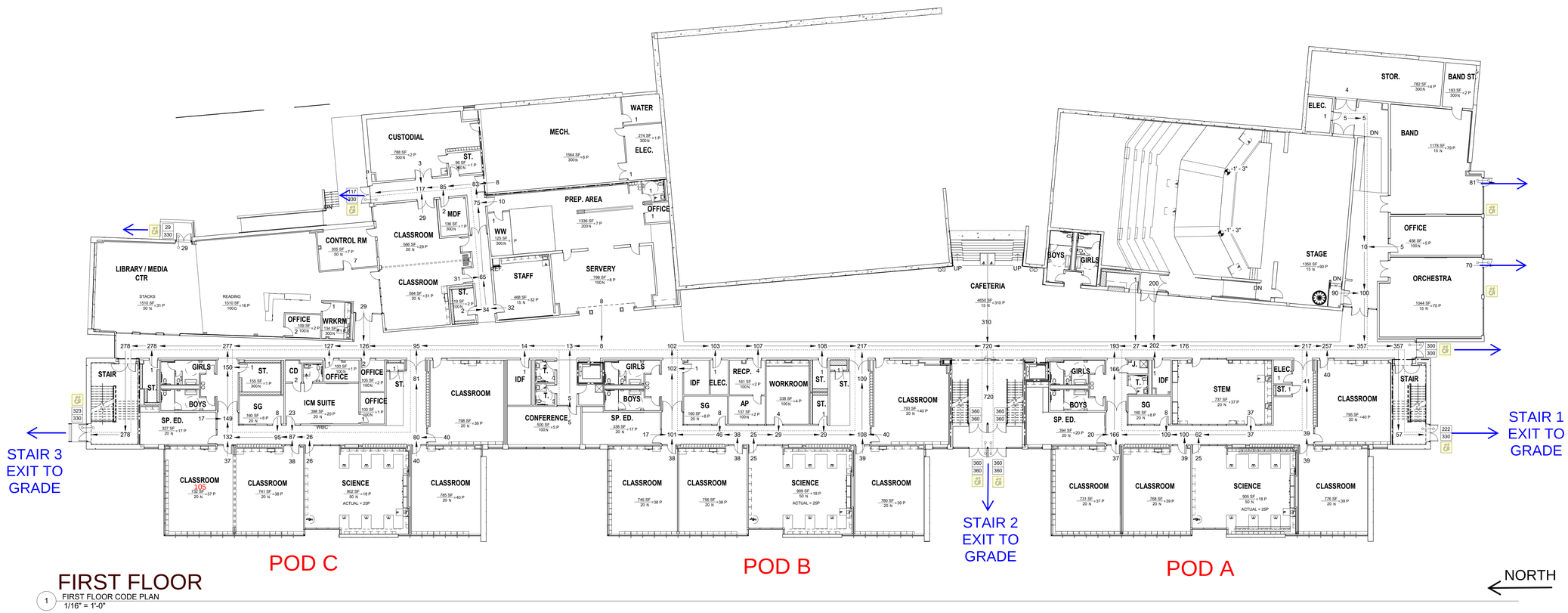
14.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

School Diagrams

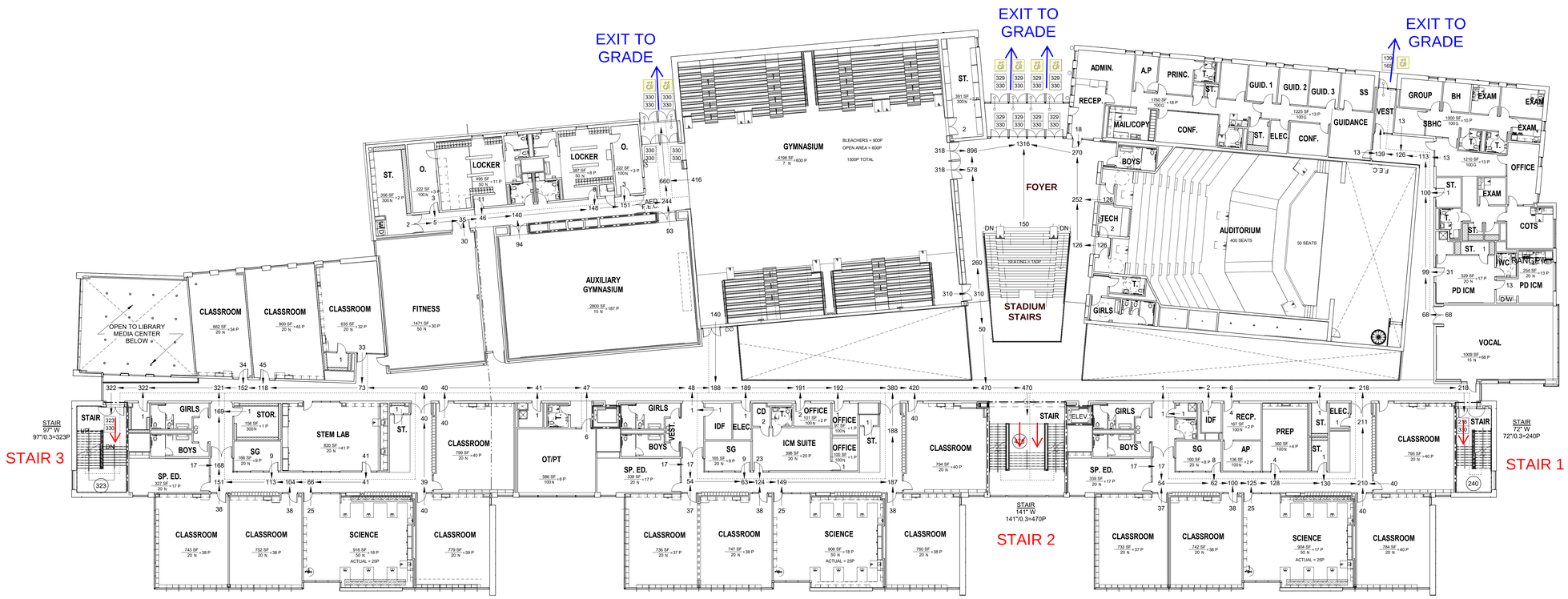
Beman Middle School
First Floor



FIRST FLOOR

1 FIRST FLOOR CODE PLAN
1/16" = 1'-0"

Beman Middle School
Second Floor



SECOND FLOOR

2 SECOND FLOOR CODE PLAN
1/16" = 1'-0"

Beman Middle School
Third Floor



1 THIRD FLOOR PLAN - 1/16"
1/16" = 1'-0"

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One Hartford Square West
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Hartford, CT 06106
860.547.1970

ARCHITECTURE | PLANNING | INTERIORS

WOODROW WILSON MIDDLE SCHOOL

Middletown CT

CONFORMED SET

KEY PLAN

PROJECT NORTH

C B A

DRAWING TITLE

OVERALL THIRD FLOOR PLAN

STATE PROJ. NO.	083-0116 N
PROJ. NO.	180402
SCALE	1/16" = 1'-0"
DATE	2019-11-19
DRAWN BY	Author
APPROVED BY	Approver

ISSUE DATES

NO.	DATE	PURPOSE

A1.03

3/3/2022 12:01:21 PM C:\Users\MSICOTT\Documents\180402 WWMS-Central_2018_rrscottBKVT.rvt

Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Bemen Middle School

Room or Area: _____ Date Completed: 12-3-2024

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

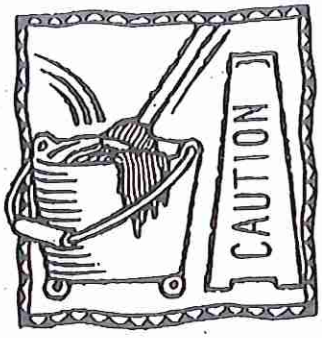
		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES

We donot use dust feather dusters.



Waste Management Checklist

Name: _____

School: Bemen Middle School

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☐	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: BEMAN MIDDLE SCHOOL

Unit Ventilator/AHU No: DOAS 3, 4, 5

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

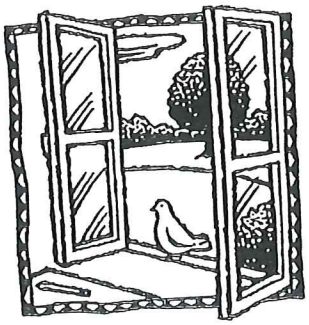
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



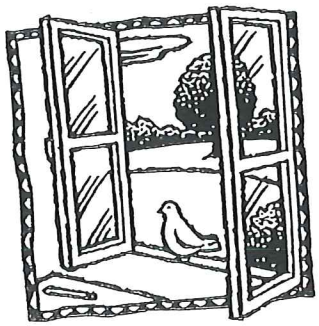
2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

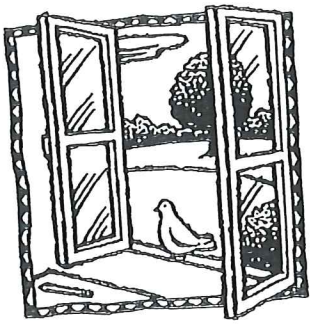
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

		Yes	No	N/A
3aa.	Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a.	Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b.	Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c.	Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d.	Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e.	Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f.	Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g.	Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h.	Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i.	Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j.	Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

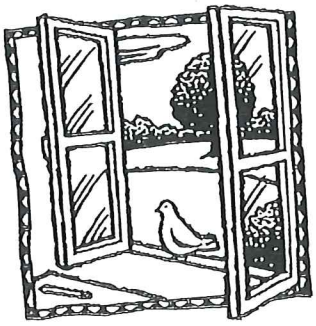
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a.	Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

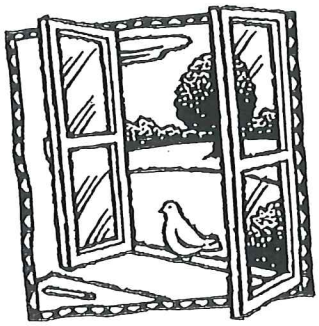
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: BEMAN MIDDLE SCHOOL

Unit Ventilator/AHU No: AHU-2

Room or Area: AUDITORIUM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

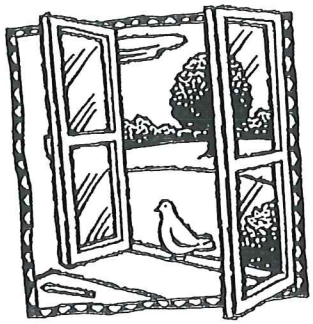
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



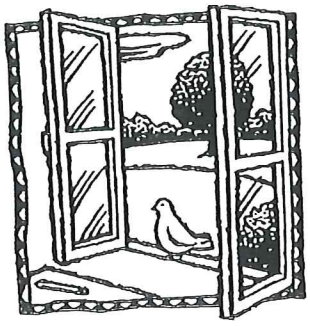
2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

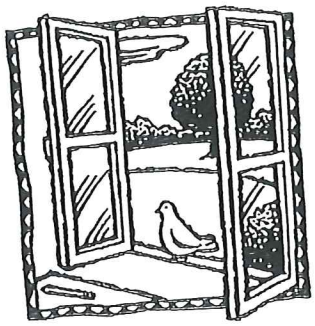
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: BEMAN MIDDLE SCHOOL

Unit Ventilator/AHU No: AHU 1

Room or Area: AREA 1 (OFFICE) Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

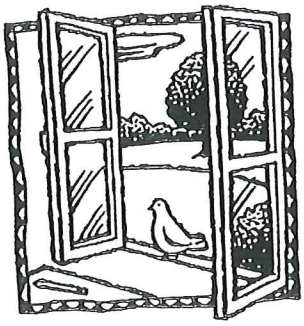
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



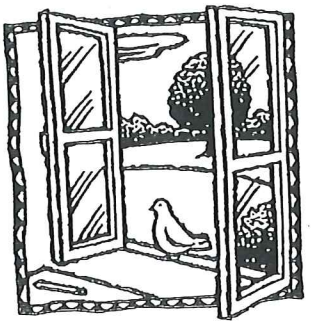
2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐

OR

3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

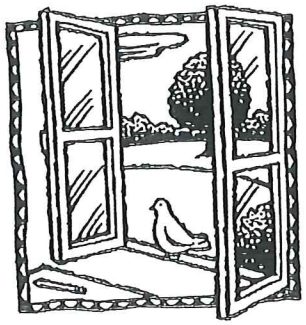
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

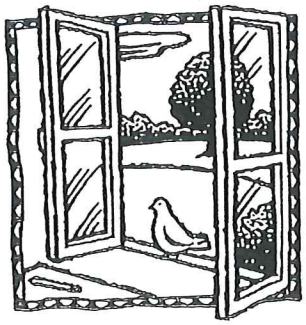
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

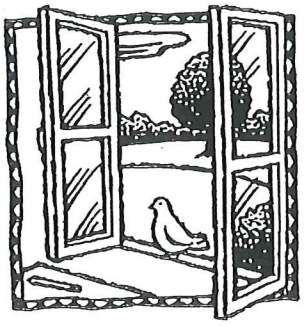
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: BEMAN MIDDLE SCHOOL

Unit Ventilator/AHU No: AHU-3

Room or Area: GYM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

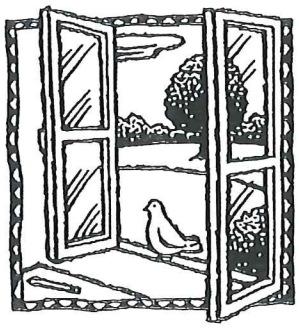
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Walkthrough Inspection Checklist

Name: _____

School: BEMAN MIDDLE SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

2a.	Ensured that the roof is in good condition	☑	☐	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐



4. GENERAL CONSIDERATIONS (continued)

	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

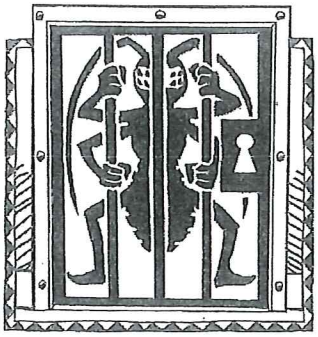
7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

Rn TEST TO BE PERFORMED FEBRUARY 2024



Integrated Pest Management Checklist

Name: JP Bellamo And Sons Pest Control

School: Berman Middle School

Room or Area: _____ Date Completed: 12/18/24

Signature: J P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

	Yes	No	N/A
1a. Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

	Yes	No	N/A
2a. Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b. Involved decision makers in the IPM program	☒	☐	☐
2c. Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d. Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e. Developed a program to educate and train all IPM participants	☐	☒	☐
2f. Included language about IPM into contracts with pest management professionals	☒	☐	☐

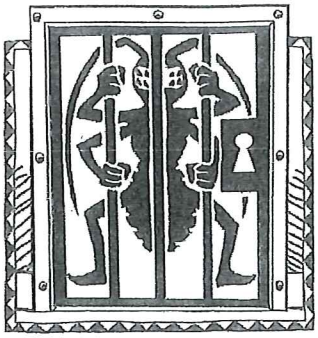
3. SETTING PEST MANAGEMENT OBJECTIVES

	Yes	No	N/A
3a. Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b. Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

	Yes	No	N/A
4a. Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b. Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c. Pinpointed the source of any current pest problems	☒	☐	☐
4d. Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e. Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f. Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

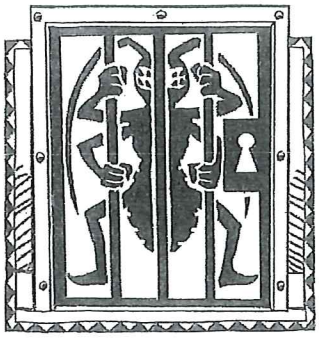
OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



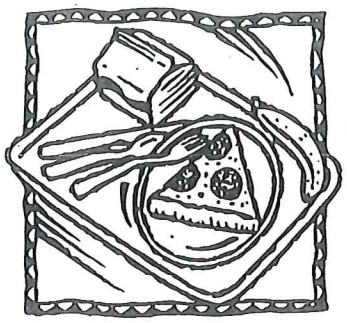
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel
School: Berman Middle School
Room or Area: Cafe Date Completed: 11/13/24
Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☑	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

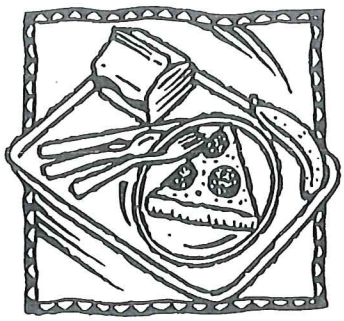
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☑	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

Lawrence Elementary School
Kaplan Drive
Middletown, Connecticut 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

LANGAN

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LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Lawrence Elementary School (the School) at Kaplan Drive, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	26 November 2024
Professional's project #:	140305401	Construction Dates:	1972
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	One (Approximately 48,500 Square Feet)
Email:	mmyers@langan.com		
Property Address:	Kaplan Drive		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Elementary School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspectors, Andrew P. Rolinger, Hilton Hernandez and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 26 November 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles/sheetrock ceilings exhibited evidence of dried, historic water staining/ damage at approximately ten (10) locations in nine (9) rooms/corridors throughout the School. Dry water staining was also observed on a bulletin board in classroom 16.
- Dried, historic water staining was observed inside a fluorescent light fixture located in the art room.
- One area of possible mold growth on a ceiling tile was observed in the teachers' lounge.
- A disconnected heating, ventilation and air conditioning (HVAC) duct was observed above the teachers' lounge suspended ceiling.
- Classrooms 6 and 23 toilet rooms appear to have small leaks at the toilet bases where they contact the floors.
- "Dirty" ceiling air diffusers were observed in several locations throughout classrooms 16 - 21.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Fascia boards at the roof eaves/drip edges/corners were rotted in limited areas. Upper wood siding materials were deteriorated in limited areas.
- Rain downspouts were disconnected or damaged in limited areas.
- Solid waste containers (e.g., dumpsters) were observed in an area to the northeast of the School. Solid waste containers were not observed near the School HVAC air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with natural gas fired HVAC units located on the roofs. Supplemental heat is provided by electric baseboard or unit ventilator heaters in some areas. Air conditioning (AC) units were observed above the kitchen, intervention room and server room suspended ceilings.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas of the School, including within the hot water heater utility room, laundry room, and custodial work bench room. The custodial work bench room had stored paint containers. The art room has a kiln with a dedicated exhaust, ceramic glazes and paints. A rear shed to the north of the School contains lawn mowers, leaf/snow removal equipment and containers of gasoline.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided by to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance*. The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Nine locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

Rodent droppings were noted in multiple locations above suspended ceiling tiles (where present) throughout the interior of the school.

Evidence of bird nests was observed in damaged wood siding/soffits/roof eaves in several locations and limited wood siding appeared to have woodpecker damage. A bird feeder was present at classroom 22 exterior window and a bird nest is present beside the rain gutters at this location. A bird box and bird feeder were present at the art room exterior window. Other bird feeders and boxes were observed on a pole and in a tree near the dumpster area.

Mud dauber wasp nests and paper wasp nests were observed at several exterior entrances and soffits/eaves.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine*

if a pest problem exists that exceeds acceptable threshold levels.

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*
- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*
- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*
- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*
- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials and exterior wood siding/soffits/roof eaves.
- The visual survey noted water impacted ceiling tiles in limited locations (dried, historic water staining). These should be removed and replaced under controlled conditions (to

avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going.

- "Dirty" ceiling air diffusers in classrooms 16 – 21 should be cleaned.
- Clean the art room water-stained fluorescent light fixture. Clean the water-stained bulletin board in classroom 16 and investigate for the possible cause of water damage.
- Reconnect the teachers' lounge HVAC duct (above suspended ceiling).
- Investigate the cause of the leaking toilets in classrooms 6 and 23 toilet rooms and take corrective action.
- Repair/reconnect downspouts that are disconnected from their associated gutters and repair or remove and replace damaged downspouts.
- Clean up/remove the rodent droppings on top of limited suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrances and soffit/eaves wasp nests. Remove the bird nests in the exterior damaged wood siding/soffits/roof eaves and repair (close the nest entrances). Remove bird feeders and boxes throughout.

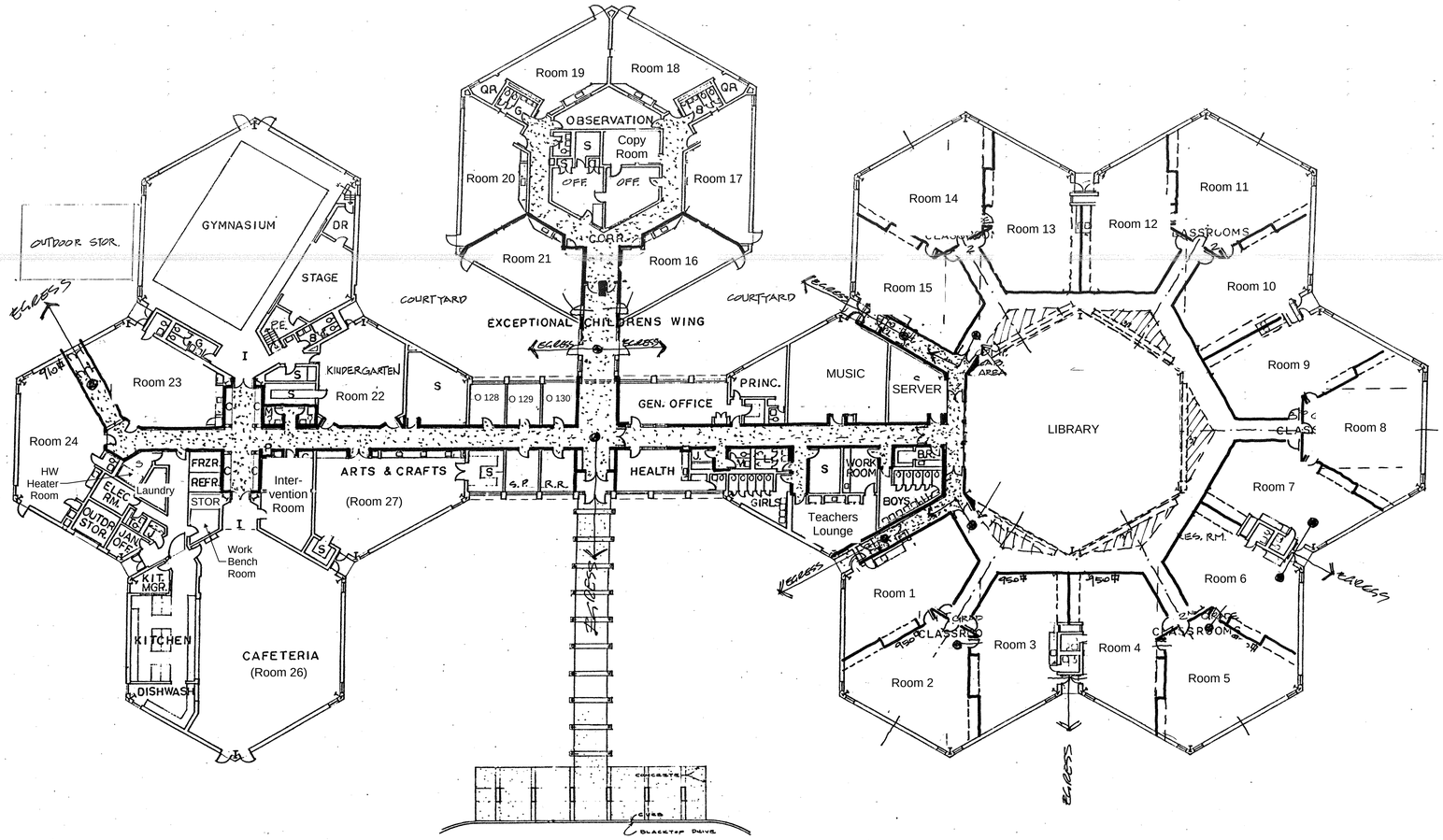
14.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

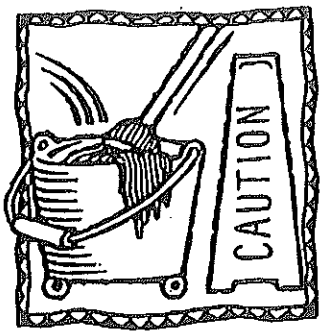
School Diagram

LAWRENCE ELEMENTARY SCHOOL FLOOR PLAN



Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Lawrence Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

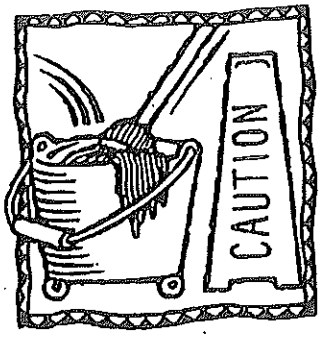
		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

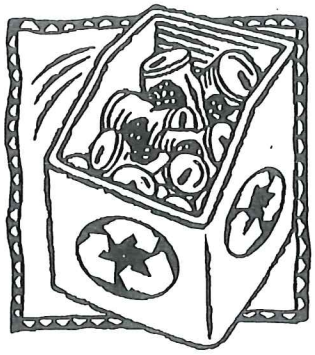
7. COMBUSTION APPLIANCES

7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☐	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☐	☐	☐
7d. Inspected flue components for corrosion and soot	☐	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES



Waste Management Checklist

Name: _____

School: Lawrence Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☐	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: LAWRENCE ELEMENTARY SCHOOL

Unit Ventilator/AHU No: RTU 1-9, 11

Room or Area: CLASSROOMS Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

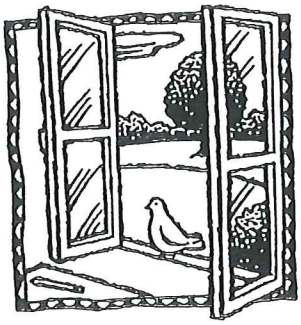
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



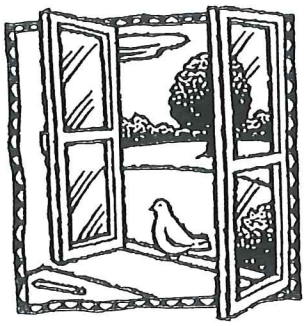
2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

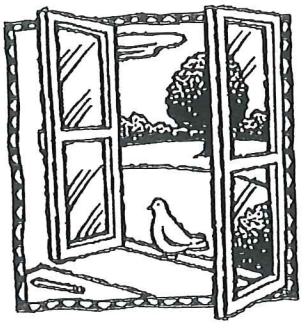
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

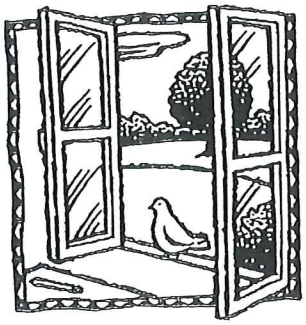
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: LAWRENCE ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AC-4

Room or Area: OFFICE Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

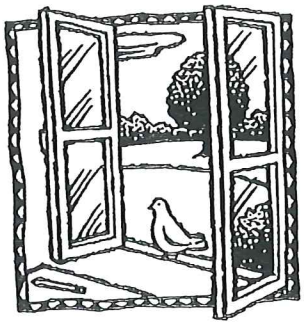
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



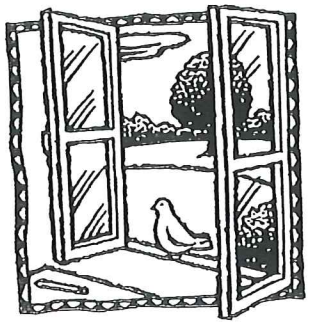
2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

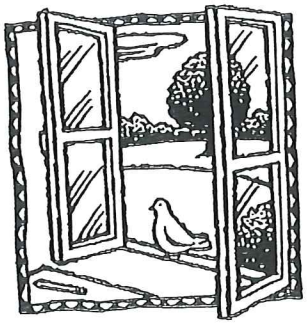
3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

		Yes	No	N/A
3aa.	Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a.	Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b.	Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c.	Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d.	Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e.	Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f.	Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g.	Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h.	Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i.	Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j.	Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

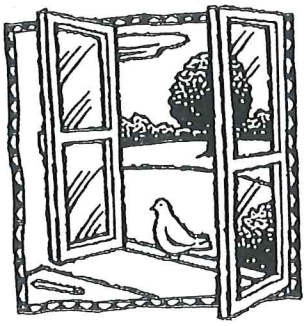
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a.	Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: LAWRENCE ELEMENTARY SCHOOL

Unit Ventilator/AHU No: RTU-10

Room or Area: GYM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

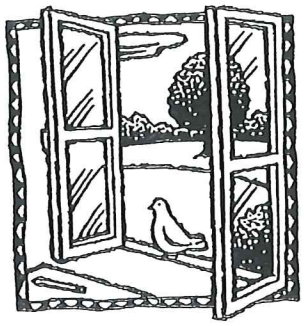
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

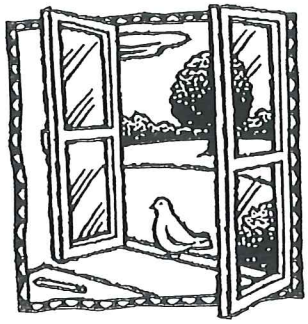
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

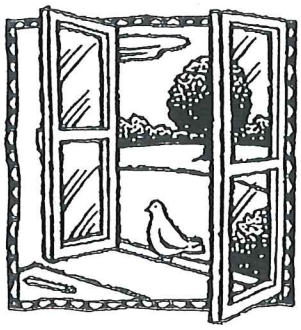
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Walkthrough Inspection Checklist

Name: _____

School: LAWRENCE ELEMENTARY SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

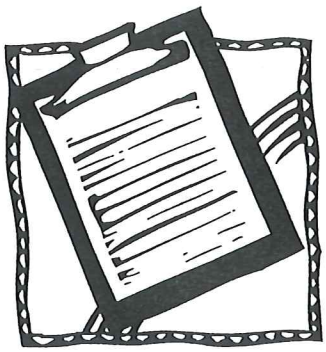
2a.	Ensured that the roof is in good condition	☐	☑	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐



4. GENERAL CONSIDERATIONS (continued)

	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

2a ROOF AGE 20+ YEARS

8b TEST TO BE PERFORMED FEBRUARY 2024



Walkthrough Inspection Checklist

Name: _____

School: LAWRENCE ELEMENTARY SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

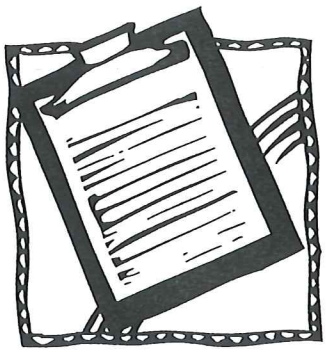
2a.	Ensured that the roof is in good condition	☐	☑	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐



4. GENERAL CONSIDERATIONS (continued)

	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

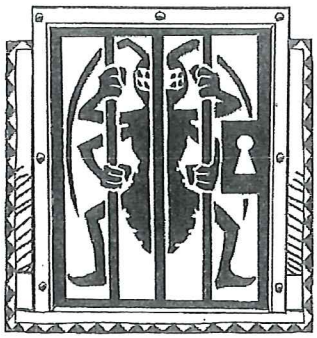
8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

2a ROOF AGE 20+ YEARS

8b TEST TO BE PERFORMED FEBRUARY 2024



Integrated Pest Management Checklist

Name: JP Bellamo And Sons Pest Control

School: Lawrence Elementary

Room or Area: _____ Date Completed: 12/18/24

Signature: J P Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

	Yes	No	N/A
1a. Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

	Yes	No	N/A
2a. Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b. Involved decision makers in the IPM program	☒	☐	☐
2c. Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d. Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e. Developed a program to educate and train all IPM participants	☐	☒	☐
2f. Included language about IPM into contracts with pest management professionals	☒	☐	☐

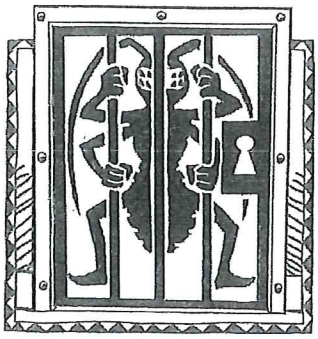
3. SETTING PEST MANAGEMENT OBJECTIVES

	Yes	No	N/A
3a. Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b. Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

	Yes	No	N/A
4a. Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b. Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c. Pinpointed the source of any current pest problems	☒	☐	☐
4d. Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e. Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f. Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

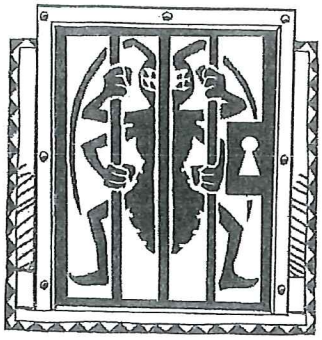
OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



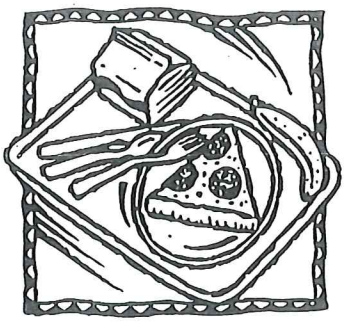
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel

School: Lawrence Elementary

Room or Area: Cafe Date Completed: 11/14/24

Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☑	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

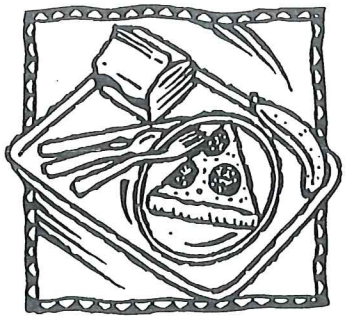
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☐	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

MacDonough Elementary School
66 Spring Street
Middletown, Connecticut 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

LANGAN

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LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout MacDonough Elementary School (the School) at 66 Spring Street, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	23 November 2024
Professional's project #:	140305401	Construction Dates:	1925 Renovation/ Addition 1988
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	Three (Approximately 42,000 Square Feet)
Email:	mmyers@langan.com		
Property Address:	66 Spring Street		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Elementary School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspectors, Matthew A. Myers (M.Sc. in Industrial Hygiene), Andy Rolinger, Jared Gorborino and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 23 November 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles/sheetrock ceilings exhibited evidence of dried, historic water staining at approximately fifty (50) locations in thirty-five (35) rooms throughout the School. Water was observed inside a fluorescent light fixture in the cafeteria. Surface rust on I beams was observed above the suspended ceilings in the kitchen and in the ground floor family resource room (Room 6).
- Plaster and sheetrock walls and ceilings exhibited water damage in locations adjacent to windows throughout the second floor and the first-floor library above the suspended ceiling tiles, in limited stairwells and restrooms and corridors near restrooms (appeared to be old (dry) damage/staining and were not currently wet).
- Two areas of suspect active water infiltration were observed in the cafeteria and in the first floor corridor adjacent to stairwell A.
- Four areas of possible mold growth on ceiling tiles were observed in the cafeteria, the family resource room (room 6), the art room (room 7), and a toilet room adjacent to stairwell C.
- "Dirty" ceiling air diffusers (some are dusty or stained) were observed in the library, the nurse's toilet room, elevator room, art room, and room 211. Visible dust was observed throughout the cafeteria HVAC mechanical closet.
- An odor was observed in the first-floor custodial closet.
- The ground floor YMCA room (room 9) has four wall mounted fans in use due. The room was warmer than most of the other rooms.
- The School has six "stacked" toilet rooms on the east (Pease Avenue) side of the School adjacent to stairwell C (two side-by-side toilet rooms on each floor). Floor drains in these toilet rooms were reported to be possibly improperly sealed to the floor, which occasionally causes water to leak around edges. John Giuliano, the School's Custodial Lead, reported this information.
- The gymnasium ceiling was slightly discolored and overhead pipe insulation on gymnasium rain leaders exhibited evidence of water staining.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Brick and mortar on exterior walls were partially deteriorated in several locations;
- Window systems were partially deteriorated (rotted, cracked, water damage) around the window casings/trim.
- John Giuliano reported that several roof leaks have occurred at the School and that roof repair/patching has been performed.
- Solid waste containers (e.g., dumpsters) were observed in a fenced area to the northeast of the School. Solid waste containers were not observed near the School heating, ventilation and air conditioning (HVAC) air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The original portion of the School is heated with two fuel-oil fired boilers located in a ground floor boiler room which feeds radiators throughout and unit ventilators are also located throughout. Fuel oil is stored in an underground storge tank (UST) located to the west of the School. An emergency electrical generator is located in the main boiler room. The emergency generator exhaust is located adjacent the first floor main office windows. Ground floor addition areas (cafeteria, kitchen, gymnasium/all-purpose room and associated rooms) are heated with a forced hot air HVAC system located in a ground floor mechanical room in the cafeteria.

Air-conditioning units are located above the suspended ceilings of the family resource room (room 6), the first floor library and main office, and room 212.

Two areas consisting of rooms converted to smaller offices (an area between room 217 and 212 on the second floor and an area adjacent to the gymnasium on the first floor) were observed to have been designed with proper ventilation (i.e., ventilation supply and return diffusers in each space).

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas of the School. Storage areas in the main ground floor boiler room included a flammable cabinet (containing commercial sized containers of paint), boxes of hand sanitizer, alcohol wipes, hand soap, and floor finish. A plastic container of spent fluorescent tubes was observed in the main boiler room. A smaller boiler room (located between the main boiler room and art room (room 7)) contains a domestic hot water heater, an air compressor and a kiln. Various ceramic glazes are stored on shelves in this area. Craft paints were observed in art room (room 7)) and the YMCA room (room 9). A rear garage storage area on the back of the gymnasium/all purpose room contains gasoline containers and bags of ice melt.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Five locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

No evidence of building-wide widespread pest infestation (rodent/bird droppings, dead animals, bird/insect nests, etc.) were observed during the visual survey.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.*

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order. The gymnasium overhead pipe insulation on the rain leaders exhibited evidence of water staining.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended. Two areas consisting of rooms converted to smaller offices (an area between room 217 and 212 on the second floor and an area adjacent to the gymnasium on the first floor) were observed to have been designed with proper ventilation (i.e., ventilation supply and return diffusers in each space).

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, replacing/repairing roofing materials, window systems, deteriorated exterior brick walls and sealing toilet room floor drains.
- "Dirty" ceiling air diffusers in the library, the nurse's toilet room, elevator room, art room, and room 211 should be cleaned. The cafeteria HVAC mechanical closet should be cleaned.
- The odor in the first floor custodial closet should be investigated. Consider installing/improving a dedicated air exhaust in this closet.

- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Middletown is in the process of planning a School renovation/demolition project. Consider removing water damaged plaster and sheetrock as part of the project.
- Reconfigure and extend the emergency generator exhaust piping to be compliant with the building code.

14.0 LIMITATIONS

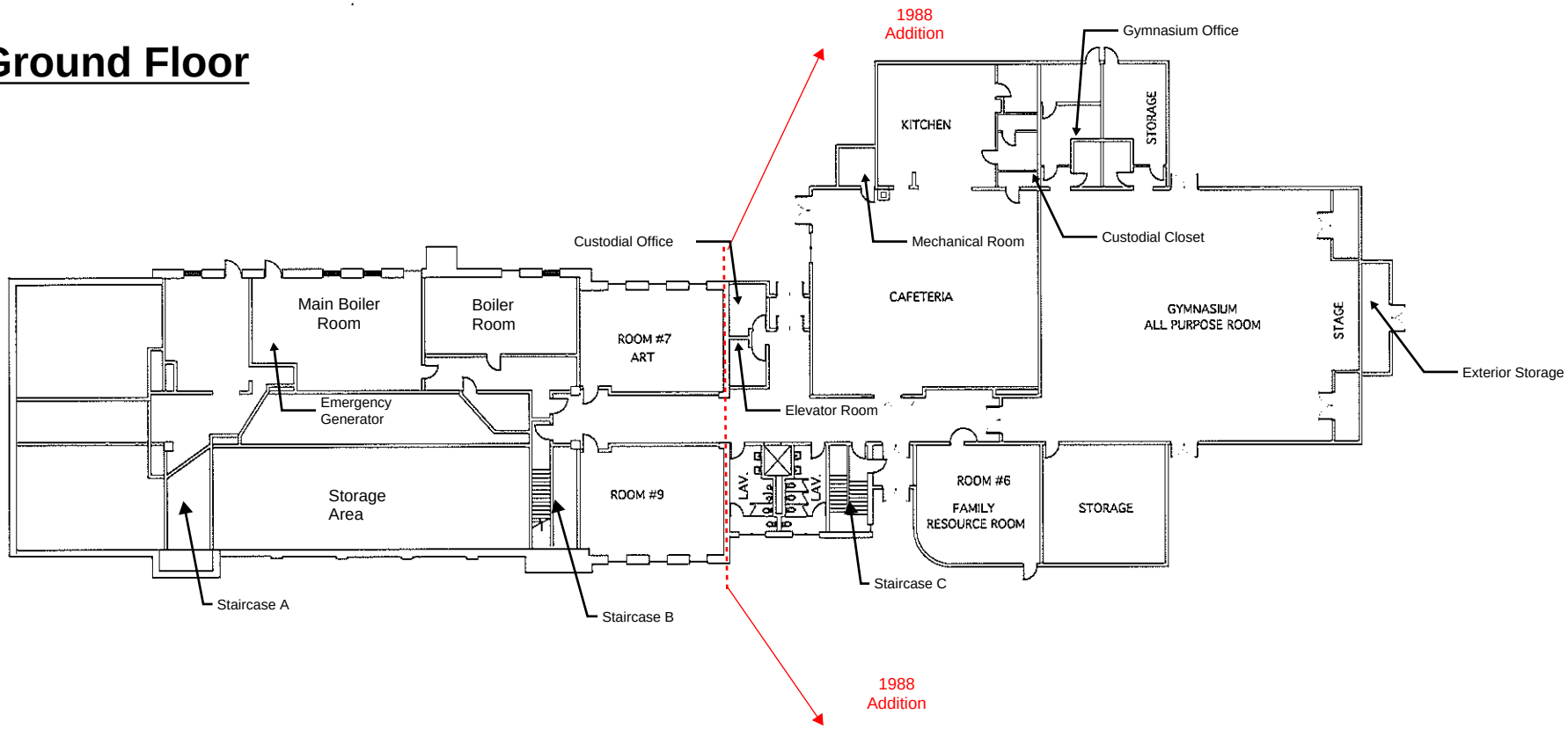
The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

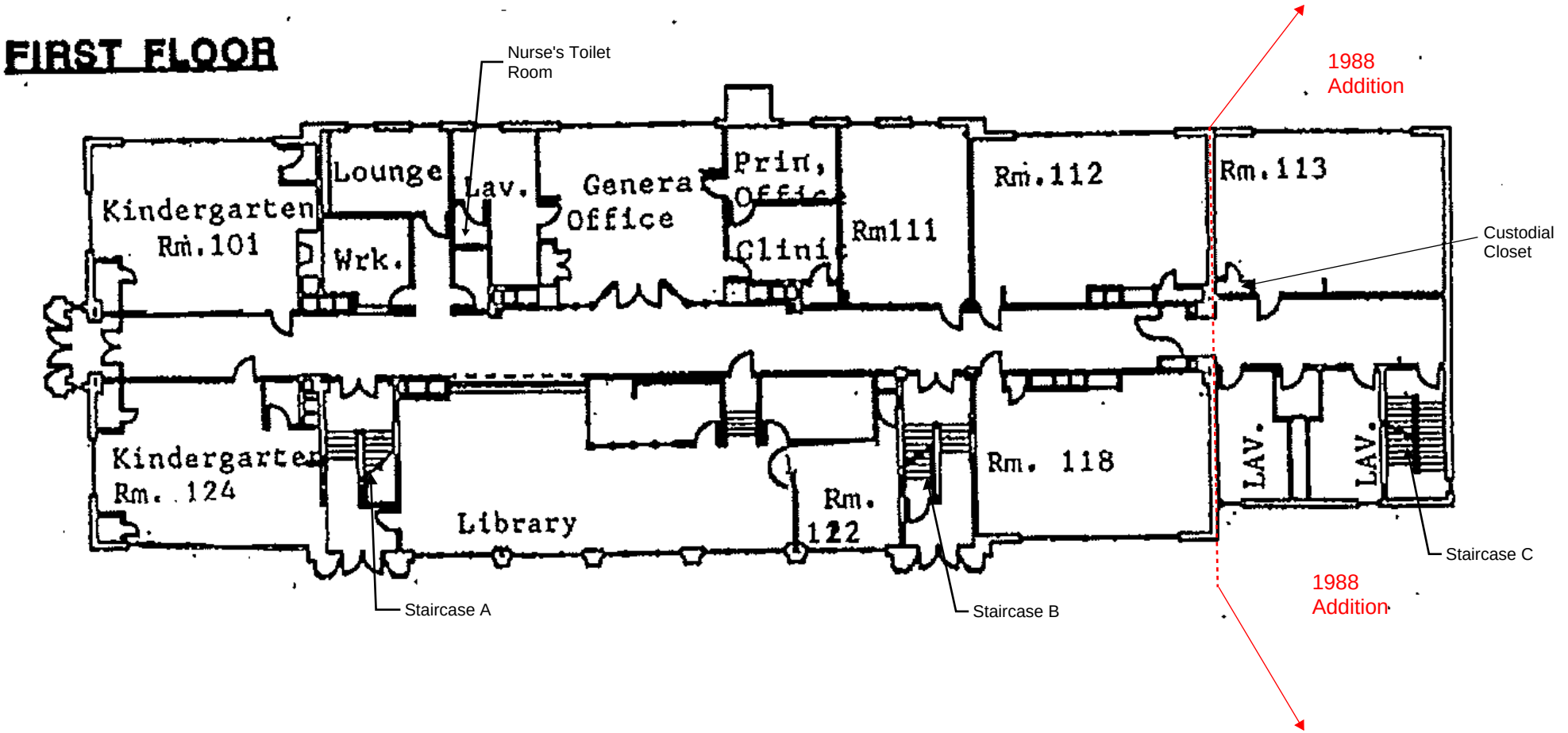
School Diagrams

MACDONOUGH SCHOOL FLOOR PLAN

Ground Floor

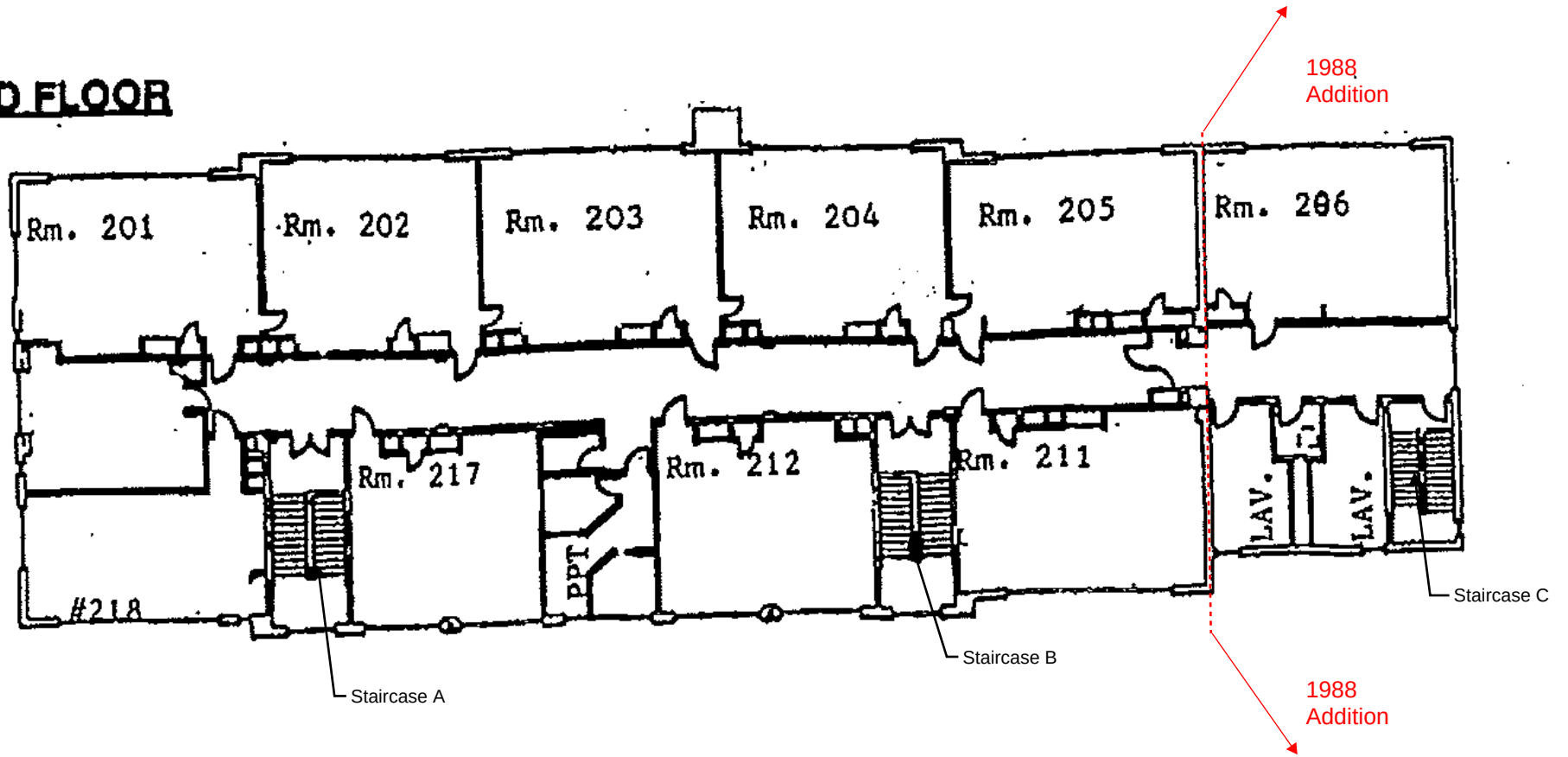


MACDONOUGH SCHOOL FLOOR PLAN



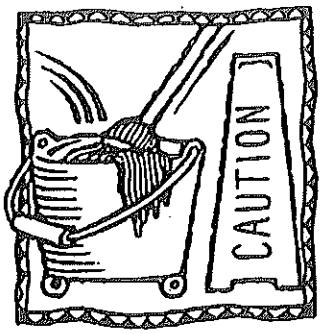
MACDONOUGH SCHOOL FLOOR PLAN

SECOND FLOOR



Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: MacDonough Elementary

Room or Area: _____ Date Completed: 11-22-2024

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

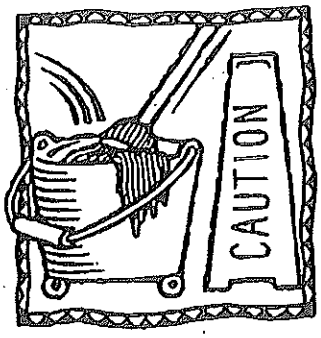
2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐

4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐



5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

7. COMBUSTION APPLIANCES

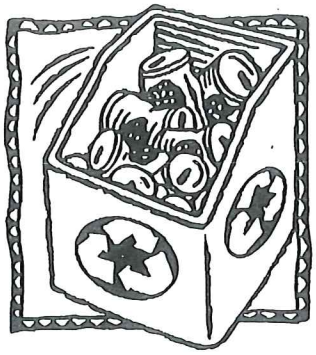
7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES

we do not use dust feather dusters.



Waste Management Checklist

Name: _____

School: MacDonough Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

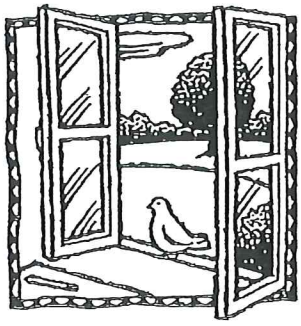
Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☐	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MacDonovan Elementary School

Unit Ventilator/AHU No: AHU 1

Room or Area: Gym Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

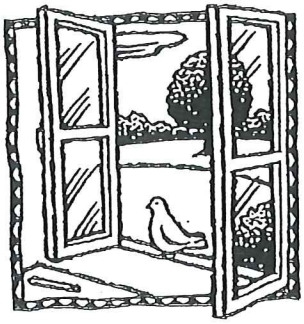
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
▪ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
▪ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
▪ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
▪ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

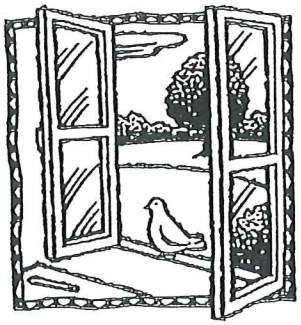
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☐	☐	☑

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☐	☐	☑
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☐	☐	☑

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

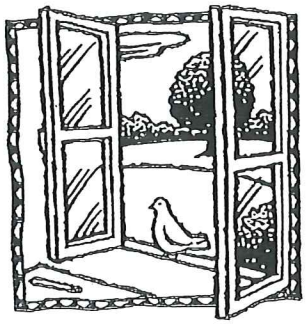
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MacDonald Elementary School

Unit Ventilator/AHU No: AHU 4

Room or Area: Office Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

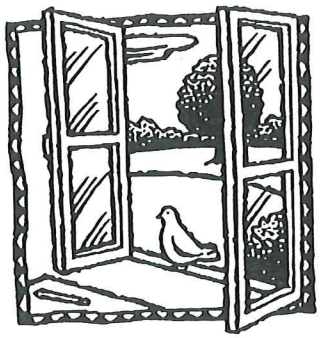
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

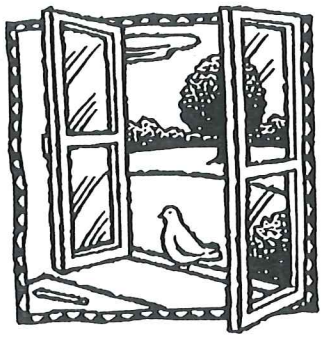
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

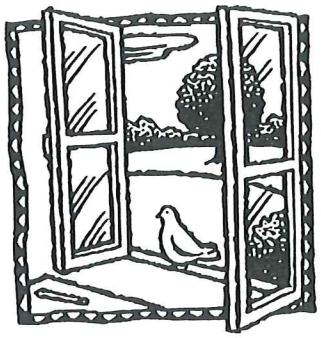
3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

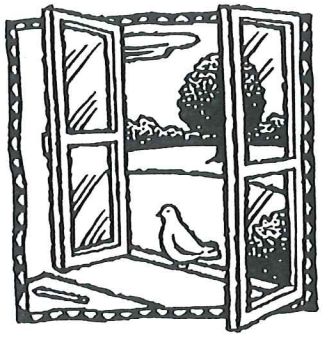
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MacDonough Elementry School

Unit Ventilator/AHU No: Unit Ventilators

Room or Area: Classrooms Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☐	☐	☑
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☐	☐	☑

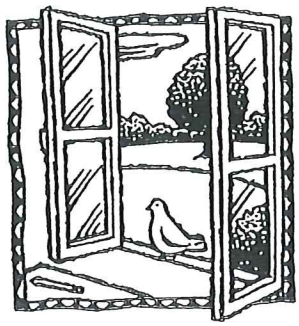
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☐	☐	☑
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



2. SYSTEM CLEANLINESS (continued)

ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☐	☐	☑
2g. Cleaned drain pans	☐	☐	☑
2h. Checked drain pans for mold and mildew	☐	☐	☑

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☐	☐	☑

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☐	☐	☑
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☐	☐	☑

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☐	☐	☑

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☐	☐	☑

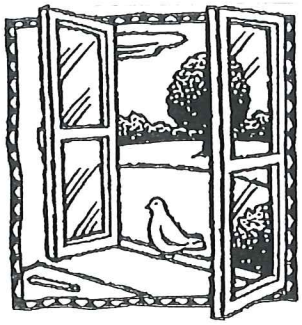
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☐	☐	☑
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☐	☐	☑

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☑
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☑	☐	☐

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☐	☐	☑

ACTIVITY 15: ECONOMIZERS

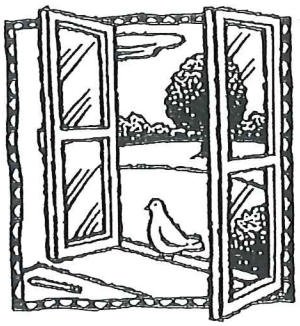
3x. Confirmed proper economizer settings based on design specifications or local practices	☐	☐	☑

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☐	☐	☑
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☐	☐	☑

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

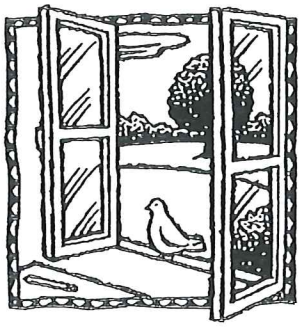
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☐	☐	☑
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☐	☐	☑

NOTES



Walkthrough Inspection Checklist

Name: _____

School: MacDonald Elementary School

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

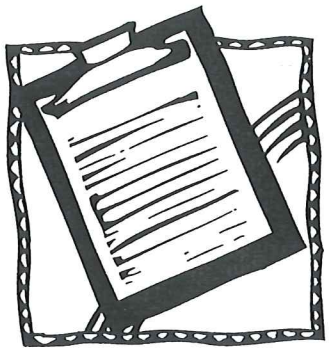
2a.	Ensured that the roof is in good condition	☐	☑	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐



4. GENERAL CONSIDERATIONS (continued)

	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

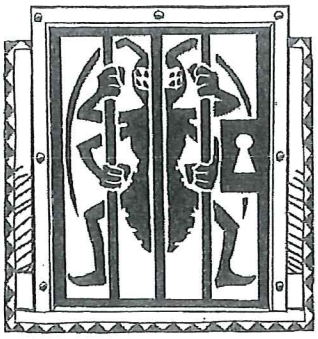
8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

2a. ROOF AGE 20+ YEARS

8b. TEST TO BE PERFORMED FEBRUARY 2024



Integrated Pest Management Checklist

Name: JP Bellamo and Sons Pest Control

School: MacDonough Elementary

Room or Area: _____ Date Completed: 12/18/24

Signature: J. P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

		Yes	No	N/A
1a.	Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

		Yes	No	N/A
2a.	Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b.	Involved decision makers in the IPM program	☒	☐	☐
2c.	Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d.	Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e.	Developed a program to educate and train all IPM participants	☐	☒	☐
2f.	Included language about IPM into contracts with pest management professionals	☒	☐	☐

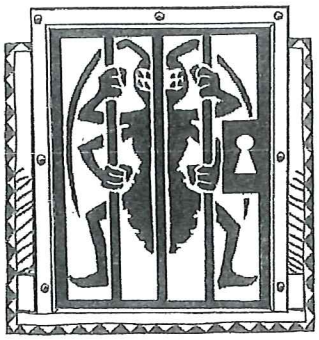
3. SETTING PEST MANAGEMENT OBJECTIVES

		Yes	No	N/A
3a.	Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b.	Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

		Yes	No	N/A
4a.	Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b.	Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c.	Pinpointed the source of any current pest problems	☒	☐	☐
4d.	Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e.	Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f.	Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

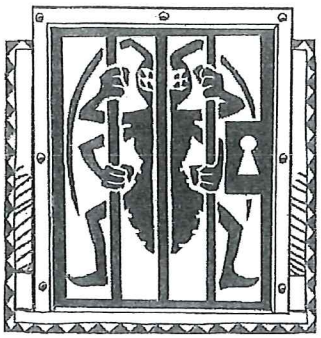
OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



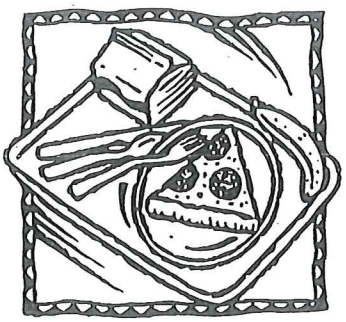
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel

School: MacDonough Elementary

Room or Area: Cafe Date Completed: 11/14/24

Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☐	☐	☑
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☐	☐	☐

2. FOOD HANDLING AND STORAGE

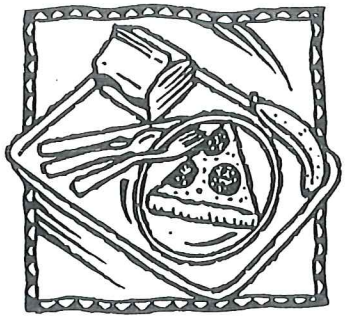
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

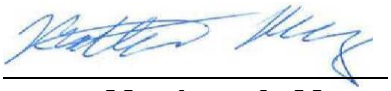
Middletown High School
200 LaRosa Lane
Middletown, Connecticut 06457

Prepared for:

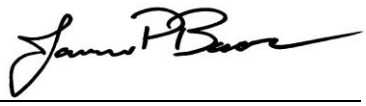
Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511



Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager



Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

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LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Middletown High School (the School) at 200 LaRosa Lane, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	11 & 12 December 2024
Professional's project #:	140305401	Construction Dates:	2008/2009
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	Two
Phone No.:	203-562-5771	No. of Stories:	Three (Approximately 284,500 Square Feet)
Email:	mmyers@langan.com		
Property Address:	200 LaRosa Lane		
Property Town, State:	Middletown, Connecticut	Property Use:	Public High School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspectors, Andrew P. Rolinger, Hilton Hernandez, Jared Gorborino and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 11 & 12 December 2024. The following items were noted on the days of the visual assessment:

Interior Areas (Main Building)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles or exposed ceiling deck fireproofing exhibited evidence or dried, historic water staining/damage at approximately one hundred seventy-three (173) locations in one hundred twenty-eight (128) rooms/corridors throughout the School. Water-stained block walls were noted in the boiler room (areas beneath exterior metal vent louvers).
- Evidence of historic or ongoing water infiltration was observed in the main gymnasium (sheet of plastic is affixed to the ceiling deck and water going through a hose to a bucket behind the bleachers). A bucket was also observed above the suspended ceiling tiles in the corridor outside classroom 321. Areas of active roof leaking (water dripping from ceilings onto light fixtures and floors) was observed in boys' team room 1, and in the two kitchen electrical rooms (water has impacted fiberglass pipe insulation). Possible active roof leaking (wet ceiling tiles or wet exposed ceiling deck fireproofing) was observed in the mechanical room adjacent classroom 329, third floor prep room PR-4 (leak being directed into a container in this room) and the second floor electrical closet adjacent classroom 201.
- Seven areas of possible mold growth on ceiling tiles were observed in the first-floor cooking classroom (across from classroom 111), the girls' drama dressing room, classroom 120, VOAG toilet room VA-14, VOAG classroom VA-17, second floor classroom 238 and in the third floor corridor outside prep room PR-4.
- "Dirty" ceiling air diffusers were observed in various locations throughout the School. There are historic, dried drip marks on the ceiling air return grille in the corridor custodial closet adjacent classroom 322.

Interior Areas (Sports Complex Locker Room Building & Stadium Structure)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- "Dirty" ceiling air diffusers were observed in the locker rooms, coach offices and elevator room.
- Minimal water staining/damage and chalky efflorescence was observed on concrete block walls and concrete ceilings of the elevator room.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- The top roof level appeared to have some cracks/holes in the roof membrane, particularly in areas around roof mounted heating, ventilation and air conditioning (HVAC) units. Water may have infiltrated under the roof membrane in these areas.
- A disconnected downspout was observed at the VOAG greenhouse.
- Solid waste containers (e.g., dumpsters) were observed in the fenced loading dock area on the south side of the School. Solid waste containers were not observed near the School HVAC air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with two natural gas fired boilers located in the first floor boiler room which feed radiators and HVAC air handling units throughout the School. Air handling units are located on the roof. An exterior, concrete pad mounted emergency electrical generator is located to the south of the School. The emergency electrical generator is fueled by fuel oil stored in an aboveground storage tank.

Cooking classrooms adjacent classrooms 111 and 113 have ventilation exhaust hoods over stove/cooking stations. Laboratory exhaust hoods exist in some of the science rooms. A dust collection system hopper was observed outside vocational/agricultural (VOAG or VA) room VA 37. Each of the VOAG greenhouses have ventilation fans.

A hydrogen fuel cell system is located to the west of the School, which is used to heat the pool. However, the custodian reported to Langan that the system doesn't work properly, and the pool is currently heated with natural gas boilers.

The sports complex building located to the west of the main School is heated with natural gas heat pump units.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas of the School. Storage areas in the first floor boiler room included 55-gallon plastic drums of propylene glycol heat transfer fluid and a drum of spent fluorescent light tubes. The first floor elevator equipment rooms adjacent the elevators contain hydraulic fluid reservoirs for the elevators. Chemistry lab chemical storage is located on the third floor in science prep rooms between classrooms 301 and 303, and prep room 4 across from classroom 324. Prep rooms contain flammable cabinets, chemical storage lockers, shelves of various laboratory chemicals and laboratory exhaust hoods.

The VOAG wing of the School had several acetylene torch cylinders, one dozen arc welding stations (each equipped with an overhead welding exhaust hood), engraving equipment, and machine/wood shop equipment. A locked flammable cabinet is located in VA 38. Natural resources classroom (VA-9) contained several aquariums and plastic pools of live fish. Various aquarium chemicals were present is this area. Paints are stored in various areas including in the drama/theater area and art room. The art room contained a kiln with a dedicated exhaust and various ceramic glazes are stored in this area.

Chemical storage on the exterior of the School includes a liquid carbon dioxide tank on the west side, near the pool area and compressed gas cylinders in the fuel cell area. Containers of carpet shampoo and floor wax were observed in the loading dock area.

A exterior shed adjacent the VOAG area contains lawn mowers, leaf/snow removal equipment and containers of gasoline.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Except for certain chemicals stored in the pool storage areas in amounts appropriate for typical pool maintenance, Langan did not identify any "extremely hazardous substances" as referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq. Pool storage areas are generally unoccupied and are only accessed by facility/maintenance staff on an as-needed basis.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Sixteen (16) locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

Rodent droppings were noted in multiple locations above suspended ceiling tiles throughout the school and on the floors of the corridor between classrooms 105 and 106. The custodial staff reported that sticky pest traps are deployed, as needed, in such areas as the cooking classrooms adjacent classrooms 111 and 113.

Dead insects were observed inside ceiling light fixtures located in the first floor northeast stairwell and in the corridor between the stage and the band room. Mud dauber wasp nests and paper wasp nests were observed at some exterior entrances, roof soffit overhangs and on

an VOAG exterior window.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.*

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order. Water impacted fiberglass pipe insulation was noted in the two kitchen electrical rooms.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials.
- "Dirty" ceiling air diffusers in various locations throughout the School and in the sports complex locker room building and stadium structure locker rooms, coach offices and elevator room should be cleaned. The ceiling air return grille in the corridor custodial closet adjacent classroom 322 should be cleaned.
- The visual survey noted water impacted ceiling tiles in limited locations (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/ceiling decks to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures located in boys' team room 1 and in the two kitchen electrical rooms. Clean the fluorescent light fixtures located in the first floor northeast stairwell and in the corridor between the stage and the band room Clean the water-stained walls in the boiler room and the walls and ceilings in the sports complex locker room building and stadium structure elevator room and investigate for the possible cause of staining.
- Repair/reconnect the VOAG greenhouse disconnected downspout.
- Clean up/remove the rodent droppings were noted in multiple locations above suspended ceiling tiles throughout the school and on the floors of the corridor between classrooms 105 and 106. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the mud dauber wasp nests and paper wasp nests at exterior

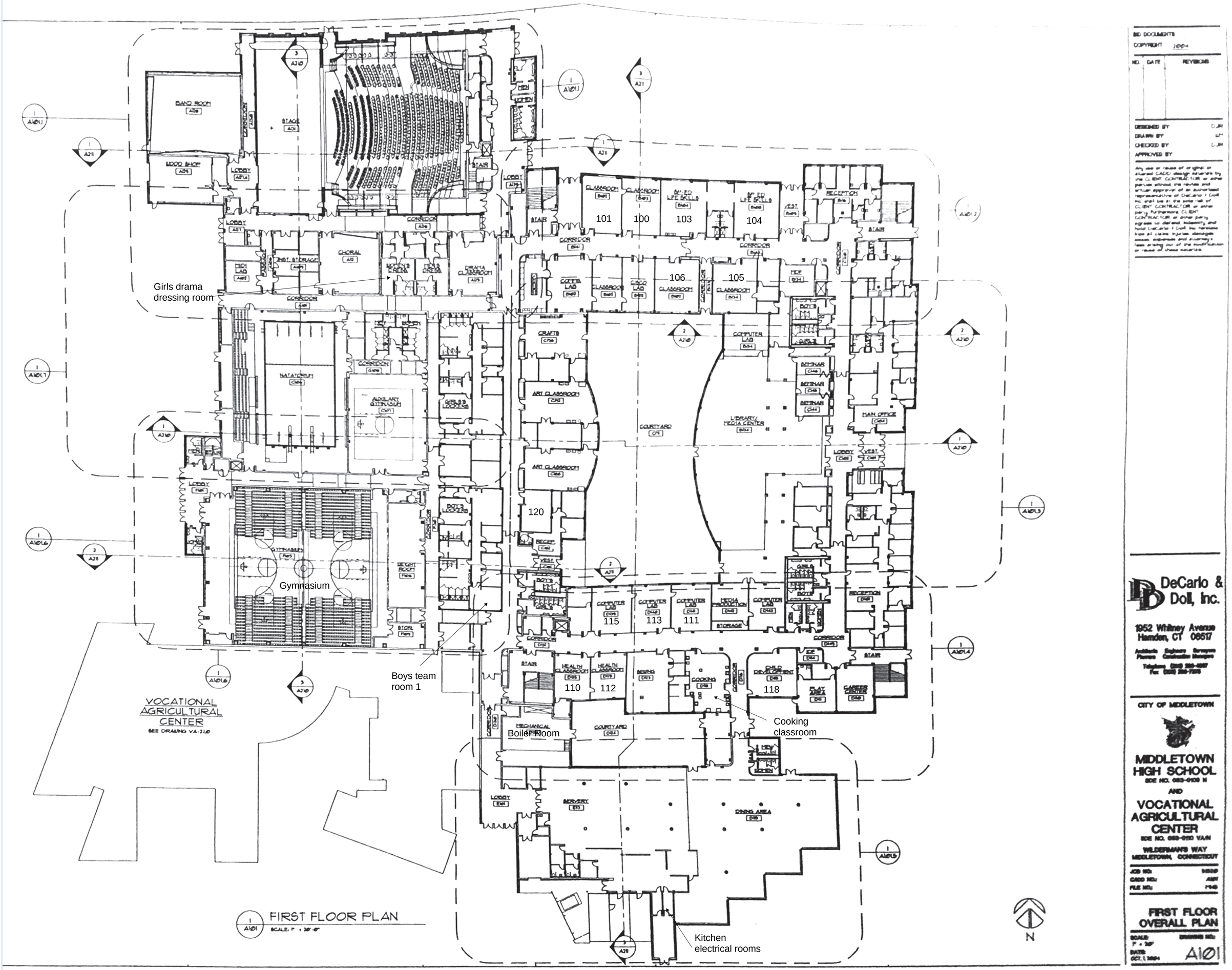
entrances, roof soffit overhangs and on an VOAG exterior window.

14.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

School Diagrams



BID DOCUMENTS

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NO.	DATE	REVISIONS

DESIGNED BY: DJR
DRAWN BY: DJR
CHECKED BY: DJR
APPROVED BY:

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DeCarlo & Doll, Inc.
1952 Whitney Avenue
Hamden, CT 06517
Architects Engineers Surveyors
Planners Construction Managers
Telephone (203) 288-4567
Fax (203) 288-7335

CITY OF MIDDLETOWN

MIDDLETOWN HIGH SCHOOL
SDE NO. 063-0100 N

AND

VOCATIONAL AGRICULTURAL CENTER
SDE NO. 063-0100 VA/N

WILDERMAN'S WAY
MIDDLETOWN, CONNECTICUT

JOB NO: 9830
CADD NO: A01
FILE NO: 7140

FIRST FLOOR OVERALL PLAN

SCALE: 1" = 30'
DATE: OCT. 1, 1999

DRAWING NO: A101

Electrical closet

SECOND FLOOR PLAN

SCALE: 1" = 30'-0"

BID DOCUMENTS

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NO.	DATE	REVISIONS

DESIGNED BY: DJR

DRAWN BY: EH

CHECKED BY: DJR

APPROVED BY:

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Planners Construction Managers

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CITY OF MIDDLETOWN

MIDDLETOWN HIGH SCHOOL

SDE NO. 053-0100 N

AND

VOCATIONAL AGRICULTURAL CENTER

SDE NO. 053-0150 VA/

WILDERMAN'S WAY
MIDDLETOWN, CONNECT

JOB NO:

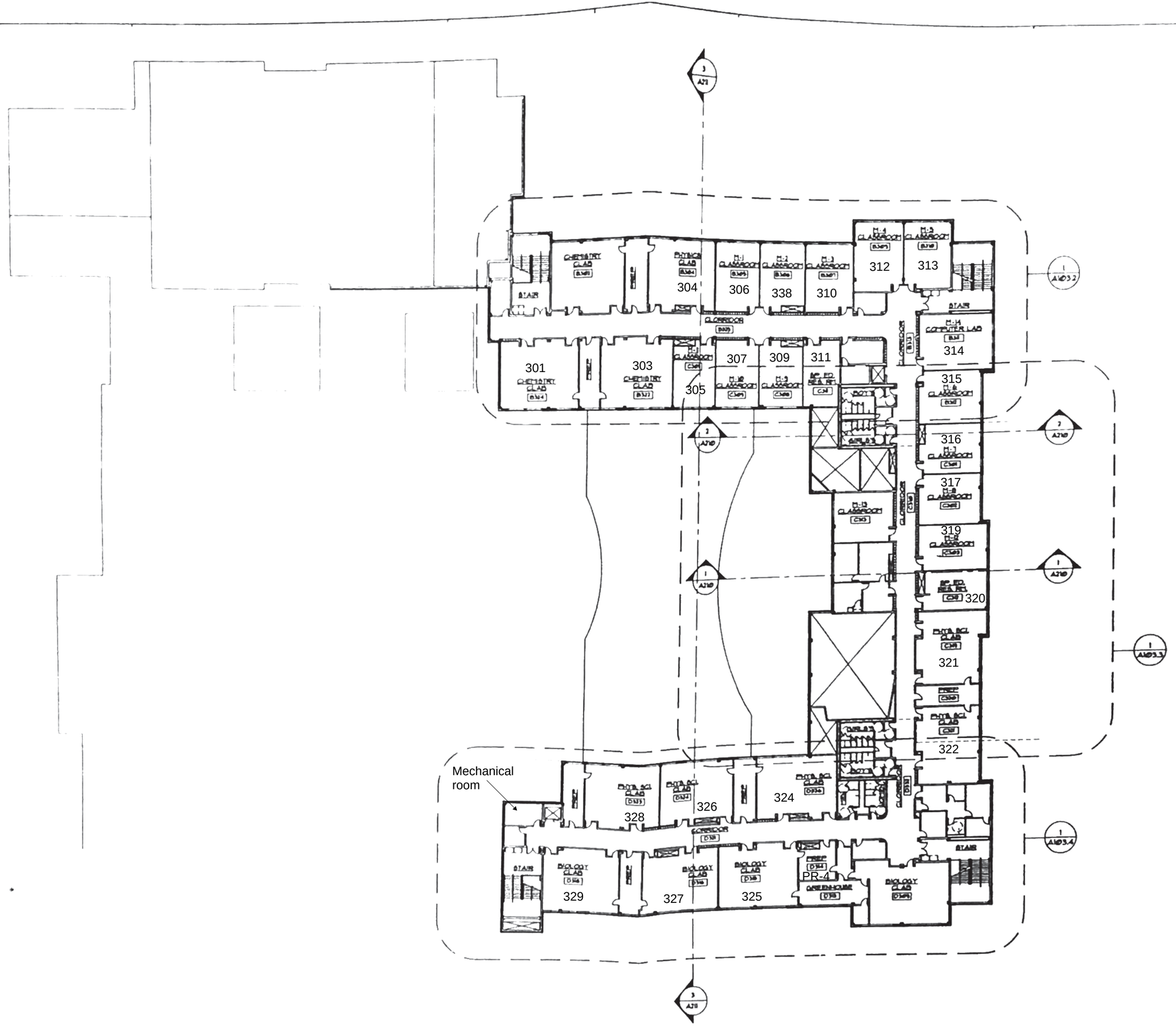
CADD NO:

FILE NO:

SECOND FL
OVERALL

SCALE: 1" = 30'

DATE: OCT. 1, 2004



1 / A103 THIRD FLOOR PLAN
SCALE: 1" = 30'-0"

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NO.	DATE	REVISIONS

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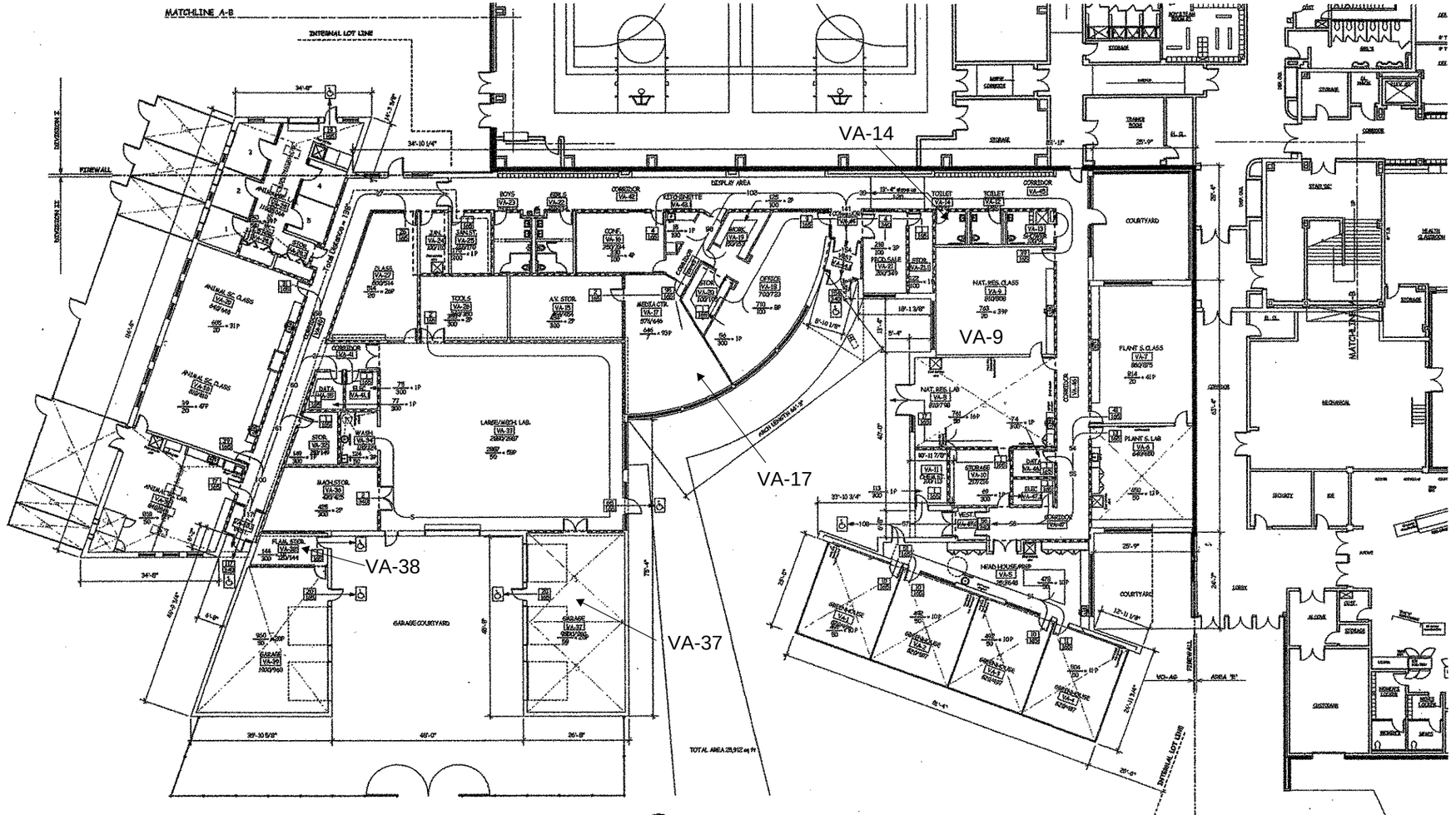
CITY OF MIDDLETOWN

MIDDLETOWN HIGH SCHOOL
BDE NO. 060-0120 N
AND
VOCATIONAL AGRICULTURAL CENTER
BDE NO. 060-0110 VA/N
WILDERMAN'S WAY
MIDDLETOWN, CONNECTICUT

JOB NO: 0320
CADD NO: A103
FILE NO: 1140

THIRD FLOOR OVERALL PLAN

SCALE: 1" = 30'
DATE: OCT. 1, 2004
DRAWING NO: A103



BUILDING EGRESS PLAN

1 / VA-000 SCALE: 3/32" = 1'-0"

ENTIRE FACILITY

Date of Original Construction: N/A Date of Addition: N/A

1. USE GROUP CLASSIFICATION
   (Primary) E - Educational
   (Incidental) A3 - Gymnasium
2. CONSTRUCTION TYPE (Chapter 6)
   Minimum Type Required: 2B (Non-combustible)
   Actual Type Provided: (existing) N/A
   (new) 2B
3. BUILDING HEIGHT (Chapter 5)
   Allowable Height (story/feet): UNLIMITED
   Actual Height (story/feet): 1 STORY
   Grades above Grade: 1
4. TOTAL BUILDING AREA (Chapter 5)
   a) Gross Building Area (each floor)
   Existing construction: N/A sq.ft.
   New construction: sq.ft.
   Total floor: sq.ft.
   b) Gross Building Area (entire facility)
   Existing unrenovated construction: N/A sq.ft.
   Existing renovated construction: N/A sq.ft.
   Total existing construction: N/A sq.ft.
   Total new construction: sq.ft.
   Total facility: sq.ft.
7) FIRE RESISTANT RATING OF STRUCTURE ELEMENTS

1	Exterior walls		1hr(s)
2	Fire walls		1hr(s)
3	Fire separation assemblies		1hr(s)
4	Fire partitions		1hr(s)
5	Dwelling unit		1hr(s)
6	Smoke Barriers		1hr(s)
7	Other exits enclosing 3 stairways		1hr(s)
8	Interior load bearing walls		1hr(s)
9	Structural members supporting wall		1hr(s)
10	Floor construction including beams		1hr(s)
11	Roof Construction including beams		1hr(s)

8) OCCUPANT LOAD
   Design Total for Each Floor (list all floors)
   Total Exit Capacity for Each Floor (list all floors)
   Design Total for School
   Total Exit Capacity for School

9. MODIFICATIONS
   Provide Modification Number and Code Section Number being modified. State if approved or not.
   Boca International Building Code 1021.2.2 - # of Occupants - Pending
   Boca International Building Code 1021.2 - UFAS Accessibility - Pending
10. ACCESSIBLE BUILDING: X Designated; Non-Designated
11. MINIMUM PLUMBING FIXTURE COUNT (I.P.C. 403.1 DESIGN LOAD) for each use group and for staff, per separate building or entire facility.

	Required	Provided
A use group:		
WC male	N/A	
WC female	N/A	
Lavs	N/A	
D/F	N/A	
E use group:		
WC	6	
Lavs	6	
D/F	2	+ fountain

12. SPRINKLER PROTECTION: X Entire building; Limited area
13. CODES TO WHICH THIS PROJECT WAS DESIGNATED (Listed)

State Building Code w/Supplement	2003 IBC/IRC & CT Amendments
State Fire Code w/Supplement	2003 IFC & CT Amendments
State Health Code	2005 RC of NCSC, Conditions 2003
OSHA	Current - 2003
Section 504	1973 UFAS
ADA	2010 ADAS & 1991 ADA Standards
Other	

14. THRESHOLD BUILDING CONDITIONS: Yes ___ No X
15. BUILDING AREAS FOR GRANT CALCULATION (ENTIRE FACILITY)

Existing unrenovated construction	N/A	sq.ft.
Existing renovated construction	N/A	sq.ft.
Existing being demolished	-	sq.ft.
Total existing construction	-	sq.ft.
Total new construction	-	sq.ft.
Total facility	-	sq.ft.

DIVISION I

4. BUILDING AREA (Chapter 5)
   Building Area: (each floor)
   Existing construction: sq.ft.
   New construction: sq.ft.
   Total floor: sq.ft.
5. AREA TABULATION for each building (Floor Area)
   Total Perimeter = ___ ___ ___ ___ ___ ___
   Open Perimeter = ___ ___ ___ ___ ___ ___
   Total Perimeter (total) ___ Open Perimeter (total) ___
   % Increase for Open Perimeter = (Total Open Perimeter ÷ Total Perimeter - .25) x 200 = ___ ÷ ___ - .25) x 200 = ___ %
   Note: Provide a key plan to show total and open perimeter.
   % of Allowable Tabular Area (Table 503) ___ %
   % Reduction for Height (506.4) ___ %
   % Increase for Open Perimeter (506.3) ___ %
   % Increase for NO Fire Suppression (506.3) ___ %
   Total Percentage Factor ___ %
   Conversion Factor (% Factor/100) ___
6) MIXED USE (§302)
   Non-Separated uses
   X Separated uses
   (Use Group ___ %)(Use Group ___)
   Σ [Actual Area ÷ Allowed Area] + [Actual Area ÷ Allowed Area] = ≤ 1
   Σ ___ ÷ ___ + ___ ÷ ___ = ___
   a) ADJUSTED TABULAR AREA: (actual floor area of each use group must be ≤ Table 503) ___ % ___ sq.ft.
   b) ALLOWABLE AREA per floor: (tabular area ___ x conversion factor ___) ___ sq.ft.
   c) ACTUAL AREA: (each floor of each building) ___ sq.ft.

SYMBOLS LEGEND

- 101 — ROOM NUMBER
- 428 ÷ 428 — ROOM OCCUPANCY LOAD: AREA IN SQUARE FEET ÷ OCCUPANCY LOAD FACTOR
- 3 / 165 — EXIT CAPACITY: ACTUAL SERVICE OCCUPANCY OF DOOR OR STAIR ÷ MAXIMUM ALLOWABLE SERVICE OCCUPANCY OF DOOR OR STAIR
- 15 — DIRECTION OF TRAVEL WITH ACCUMULATED OCCUPANCY LOAD
- 145' — MAXIMUM TRAVEL DISTANCE FROM FURTHEST POINT
- ACCESSIBLE AREA OR EXIT: FLUSH CONDITION @ FLOOR SURFACE. THRESHOLDS (IF ANY) MAX 1/2" H.
- 1 HOUR FIRE RATED WALL (TIGHT TO DECK ABOVE)
- 2 HOUR FIRE RATED WALL (TIGHT TO DECK ABOVE) 1 HOUR FIRE WALL WHERE NOTED
- SMOKE BARRIER OR SMOKE RESISTANT CONSTRUCTION OR 20 MINUTE FIRE RESISTANCE RATING

NORTH

KEY PLAN

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(PROGRESS PRINT) AUG 17 2004

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Architect:
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CITY OF MIDDLETOWN

VOCATIONAL AGRICULTURAL CENTER

SDE NO. 065-0110 VA/N

WILDERMAN'S WAY
MIDDLETOWN, CONNECTICUT

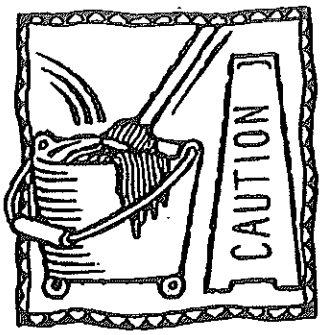
JOB NO: 51520
CADD NO.:
FILE NO.: MH5

ENLARGED VO-AG CODE SHEET

SCALE: AS NOTED
DATE: MAR. 1, 2004
DRAWING NO.: VA0.0.0

Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Middletown High School

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

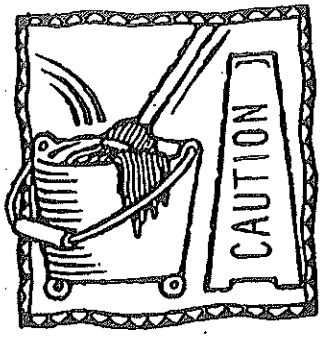
	Yes	No	N/A
1a. Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b. Reviewed supply labels	☑	☐	☐
1c. Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d. Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e. Researched and selected the safest products available	☑	☐	☐
1f. Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g. Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h. Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i. Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j. Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a. Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b. Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c. Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d. Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e. Replaced portable gas cans with low-emission cans	☑	☐	☐
2f. Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g. Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a. Installed and maintained barrier mats for entrances	☑	☐	☐
3b. Used high efficiency vacuum bags	☑	☐	☐
3c. Used proper dusting techniques	☑	☐	☐
3d. Wrapped feather dusters with a dust cloth	☐	☐	☑
3e. Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES



Waste Management Checklist

Name: _____

School: Middletown High School

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☐	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MIDDLETOWN HIGH SCHOOL

Unit Ventilator/AHU No: RTU 1-7, 31-35

Room or Area: CLASSROOMS Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

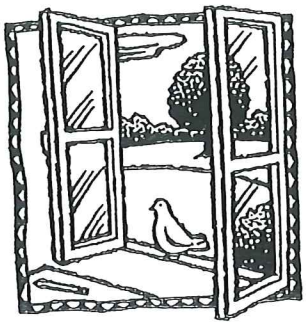
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



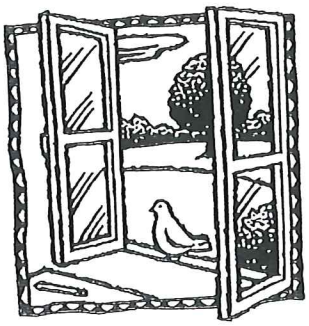
2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐

OR

3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

		Yes	No	N/A
3aa.	Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a.	Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b.	Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c.	Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d.	Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e.	Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f.	Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g.	Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h.	Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i.	Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j.	Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

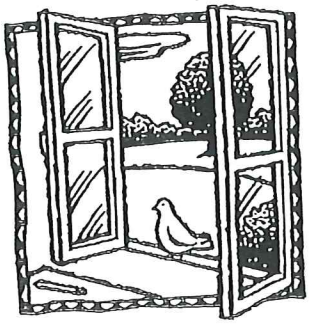
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a.	Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MIDDLETOWN HIGH SCHOOL

Unit Ventilator/AHU No: RTU - 11A, 11B

Room or Area: AUDITORIUM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

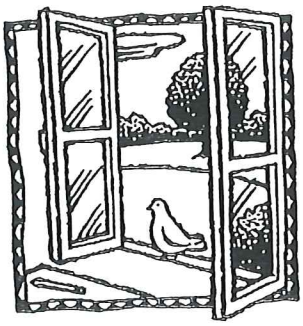
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

		Yes	No	N/A
3aa.	Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a.	Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b.	Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c.	Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d.	Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e.	Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f.	Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g.	Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h.	Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i.	Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j.	Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a.	Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MEDDLETOWN HIGH SCHOOL

Unit Ventilator/AHU No: RTU -4

Room or Area: OFFICE Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

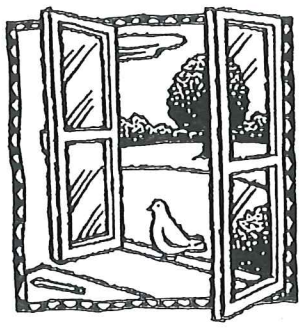
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: MIDDLETOWN HIGH SCHOOL

Unit Ventilator/AHU No: RTU 16-17

Room or Area: Gym Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

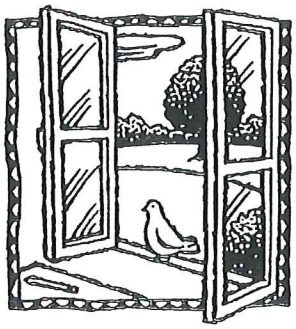
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

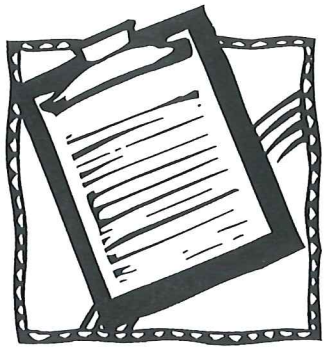
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Walkthrough Inspection Checklist

Name: _____

School: MIDDLETOWN HIGH SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

2a.	Ensured that the roof is in good condition	☑	☐	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

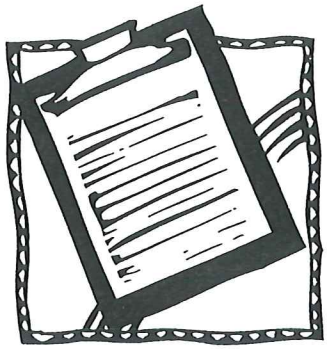
3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐

4. GENERAL CONSIDERATIONS (continued)



	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☐	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☐	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

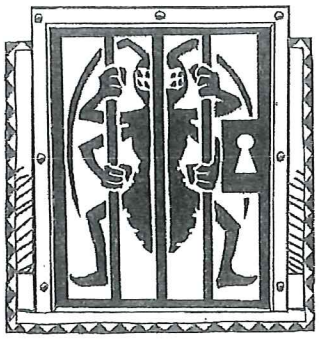
7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☐	☐	☐

8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

8b TEST TO BE PERFORMED FEBRUARY 2024



Integrated Pest Management Checklist

Name: JP Bellamo and Sons Pest Control

School: Middletown High School

Room or Area: _____ Date Completed: 12/18/24

Signature: J. P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

	Yes	No	N/A
1a. Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

	Yes	No	N/A
2a. Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b. Involved decision makers in the IPM program	☒	☐	☐
2c. Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d. Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e. Developed a program to educate and train all IPM participants	☐	☒	☐
2f. Included language about IPM into contracts with pest management professionals	☒	☐	☐

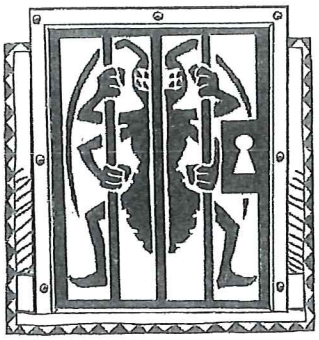
3. SETTING PEST MANAGEMENT OBJECTIVES

	Yes	No	N/A
3a. Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b. Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

	Yes	No	N/A
4a. Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b. Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c. Pinpointed the source of any current pest problems	☒	☐	☐
4d. Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e. Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f. Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

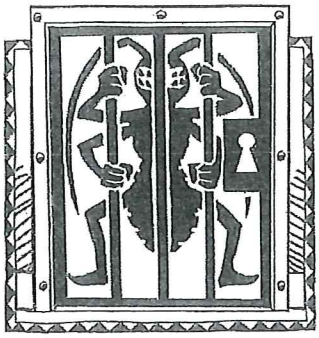
OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



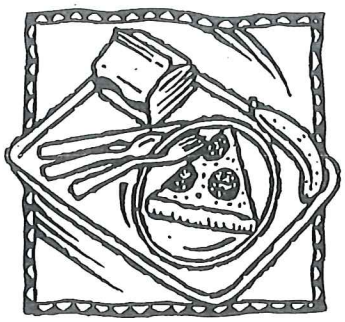
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel

School: Middletown High School

Room or Area: Cafe Date Completed: 11/13/24

Signature: Randall Mel

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☑	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

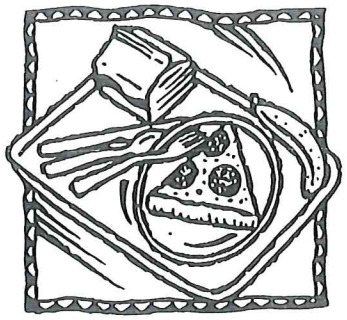
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

Van Buren Moody Elementary School
300 Country Club Road
Middletown, Connecticut 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

LANGAN

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1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Van Buren Moody Elementary School (the School) at 300 Country Club Road, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	25 November 2024
Professional's project #:	140305401	Construction Dates:	1964 Renovations/ Additions 1992
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	One (Approximately 47,700 Square Feet)
Email:	mmyers@langan.com		
Property Address:	300 Country Club Road		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Elementary School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspectors, Andrew P. Rolinger, Hilton Hernandez and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 25 November 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles/sheetrock ceilings exhibited evidence of dried, historic water staining/damage at approximately sixty (60) locations in thirty-five (35) rooms/corridors throughout the School.
- Sagging suspended ceiling tiles were observed in classrooms 1 and 2, in the main office areas and in the music room (classroom 22). According to custodial staff, ceiling tiles in a converted office space adjacent to the cafeteria were replaced due to sagging.
- An active area of leaking/dripping was observed in the gymnasium stage area. Leaking appears to be from an overhead sprinkler pipe and the leaking water is being collected into a trash barrel.
- Five areas of possible mold growth on ceiling tiles were observed in the corridors outside classrooms 5, 11 and 17, the gymnasium storage room and in classroom 20 closet.
- "Dirty" ceiling air diffusers were observed in the custodial closet and toilet rooms adjacent classroom 18, the cafeteria and the toilet rooms adjacent classroom 9.
- An odor suspected to be coming from an old floor drain in the custodial office (adjacent the boiler room).

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- According to custodial staff, windows located in courtyard #1 leak during rain events.
- The School has a flat roof covered with a rolled asphaltic cap sheet. Roof drains appeared generally unclogged and free of debris.
- Solid waste containers (e.g., dumpsters) are located on the west side of the School. Solid waste containers were not observed near the School heating, ventilation and air conditioning (HVAC) air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with two fuel-oil fired boilers located in the boiler room which feeds radiators throughout the School and unit ventilators in the media center. The gymnasium is heated with a rooftop forced hot air HVAC system. Fuel oil is stored in an underground storge tank (UST) located to the west of the School. The School is ventilated with rooftop exhaust units. Boiler room ventilation louvers are located on the west side of the School near cardboard storage dumpsters.

Air-conditioning (AC) units are located above the suspended ceilings of the media center and the music room (classroom 22). A window mounted AC unit was observed in classroom 21. Two portable AC units were observed in classrooms 1 and 2.

A former staff lounge/kitchen area on the west side of the School has been converted into office space. A supplemental rooftop air handing unit was added to this area to accommodate the new use of space. A former locker/shower room area adjacent to the gymnasium has been converted into the gym teacher's office, but the redesigned space appears to not be ventilated appropriately for the new space.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas of the School. The main chemical storage area is located in two rooms adjacent to the custodians' office. Storage in these areas included a flammable cabinet (containing commercial sized containers of paint), shelves of hand soap, various cleaning chemicals, boxes of alcohol wipes and floor cleaners. The (former) art room contains a kiln with a dedicated exhaust. A garage storage area is located on the west side of the School contains containers of gasoline and bags of ice melt.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools.

Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Nine locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

A possible radon mitigation system (or other sub-slab depressurization system), consisting of a PVC pipe stack extending from floor-to-ceiling with an associated U-tube manometer, was observed in the closets of classrooms 14 and 22. Associated radon mitigation fan units were observed on the roof in these locations.

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

Rodent droppings were noted in multiple locations above suspended ceiling tiles throughout the school. No evidence of insect or bird nests were observed at exterior entrances, under exterior overhangs/soffits or in exterior courtyard areas.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.*

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended. A former staff lounge/kitchen area on the west side of the School has been converted into office space. A supplemental rooftop air handing unit was added to this area to

accommodate the new use of space. A former locker/shower room area adjacent to the gymnasium has been converted into the gym teacher's office, but the redesigned space appears to not be ventilated appropriately for the new space.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing roofing materials, repairing roof drain seals, leaking pipe valves, and possible window systems (courtyard #1).
- "Dirty" ceiling air diffuser in the custodial closet and toilet rooms adjacent classroom 18, the cafeteria, and the toilet rooms adjacent classroom 9 should be cleaned.
- The odor suspected to be coming from an old floor drain in the custodial office (adjacent the boiler room) should be investigated.
- The visual survey noted water impacted ceiling tiles throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- The gym teacher's office that was constructed in a former locker/shower room area adjacent to the gymnasium should have an HVAC air supply and return system/ ductwork installed.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion.

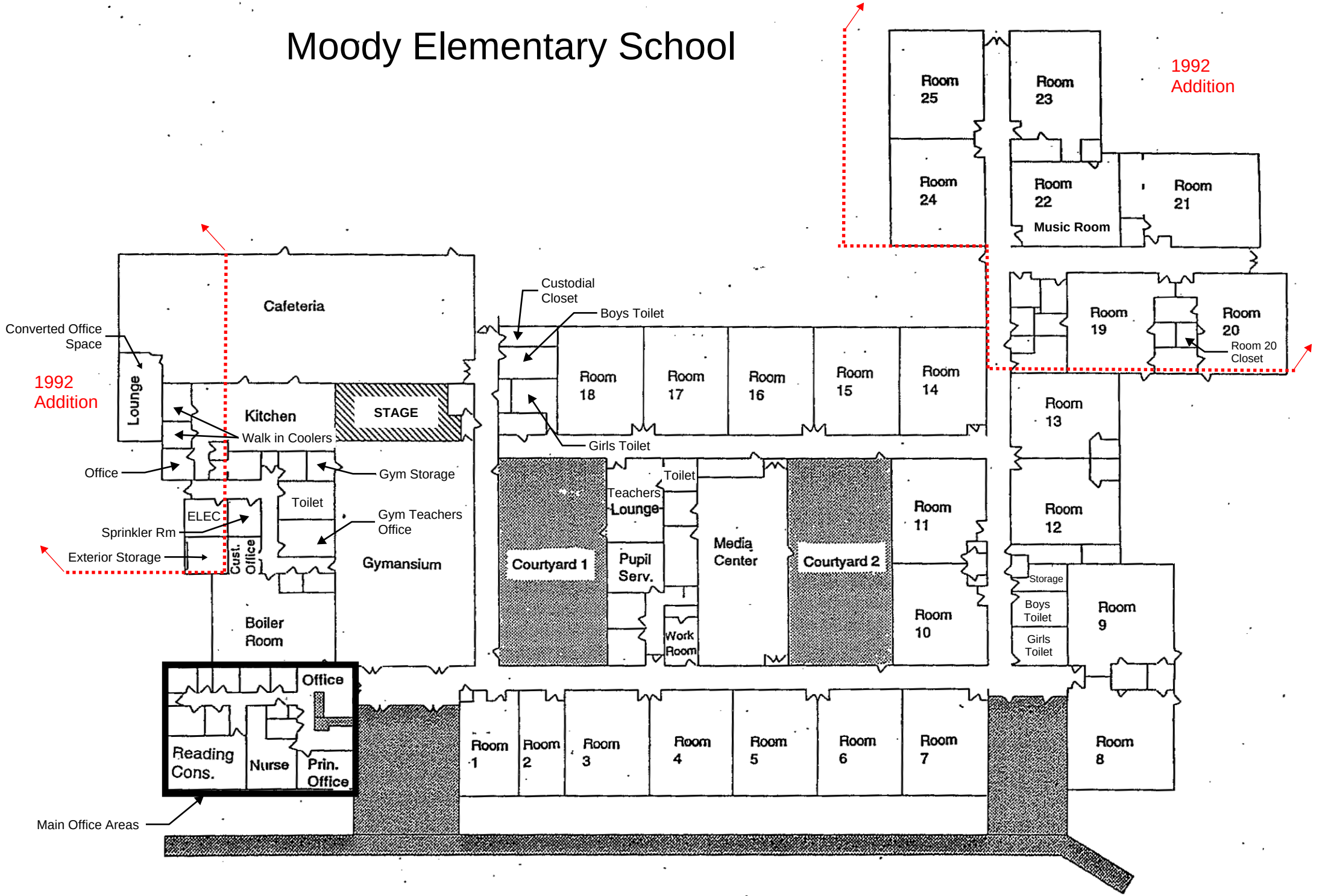
14.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

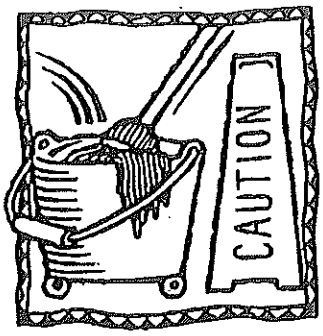
School Diagram

Moody Elementary School



Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Moody Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

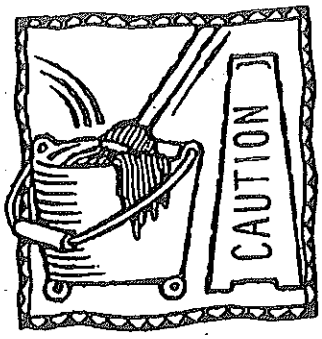
		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

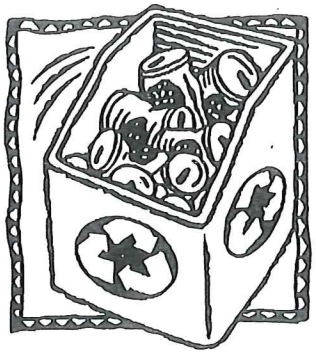
7. COMBUSTION APPLIANCES

7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES



Waste Management Checklist

Name: _____

School: Moody Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☑	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: VAN BURAN MOODY ELEMENTARY SCHOOL

Unit Ventilator/AHU No: N/A (RADIANT HEAT ONLY)

Room or Area: CLASSROOMS Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☐	☐	☑

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☐	☐	☑
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☐	☐	☑
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☐	☐	☑
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☐	☐	☑

ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☐	☐	☑
1i. Confirmed that outdoor air is entering the intake appropriately	☐	☐	☑

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☐	☐	☑
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☐	☐	☑
2c. Vacuumed filter areas before installing new filters	☐	☐	☑
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☐	☐	☑
2e. Confirmed proper installation of filters (correct direction for airflow)	☐	☐	☑

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☐	☐	☑
2g. Cleaned drain pans	☐	☐	☑
2h. Checked drain pans for mold and mildew	☐	☐	☑

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☐	☐	☑
2k. Ensured that ducts are clean	☐	☐	☑

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☐	☐	☑
3b. Ensured that minimum position provides adequate outdoor air for occupants	☐	☐	☑

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☐	☐	☑

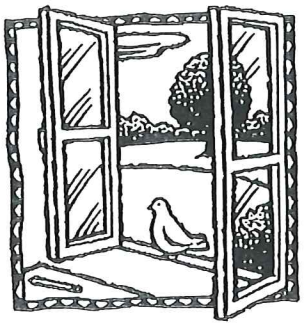
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☐	☐	☑
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☐	☐	☑

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☐	☐	☑
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☐	☐	☑

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☐	☐	☑
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☐	☐	☑
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☐	☐	☑
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☐	☐	☑
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☐	☐	☑
• Moving parts are free of impediments (e.g., rust, corrosion)	☐	☐	☑
• Electrical wire or pneumatic tubing connects to the damper actuator	☐	☐	☑
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☐	☐	☑

OR

3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☐	☐	☑
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☐	☐	☑

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☐	☐	☑

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☐	☐	☑

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☐	☐	☑
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☐	☐	☑

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☐	☐	☑

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☐	☐	☑
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☐	☐	☑
4d. Ensured that supply and return vents are open and unblocked	☐	☐	☑

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☐	☐	☑
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☐	☐	☑
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☐	☐	☑

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

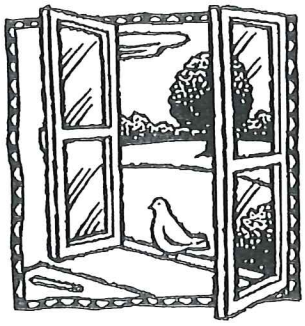
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☐	☐	☑
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☐	☐	☑

NOTES



Ventilation Checklist

Name: _____

School: VAN BURAN MOODY ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AIR HANDLER (HEAT/COOL)

Room or Area: OFFICE Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

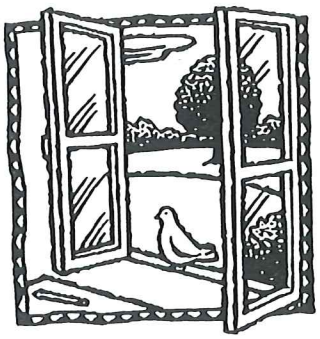
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



2. SYSTEM CLEANLINESS (continued)

ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

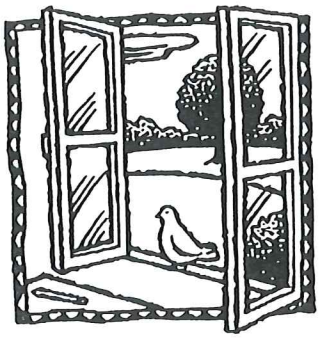
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: VAN BUREN MOODY ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AIR HANDLER (HEAT ONLY)

Room or Area: GYM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

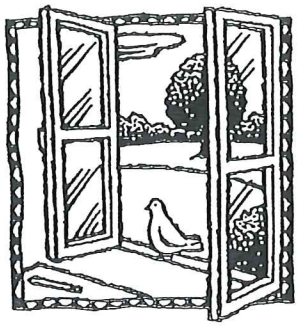
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

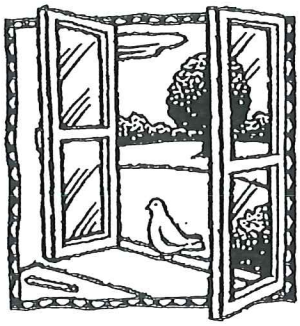
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

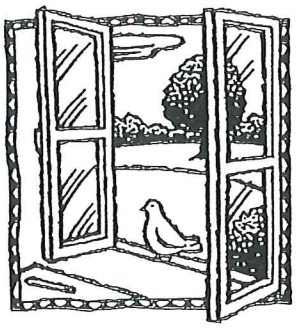
3x. Confirmed proper economizer settings based on design specifications or local practices	☐	☐	☑

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☐	☐	☑
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☐	☐	☑

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

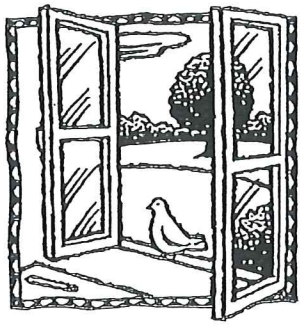
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

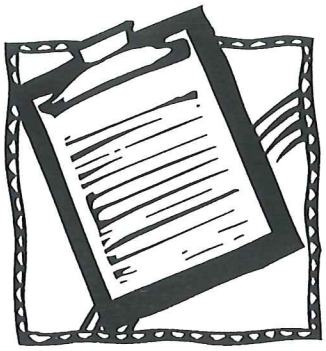
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Walkthrough Inspection Checklist

Name: _____

School: VAN BURAN MOODY ELEMENTARY SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

2a.	Ensured that the roof is in good condition	☐	☑	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

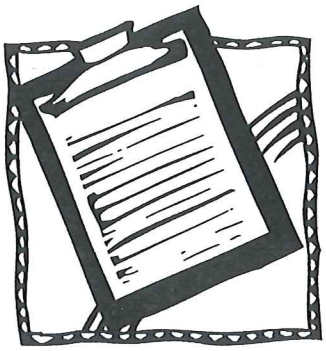
3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐

4. GENERAL CONSIDERATIONS (continued)



	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

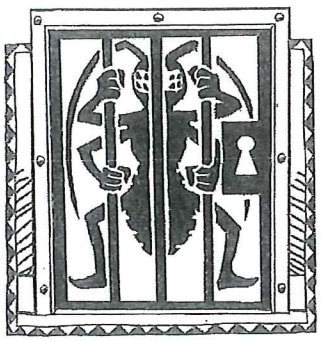
8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

2a. ROOF AGE 20+ YEARS

8b. TEST TO BE PERFORMED IN FEBRUARY 2024



Integrated Pest Management Checklist

Name: J P Bellamo And Sons Pest Control

School: Moody Elementary

Room or Area: Date Completed: 12/18/24

Signature: J. P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

		Yes	No	N/A
1a.	Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

		Yes	No	N/A
2a.	Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b.	Involved decision makers in the IPM program	☒	☐	☐
2c.	Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d.	Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e.	Developed a program to educate and train all IPM participants	☐	☒	☐
2f.	Included language about IPM into contracts with pest management professionals	☒	☐	☐

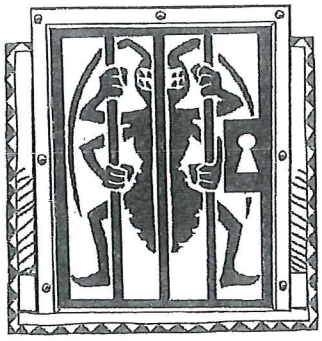
3. SETTING PEST MANAGEMENT OBJECTIVES

		Yes	No	N/A
3a.	Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b.	Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

		Yes	No	N/A
4a.	Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b.	Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c.	Pinpointed the source of any current pest problems	☒	☐	☐
4d.	Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e.	Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f.	Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

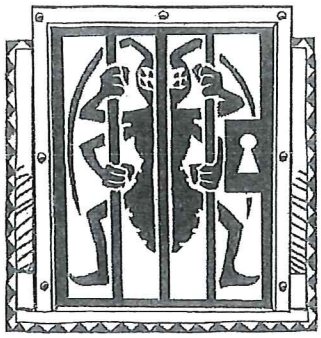
OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



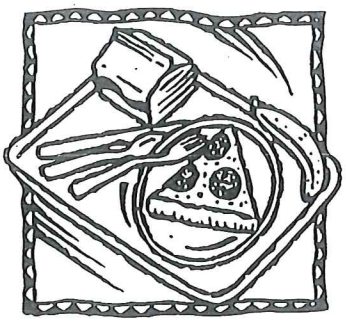
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel
School: Moody Elementary
Room or Area: Cafe Date Completed: 11/13/21
Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☐	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

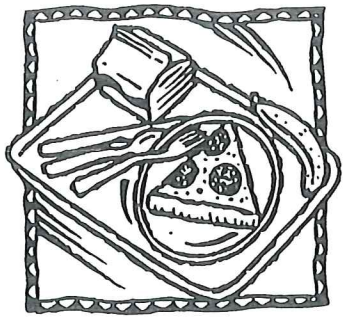
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

Spencer Elementary School
207 Westfield Street
Middletown, CT 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

LANGAN

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LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Spencer Elementary School (the School) at 207 Westfield Street, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	5 December 2024
Professional's project #:	140305401	Construction Dates:	1951 Renovation/ Addition 1957
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	One (Approximately 49,650 Square Feet)
Email:	mmyers@langan.com		
Property Address:	207 Westfield Street		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Elementary School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspector, Andrew P. Rolinger, Pavel Zayenchik and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 5 December 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles exhibited evidence of dried, historic water staining/damage at approximately forty-five (45) locations in twenty-five (25) rooms/corridors throughout the School. Some of these locations also had stained roof deck materials above. Sheetrock ceilings exhibited evidence of dried, historic water damage in the music room closet, art room, and the main corridor between the main entrance and main office. Water-stained walls were also noted in the gymnasium storage room.
- Areas of possible active roof leaking (wet ceiling tiles) were observed in classroom 10, the cafeteria, the corridor outside classroom 7, and classroom 7 (leak being directed into a container in this room). Water was observed inside the fluorescent light fixture in classroom 10. Historic water staining was also observed inside fluorescent light fixtures inside the media center and classrooms 10 and 11.
- The boiler room, kindergarten 2 and media center heating ventilation air conditioning (HVAC) equipment room have fiberglass pipe insulation with limited water staining.
- The art room metal roof deck and metal trusses have visible surface rust above the suspended ceiling tiles.
- Sagging suspended ceiling tiles were observed in kindergarten 1, classroom 11 and the ESL room.
- Classroom 8 has water damage on the windowsills and unit ventilators (rust).
- Five areas of possible mold growth on ceiling tiles were observed in the southern entrance vestibule, media center, storage room across from the gymnasium, special education room, and the boys and girls toilet rooms on the east side of the School.
- Dirty ceiling air diffusers were observed in several locations throughout, including kindergarten 1 (missing diffuser also), kindergarten 3 toilet room, classroom 13, classroom 16, the janitors closet between classrooms 9 and 10, gymnasium/auditorium stage and server room. A rusted ceiling diffuser was observed in the corridor custodial closet adjacent classroom 16.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Water damage to wood and stucco materials at roof level eaves and soffits was observed throughout the School (particularly in courtyard areas and around downspouts). Water was observed leaking from exterior soffits onto exterior masonry perimeter walls of classroom 8 and onto exterior windows of the music room (raining on day of visual survey - possibly from a roof leak in this area).
- Solid waste containers (e.g., dumpsters) were observed in a fenced area to the northeast of the School. Solid waste containers were not observed near the School HVAC air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with two fuel-oil fired boilers located in the boiler room which feed radiators and unit ventilators throughout the School. The gymnasium/auditorium is heated with an overhead forced hot air HVAC system located above the stage. An emergency electrical generator is located in the electrical room. The School has rooftop exhaust units and unit ventilators.

Wall mounted air conditioning (AC) units are located in the server room and media center. Window mounted AC units are located in the main office/principal's office area, ESL classroom, art room and custodian's office.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas of the School. The custodian's office contains a flammable cabinet with spray paints and motor oil. Various janitorial cleaning supplies are stored in this office. The teachers work room (adjacent to the custodian's office) contains a flammable cabinet with rubber cement, paint thinner and

printer toner. A corridor storage room adjacent the computer lab has alcohol wipes. The art room has a kiln with a dedicated exhaust, craft paints and ceramic glazes. A drum of spent fluorescent light tubes was observed in the boiler room. A garage outbuilding is located to the northeast of the school, which contains a lawnmower, snowblower, leaf blower, weed whacker, containers of gasoline, spray paint and ice melt.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Eight locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and

§ 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

Birds were observed nesting in damaged wood and stucco exterior perimeter soffits at the roof level throughout the School (particularly in courtyard areas). Rodent droppings were noted in multiple locations above suspended ceiling tiles throughout the School. Mud dauber wasp nests were observed at several exterior entrance canopies.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.*

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing/replacing roofing materials and exterior soffit/eaves/canopy/wall materials.
- "Dirty" ceiling air diffusers in kindergarten 1 (missing diffuser also), kindergarten 3 toilet room, classroom 13, classroom 16, the janitors' closet between classrooms 9 and 10, gymnasium/auditorium stage and server room should be cleaned. Replace the missing ceiling diffuser in kindergarten 1. Remove and replace the rusted ceiling diffuser in the corridor custodial closet adjacent classroom 16.
- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures located in classrooms 10 and 11 and media center. Clean the water-stained walls in the gymnasium storage room and investigate for the possible cause of staining. Clean/repair the water damaged windowsills and unit ventilator in classroom 8 and investigate for the possible cause of water damage.

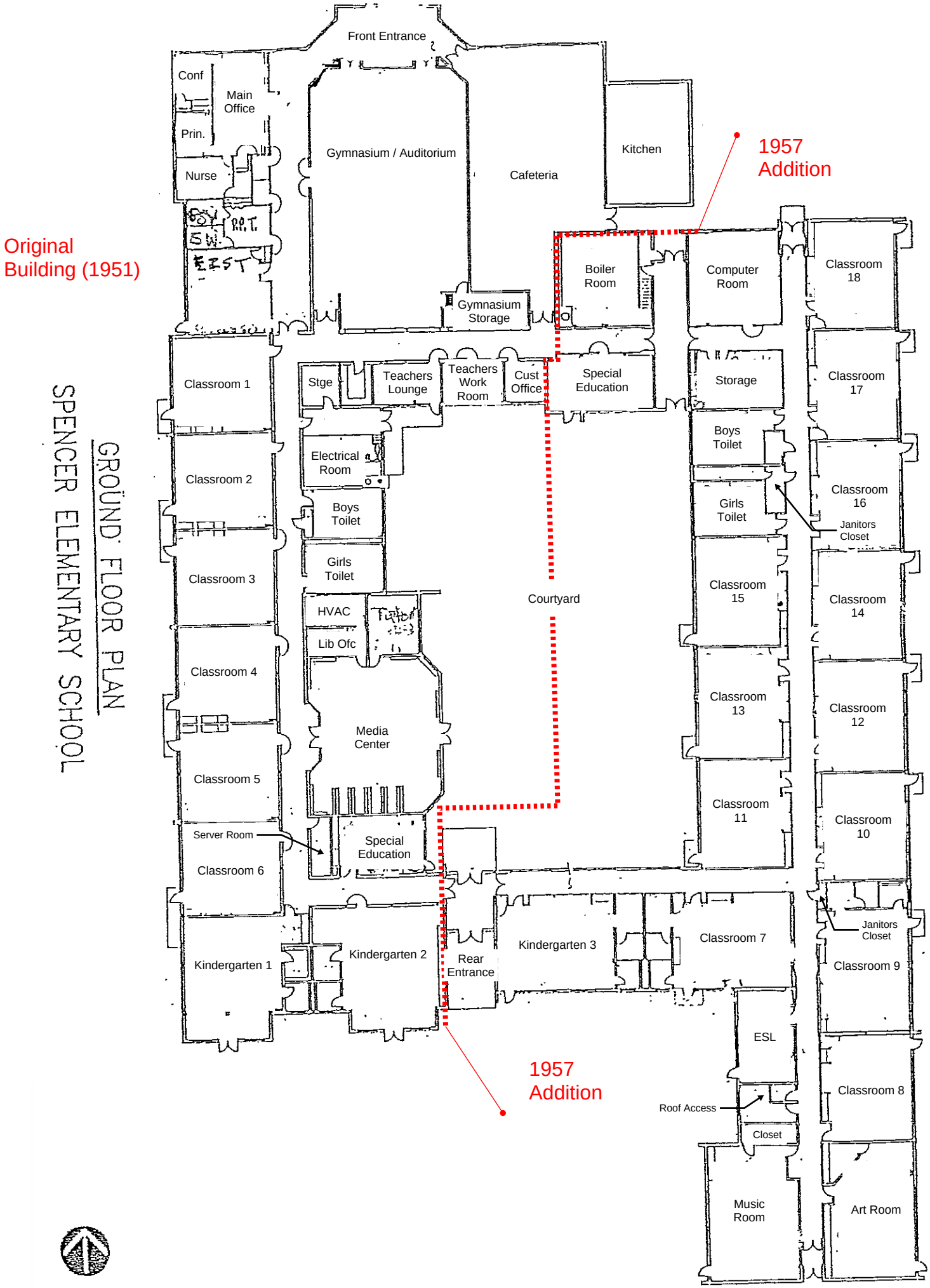
- Clean or remove and replace the media center HVAC equipment room and kindergarten 2 water-stained fiberglass pipe insulation and investigate for the possible cause of water damage.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrance canopy mud dauber wasp nests. Remove the bird nests in the exterior perimeter soffits throughout the School and repair soffits (close the nest entrances).

14.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

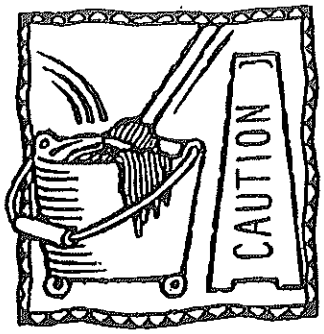
Appendix A

School Diagram


Original Building (1951)
SPENCER ELEMENTARY SCHOOL
GROUND FLOOR PLAN
Front Entrance
Conf
Main Office
Prin.
Nurse
Gymnasium / Auditorium
Cafeteria
Kitchen
1957 Addition
Boiler Room
Computer Room
Classroom 18
Gymnasium Storage
Classroom 1
Stge
Teachers Lounge
Teachers Work Room
Cust Office
Special Education
Storage
Classroom 17
Boys Toilet
Classroom 2
Electrical Room
Girls Toilet
Classroom 16
Janitors Closet
Boys Toilet
Classroom 3
Girls Toilet
Courtyard
Classroom 15
Classroom 14
HVAC
Lib Ofc
Classroom 4
Classroom 13
Classroom 12
Media Center
Classroom 5
Classroom 11
Classroom 10
Server Room
Special Education
Classroom 6
Janitors Closet
Kindergarten 1
Kindergarten 2
Rear Entrance
Kindergarten 3
Classroom 7
Classroom 9
ESL
1957 Addition
Classroom 8
Roof Access
Closet
Music Room
Art Room

Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Spencer Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

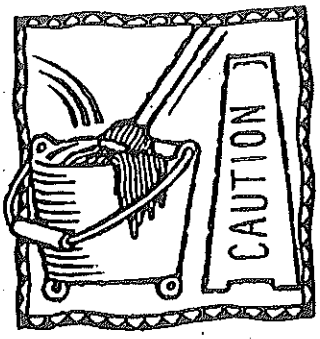
		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

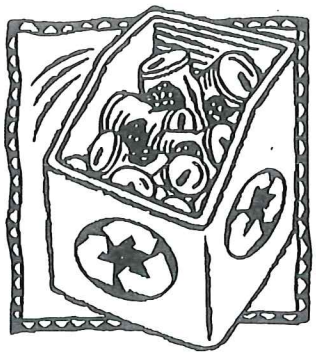
7. COMBUSTION APPLIANCES

7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES



Waste Management Checklist

Name: _____

School: Spencer Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☐	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: SPENCER ELEMENTARY SCHOOL

Unit Ventilator/AHU No: UNIT VENTILATORS

Room or Area: CLASSROOMS Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☐	☐	☑
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☐	☐	☑

ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☐	☐	☑
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)

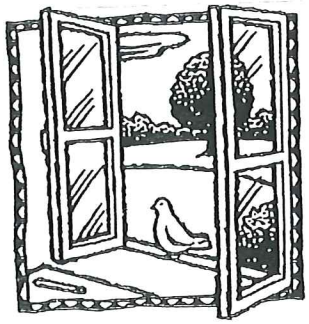


	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☐	☐	☑
2g. Cleaned drain pans	☐	☐	☑
2h. Checked drain pans for mold and mildew	☐	☐	☑
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☐	☐	☑
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☐	☐	☑
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☐	☐	☑

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☐	☐	☑
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☐	☐	☑
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☐	☐	☑
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☐	☐	☑
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☑
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☑	☐	☐

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☐	☐	☑

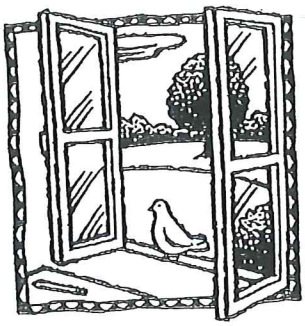
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☐	☐	☑

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☐	☐	☑
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☐	☐	☑

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required ☑ ☐ ☐

4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning ☐ ☐ ☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows) ☑ ☐ ☐

4d. Ensured that supply and return vents are open and unblocked ☑ ☐ ☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply ☐ ☐ ☑

4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes ☑ ☐ ☐

4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents ☐ ☐ ☑

4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities ☑ ☐ ☐

4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals ☑ ☐ ☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings) ☐ ☐ ☑

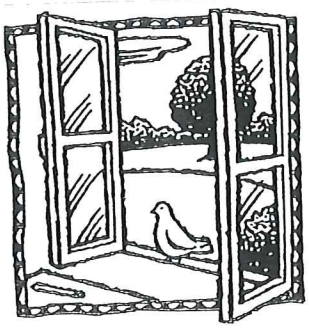
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s) ☐ ☐ ☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☐	☐	☑
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☐	☐	☑

NOTES



Ventilation Checklist

Name: _____

School: SPENCER ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AHU

Room or Area: OFFICE Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

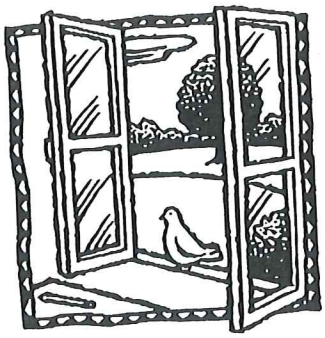
ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



2. SYSTEM CLEANLINESS (continued)

	Yes	No	N/A
ACTIVITY 5: DRAIN PANS			
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐
ACTIVITY 6: COILS			
2i. Ensured that heating and cooling coils are clean	☑	☐	☐
ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐
ACTIVITY 8: MECHANICAL ROOMS			
2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐
ACTIVITY 9: CONTROLS INFORMATION			
3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐
ACTIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐
ACTIVITY 11: CONTROL COMPONENTS			
3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐
ACTIVITY 12: OUTDOOR AIR DAMPERS			
3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐

OR

3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

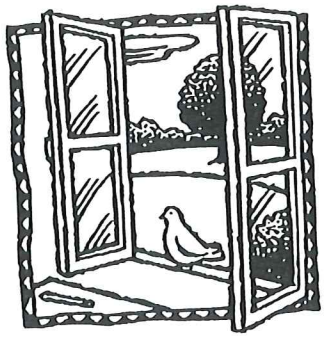
ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

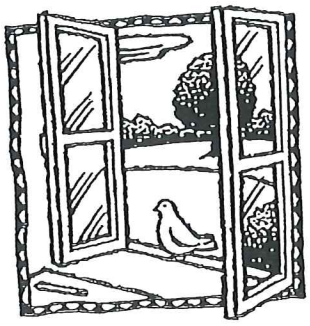
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: SPENCER ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AHU 1

Room or Area: Gym Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

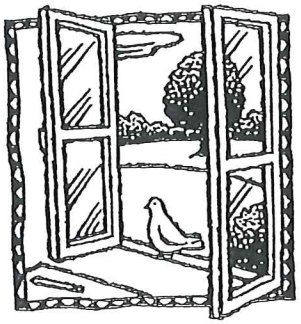
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

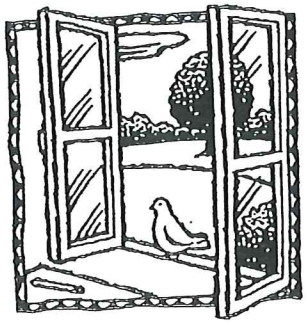
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☐	☐	☑

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☐	☐	☑
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☐	☐	☑

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

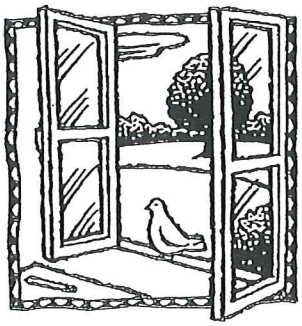
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Walkthrough Inspection Checklist

Name: _____

School: SPENCER ELEMENTARY SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

		Yes	No	N/A
1a.	Ensured that ventilation units operate properly	☑	☐	☐
1b.	Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d.	Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e.	Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f.	Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g.	Minimized pesticide application	☑	☐	☐
1h.	Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i.	Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j.	Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

2a.	Ensured that the roof is in good condition	☑	☑	☐
2b.	Checked for evidence of water ponding	☑	☐	☐
2c.	Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d.	Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e.	Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f.	Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g.	Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

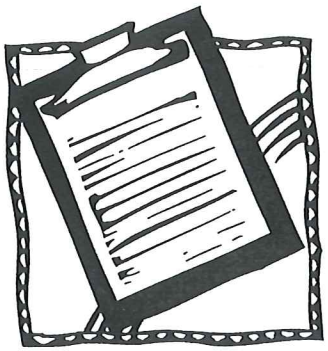
3. ATTIC

3a.	Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b.	Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a.	Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b.	Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c.	Checked for odors	☑	☐	☐
4d.	Checked for signs of mold and mildew growth	☑	☐	☐

4. GENERAL CONSIDERATIONS (continued)



	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

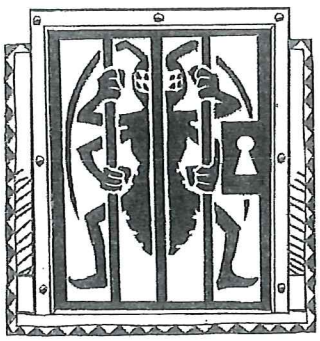
8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

2a. ROOF AGE 20+ YEARS

8b. TEST TO BE PERFORMED IN FEBRUARY 2024



Integrated Pest Management Checklist

Name: J P Bellamo and Sons Pest Control

School: Spencer Elementary

Room or Area: _____ Date Completed: 12/18/24

Signature: J. P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

		Yes	No	N/A
1a.	Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

		Yes	No	N/A
2a.	Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b.	Involved decision makers in the IPM program	☒	☐	☐
2c.	Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d.	Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e.	Developed a program to educate and train all IPM participants	☐	☒	☐
2f.	Included language about IPM into contracts with pest management professionals	☒	☐	☐

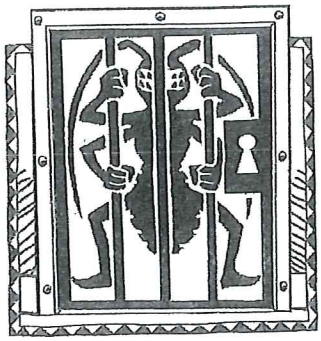
3. SETTING PEST MANAGEMENT OBJECTIVES

		Yes	No	N/A
3a.	Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b.	Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

		Yes	No	N/A
4a.	Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b.	Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c.	Pinpointed the source of any current pest problems	☒	☐	☐
4d.	Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e.	Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f.	Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

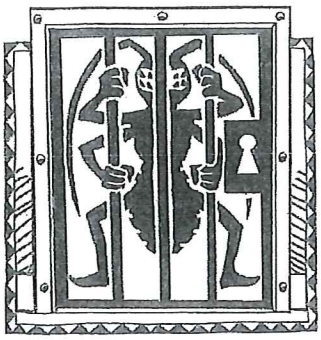
6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:			
• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:			
• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



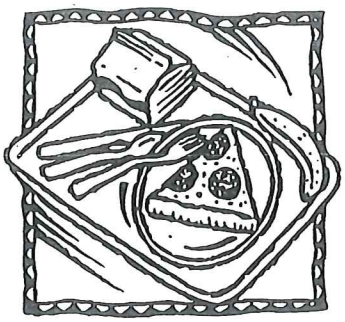
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel

School: Spencer Elementary

Room or Area: Cafe Date Completed: 11/13/24

Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☑	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

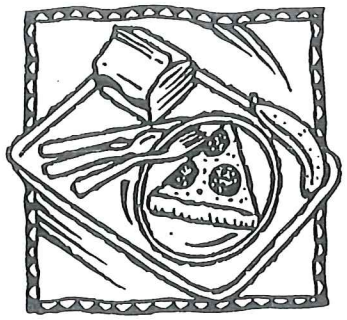
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

Wesley Elementary School
10 Wesleyan Hills Road
Middletown, CT 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

LANGAN

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LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Wesley Elementary School (the School) at 10 Wesleyan Hills Road, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	9 December 2024
Professional's project #:	140305401	Construction Dates:	1972 (Renovated 2003)
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	One (Approximately 51,500 Square Feet)
Email:	mmyers@langan.com		
Property Address:	10 Wesleyan Hills Road		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Elementary School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspector, Andrew P. Rolinger, Hilton Hernandez and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 9 December 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles exhibited evidence of dried, historic water staining/damage at approximately seventy (70) locations in thirty (30) rooms/corridors throughout the School. Sheetrock ceilings exhibited evidence of dried, historic water damage on either side of the stage. Water-stained walls were also noted in the band room closet.
- Heavy rain was occurring on the day of visual assessment. Water infiltration was observed in the cafeteria (water was dripping from the ceiling deck onto fluorescent light fixtures and into several water collection buckets). Evidence of additional roof leaks (wet ceiling tiles) was also observed in a corridor outside the cafeteria, gymnasium storage room, office adjacent to the life skills room, girls' toilet room adjacent to classroom 11, custodial storage room and library office. Water was observed inside fluorescent light fixtures in the gymnasium storage room and custodial storage room.
- Four areas of possible mold growth on ceiling tiles were observed in the gymnasium storage room, office adjacent to the life skills room, band room closet and the gymnasium boys' toilet room.
- Multiple mechanical rooms throughout the School have fiberglass pipe insulation with limited water staining.
- A "dirty" ceiling air diffuser was observed in the reading room adjacent classroom 5.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Fascia boards at the roof eaves/drip edges were rotted at the corners in some areas. Two downspouts were disconnected from their associated gutters. Areas around the foundation of the School were pooling with rainwater.
- A large gap at the corner of the library masonry facade (approximately 2-3 inches wide) was observed. This gap appears to have been patched with foam sealants and other materials, however the sealant materials are deteriorating.

- Solid waste dumpsters (e.g., dumpsters) were observed in an area to the southwest of the School. Solid waste containers were not observed near the School heating, ventilation and air conditioning (HVAC) air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with propane fired HVAC rooftop units. Propane is stored in an underground storage tank (UST) on the west side of the School. Supplemental heat is provided by electrical unit heaters in some areas.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals were observed in custodial closets and storage areas of the School. The art room has a kiln with a dedicated exhaust, craft paints, art supplies and ceramic glazes. A drum of spent fluorescent tubes was observed in the electrical room located on the west side of the School. A garage storage area at the southwest corner of the School contains a lawn mower, snow blower, leaf blower, containers of gasoline, flammable cabinet and ice melt.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut DPH Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Seven locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

Evidence of bird nesting was observed in damaged wood fascia at the roof eaves. Rodent droppings were noted in multiple locations above suspended ceiling tiles throughout the school. Mud dauber wasp nests were observed at several exterior entrances, roof soffit overhangs and under the front roof canopy.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public*

school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order. Multiple mechanical rooms throughout the School have fiberglass pipe insulation with limited water staining.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, repairing/replacing roofing materials, fascia board and masonry façade materials.
- Repair/reconnect downspouts that are disconnected from their associated gutters.
- A "dirty" ceiling air diffuser in the reading room adjacent classroom 5 should be cleaned.
- The visual survey noted water impacted ceiling tiles/sheetrock throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles/sheetrock to see if localized water infiltration is on-going and take corrective measures to stop any on-going water infiltration.
- Clean the water-stained fluorescent light fixtures in the gymnasium storage room and custodial storage room. Clean the band room closet water-stained walls and investigate for the possible cause of staining.
- Clean up/remove the rodent droppings on top of the suspended ceilings throughout. Conduct further investigation throughout to determine how mice are entering the School and take corrective action to prevent future rodent intrusion. Remove the exterior entrances, roof soffit overhangs and front roof canopy mud dauber wasp nests. Remove the bird nests in the exterior damaged wood fascia at roof eaves and repair (close the nest entrances).

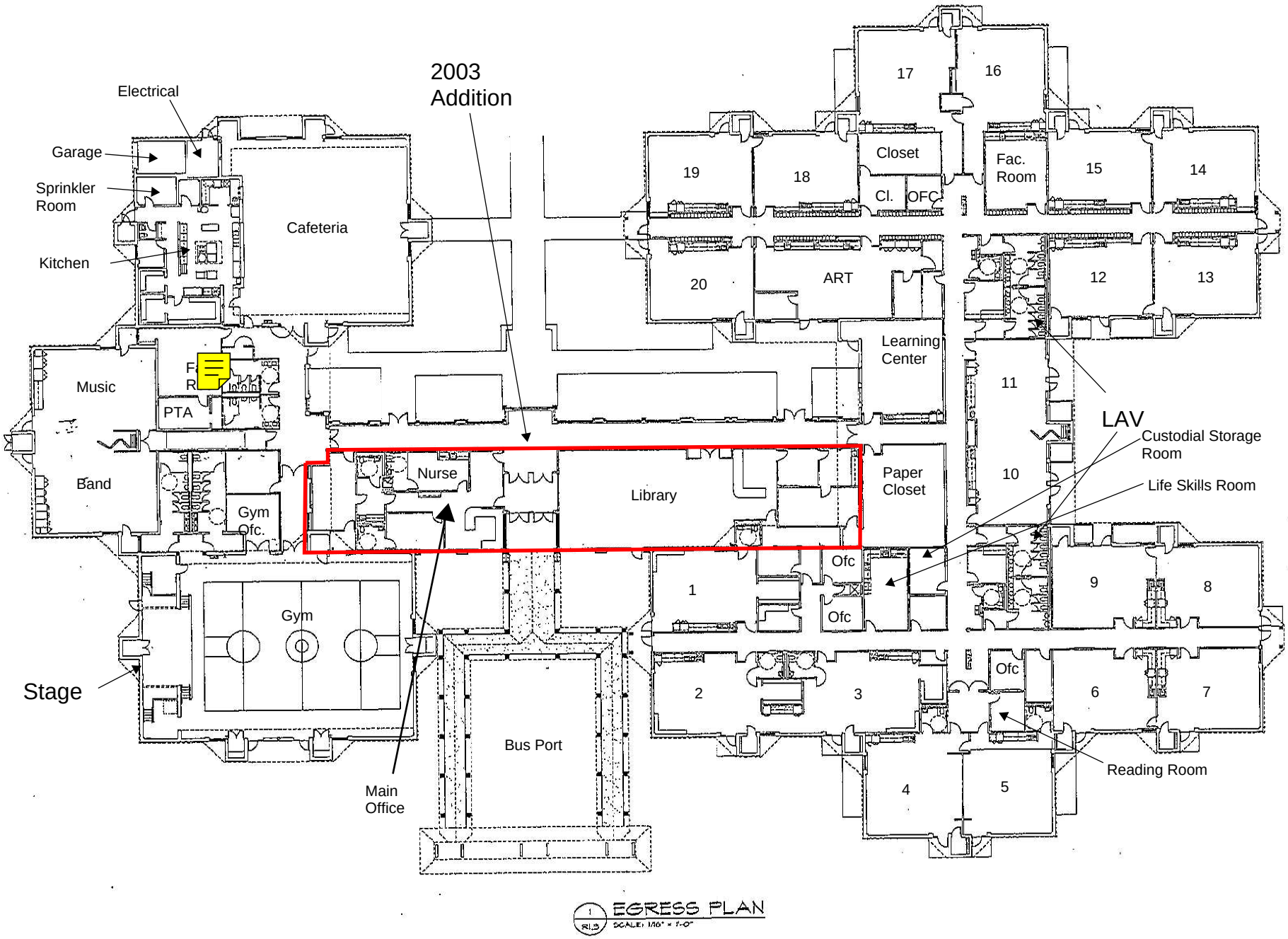
14.0 LIMITATIONS

The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

School Diagram

Wesley Elementary School



Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Wesley Elementary

Room or Area: _____ Date Completed: 12-4-2024

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

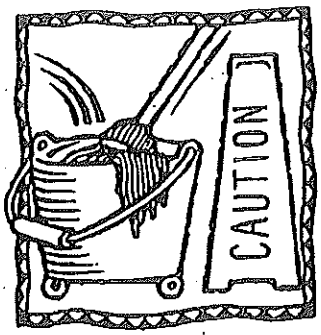
		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

7. COMBUSTION APPLIANCES

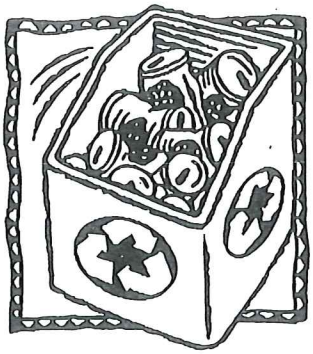
7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES

we do not use dust feather dusters.



Waste Management Checklist

Name: _____

School: Wesley Elementary

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

	Yes	No	N/A
1a. Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b. Ensured that waste containers are lined	☑	☐	☐
1c. Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d. Labeled recycling bins clearly	☑	☐	☐
1e. Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f. Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g. Ensured waste containers are emptied regularly	☑	☐	☐
1h. Ensured appropriate waste removal schedule	☑	☐	☐
1i. Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j. Ensured any exhaust fans in the room are operating properly	☑	☐	☐
1k. Checked waste storage areas for odors, contaminants, or signs of vermin	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: WESLEY ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AHU 5

Room or Area: OFFICE Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

		Yes	No	N/A
1a.	Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b.	Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c.	Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d.	Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e.	Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f.	Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g.	Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

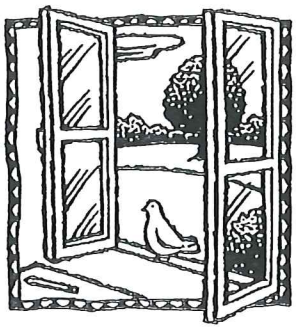
1h.	Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i.	Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a.	Replaced filters per maintenance schedule	☑	☐	☐
2b.	Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c.	Vacuumed filter areas before installing new filters	☑	☐	☐
2d.	Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e.	Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

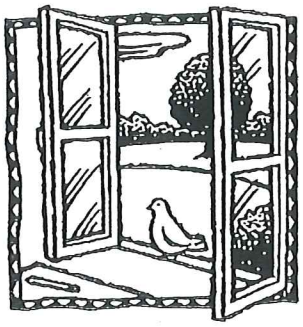
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: WESLEY ELEMENTARY SCHOOL

Unit Ventilator/AHU No: RTU 1-8

Room or Area: CLASSROOMS Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

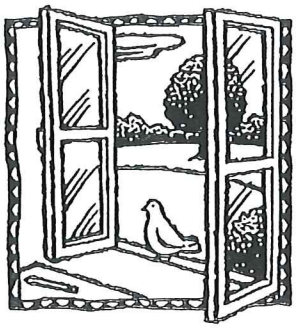
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

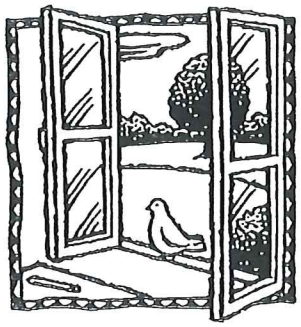
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

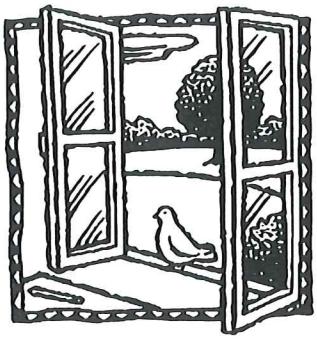
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: WESLEY ELEMENTARY SCHOOLS

Unit Ventilator/AHU No: AIR HANDLER (AHU 2, 3)

Room or Area: GYM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
• The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
• Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
• Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	❑	❑	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	❑	❑	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	❑	❑	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	❑	❑	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	❑	❑	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	❑	❑	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	❑	❑
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	❑	❑

NOTES



Walkthrough Inspection Checklist

Name: _____

School: WESLEY ELEMENTARY SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

	Yes	No	N/A
1a. Ensured that ventilation units operate properly	☑	☐	☐
1b. Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c. Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d. Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e. Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f. Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g. Minimized pesticide application	☑	☐	☐
1h. Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i. Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j. Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

2a. Ensured that the roof is in good condition	☐	☑	☐
2b. Checked for evidence of water ponding	☑	☐	☐
2c. Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d. Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e. Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f. Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g. Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

3. ATTIC

3a. Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b. Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a. Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b. Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c. Checked for odors	☑	☐	☐
4d. Checked for signs of mold and mildew growth	☑	☐	☐

4. GENERAL CONSIDERATIONS (continued)



	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

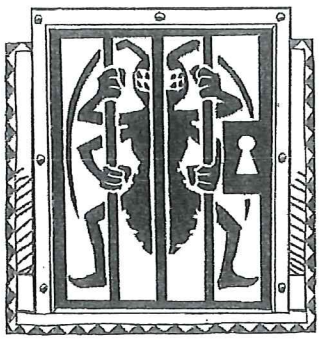
8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☑	☐	☐

NOTES

2a. ROOF AGE 20+ YEARS

8b. TEST BEING PERFORMED IN FEBURARY 2024



Integrated Pest Management Checklist

Name: JP Bellamo and Sons Pest Control

School: Wesley Elementary

Room or Area: _____ Date Completed: 12/18/24

Signature: J. P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

		Yes	No	N/A
1a.	Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

		Yes	No	N/A
2a.	Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b.	Involved decision makers in the IPM program	☒	☐	☐
2c.	Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d.	Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e.	Developed a program to educate and train all IPM participants	☐	☒	☐
2f.	Included language about IPM into contracts with pest management professionals	☒	☐	☐

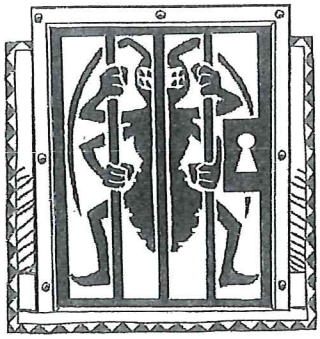
3. SETTING PEST MANAGEMENT OBJECTIVES

		Yes	No	N/A
3a.	Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b.	Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

		Yes	No	N/A
4a.	Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b.	Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c.	Pinpointed the source of any current pest problems	☒	☐	☐
4d.	Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e.	Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f.	Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

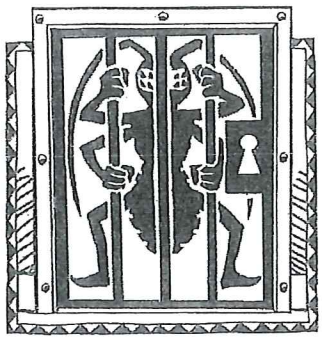
OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:

• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



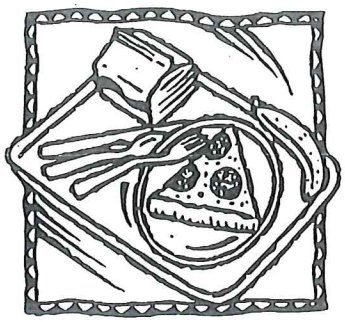
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel

School: Wesley Elementary

Room or Area: Cafe Date Completed: 11/13/24

Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☑	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

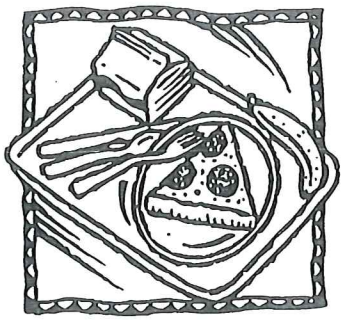
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

UNIFORM INDOOR AIR QUALITY ASSESSMENT AND EVALUATION REPORT

for

Wilbert Snow Elementary School
299 Wadsworth Street
Middletown, CT 06457

Prepared for:

Mr. Marco Gaylord
Executive Director of Operations
Middletown Public Schools
311 Hunting Hill Avenue
Middletown, CT 06457

Prepared By:

Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511

Matthew A. Myers
M.Sc. in Industrial Hygiene
Senior Project Manager

Jamie P. Barr, L.E.P.
Principal/Vice President

29 December 2024
140305401

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LANGAN

1.0 INTRODUCTION AND BACKGROUND

Middletown Public Schools (Middletown) engaged Langan CT, Inc. (Langan) to conduct a limited indoor air quality (IAQ) document review and visual assessment throughout Wilbert Snow Elementary School (the School) at 299 Wadsworth Street, Middletown, CT. The document review and visual assessment were conducted to address the State of Connecticut's recent revisions to IAQ inspection and evaluation requirements for Connecticut public schools in Connecticut General Statutes § 10-220(d) (the IAQ Statute) and the 14 categories of IAQ considerations set forth therein.

Documents reviewed included Middletown's completed "Tools for Schools" (TFS) checklists, which are forms published by the U.S. Environmental Protection Agency (EPA) as guidance for conducting IAQ assessments, as TFS is now mandated by the IAQ Statute.

The following sections include a summary of Langan's visual assessment and document review.

PROJECT INFORMATION

Client Name:	Middletown Public Schools	Property Visit Date:	6 December 2024
Professional's project #:	140305401	Construction Dates:	1954 - Gymnasium, Auditorium and Dining Hall Areas 1998 -Classroom/ Office Portions of Building
Consultant's Project Manager:	Matthew A. Myers	No. Buildings:	One
Phone No.:	203-562-5771	No. of Stories:	Two (Approximately 65,600 Square Feet)
Email:	mmyers@langan.com		
Property Address:	66 Spring Street		
Property Town, State:	Middletown, Connecticut	Property Use:	Public Elementary School

2.0 SUMMARY OF VISUAL ASSESSMENT (CATEGORY L OF IAQ STATUTE)

Langan inspectors, Matthew A. Myers (M.Sc. in Industrial Hygiene), Jared Gorborino and Jeffrey Glass visually assessed representative interior and exterior locations of the School on 6 December 2024. The following items were noted on the day of the visual assessment:

Interior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- Ceiling tiles/sheetrock ceilings exhibited evidence of dried, historic water staining at approximately forty-six (46) locations in thirty (30) rooms/corridors throughout the School. Wall staining was noted in two areas of the auditorium stage. Langan noted that there is polyethylene sheeting and a tube (for water collection) above the suspended ceiling tiles in the main office workroom. Surface rust on I beams was observed in custodial closet room 112. The gymnasium has what appears to be surface rust or staining on the roof deck.
- John Giuliano, the School's Custodial Lead, reported to Langan that the boiler room and main electrical room sometimes get water on the floors when consistent heavy rains occur.
- The perimeter concrete block walls have cracks in limited locations of the gymnasium and in classroom 108, adjacent the window.

Exterior Areas

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

- John Giuliano reported to Langan that there have been several roof leaks and roof patching in the past and that the roofs are planned to be removed and replaced.
- John Giuliano also reported to Langan that carpenter bees have caused soffit problems in the past.
- An exterior wall at the corner of the kitchen is damaged.
- Some of the exterior wall expansion joints are missing or have deteriorating caulking compounds.
- Solid waste containers (e.g., dumpsters) were not observed near the School heating, ventilation and air conditioning (HVAC) air intake systems.

3.0 MECHANICAL/HVAC SYSTEMS (CATEGORIES A AND H OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Ventilation Checklists.

The School is heated with gas fired boilers (baseboard heat and corridor wall units) and the School also has ducted air conditioning in limited locations throughout (main offices, library, nurses room, auditorium, music and band rooms, teachers' lounge, copy room, server room and cafeteria manager's office). The boiler room has "newer" boilers and an emergency generator. John Giuliano reported the HVAC unit in the mechanical room adjacent to the kitchen (unit services cafeteria) is not operating due to broken unit coils.

4.0 CHEMICAL STORAGE (CATEGORIES D AND G OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection and Building and Grounds Checklists.

Various custodial cleaning chemicals, hand sanitizer, alcohol wipes and paints were observed in custodial closets and storage areas of the School. Langan did not note the presence of fire cabinets. A rear garage storage area on the back of the gymnasium contains gasoline containers and bags of ice melt.

Langan did not identify the presence of substances/products containing significant quantities of volatile organic compounds (VOCs), that are commonly attributed to adverse IAQ in schools. Langan also did not identify any substances considered "extremely hazardous substances" referenced in Section 302 of the federal Emergency Planning and Community Right-to-Know Act, 42 USC § 9601 et seq.

5.0 RADON (CATEGORY B OF IAQ STATUTE)

Langan reviewed the State of Connecticut Department of Public Health (DPH) Radon Program "School Radon Re-Evaluation Report Form" for the School that was provided to Langan by Middletown.

The re-evaluation form indicates that radon measurement activities were conducted at the School in accordance with EPA protocols and the Connecticut Department of Public Health Radon Program's *School Radon Testing Guidance.* The testing was performed by Environmental Transactions, Inc. of River's Edge, New Jersey (Radon Measurement Professional Louis Esposito (NRSB# 5SS0001)). Eight locations (rooms) within the School were tested over a 48-hour period (March 12 – 14, 2024). None of the rooms tested exhibited indoor radon concentrations exceeding the EPA action level of 4.0 picocuries per liter (pCi/L).

6.0 INTEGRATED PEST MANAGEMENT AND DEGREE OF PESTICIDE USAGE (CATEGORIES E AND F OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

EPA recommends that schools use Integrated Pest Management (IPM), which is an effective and environmentally sensitive approach to pest management that uses a combination of common-sense practices. IPM can reduce the use of chemicals and provide economical and effective pest suppression. Middletown utilizes and adheres to an IPM policy pursuant to EPA's recommendation and in compliance with Connecticut General Statutes §§ 10-231a-10-231d and § 22a-66l. Middletown reported that they employ J.P. Bellamo & Sons Pest Controls Inc., Cromwell CT to perform their pest management and pesticide applications and that pesticides are used minimally and avoided where possible.

No evidence of building-wide pest infestation (rodent/bird droppings, dead animals, bird/insect nests, etc.) was observed during the visual survey. Localized instances of limited rodent droppings were noted on top of the suspended ceilings in the corridor adjacent classroom 214, in classroom 132 and in the gymnasium lobby. Dead insects were noted inside ceiling light fixtures in gym storage room 117.

Notable excerpts from Middletown's IPM policy statement are as follows:

- *It is the policy of the Middletown Board of Education to implement an integrated pest management plan to reduce the amount of pesticides applied in any building, or on the grounds of any Middletown public school, by using available pest control techniques including judicious use of pesticides, when warranted, to maintain a pest population at or below an acceptable level, while decreasing the use of pesticides.*

- *The decision to apply pesticide in any building, or the grounds of any Middletown public school is dependent on results of periodic monitoring for pest populations to determine if a pest problem exists that exceeds acceptable threshold levels.*

- *No application of pesticide shall be made in any building, or on the grounds of any Middletown public school during regular school hours or during planned activities at any school, except as provided by Connecticut statute or regulation.*

- *Parents or guardians of children in any school may register for prior notice of pesticide application at their school.*

- *The Superintendent may direct that an emergency application of a pesticide be made during regular school hours or during planned activities at school without prior notice to parents or guardians of children in any school in the event of an immediate threat to human health, subject to applicable Connecticut statutory and regulatory provisions.*

- *There shall be no application of any lawn pesticide on the grounds of any school with students in Grade 8 or lower, except on an emergency basis, subject to applicable Connecticut statutory and regulatory provisions.*

- *The Middletown Board of Education's entire policy governing pesticide application is Policy No. 3524.1.*

7.0 POTENTIAL FOR EXPOSURE TO MICROBIOLOGICAL AIRBORNE PARTICLES, INCLUDING, BUT NOT LIMITED TO, FUNGI, MOLD AND BACTERIA (CATEGORY C OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

8.0 PLUMBING, INCLUDING WATER DISTRIBUTION SYSTEMS, DRAINAGE SYSTEMS AND FIXTURES (CATEGORY I OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

The visible plumbing and drainage systems appeared to be in working order.

9.0 MOISTURE INCURSION (CATEGORY J OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Food Service and Building and Grounds Checklists.

Please see Section 2.0 Summary of Visual Assessment and Section 13.0 Conclusions and Recommendations for additional information.

10.0 OVERALL CLEANLINESS OF THE FACILITIES (CATEGORY K OF IAQ STATUTE)

As part of its assessment, Langan reviewed Middletown's TFS General Walkthrough Inspection, Waste Management, Food Service and Integrated Pest Management Checklists.

The overall cleanliness of the School generally appeared to be relatively good and typical of school buildings in the State of Connecticut.

11.0 USE OF SPACE (CATEGORY M OF IAQ STATUTE)

Spaces for occupied and unoccupied areas of the School are being used as constructed and intended.

12.0 TRAINING (CATEGORY N OF IAQ STATUTE)

Middletown has informed Langan that their custodial leads and custodial managers have received training for IAQ and have the TFS checklists at the School. They also have internal work orders that can be completed for IAQ concerns that may occur and require corrective action. An IAQ training class for all custodial staff is to be scheduled for 2025.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the annual IAQ assessment and evaluation of the School, the following was noted and recommended:

- Middletown should assess and eliminate possible sources of water infiltration. This includes, but may not be limited to, replacing/repairing roofing materials and repairing cracked block walls in the gymnasium and classroom 108. Conduct further investigation into the wall staining in the auditorium stage.
- The School is scheduled to have a roof replacement and gutter installation project in the summer of 2025.
- Repair the broken HVAC unit that services the cafeteria.

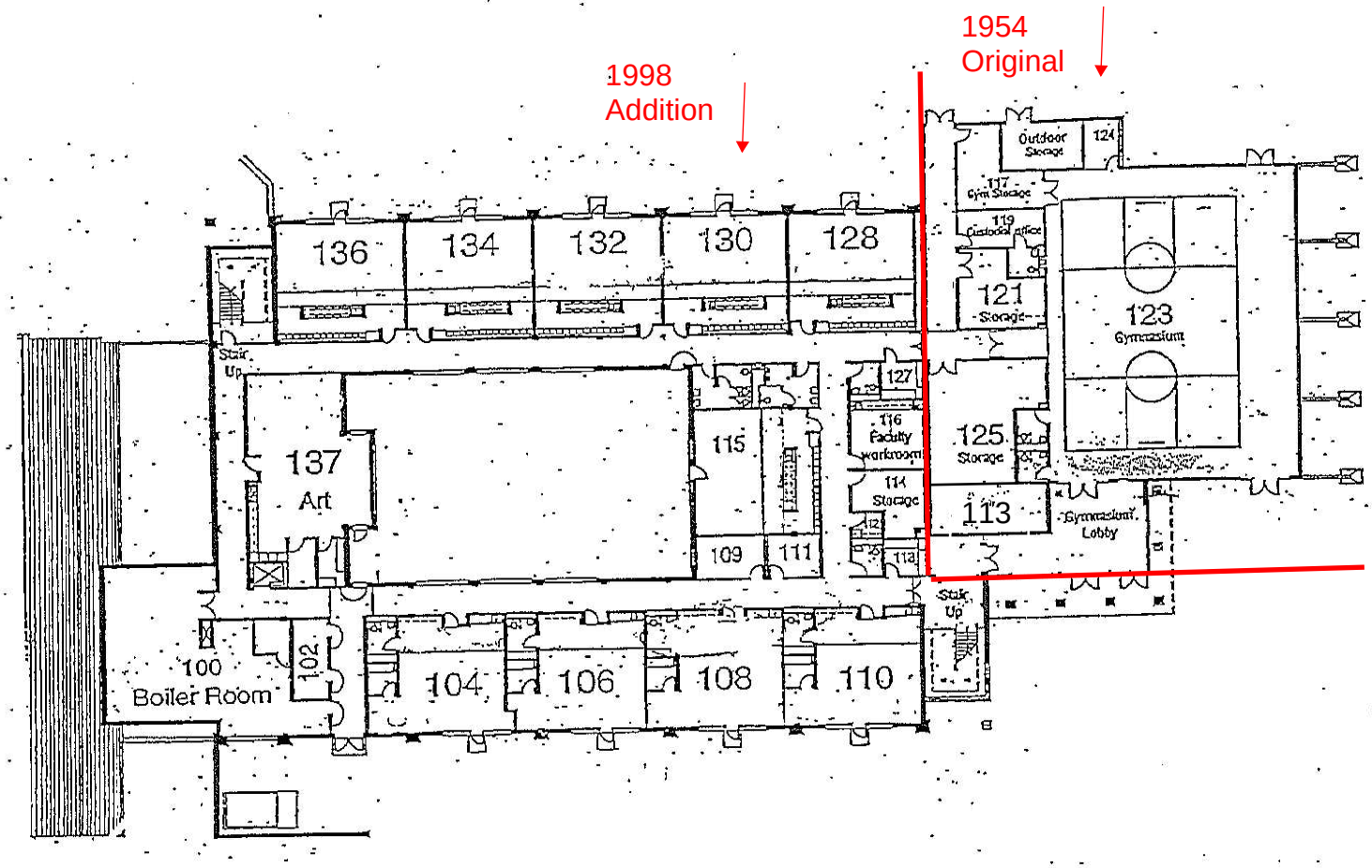
- Clean up/remove the rodent droppings on top of the suspended ceilings in the corridor adjacent classroom 214, classroom 132 and in the gymnasium lobby as well as the dead bugs inside ceiling light fixtures in gym storage room 117.
- The visual survey noted water impacted ceiling tiles throughout (dried, historic water staining). These should be removed and replaced under controlled conditions (to avoid spreading possible dust/possible mold). Investigate above impacted ceiling tiles to see if localized water infiltration is on-going.
- Repair the damaged kitchen exterior wall.
- Caulk or re-caulk the exterior wall expansion joints that are missing or have deteriorating caulking compounds.

14.0 LIMITATIONS

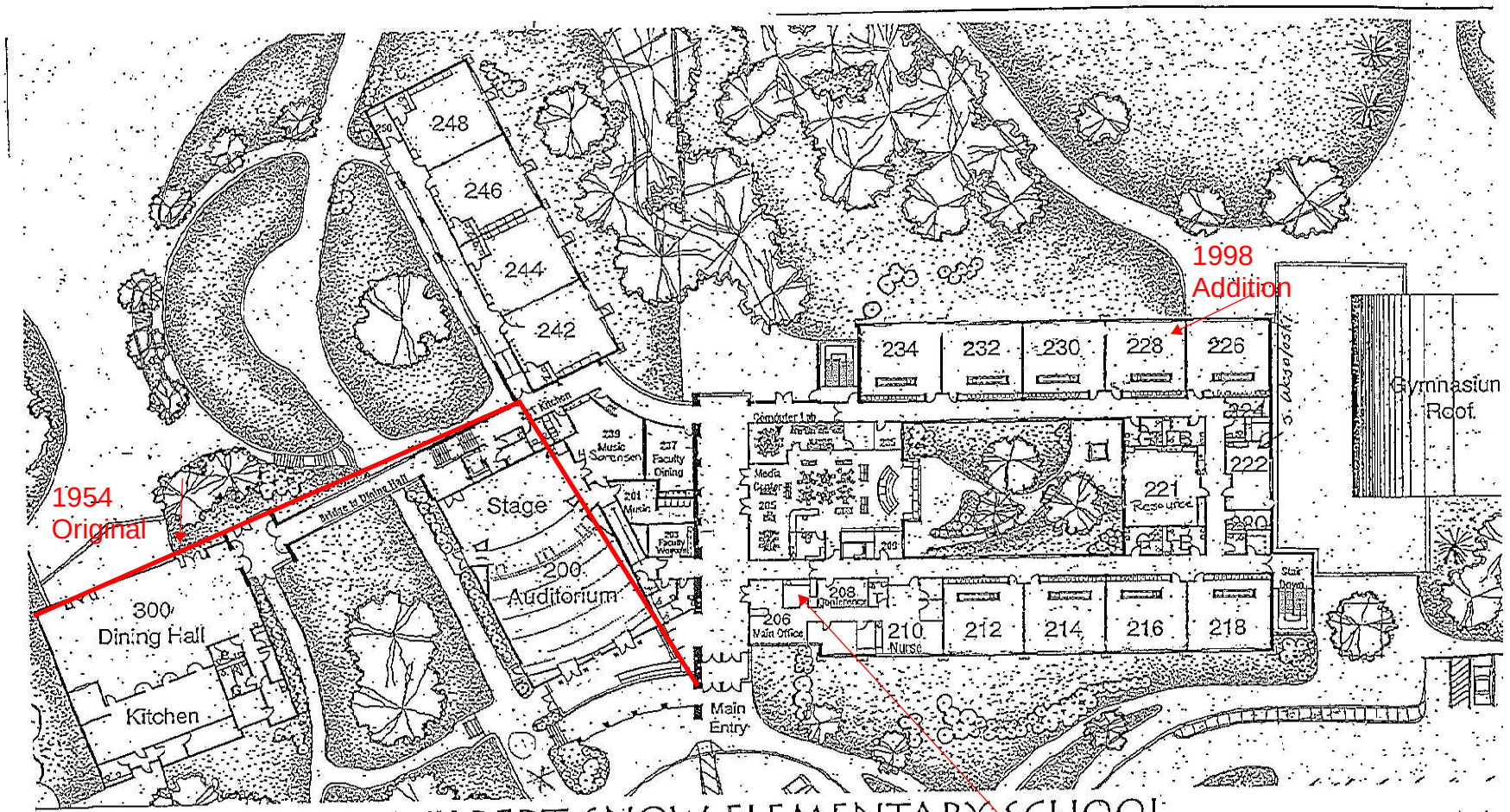
The conclusions and recommendations presented in this report are professional opinions based solely upon Langan's visual observations, document review and current legal/regulatory requirements. These conclusions and recommendations are intended exclusively for the purpose stated herein, at the site indicated, and for the project indicated.

Appendix A

School Diagrams



WILBERT SNOW ELEMENTARY SCHOOL
LEVEL 1 FLOOR PLAN

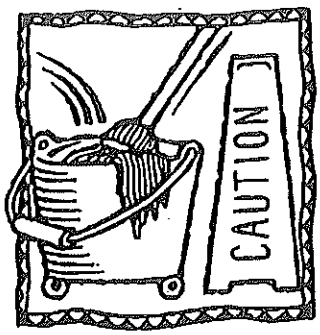


WILBERT SNOW ELEMENTARY SCHOOL

LEVEL 2 FLOOR PLAN

Appendix B

Tools for Schools Checklists



Building and Grounds Maintenance Checklist

Name: _____

School: Snow School

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. BUILDING MAINTENANCE SUPPLIES

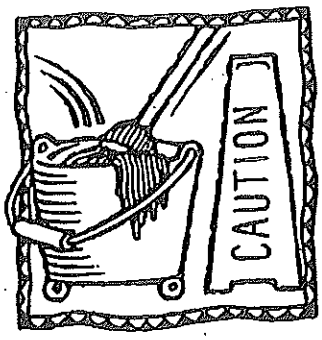
		Yes	No	N/A
1a.	Developed appropriate procedures and stocked supplies for spill control	☑	☐	☐
1b.	Reviewed supply labels	☑	☐	☐
1c.	Ensured that air from chemical and trash storage areas vents to the outdoors	☑	☐	☐
1d.	Stored chemical products and supplies in sealed, clearly labeled containers	☑	☐	☐
1e.	Researched and selected the safest products available	☑	☐	☐
1f.	Ensured that supplies are being used according to manufacturers' instructions	☑	☐	☐
1g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐
1h.	Substituted less- or non-hazardous materials (where possible)	☑	☐	☐
1i.	Scheduled work involving odorous or hazardous chemicals for periods when the school is unoccupied	☑	☐	☐
1j.	Ventilated affected areas during and after the use of odorous or hazardous chemicals	☑	☐	☐

2. GROUNDS MAINTENANCE SUPPLIES

2a.	Stored grounds maintenance supplies in appropriate area(s)	☑	☐	☐
2b.	Ensured that supplies are used and stored according to manufacturers' instructions	☑	☐	☐
2c.	Established and followed procedures to minimize exposure to fumes from supplies	☑	☐	☐
2d.	Reviewed and followed manufacturers' guidelines for maintenance	☑	☐	☐
2e.	Replaced portable gas cans with low-emission cans	☑	☐	☐
2f.	Stored chemical products and supplies in sealed, clearly-labeled containers	☑	☐	☐
2g.	Ensured that chemicals, chemical-containing wastes, and containers are disposed of according to manufacturers' instructions	☑	☐	☐

3. DUST CONTROL

3a.	Installed and maintained barrier mats for entrances	☑	☐	☐
3b.	Used high efficiency vacuum bags	☑	☐	☐
3c.	Used proper dusting techniques	☑	☐	☐
3d.	Wrapped feather dusters with a dust cloth	☐	☐	☑
3e.	Cleaned air return grilles and air supply vents	☑	☐	☐



4. FLOOR CLEANING

	Yes	No	N/A
4a. Established and followed schedule for vacuuming and mopping floors	☑	☐	☐
4b. Cleaned spills on floors promptly (as necessary)	☑	☐	☐
4c. Performed restorative maintenance (as necessary)	☑	☐	☐

5. DRAIN TRAPS

5a. Poured water down floor drains once per week (about 1 quart of water)	☑	☐	☐
5b. Ran water in sinks at least once per week (about 2 cups of water)	☑	☐	☐
5c. Flushed toilets once each week (if not used regularly)	☑	☐	☐

6. MOISTURE, LEAKS, AND SPILLS

6a. Checked for moldy odors	☑	☐	☐
6b. Inspected ceiling tiles, floors, and walls for leaks or discoloration (may indicate periodic leaks)	☑	☐	☐
6c. Checked areas where moisture is commonly generated (e.g., kitchens, locker rooms, and bathrooms)	☑	☐	☐
6d. Checked that windows, windowsills, and window frames are free of condensate	☑	☐	☐
6e. Checked that indoor surfaces of exterior walls and cold water pipes are free of condensate	☑	☐	☐
6f. Ensured the following areas are free from signs of leaks and water damage:			
Indoor areas near known roof or wall leaks	☑	☐	☐
Walls around leaky or broken windows	☑	☐	☐
Floors and ceilings under plumbing	☑	☐	☐
Duct interiors near humidifiers, cooling coils, and outdoor air intakes	☑	☐	☐

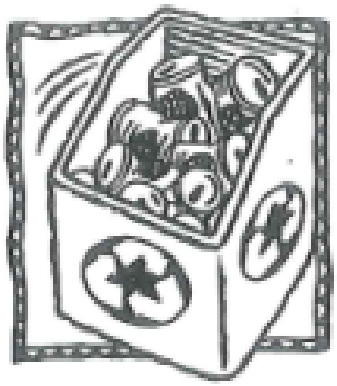
7. COMBUSTION APPLIANCES

7a. Checked for odors from combustion appliances	☑	☐	☐
7b. Checked appliances for backdrafting (using chemical smoke)	☑	☐	☐
7c. Inspected exhaust components for leaks, disconnections, or deterioration	☑	☐	☐
7d. Inspected flue components for corrosion and soot	☑	☐	☐

8. PEST CONTROL

8a. Completed the *Integrated Pest Management Checklist*	☑	☐	☐

NOTES



Waste Management Checklist

Name: _____

School: Snow School

Room or Area: _____ Date Completed: _____

Signature: _____

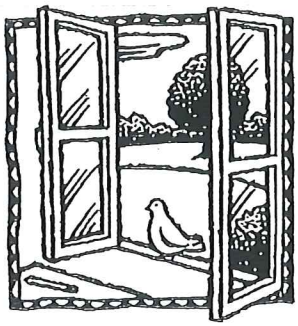
Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. WASTE MANAGEMENT

		Yes	No	N/A
1a.	Ensured that waste containers are appropriate for use (for example, food waste containers should have lids)	☑	☐	☐
1b.	Ensured that waste containers are lined	☑	☐	☐
1c.	Ensured that waste from art, science, vocational classes, etc., are handled separately	☐	☑	☐
1d.	Labeled recycling bins clearly	☑	☐	☐
1e.	Ensured number of bins and dumpsters is adequate	☑	☐	☐
1f.	Ensured appropriate location of dumpsters (i.e., away from air intakes, doors, and operable windows in relation to prevailing winds)	☑	☐	☐
1g.	Ensured waste containers are emptied regularly	☑	☐	☐
1h.	Ensured appropriate waste removal schedule	☑	☐	☐
1i.	Ensured waste is stored in a well-ventilated room	☑	☐	☐
1j.	Ensured any exhaust fans in the room are operating properly	☐	☐	☐
1k.	Checked waste storage areas for odors, contaminants, or signs of vermin	☐	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: WILBERT SNOW ELEMENTARY SCHOOL

Unit Ventilator/AHU No: HX 1-1, 1-2, 2-1, 2-1 w/ REHEAT

Room or Area: CLASSROOMS Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

		Yes	No	N/A
1a.	Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b.	Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c.	Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d.	Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e.	Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f.	Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g.	Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

1h.	Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i.	Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a.	Replaced filters per maintenance schedule	☑	☐	☐
2b.	Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c.	Vacuumed filter areas before installing new filters	☑	☐	☐
2d.	Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e.	Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐



2. SYSTEM CLEANLINESS (continued)

ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

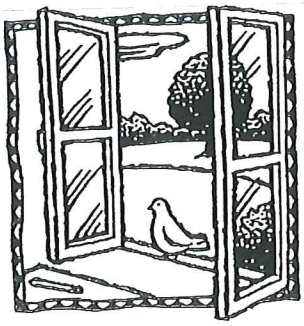
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐

OR

3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

ACTIVITY 16: FANS

		Yes	No	N/A
3aa.	Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a.	Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b.	Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c.	Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d.	Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e.	Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f.	Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g.	Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h.	Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i.	Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j.	Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

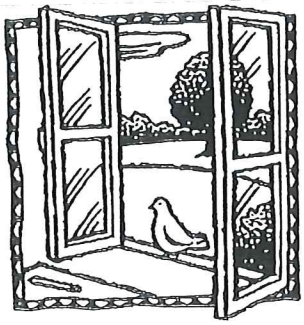
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a.	Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: WILBERT SNOW ELEMENTARY SCHOOL

Unit Ventilator/AHU No: AHU - 2

Room or Area: AUDITORIUM Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

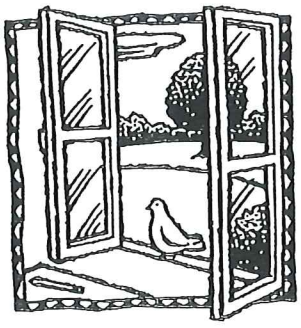
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

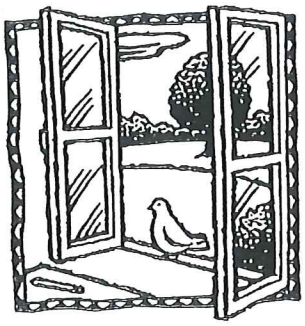
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

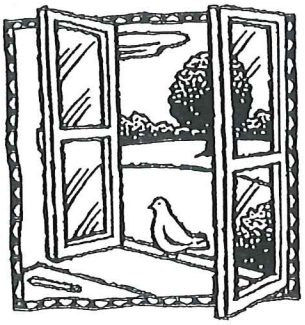
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: WILBERT SNOW ELEMENTARY SCHOOL

Unit Ventilator/AHU No: RTU -2

Room or Area: OFFICE Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

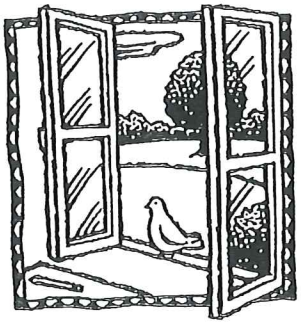
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

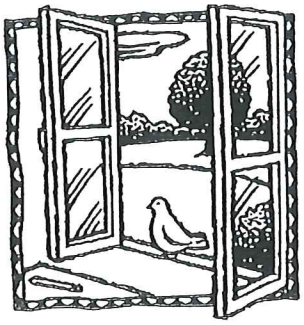
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

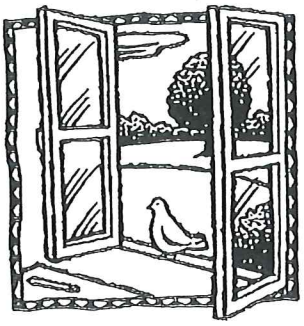
5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Ventilation Checklist

Name: _____

School: Webber Snow Elementary School

Unit Ventilator/AHU No: AHU 3, 4

Room or Area: Gym Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of this checklist for **each** ventilation unit in your school, as well as a copy for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OUTDOOR AIR INTAKES

	Yes	No	N/A
1a. Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan)	☐	☐	☑
1b. Ensured that the ventilation system was on and operating in "occupied" mode	☑	☐	☐

ACTIVITY 1: OBSTRUCTIONS

1c. Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers	☑	☐	☐
1d. Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)	☐	☐	☑

ACTIVITY 2: POLLUTANT SOURCES

1e. Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	☑	☐	☐
1f. Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)	☑	☐	☐
1g. Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	☑	☐	☐

ACTIVITY 3: AIRFLOW

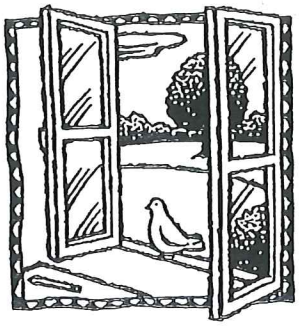
1h. Obtained chemical smoke (or a small piece of tissue paper or light plastic)	☑	☐	☐
1i. Confirmed that outdoor air is entering the intake appropriately	☑	☐	☐

2. SYSTEM CLEANLINESS

ACTIVITY 4: AIR FILTERS

2a. Replaced filters per maintenance schedule	☑	☐	☐
2b. Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)	☑	☐	☐
2c. Vacuumed filter areas before installing new filters	☑	☐	☐
2d. Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter	☑	☐	☐
2e. Confirmed proper installation of filters (correct direction for airflow)	☑	☐	☐

2. SYSTEM CLEANLINESS (continued)



ACTIVITY 5: DRAIN PANS

	Yes	No	N/A
2f. Ensured that drain pans slant toward the drain (to prevent water from accumulating)	☑	☐	☐
2g. Cleaned drain pans	☑	☐	☐
2h. Checked drain pans for mold and mildew	☑	☐	☐

ACTIVITY 6: COILS

2i. Ensured that heating and cooling coils are clean	☑	☐	☐

ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS

2j. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	☑	☐	☐
2k. Ensured that ducts are clean	☑	☐	☐

ACTIVITY 8: MECHANICAL ROOMS

2l. Checked mechanical room for unsanitary conditions, leaks, and spills	☑	☐	☐
2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	☑	☐	☐

3. CONTROLS FOR OUTDOOR AIR SUPPLY

3a. Ensured that air dampers are at least partially open (minimum position)	☑	☐	☐
3b. Ensured that minimum position provides adequate outdoor air for occupants	☑	☐	☐

ACTIVITY 9: CONTROLS INFORMATION

3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	☑	☐	☐

ACTIVITY 10: CLOCKS, TIMERS, SWITCHES

3d. Turned summer-winter switches to the correct position	☐	☐	☑
3e. Set time clocks appropriately	☐	☐	☑
3f. Ensured that settings fit the actual schedule of building use (including night/weekend use)	☑	☐	☐

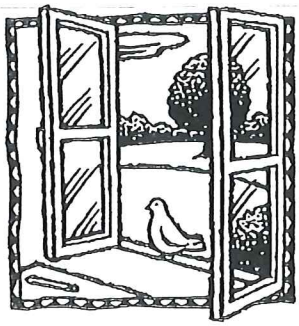
ACTIVITY 11: CONTROL COMPONENTS

3g. Ensured appropriate system pressure by testing line pressure at both the occupied (day) setting and the unoccupied (night) setting	☐	☐	☑
3h. Checked that the line dryer prevents moisture buildup	☐	☐	☑
3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you blow down the tank)	☑	☐	☐
3j. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	☑	☐	☐

ACTIVITY 12: OUTDOOR AIR DAMPERS

3k. Ensured that the outdoor air damper is visible for inspection	☑	☐	☐
3l. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	☐	☐	☑
3m. Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range	☑	☐	☐

NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)

	Yes	No	N/A
3n. Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	☑	☐	☐
3o. Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	☑	☐	☐
3p. If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	☑	☐	☐
3q. If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	☑	☐	☐
3r. If the outdoor air damper does not move, confirmed the following items:			
◦ The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	☑	☐	☐
◦ Moving parts are free of impediments (e.g., rust, corrosion)	☑	☐	☐
◦ Electrical wire or pneumatic tubing connects to the damper actuator	☑	☐	☐
◦ The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	☐	☐	☑

Proceed to Activities 13–16 if the damper seems to be operating properly.

ACTIVITY 13: FREEZE STATS

3s. Disconnected power to controls (for automatic reset only) to test continuity across terminals	☑	☐	☐
OR			
3t. Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	☑	☐	☐
3u. Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	☑	☐	☐

NOTE: HVAC systems with water coils need protection from the cold. The freeze-stat may close the outdoor air damper and disconnect the supply air when tripped. The typical trip range is 35°F to 42°F.

ACTIVITY 14: MIXED AIR THERMOSTATS

3v. Ensured that the mixed air stat for heating mode is set no higher than 65°F	☐	☐	☑
3w. Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	☑	☐	☐

ACTIVITY 15: ECONOMIZERS

3x. Confirmed proper economizer settings based on design specifications or local practices	☑	☐	☐

NOTE: The dry-bulb is typically set at 65°F or lower.

3y. Checked that sensor on the economizer is shielded from direct sunlight	☑	☐	☐
3z. Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	☑	☐	☐

NOTE: Economizers use varying amounts of cool outdoor air to assist with the cooling load of the room or rooms. There are two types of economizers, dry-bulb and enthalpy. Dry-bulb economizers vary the amount of outdoor air based on outdoor temperature, and enthalpy economizers vary the amount of outdoor air based on outdoor temperature and humidity level.

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued)



ACTIVITY 16: FANS

	Yes	No	N/A
3aa. Ensured that all fans (supply fans and associated return or relief fans) that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)	☑	☐	☐

NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply.

4. AIR DISTRIBUTION

ACTIVITY 17: AIR DISTRIBUTION

4a. Ensured that supply and return air pathways in the existing ventilation system perform as required	☑	☐	☐
4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning	☐	☐	☑

NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies.

4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows)	☑	☐	☐
4d. Ensured that supply and return vents are open and unblocked	☑	☐	☐

NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents.

4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply	☐	☐	☑
4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes	☑	☐	☐
4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents	☐	☐	☑
4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities	☑	☐	☐
4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals	☑	☐	☐

ACTIVITY 18: PRESSURIZATION IN BUILDINGS

NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity.

4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)	☐	☐	☑

5. EXHAUST SYSTEMS

ACTIVITY 19: EXHAUST FAN OPERATION

5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)	☐	☐	☑

If fans are running but air is not flowing toward the exhaust intake, check for the following:

- *Inoperable dampers*
- *Obstructed, leaky, or disconnected ductwork*
- *Undersized or improperly installed fan*
- *Broken fan belt*



5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces).

	Yes	No	N/A
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	☐	☐	☑

Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow").

5c. Ensured that air is flowing toward the exhaust intake	☐	☐	☑

ACTIVITY 21: EXHAUST DUCTWORK

5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	☐	☐	☑

6. QUANTITY OF OUTDOOR AIR

ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS

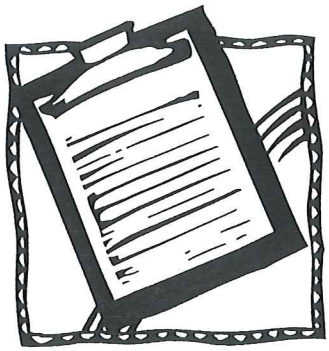
NOTE: Refer to "How to Measure Airflow" for techniques.

6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	☐	☐	☑
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	☐	☐	☑
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	☐	☐	☑

ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES

6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1	☑	☐	☐
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet the recommended levels in Table 1	☑	☐	☐

NOTES



Walkthrough Inspection Checklist

Name: _____

School: WILBERT SNOW ELEMENTARY SCHOOL

Room or Area: _____ Date Completed: _____

Signature: _____

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. GROUND LEVEL

	Yes	No	N/A
1a. Ensured that ventilation units operate properly	☑	☐	☐
1b. Ensured there are no obstructions blocking air intakes	☑	☐	☐
1c. Checked for nests and droppings near outdoor air intakes	☑	☐	☐
1d. Determined that dumpsters are located away from doors, windows, and outdoor air intakes	☑	☐	☐
1e. Checked potential sources of air contaminants near the building (chimneys, stacks, industrial plants, exhaust from nearby buildings)	☑	☐	☐
1f. Ensured that vehicles avoid idling near outdoor air intakes	☑	☐	☐
1g. Minimized pesticide application	☑	☐	☐
1h. Ensured that there is proper drainage away from the building (including roof downspouts)	☑	☐	☐
1i. Ensured that sprinklers spray away from the building and outdoor air intakes	☑	☐	☐
1j. Ensured that walk-off mats are used at exterior entrances and that they are cleaned regularly	☑	☐	☐

2. ROOF

While on the roof, consider inspecting the HVAC units (use the Ventilation Checklist*).*

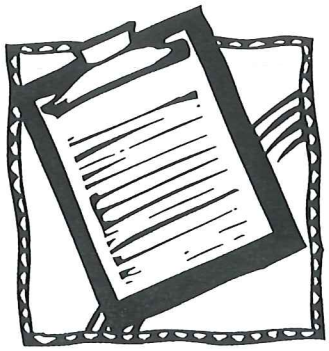
2a. Ensured that the roof is in good condition	☐	☑	☐
2b. Checked for evidence of water ponding	☑	☐	☐
2c. Checked that ventilation units operate properly (air flows in)	☑	☐	☐
2d. Ensured that exhaust fans operate properly (air flows out)	☑	☐	☐
2e. Ensured that air intakes remain open, even at minimum setting	☑	☐	☐
2f. Checked for nests and droppings near outdoor air intakes	☑	☐	☐
2g. Ensured that air from plumbing stacks and exhaust outlets flows away from outdoor air intakes	☑	☐	☐

3. ATTIC

3a. Checked for evidence of roof and plumbing leaks	☑	☐	☐
3b. Checked for birds and animal nests	☑	☐	☐

4. GENERAL CONSIDERATIONS

4a. Ensured that temperature and humidity are maintained within acceptable ranges	☑	☐	☐
4b. Ensured that no obstructions exist in supply and exhaust vents	☑	☐	☐
4c. Checked for odors	☑	☐	☐
4d. Checked for signs of mold and mildew growth	☑	☐	☐



4. GENERAL CONSIDERATIONS (continued)

	Yes	No	N/A
4e. Checked for signs of water damage	☑	☐	☐
4f. Checked for evidence of pests and obvious food sources	☑	☐	☐
4g. Noted and reviewed all concerns from school occupants	☑	☐	☐

5. BATHROOMS AND GENERAL PLUMBING

5a. Ensured that bathrooms and restrooms have operating exhaust fans	☑	☐	☐
5b. Ensured proper drain trap maintenance:			
Water is poured down floor drains once per week (approx. 1 quart of water)	☑	☐	☐
Water is poured into sinks at least once per week (about 2 cups of water)	☑	☐	☐
Toilets are flushed at least once per week	☑	☐	☐

6. MAINTENANCE SUPPLIES

6a. Ensured that chemicals are used only with adequate ventilation and when building is unoccupied	☑	☐	☐
6b. Ensured that vents in chemical and trash storage areas are operating properly	☑	☐	☐
6c. Ensured that portable fuel containers are properly closed	☑	☐	☐
6d. Ensured that power equipment, like snowblowers and lawn mowers, have been serviced and maintained according to manufacturers' guidelines	☑	☐	☐

7. COMBUSTION APPLIANCES

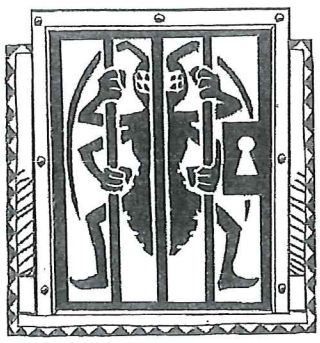
7a. Checked for combustion gas and fuel odors	☑	☐	☐
7b. Ensured that combustion appliances have flues or exhaust hoods	☑	☐	☐
7c. Checked for leaks, disconnections, and deterioration	☑	☐	☐
7d. Ensured there is no soot on inside or outside of flue components	☑	☐	☐

8. OTHER

8a. Checked for peeling and flaking paint (if the building was built before 1980, this could be a lead hazard)	☑	☐	☐
8b. Determined date of last radon test	☐	☐	☑

NOTES

2a - ROOF AGE 20+ YEARS



Integrated Pest Management Checklist

Name: J P Bellamo and Sons Pest Control

School: Snow School

Room or Area:

Date Completed: 12/18/24

Signature: J. P. Bellamo

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
   - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

1. OFFICIAL POLICY STATEMENT

		Yes	No	N/A
1a.	Developed or located the school's official policy statement for integrated pest management (IPM)	☐	☒	☐

2. DESIGNATING PEST MANAGEMENT ROLES

		Yes	No	N/A
2a.	Assigned and trained a qualified person to be the pest manager	☐	☒	☐
2b.	Involved decision makers in the IPM program	☒	☐	☐
2c.	Educated students and staff (the occupants of the building) about IPM and asked them to keep their areas clean and free of clutter	☐	☒	☐
2d.	Encouraged parents to learn about IPM practices and implement them at home	☐	☒	☐
2e.	Developed a program to educate and train all IPM participants	☐	☒	☐
2f.	Included language about IPM into contracts with pest management professionals	☒	☐	☐

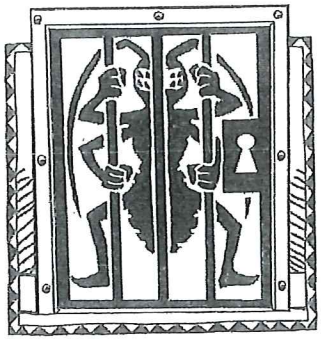
3. SETTING PEST MANAGEMENT OBJECTIVES

		Yes	No	N/A
3a.	Set appropriate pest management objectives for school buildings (such as preventing pests from interfering with students' learning environment and preserving the integrity of the building structure)	☐	☒	☐
3b.	Set appropriate pest management objectives for school grounds (such as providing safe playing areas and the best athletic surfaces possible)	☐	☒	☐

4. INSPECTING, IDENTIFYING, AND MONITORING

		Yes	No	N/A
4a.	Inspected all buildings and grounds for pest evidence, entry points, food, water, and harborage sites	☒	☐	☐
4b.	Identified potential pest habitats in buildings and grounds	☒	☐	☐
4c.	Pinpointed the source of any current pest problems	☒	☐	☐
4d.	Monitored to determine the extent of pest problems and to estimate pest populations	☒	☐	☐
4e.	Developed plans to modify habitat (for example, exclusion, repair, and sanitation efforts) to prevent or resolve any pest problems	☐	☒	☐
4f.	Established a monitoring program that consists of routine inspections to estimate pest population levels and identify evidence of pests and potential habitat	☒	☐	☐

5. SETTING ACTION THRESHOLDS



	Yes	No	N/A
5a. Evaluated all available data obtained through inspecting, identifying, and monitoring	☐	☒	☐
5b. Determined how many pests the school buildings, grounds, and occupants can tolerate	☐	☒	☐
5c. Set action thresholds	☐	☒	☐

6. PREVENTIVE STRATEGIES

INDOOR SITES

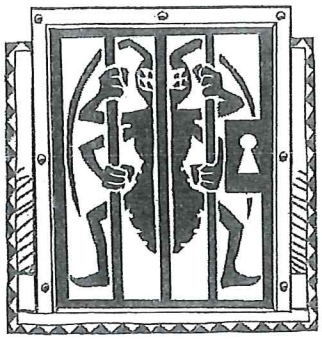
6a. Implemented appropriate strategies to prevent pests from inhabiting the following areas:			
• Entryways	☒	☐	☐
• Classrooms	☒	☐	☐
• Gymnasiums	☒	☐	☐
• Locker rooms	☒	☐	☐
• Offices	☒	☐	☐
• Staff lounges	☒	☐	☐
• Bathrooms	☒	☐	☐
• Food preparation and serving areas	☒	☐	☐
• Rooms with extensive plumbing	☒	☐	☐
• Maintenance areas	☒	☐	☐
• Other	☒	☐	☐

OUTDOOR SITES

6b. Implemented appropriate strategies to prevent pests from inhabiting the following areas:			
• Playgrounds	☒	☐	☐
• Parking lots	☒	☐	☐
• Lawns and athletic fields	☒	☐	☐
• Teaching gardens or greenhouses	☐	☒	☐
• Loading docks	☒	☐	☐
• Dumpsters	☒	☐	☐
• Areas with ornamental shrubs and trees	☐	☒	☐
• Other	☐	☐	☒

7. PESTICIDE USE AND STORAGE

7a. Explored alternative pest management methods before concluding that pesticides were necessary	☒	☐	☐
7b. Ensured that pest management professionals integrate IPM into their pest management methods	☒	☐	☐
7c. Identified the least toxic, target-specific chemical (or pesticide formulation) that is the most effective to address the pest problem, preferably as baitsand granules	☒	☐	☐
7d. Reviewed and followed all label instructions on pesticides and learned how to properly apply and handle these chemicals	☒	☐	☐
7e. Used spot-treatment (or bait, crack, and crevice applications) to apply pesticides whenever possible and only treated the obviously infested plants in the area	☒	☐	☐
7f. Used protective clothing or equipment when applying pesticides	☒	☐	☐
7g. Placed all pesticides in tamper-resistant bait boxes or locations that are inaccessible to children and non-target species	☒	☐	☐



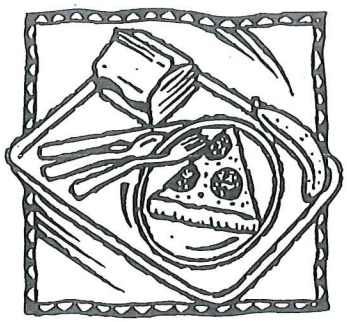
7. PESTICIDE USE AND STORAGE (cont.)

	Yes	No	N/A
7h. Locked or fastened lids of all bait boxes and placed bait away from the runway of the box	☒	☐	☐
7i. Applied pesticides when occupants were not present or in areas where they would not be exposed to the chemicals	☒	☐	☐
7j. Ensured that school occupants (students and staff) are notified of upcoming pesticide applications through posted notices and/or letters	☒	☐	☐
7k. Ensured that parents are notified of upcoming pesticide applications through letters	☒	☐	☐
7l. Kept copies of current pesticide labels and information on pesticides easily accessible	☒	☐	☐
7m. Stored pesticides off site or in areas that are locked and accessible only to designated personnel	☐	☐	☒
7n. Ensured that storage areas are adequately ventilated and are located away from areas prone to flooding or where spills or leaks may contaminate the environment	☐	☐	☒
7o. Ensured that flammable liquids are stored away from ignition sources	☐	☐	☒
7p. Ensured that pesticides are stored in their original containers and all lids are securely fastened	☐	☐	☒
7q. Ensured that air in the storage space cannot mix with the air in the central ventilation system	☐	☐	☒

8. EVALUATING RESULTS AND RECORD KEEPING

8a. Ensured that accurate, up-to-date records of IPM practices and a pest management log for each property are kept	☒	☐	☐
8b. Ensured that pesticide records necessary to meet all state, local, and school board requirements are maintained	☒	☐	☐
8c. Ensured that each log book contains the following items:			
• Copy of the pest management plan	☒	☐	☐
• Service schedules for maintenance of buildings and grounds	☒	☐	☐
• Current EPA-registered labels	☒	☐	☐
• Current Material Safety Data Sheets (MSDS) for each pesticide project	☒	☐	☐
• Pest surveillance data sheets	☒	☐	☐
• Diagram noting the location of pest activity, traps, and bait stations	☒	☐	☐

NOTES



Food Service Checklist

Name: Randall Mel
School: Snow School
Room or Area: Cafe Date Completed: 11/14/24
Signature:

Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
   - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
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4. Return the checklist portion of this document to the IAQ Coordinator.

1. COOKING AREA

		Yes	No	N/A
1a.	Determined that local exhaust fans operate properly (note if fans are excessively noisy)	☑	☐	☐
1b.	Checked for odors near cooking, preparation, and eating areas	☑	☐	☐
1c.	Ensured that exhaust fans are used whenever cooking, washing dishes, and cleaning	☑	☐	☐
1d.	Determined that gas appliances function properly	☑	☐	☐
1e.	Verified that gas appliances are vented outdoors	☑	☐	☐
1f.	Ensured there are no combustion gas or natural gas odors, leaks, back-drafting, or headaches when gas appliances are used	☑	☐	☐
1g.	Ensured that kitchen is clean after use	☑	☐	☐
1h.	Checked for signs of microbiological growth in the kitchen, including the upper walls and ceiling (for example, mold, slime, and algae)	☑	☐	☐
1i.	Selected biocides registered by EPA (if required), followed the manufacturer's directions for use, and carefully reviewed the method of application	☑	☐	☐
1j.	Verified the kitchen is free of plumbing and ceiling leaks (signs include stains, discoloration, and damp areas)	☑	☐	☐

2. FOOD HANDLING AND STORAGE

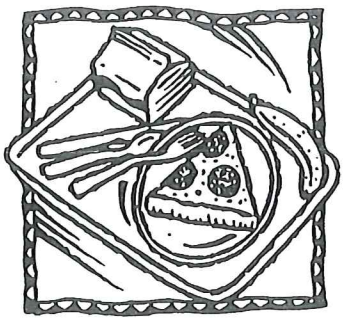
2a.	Checked food preparation, cooking, and storage areas for signs of insects and vermin (for example, feces or remains)	☑	☐	☐
2b.	Stored leftovers in well-sealed containers with no traces of food on outside surfaces	☑	☐	☐
2c.	Ensured that food preparation, cooking, and storage practices are sanitary	☑	☐	☐
2d.	Disposed of food scraps properly and removed crumbs	☑	☐	☐
2e.	Cleaned counters with soap and water or a disinfectant (according to school policy)	☑	☐	☐
2f.	Swept and wet mopped floors	☑	☐	☐

3. WASTE MANAGEMENT

3a.	Selected and placed waste in appropriate containers	☑	☐	☐
3b.	Ensured that containers' lids are securely closed	☑	☐	☐
3c.	Separated food waste and food-contaminated items from other wastes, if possible	☑	☐	☐
3d.	Stored waste containers in a well-ventilated area	☑	☐	☐
3e.	Ensured that dumpsters are properly located (away from air intake vents, operable windows, and food service doors in relation to prevailing winds)	☑	☐	☐

4. DELIVERIES

	Yes	No	N/A
4a. Instructed vendors to avoid idling their engines during deliveries	☑	☐	☐
4b. Posted a sign prohibiting vehicles from idling their engines in receiving areas	☑	☐	☐
4c. Ensured that doors or air barriers are closed between receiving area and kitchen	☑	☐	☐



NOTES

Office of Food, Nutrition and Wellness Services

Cultivating the Brilliance in Each Student

Randall Mel, Director of Food, Nutrition and Wellness Services
food-nutrition@mpsct.org | (860) 704-4519
372 Hunting Hill Avenue, Middletown, CT 06457
www.middletownschools.org

Summary and Request for Approval: CTG4CTK Grant

Middletown Public Schools is pleased to announce that we are being awarded the Connecticut Grown for Connecticut Kids (CTG4CTK) Grant in the amount of $74,620.00 over the course of two years. This grant, provided by the Department of Agriculture, presents transformative opportunities for our district to further support student wellness, education, and culinary advancement.

Key Opportunities Provided by the Grant:

1. **Culinary Enhancement and Professional Development**
    - The Office of Food, Nutrition, and Wellness Services will collaborate with a professional chef to conduct multiple professional development and recipe creation sessions.
    - These sessions will focus on enhancing our from-scratch cooking capabilities, with an emphasis on incorporating locally sourced foods and eliminating ingredients of concern from our menus.
2. **Educational and Experiential Learning Opportunities**
    - The grant will fund the establishment of edible school gardens, including outdoor raised beds and/or indoor hydroponic units, at all schools.
    - Students will benefit from hands-on learning experiences tied to the gardens, which will also serve as a supplemental food source for our cafeterias.
3. **Train-the-Trainer Model and Staff Support**
    - Our team, along with interested staff members, will receive training from a local farmer on how to run school gardens through multiple sessions.
    - Training manuals will be created, and the program will include two stipend positions to support farm-to-school initiatives and culinary advancements.

To move forward with this exciting opportunity, we respectfully request the Board of Education approve the resolutions before them to allow the Superintendent and the Executive Director of Finance to sign on behalf of the district with the Department of Agriculture for the CTG4CTK Grant.

Thank you for your support as we continue to elevate the educational and nutritional experiences for Middletown Public Schools students.

"Certified Resolution"

Be it resolved that it is in the best interests of the Middletown Board of Education to enter into contracts with the CT Department of Agriculture.

In furtherance of this resolution, the Executive Director of Finance (director/secretary/clerk) is duly authorized to enter into and sign said contracts on behalf of the Middletown Board of Education.

The Executive Director of Finance (director/secretary/clerk) is further authorized to provide such additional information and execute such other documents as may be required by the state or federal government in connection with said contracts and to execute any amendments, rescissions, and revisions thereto. The Executive Director of Finance (secretary/clerk) is authorized to impress the seal of the Middletown Board of Education on any such document, amendment, rescission, or revision.

I, Natalie Forbes (name), the Executive Director of Finance (secretary/clerk) of the Middletown Board of Eduaction do hereby certify this to be a true copy of the resolution duly adopted at the Middletown Board of Education Meeting (type of Meeting or Hearing), on 01/14/2025 (date), and that it has not been rescinded, amended or altered in any way, **and that it remains in full force and in effect.**

_____

Clerk/Secretary, etc.

_____

Date

[*Corporate Seal or "L.S."which stands for legal signature*]

INCUMBENCY CERTIFICATION

I, Natalie Forbes (name), Executive Director of Finance (secretary/clerk) of the Middletown Board of Education.

DO HEREBY certify that as of _____ (date of contract signing), Dr. Alberto Vazquez Matos (name of director).

holds the office of Superintendent of Schools and has held that position since

06/14/2022
(date of election)

IN WITNESS WHEREOF, the undersigned has affixed his (his/her) signature

and the corporate seal of the Company on this _____ (1st, etc.) day of _____ (month), ____ (year).

_____
Signature
(secretary/clerk)

[SEAL or "L.S." notation]

APPENDIX #3

PROPOSED NEW COURSE/PROGRAM
OR MAJOR CURRICULUM REVISIONS

Please check appropriate item:

School: **Middletown High School**
New Course/Program:
Department: **STEAM**
Major Revision: **New Course**
Course/Program Title: **The Psychology of Wellbeing**
Date:**12/5/24**

1. **Proposed Change** – Please give a brief description of course and/or program with explanation of content.

The Psychology of Wellbeing is a new course that examines the link between the body & mind to determine ways to improve wellness through actions based on scientific research. Students will evaluate links between chemicals in the mind, neural networks, social psychology, and sociology to daily routines, diet, fitness, and other positive and negative effects on the human mind. Students will analyze scientific studies and then ethically and consensually apply new learning in their lives to experiment on how their own minds are affected by stimuli.

2. **Rationale** – What is the purpose of the proposed new course or course change? To what extent will it benefit the students?

There is a mental health crisis in our nation. By using scientific studies to draw connections between fitness, daily routines, diet, and experiences to mental health, students can live more fulfilling, joyful, and productive lives. They can also join the emerging fields around mental health and the human body.

3. **Target Population** – Which group of students will be directly affected (grade level, academic level)?

Juniors and seniors seeking to understand the psychology & physiology behind managing stress, mentally planning for life changes as they grow up, and developing positive life habits and relationships.

4. **Evaluation** – How do you plan to assess the implementation of the proposed new course or the course change?

Students will participate in consensual, ethical psychological & social experiments in their own lives to determine which changes to their personal lives have positive effects on their mood, success, and mindset.

5. **Cost** – What are the anticipated costs for staff, textbooks, materials, other?

Curriculum writing time will be needed to fully write the course. A small supply budget may be necessary for certain experiments. In total, the course will cost approximately $1000.

Staff _____

Textbooks _____

Materials _____

Other _____

POLICY REGARDING STUDENTS AND
SECTION 504 OF THE REHABILITATION ACT OF 1973 AND
TITLE II OF THE AMERICANS WITH DISABILITIES ACT OF 1990

Section 504 of the Rehabilitation Act of 1973 ("Section 504") prohibits discrimination against individuals with a disability in any program receiving Federal financial assistance. Similarly, Title II of the Americans with Disabilities Act of 1990 ("Title II" or "ADA") prohibits discrimination against individuals with a disability by state and local governments. To be protected under Section 504 and the ADA ("collectively, "Section 504/ADA"), an individual must (1) have a physical or mental impairment that substantially limits one or more major life activities; (2) have a record of such an impairment; or (3) be regarded as having such an impairment.

In order to fulfill its obligation under Section 504/ADA, the Middletown Public Schools (the "District") recognize a responsibility to avoid discrimination in policies and practices regarding its personnel, students, parents/guardians and members of the public who participate in school sponsored programs, which may require reasonable modifications to such policies and practices. In this regard, the District prohibits discrimination against any person with a disability in any of the services, programs or activities of the school system.

The District has specific responsibilities under Section 504 to identify, evaluate and provide an educational placement for students who have a physical or mental impairment that substantially limits a major life activity. The District's obligation includes providing access to a free appropriate public education ("FAPE") for students determined to be eligible under Section 504/ADA. Under Section 504, FAPE is defined as the provision of regular or special education and related services that are designed to meet the individual educational needs of a student with a disability as adequately as the needs of students without disabilities are met, and that are provided without cost (except for fees similarly imposed on nondisabled students/parents).

If a student's parents/guardians disagree with the decisions made by the professional staff of the District with respect to the identification, evaluation or educational placement of their child, such parents/guardians have a right to request an impartial due process hearing.

In addition, a student or parent/guardian of a student may also file an internal grievance/complaint on these issues or any other type of discrimination on the basis of disability by or within the District by utilizing the grievance/complaint procedures outlined in the Administrative Regulations Regarding Students and Section 504 of Rehabilitation Act of 1973 and Title II of Americans with Disabilities Act associated with this policy, and/or may file a complaint with the Office for Civil Rights, U.S. Department of Education ("OCR"):

Office for Civil Rights, Boston Office
U.S. Department of Education
8th Floor
5 Post Office Square
Boston, MA 02109- 3921

(617) 289-0111

Anyone who wishes to file a grievance/complaint with the District, or who has questions or concerns about this policy, should contact the Section 504/ADA Coordinator for the District:

Vacianna Spaulding, Director of Pupil Services

Legal References:

29 U.S.C. §§ 705, 794
34 C.F.R. Part 104
42 U.S.C. § 12101 et seq.
28 C.F.R. Part 35

Protecting Students with Disabilities, Frequently Asked Questions About Section 504 and the Education of Children with Disabilities, Office for Civil Rights (March 17, 2011), available at http://www.ed.gov/about/offices/list/ocr/504faq.html

Dear Colleague Letter, United States Department of Education, Office for Civil Rights (January 19, 2012)

Supporting Students with Disabilities and Avoiding the Discriminatory Use of Student Discipline Under Section 504 of the Rehabilitation Act of 1973, Office for Civil Rights (July 2022), available at https://www2.ed.gov/about/offices/list/ocr/docs/504-discipline-guidance.pdf?utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term

ADOPTED: May 11, 2004
Policy readopted: June 7, 2005
Policy readopted: June 3, 2008
Policy revised: October 9, 2012
Policy replaced: November 16, 2021
Policy revised:

SUICIDE PREVENTION AND INTERVENTION

The Middletown Board of Education (the "Board") recognizes that suicide is a complex issue and that schools are not mental health treatment centers. The Middletown Public Schools (the "District") cannot be expected to thoroughly evaluate and eliminate suicidal risk. Nevertheless, school personnel may become aware of specific factual circumstances in which a student has communicated a suicidal intent or other specific circumstances in which a student is perceived by school staff to be at risk for suicide. In such cases, the Board is committed to respond in a supportive manner, both aggressively and immediately, to a student who has attempted, has threatened, or who communicates that they are considering attempting suicide.

Any Board employee who has knowledge that a student has made a suicidal threat or attempt or exhibited suicidal ideation must immediately report this information to the building principal or designee, who will, in turn, notify **appropriate Pupil Personnel Services staff and the designated Crisis Intervention Team**, with administrative assistance, if necessary, will contact the student's family and appropriate resources within and outside the school system, as permitted by law. The Board further directs the school staff to refer students who come to their attention as being at risk of attempting suicide for professional assessment and treatment services outside of the school. Information concerning a student's suicide attempt, threat or risk will be shared with others only as permitted by state and federal law.

In recognition of the need for youth suicide prevention procedures, the Board directs the Superintendent or designee to adopt and maintain administrative regulations addressing youth suicide prevention.

Training will be provided for teachers, other school staff, and students regarding the prevention of and response to youth suicide.

Legal Reference:
Connecticut General Statutes § 10-220a
Connecticut General Statutes § 10-221(f)
Public Act 23-167, "An Act Concerning Transparency in Education."

Policy adopted: April 16, 1996
Policy readopted: June 7, 2005
Policy revised: October 18, 2016
Policy revised: June 18, 2020
Policy replaced: December 18, 2022

Policy updated:

SOCIAL MEDIA

The Middletown Board of Education (the "Board") recognizes the importance and utility of social media and networks for its employees. The laws regarding social media continue to evolve and change. Nothing in this policy is intended to limit an employee's right to use social media or personal online accounts under applicable law, as it may evolve. The Board acknowledges, for example, that its employees have the right under the First Amendment, in certain circumstances, to speak out on matters of public concern. The Board will resolve any conflict between this policy and applicable law in favor of the law.

Ordinarily, the use of social media by employees, including employees' use of personal online accounts, will not be a legal or policy issue. While a policy cannot address every instance of inappropriate social media use, employees must refrain from personal social media use that:

1) interferes, disrupts or undermines the effective operation of the school district or is used to engage in harassing, defamatory, obscene, abusive, discriminatory or threatening or similarly inappropriate communications (e.g., when such speech relates to a matter of public concern and its disruptive impact outweighs the importance of the speech);
2) creates a hostile work environment;
3) breaches confidentiality obligations of school district employees; or
4) violates the law, Board policies and/or other school rules and regulations.

Employees' official social media use will be addressed as speech pursuant to duty under applicable First Amendment principles.

The Board, through its Superintendent, will adopt and maintain administrative regulations to implement this policy.

Legal References:

U.S. Constitution, Amend. I
Pickering v. Board of Education, 391 U.S. 563 (1968)
Connick v. Myers, 461 U.S. 138 (1983)
Garcetti v. Ceballos, 547 U.S. 410 (2006)
Lindke v. Freed, 601 U.S. 187 (2024)

Electronic Communication Privacy Act, 18 U.S.C. §§ 2510 through 2520

Conn. Constitution, Article I, Sections 3, 4, 14
Conn. Gen. Stat. § 31-40x

Conn. Gen. Stat. § 31-48d
Conn. Gen. Stat. § 31-51q
Conn. Gen. Stat. §§ 53a-182; 53a-183; 53a-250

Policy adopted: May 10, 2011
Policy revised: March 11, 2014
Policy replaced: November 16, 2021
Policy revised:

FAMILY AND MEDICAL LEAVE

PURPOSE

The purpose of this policy is to apprise employees of their rights, and establish guidelines for leaves taken by employees of the Middletown Board of Education (the "Board"), under the federal Family and Medical Leave Act of 1993 ("FMLA") and applicable Connecticut state law. This policy is not intended to, and does not, recite every provision of applicable law and regulations.

ELIGIBILITY

Employees other than school paraprofessionals who have been employed by the Board for at least twelve (12) months, and who have worked at least 1,250 actual work hours during the twelve (12) months immediately preceding the start of a leave, are eligible for unpaid leave under the FMLA.

A school paraprofessional in an educational setting is eligible for the leave described in this policy if the paraprofessional has worked for the Board for at least twelve (12) months, and has worked at least 950 service hours during the twelve (12) months immediately preceding the start of such leave.

Full-time instructional employees meet the 1,250 hours of service requirement unless the Board can demonstrate that the full-time instructional employee did not meet the 1,250 hours of service requirement in the 12-month period prior to the start of leave.

DEFINITIONS

Genetic information: For purposes of this policy, "genetic information" includes an individual's family medical history, the results of an individual's or family member's genetic tests, the fact that an individual or an individual's family member sought or received genetic services, and genetic information of a fetus carried by an individual or an individual's family member or an embryo lawfully held by an individual or family member receiving assistive reproductive services.

Instructional employee: For purposes of this policy, an "instructional employee" is defined as a teacher or other employee of the Board who is employed principally in an instructional capacity and whose principal function is to teach and instruct students in a class, a small group, or an individual setting, and includes athletic coaches, driving instructors, and special education assistants such as signers for the hearing impaired. The term does not include teacher assistants or aides who do not have as their principal function actual teaching or instructing, nor auxiliary personnel such as counselors, psychologists, curriculum specialists, cafeteria workers, maintenance workers, bus drivers, or other primarily non-instructional employees.

Paraprofessional: For purposes of this policy, a "paraprofessional" means a school employee who performs duties that are instructional in nature or deliver either direct or indirect services

to students and/or parents and serves in a position for which a teacher has ultimate responsibility for the design and implementation of educational programs and services. This definition is only used for the purpose of calculating eligibility for the leave described in this policy at the 950 hour threshold.

REASONS FOR LEAVE

Leaves under the FMLA and applicable state law may be taken for the following reasons:

- incapacity due to pregnancy, prenatal medical care or child birth; or
- to care for the employee's newborn child; or
- the placement of a child with the employee by adoption or for foster care; or
- to care for the employee's spouse, child or parent who has a serious health condition; or
- to care for the employee's own serious health condition that renders the employee unable to perform the functions of the employee's position; or
- to serve as an organ or bone marrow donor; or
- to care for an injured or ill servicemember (see below – Length of Leave – for further information); or
- a qualifying exigency arising out of a family member's military service, including one or more of the following reasons (note – more detailed information on the following categories is available from Harry Snyder.
    - short-notice deployment;
    - military events and related activities;
    - childcare and school activities;
    - financial and legal arrangements;
    - counseling;
    - rest and recuperation;
    - post-deployment activities;

- parental care leave for military member's parent who is incapable of self-care and care is necessitated by the military member's covered active duty;

- additional activities that arise out of the active duty or call to active duty status of a covered military member, provided that the Board and the employee agree that such leave qualifies as an exigency, and agree to both the timing and the duration of such leave.

LENGTH OF LEAVE

(a) Basic FMLA Leave Entitlement

If a leave is requested for one of the above listed reasons, each eligible employee may take up to a total of twelve (12) weeks unpaid family or medical leave in the 12-month entitlement period.

The 12-month entitlement period for family or medical leave is measured on the basis of a "rolling" 12-month period measured backward from the date an employee uses any FMLA leave. NOTE: To change calculation methods, the employer must plan ahead, giving at least sixty (60) days' notice to all employees, and make no reduction in rights for employees using/requesting leave at the time of transition].

(b) Leave to Care for an Injured or Ill Servicemember

In addition to the reasons for leave listed above, an eligible employee may take up to twenty-six (26) workweeks of FMLA leave during a 12-month period to care for (i) a servicemember who is the employee's spouse, parent, child or next of kin, and who incurred a serious injury or illness in the line of duty and while on active duty in the Armed Forces or had a preexisting injury or illness prior to beginning active duty that was aggravated by service in the line of duty on active duty in the Armed Forces; or (ii) a covered veteran with a serious injury or illness who is the employee's spouse, parent, child or next of kin.

For service members, the injury or illness must render the servicemember medically unable to perform the duties of office, grade, rank or rating. This provision applies to service members who are undergoing medical treatment, recuperation, or therapy, are in outpatient status, or who are on the temporary disability retired list, for a serious injury or illness.

For covered veterans, the veteran must be undergoing medical treatment, recuperation or therapy for a serious injury or illness and must have been (1) a member of the Armed Forces (including the National Guard or Reserves); (2) discharged or released under conditions that were other than dishonorable; and (3) discharged within the five-year period before the eligible employee first takes FMLA military caregiver leave to care for the veteran.[1]

[1] The employee's first date of leave must be within the five-year period. However, the employee may continue to take leave throughout the single 12-month period even if the leave extends past the five-year period. Note -

For covered veterans, serious injury or illness means any of the following:

(i) a continuation of a serious injury or illness that was incurred or aggravated when the covered veteran was a member of the Armed Forces and rendered the service member unable to perform the duties of the service member's office, grade, rank, or rating; or

(ii) a physical or mental condition for which the covered veteran has received a U.S. Department of Veterans Affairs Service-Related Disability Rating (VASRD) of 50 percent or greater, and such VASRD rating is based, in whole or in part, on the condition precipitating the need for military caregiver leave; or

(iii) a physical or mental condition that substantially impairs the covered veteran's ability to secure or follow a substantially gainful occupation by reason of a disability or disabilities related to military service, or would do so absent treatment; or

(iv) an injury, including a psychological injury, on the basis of which the covered veteran has been enrolled in the Department of Veterans Affairs Program of Comprehensive Assistance for Family Caregivers.

When combined with any other type of FMLA qualifying leave, total leave time may not exceed twenty-six (26) weeks in a single twelve (12) month period. Standard FMLA leave procedures described below apply to all requests for and designation of leave for this purpose. *However*, in the case of leave to care for a service member with a serious injury or illness, the 12-month period begins on the day such leave actually commences.

TYPES OF LEAVE AND CONDITIONS

(a) Full-Time, Intermittent and Reduced Schedule Leave

Full-time leave excuses the employee from work for a continuous period of time. Full time unpaid leave may be taken for any of the reasons permitted by the FMLA.

Intermittent leave means leave taken due to a single qualifying reason in separate periods of time rather than for one continuous period of time. Examples of intermittent leave include: leave taken one day per week over a period of a few months; or leave taken on an occasional/as-needed basis for medical appointments.

Reduced schedule leave is leave that reduces the employee's usual number of work hours per day for some period of time. For example, an employee may request to work half time for a number of weeks so the employee can assist in the care of a seriously ill parent.

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special rules may apply to calculating the five-year period for veterans discharged between October 28, 2009 and March 8, 2013. This period will effectively be excluded from the five-year calculation.

Intermittent or reduced schedule leave may be taken (a) when medically necessary for an employee's or covered family member's serious health condition, or for a covered service member's serious illness or injury, and (b) the need for leave can be best accommodated through an intermittent or reduced schedule leave. In addition, FMLA leave may be taken intermittently or on a reduced schedule basis (1) due to a qualifying exigency; or (2) to effectuate the placement of a child for adoption or foster care before the placement of the child in the home.

If foreseeable intermittent or reduced schedule leave is medically required based upon planned medical treatment of the employee or a family member or a covered service member, including during a period of recovery from an employee's or family member's serious health condition or a serious injury or illness of a covered service member, to be included if the above optional section regarding intermittent leave is included: or if the Board agrees to permit intermittent or reduced schedule leave for the birth of a child or for placement of a child for adoption or foster care], the Board may, in its sole discretion, temporarily transfer the employee to another job with equivalent pay and benefits that better accommodates the type of leave requested. Also, special arrangements may be required of an instructional employee who needs to take intermittent or reduced-schedule leave which will involve absence for more than twenty (20) percent of the work days in the period over which the leave will extend (for example, more than five days over a five-week period), if the leave is to care for a family member with a serious health condition, to care for a covered service member with a serious injury or illness, or for the employee's own serious health condition, which is foreseeable based on planned medical treatment. In such situations, the Board may require the instructional employee to transfer temporarily to another job or take leave for a particular duration, not to exceed the duration of the planned medical treatment.

(b) Both Spouses Working for the Same Employer

If both spouses are eligible employees of the Board and request leave for the birth, placement of a child by adoption or for foster care, or to care for a parent with a serious health condition, they only will be entitled to a maximum combined total leave equal to twelve (12) weeks in the 12-month entitlement period. If either spouse (or both) uses a portion of the total 12-week entitlement for one of the purposes in the preceding sentence, each is entitled to the difference between the amount the employee has taken individually and the 12 weeks for FMLA leave for their own or their spouse's serious health condition in the 12-month entitlement periods.

(c) Leave Taken by Instructional Employees Near the End of an Academic Term

If a leave taken by an instructional employee for any reason begins more than five (5) weeks before the end of an academic term, the Board may require that instructional employee to continue the leave until the end of the term if the leave will last at least three (3) weeks and the instructional employee would return to work during the three-week period before the end of the term.

If the instructional employee begins a leave during the five-week period preceding the end of an academic term for a reason other than the instructional employee's own serious health condition, the Board may require the instructional employee to continue taking leave until the end of the term if the leave will last more than two (2) weeks and the instructional employee would return to work during the two-week period before the end of the term.

If the instructional employee begins a leave during the three-week period preceding the end of an academic term for a reason other than the instructional employee's own serious health condition, the Board may require the instructional employee to continue taking leave until the end of the term if the leave will last more than five (5) working days.

REQUESTS FOR LEAVE

(a) Foreseeable Leave

An employee must notify the **FMLA Administrator/ Harry Snyder.** of the need for a family or medical leave at least thirty (30) days before the leave is to begin if the need for the leave is foreseeable based on the expected birth of the employee's child, placement of a child with the employee for adoption or foster care, planned medical treatment for the employee's or family member's serious health condition, or the planned medical treatment for a serious injury or illness of a covered service member. If 30 days' notice is not practicable, then the employee must provide notice as soon as practicable under the circumstances, usually the same day or the next business day after the employee becomes aware of the need for FMLA leave.

(b) Qualifying Exigency.

An employee must provide notice as soon as practicable if the foreseeable leave is for a qualifying exigency, regardless of how far in advance such leave is foreseeable.

(c) Unforeseeable Leave.

When the employee's need for leave is not foreseeable, an employee must provide notice as practicable under the circumstances.

SCHEDULING PLANNED MEDICAL TREATMENT

When planning medical treatment for foreseeable FMLA leave, an employee must consult with the **FMLA Administrator/Harry Snyder** and make a reasonable effort to schedule the treatment so as not to disrupt unduly the Board's operations, subject to the approval of the health care provider. Similarly, if an employee needs leave intermittently or on a reduced leave schedule for planned medical treatment, the employee must make a reasonable effort to schedule the treatment so as not to disrupt unduly the Board's operations. Ordinarily, the employee should consult with the **FMLA Administrator/Harry Snyder** prior to scheduling the treatment in order to work out a treatment schedule that best suits the needs of the Board and the employee. The Board and the employee shall attempt to work out a schedule for leave that meets the employee's needs without unduly disrupting the Board's

operations, subject to the approval of the health care provider as to any modification of the treatment schedule.

REQUIRED CERTIFICATIONS/DOCUMENTATION

For leaves taken for any FMLA qualifying reason, an employee must submit a completed certification form supporting the need for leave. The appropriate form will be provided to the employee. The employee must submit a complete and sufficient certification form as required within fifteen (15) calendar days of receiving the request for the completed certification. If it is not practicable for the employee to provide the completed form by the due date despite the employee's diligent, good faith efforts, the employee must inform the FMLA Administrator/Harry Snyder of the reason(s) for delay and what efforts the employee undertook to obtain the required certification. FMLA-protected leave may be delayed or denied if the employee does not provide a complete and sufficient certification as required. Depending on the reason for leave, an employee may be required to submit medical certification from the employee's health care provider, medical certification the employee's family member's health care provider, and/or other documentation (e.g., to establish a family relationship, military active duty orders, etc.). In certain circumstances and under certain conditions, employees may also be required to obtain second or third medical opinions and/or recertifications, in accordance with applicable law.

If an employee takes leave for the employee's own serious health condition (except on an intermittent or reduced-schedule basis), prior to returning to work the employee must provide a medical fitness-for-duty certification that the employee is able to resume work and the health condition that created the need for the leave no longer renders the employee unable to perform the essential functions of the job. This certification must be submitted to the FMLA Administrator/Harry Snyder . If the employee is unable to perform one or more of the essential functions of the employee's position, the Board will determine whether the employee is eligible for additional FMLA leave (if such leave has not been exhausted) or whether an accommodation is appropriate, in accordance with the Americans with Disabilities Act.

In connection with the Board's request for medical information, employees must be aware that the Genetic Information Nondiscrimination Act of 2008 ("GINA") prohibits employers and other entities covered by Title II of GINA from requesting or requiring genetic information of an individual or family member of the individual, except as specifically allowed by this law. To comply with this law, the Board requests that employees not provide any genetic information when responding to a request for medical information.

USE OF PAID LEAVE

Accrued paid personal leave and accrued paid vacation will be substituted (in that order) for any unpaid portions of family or medical leave taken for any reason. However, where the leave is for the employee's own serious health condition, accrued paid leave shall be substituted for unpaid portions of family or medical leave prior to the substitution of

accrued paid personal and accrued paid vacation leave. The amount of unpaid family or medical leave entitlement is reduced by the amount of paid leave that is substituted.

In addition, in cases involving absences due to a Workers' Compensation injury that also qualifies as an FMLA serious health condition, and if the employee (and the employee's collective bargaining agent, if applicable) and the Board agree to do so, the Board will apply the employee's available accrued paid leave in increments as a supplement to the Workers' Compensation weekly benefit in an appropriate amount so that the employee can maintain the employee's regular weekly income level.

MEDICAL INSURANCE AND OTHER BENEFITS

During approved family or medical leaves of absence, the Board will continue to pay its portion of medical insurance premiums for the period of unpaid family or medical leave. The employee must continue to pay the employee's share of the premium, and failure to do so may result in loss of coverage. If the employee does not return to work after expiration of the leave, the employee will be required to reimburse the Board for payment of medical insurance premiums during the family or medical leave, unless the employee does not return because of a serious health condition or circumstances beyond the employee's control.

During an FMLA leave, an employee shall not accrue **[list benefits, such as seniority, pension benefits, or sick or vacation leave],** unless otherwise required by any applicable collective bargaining agreement or Board policy. However, unused employment benefits accrued by the employee up to the day on which the leave begins will not be lost upon return to work. Leave taken under this policy does not constitute an absence under the Board's attendance policy, if any.

REINSTATEMENT

Except for circumstances unrelated to the taking of a family or medical leave, and unless an exception applies, an employee who returns to work following the expiration of a family or medical leave is entitled to return to the job such employee held prior to the leave or to an equivalent position with equivalent pay and benefits.

ADDITIONAL INFORMATION

Questions regarding family or medical leave may be directed to the Superintendent or designee. An employee may file a complaint with the U.S. Department of Labor or may bring a private lawsuit against an employer. FMLA does not affect any federal or state law prohibiting discrimination, or supersede any state or local law or collective bargaining agreement that provides greater family or medical leave rights.

Legal References:
Connecticut General Statutes:

Conn. Gen. Stat. § 31-51rr Family and medical leave benefits for employees of political subdivisions

Regs. Conn. State Agencies 31-51rr-1, et seq.

United States Code:
Family and Medical Leave Act of 1993, 29 U.S.C. Section 2601 et seq., as amended

29 CFR Part 825.100 et seq.

Title II of the Genetic Information Nondiscrimination Act of 2008, 42 USC 2000ff et seq.

29 CFR 1635.1 et seq.

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