

WESTPORT BOARD OF EDUCATION

AGENDA*

(Agenda Subject to Modification in Accordance with Law)

PUBLIC SESSION/PLEDGE OF ALLEGIANCE

7:00 p.m., Staples High School, Cafeteria B (Room 301)

ANNOUNCEMENTS FROM BOARD AND ADMINISTRATION

PUBLIC QUESTIONS/COMMENTS ON NON-AGENDA ITEMS (15 MINUTES)

MINUTES: January 10, 2022, *page 1*

DISCUSSION

- | | | |
|---|---------|--------------------------------------|
| 1. Health Report | | Ms. Suzanne Levasseur |
| 2. FY 2023 Proposed Budget of the Superintendent of Schools | | Mr. Thomas Scarice
Mr. Elio Longo |
| 3. Board of Education 5-Year Capital Budget Forecast Including Long Lots Elementary School and Stepping Stones Preschool, <i>pages 2-84</i> | (Encl.) | Mr. Elio Longo |
| 4. Proposed Modifications to the 2021-2022 School Calendar as a Result of January 3 PD Day, <i>page 85</i> | (Encl.) | Mr. Thomas Scarice |

ADJOURNMENT

*A 2/3 vote is required to go to executive session, to add a topic to the agenda of a regular meeting, or to start a new topic after 10:30 p.m.

The meeting can also be viewed on Cablevision on channel 78; Frontier channel 6021 and by video stream @www.westportps.org

PUBLIC PARTICIPATION WELCOME USING THE FOLLOWING GUIDELINES:

- Comment on non-agenda topics will occur during the first 15 minutes *except* when staff or guest presentations are scheduled.
- Board will not engage in dialogue on non-agenda items.
- Public may speak as agenda topics come up for discussion or information.
- Speakers on non-agenda items are limited to 2 minutes each, except by prior arrangement with chair.
- Speakers on agenda items are limited to 3 minutes each, except by prior arrangement with chair.
- Speakers must give name and address, and use microphone.
- Per Board policy, speakers must be town residents or employees
- Responses to questions may be deferred if answers not immediately available.
- Public comment is normally not invited for topics listed for action after having been publicly discussed at one or more meetings.

WESTPORT BOARD OF EDUCATION

Board Members Present:

Lee Goldstein Chair
Liz Heyer Vice Chair
Neil Phillips Secretary
Christina Torres
Dorrie Hordon
Robert Harrington
Kevin Christie

Administrators Present:

Thomas Scarice Superintendent of Schools
Anthony Buono Asst. Superintendent, Teaching and Learning
Michael Rizzo Asst. Superintendent, Pupil Personnel Services
Elio Longo Chief Financial Officer
John Bayers Asst. Superintendent, Human Resources and
General Admin.

PUBLIC CALL TO ORDER/PLEDGE OF ALLEGIANCE: 7:12 p.m., Staples High School,
Cafeteria B (Room 301)

ANNOUNCEMENTS FROM BOARD AND ADMINISTRATION

PUBLIC QUESTIONS/COMMENTS ON NON-AGENDA ITEMS

MINUTES: Dorie Hordon moved to approve the minutes of January 4, 2022; seconded by Liz Heyer and passed unanimously.

DISCUSSION/ACTION

Acceptance of CMS Building Project

Be it resolved that upon the recommendation of the Coleytown Middle School Building Committee, the Westport Board of Education formally accepts Coleytown Middle School's renovation as complete.

MOTION: Neil Phillips

SECOND: Lee Goldstein

RESULT: Passed unanimously

VOTE: 7-0

DISCUSSION

Health Report

Health and Medical Insurance Review with Board of Education Insurance Consultant, Lockton Companies LL

FY 2023 Proposed Budget of the Superintendent of Schools

ADJOURNMENT: Christina Torres moved to adjourn at 10:44 p.m.; seconded by Dorie Hordon and passed unanimously.

Respectfully submitted,
Neil Phillips, Secretary
(Minutes written by Lisa Marriott)



Project Leaders

January 13, 2022

Mr. Thomas Scarice
Superintendent
Westport Public Schools
110 Myrtle Avenue
Westport, CT 06880

Subject: *Recommended 5-year Capital Improvement Plan FY23 through FY27*

Dear Mr. Scarice:

Enclosed for your consideration is Colliers Project Leaders recommended 5-year capital improvement plan for fiscal years 2023 through 2027. Please note that this plan is based on the 2019 Antinozzi Master Plan Facility Study as well as input provided by WPS facilities staff. The attached CIP plan is a proprietary spreadsheet developed by Colliers to assist districts with planning and forecasting of capital improvement plans for up to 10-years. Per your request, we have only provided a 5-year outlook.

The enclosed CIP summary plan is divided by each school facility. This CIP includes Staples High School, Bedford Middle School, Coleytown Elementary School, Greens Farm Elementary School, Kings Highway Elementary School, Long Lots Elementary School and Saugatuck Elementary School. Please note that the recently renovated Coleytown Middle School was omitted from the 2019 Antinozzi report and has been omitted from the enclosed 5-year CIP plan. Under each of the schools you'll find multiple projects listed with each one having a unique project number. The project numbers start with the school designation with a numerical assignment after that. Across the top of each sheet are the designated fiscal years.

At the bottom of each school section, the sum of the requested capital funding for each fiscal year is provided and the total amount for each school being summed at the lower right corner. Specific to each project will typically be provided two values in adjacent fiscal years. The first-year value designates the design and planning dollars being requested to hire design professional to prepare design documents necessary to bid projects. The second-year value is the balance of the project budget. This value consists of the forecasted construction value, escalation to the start of the anticipated construction year and miscellaneous soft costs for testing and commissioning and other ancillary soft costs.

We have structured the spreadsheet to automatically assign the design and planning costs one year in advance of the anticipated construction start date which is always July 1st of a given year as that is when new budgets are applied each year. This will typically allow one year for the WPS staff and selected design professional time to prepare design documents necessary to bid most of the projects in preparation of awarding the contract the following year. This is a typical scenario and there may be specific cases where the entire project amount may be required to be approved to award a project prior to a July 1st date.

Supporting the summary worksheet are detailed worksheets for each building that contain details for each project. The supporting worksheets are linked to the summary sheet thus all data entry for costs, construction dates, and project initiation dates are contained within them. These detailed sheets have not been provided in the enclosed summary sheet but are available upon request.

Colliers has not performed field verifications of the Antinozzi findings as we feel this would be redundant. We are taking the report at face value with respect to the visual findings. With respect to pricing of individual scopes of work, Colliers does not possess the detailed backup Antinozzi used to prepare such cost factors to attest to their accuracy. Additionally, the construction market has change drastically since 2019 due to the COVID pandemic and the impact it has had on the availability of materials and costs thereof. As of this date, we will need to keep this in mind as we move forward with projects.

As with many planning studies just as this, we consider the cost provided by Antinozzi to be a forecasting tool for budgeting. The actual costs of the work for each item are subject to, but not limited to, further field investigations, testing, procurement of quotes by vendors or contractors, and development of detailed plans and specifications by qualified design professionals with professional cost estimates.

We also understand that the observations and recommendations contained in the Antinozzi report are strictly based on the physical conditions of the building and do not consider educational planning or potential future renovation or alteration projects. Additionally, their report has not proposed specific projects or grouping of recommendations into projects. All recommendations appear to be individual items.

Based on our review of Antinozzi's Capital Implementation Plan contained within their report, we generally do not take any exceptions at this time. However, based on our reading of the reports and

the proposed values of construction, we recommend that planning and design funding be provided to perform more comprehensive investigations and review of their findings. We recommend this as our understanding of their scope of work was based purely on visual observations of the physical conditions. Below are our recommendations for specific divisions of work.

HVAC Systems (Division 23): The HVAC system improvements comprise \$28.7 million of the total \$96 million in proposed improvements by Antinozzi. We recommend that the HVAC system improvements be reviewed in a holistic manner versus on an individual component basis. Simply replacing units on a one-to-one basis without reviewing the systems as a collective whole may lead to a less effective and/or efficient system. Many of the current systems are original systems that do not possess current design methodologies and technologies.

Finishes (Division 9): The proposed finishes comprise \$13.3 million of the \$96 million in proposed improvements. Most of the proposed finish projects consist of either ceiling tile replacement or flooring replacements. There are some painting recommendation and a few other finish recommendations, but the vast majority lie between ceiling tiles and flooring.

Based on our review of their report and our experience with older buildings, we find that many of the areas being recommended for replacement are associated purely with aesthetics. There will certainly be areas in need of repair such as floor cracking, tile delamination or other failures but we recommend these areas be addressed on a case-by-case basis when presenting a safety hazard. The recommendation to replace large areas of ceilings or flooring based purely on age or aesthetics should be weighed against other proposed work and balanced against the available funding.

Exterior Improvements (Division 32): These improvements comprise \$15.1 million. Most of these costs are repaving of lots and driveways. This information is being provided due to the large percentage of the total costs.

The total cost of the HVAC, Finishes, Exterior Improvements, and Thermal and Moisture Protection (Division 7, mostly roofs) make up 82% of the total costs proposed by Antinozzi.

Six other divisions comprise 14% (\$13.5M) of the \$96 million in proposed improvements. These are masonry, woods and plastics (cabinets primarily), openings (doors and windows), specialties (mostly toilet partitions), plumbing (fixtures such as toilets, sinks and urinals), and electrical. The remaining \$4M is spread amongst the remaining 12 divisions.



Project Leaders

In addition to these recommendations, Colliers also recommends that proposed improvements be reviewed against any future major renovations or alterations to the buildings like that completed at Coleytown Middle School. Under these comprehensive projects all building components are typically upgraded. Replacement of systems within 5-10 years of such a proposed project should be considered carefully before executing.

Another observation is that although the proposed capital projects are listed for a specific fiscal year, some may take multiple years to construct due to the constraints of the academic year. Most projects are expected to occur over the summer break but allow only 8-10 weeks at most. Depending on the amount of work, it may need to be executed over multiple summers or even during school breaks.

The total recommended value of the proposed capital improvements over the next five fiscal years is forecast to be approximately \$70 million. For fiscal year 2023, most of the proposed costs are associated with planning and design costs necessary to evaluate the proposed work further as well as develop bid documents necessary to execute the work in the following years.

This letter is intended to provide a general overview of the enclosed 5-year CIP plan and to provide insight on Colliers proposed philosophy for executing the plan. There are many other facets and nuances that have not been included in this letter, but we are happy to discuss them with you and the Westport Public Schools committees. In closing, we thank you for the opportunity to serve as your capital projects program manager.

Sincerely,

A handwritten signature in cursive script, appearing to read "Charles E. Warrington, Jr.".

Charles E. Warrington, Jr., P.E.
Director, Project Management

Enclosure

cc: Mr. Elio Long, Chief Financial Officer
Theodore Hunyadi, Facilities Director

Westport Capital Project Forecast
through FY 27
Summary
DRAFT

Project #	Capital Non-Recurring Expenditures														
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSGR Reimbursement	Estimated District Share
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
School Security		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
District Wide Total		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Staples High School															
SHS-001	Repair floor slab in auditorium	\$0	\$0	\$9,034	\$110,810	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$119,844	\$0	\$119,844
SHS-002	Replace acoustical ceiling tiles at lower level	\$0	\$0	\$0	\$67,432	\$850,789	\$0	\$0	\$0	\$0	\$0	\$0	\$918,221	\$0	\$918,221
SHS-003	Replace sports flooring	\$0	\$0	\$120,359	\$1,476,378	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,596,737	\$0	\$1,596,737
SHS-004	Replace AHUs and install BMS	\$0	\$0	\$20,004	\$216,364	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$236,368	\$0	\$236,368
SHS-005	Replace pool dehumidification AHU	\$0	\$0	\$11,945	\$146,525	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$158,470	\$0	\$158,470
SHS-006	Asphalt Repair and Replacement	\$0	\$0	\$165,378	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$165,378	\$0	\$165,378
SHS-007	Masonry Repairs	\$0	\$0	\$0	\$43,084	\$549,518	\$0	\$0	\$0	\$0	\$0	\$0	\$592,602	\$0	\$592,602
SHS-008	Replacement of Millwork	\$0	\$0	\$17,788	\$218,191	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$235,979	\$0	\$235,979
SHS-009	Replace windows	\$0	\$0	\$58,774	\$720,946	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$779,720	\$0	\$779,720
SHS-010	Replacement of VCT flooring	\$0	\$0	\$99,451	\$1,219,912	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,319,363	\$0	\$1,319,363
SHS-011	Replacement of Floor in Area H	\$0	\$0	\$10,583	\$129,811	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,394	\$0	\$140,394
SHS-012	Carpet Replacement	\$0	\$0	\$16,422	\$201,437	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$217,859	\$0	\$217,859
SHS-013	Replace Toilet Stalls	\$0	\$0	\$30,036	\$368,432	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$398,468	\$0	\$398,468
SHS-014	Update food service equipment	\$0	\$0	\$315,460	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$315,460	\$0	\$315,460
SHS-015	Replace pumps in boiler room	\$0	\$0	\$10,917	\$133,912	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$144,829	\$0	\$144,829
SHS-016	Add new pumps	\$0	\$0	\$6,598	\$80,938	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$87,536	\$0	\$87,536
SHS-017	Replacement Cooling tower filter/pump/water treatment, BMS controls	\$0	\$0	\$72,148	\$885,003	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$957,151	\$0	\$957,151
SHS-018	Replace Area B Indoor AHUs, BMS controls	\$0	\$0	\$333,702	\$4,093,353	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,427,055	\$0	\$4,427,055
SHS-019	Replacement of fixtures in 1973 section	\$0	\$0	\$24,166	\$296,436	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$320,602	\$0	\$320,602
SHS-020	Area D AHU at Gym	\$0	\$0	\$75,556	\$917,818	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$993,374	\$0	\$993,374
SHS-021	Area D AHU at Gym with AC and BMS Controls	\$0	\$0	\$80,788	\$990,987	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,071,775	\$0	\$1,071,775
SHS-022	Area E AHU in Penthouse and BMS Controls	\$0	\$0	\$56,651	\$693,162	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$749,813	\$0	\$749,813
SHS-023	Replace Rubber Treads and Risers	\$0	\$0	\$0	\$52,482	\$667,698	\$0	\$0	\$0	\$0	\$0	\$0	\$720,180	\$0	\$720,180
SHS-024	Replace VCT flooring at Unit F,G, multiple areas	\$0	\$0	\$0	\$40,990	\$522,812	\$0	\$0	\$0	\$0	\$0	\$0	\$563,802	\$0	\$563,802
SHS-025	Install Packaged Chiller for Area E and J	\$0	\$0	\$0	\$22,727	\$289,869	\$0	\$0	\$0	\$0	\$0	\$0	\$312,596	\$0	\$312,596
SHS-026	Replace Gas Fired makup Air Units & BMS Controls	\$0	\$0	\$0	\$63,938	\$815,499	\$0	\$0	\$0	\$0	\$0	\$0	\$879,437	\$0	\$879,437
SHS-027	Asphalt Repair and Replacement	\$0	\$0	\$0	\$0	\$5,128,528	\$0	\$0	\$0	\$0	\$0	\$0	\$5,128,528	\$0	\$5,128,528
SHS-028	Replace VCT flooring with VET	\$0	\$0	\$0	\$0	\$21,417	\$283,999	\$0	\$0	\$0	\$0	\$0	\$305,416	\$0	\$305,416
SHS-029	Install Ductless Splits for IT	\$0	\$0	\$120,897	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$120,897	\$0	\$120,897
SHS-030	Replace room signage with ADA signage	\$0	\$0	\$17,045	\$209,083	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$226,128	\$0	\$226,128
Staples High School		\$0	\$0	\$1,673,702	\$13,400,153	\$8,846,130	\$283,999	\$0	\$0	\$0	\$0	\$0	\$24,203,984	\$0	\$24,203,984



Westport Capital Project Forecast
through FY 27
Summary
DRAFT

Project #	Capital Non-Recurring Expenditures														
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSCGR Reimbursement	Estimated District Share
Bedford Middle School															
BMS-001	Upgrade science labs	\$0	\$0	\$32,000	\$392,527	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$424,527	\$0	\$424,527
BMS-002	Structural Slab Repairs/masonry/interior tile	\$0	\$0	\$20,271	\$248,654	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$268,925	\$0	\$268,925
BMS-003	Install AC in IDF	\$0	\$0	\$77,998	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$77,998	\$0	\$77,998
BMS-004	Replace CV actuators for VAV boxes	\$0	\$0	\$17,045	\$209,083	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$226,128	\$0	\$226,128
BMS-005	Asphalt Repair and Replacement	\$0	\$0	\$579,106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$579,106	\$0	\$579,106
BMS-006	Concrete pavement repair	\$0	\$0	\$109,360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$109,360	\$0	\$109,360
BMS-007	Replacement of Millwork	\$0	\$0	\$97,498	\$1,195,959	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,293,457	\$0	\$1,293,457
BMS-008	Masonry Cleaning	\$0	\$0	\$0	\$9,899	\$125,030	\$0	\$0	\$0	\$0	\$0	\$0	\$134,929	\$0	\$134,929
BMS-009	Replacement of toilet partitions	\$0	\$0	\$24,245	\$297,402	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$321,647	\$0	\$321,647
BMS-010	Replace CV actuators at remaining AHUs, FCUs, Uvs	\$0	\$0	\$10,606	\$129,767	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,373	\$0	\$140,373
BMS-011	Replace Insulated Glass	\$0	\$0	\$9,848	\$120,499	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$130,347	\$0	\$130,347
BMS-012	Relace acoustical ceiling tile in locker rooms, toilet rooms and kitchen	\$0	\$0	\$117,273	\$1,438,531	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,555,804	\$0	\$1,555,804
BMS-013	Replace VCT floor in cafeteria and elevator, wall base	\$0	\$0	\$27,597	\$338,514	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$366,111	\$0	\$366,111
BMS-014	Replace carpet tile in CRs, Auditorium, and Guidance offices	\$0	\$0	\$33,970	\$416,693	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$450,663	\$0	\$450,663
BMS-015	Replace AHU-9	\$0	\$0	\$10,985	\$134,742	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$145,727	\$0	\$145,727
BMS-016	Replace roof mounted exhaust fans	\$0	\$0	\$17,942	\$220,079	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$238,021	\$0	\$238,021
BMS-017		\$0	\$0	\$0	\$503,451	\$5,791,753	\$0	\$0	\$0	\$0	\$0	\$0	\$6,295,204	\$0	\$6,295,204
BMS-018	Remove and replace rubber stair tread	\$0	\$0	\$0	\$14,359	\$183,139	\$0	\$0	\$0	\$0	\$0	\$0	\$197,498	\$0	\$197,498
BMS-019	Update Food Service Equipment	\$0	\$0	\$0	\$7,954	\$101,455	\$0	\$0	\$0	\$0	\$0	\$0	\$109,409	\$0	\$109,409
BMS-020	Replace Cooling Tower, Pumps, BMS Controls	\$0	\$0	\$0	\$93,841	\$1,196,889	\$0	\$0	\$0	\$0	\$0	\$0	\$1,290,730	\$0	\$1,290,730
BMS-021	Packaged Chillers Maintenance	\$0	\$0	\$0	\$15,151	\$193,246	\$0	\$0	\$0	\$0	\$0	\$0	\$208,397	\$0	\$208,397
BMS-022	Replacment of 30 wall mounted UVs and BMS controls	\$0	\$0	\$0	\$71,135	\$907,286	\$0	\$0	\$0	\$0	\$0	\$0	\$978,421	\$0	\$978,421
BMS-023	New package engine for Diesel Generator	\$0	\$0	\$0	\$11,363	\$144,935	\$0	\$0	\$0	\$0	\$0	\$0	\$156,298	\$0	\$156,298
BMS-024	Asphalt Repair and Replacement	\$0	\$0	\$0	\$0	\$0	\$2,832,855	\$0	\$0	\$0	\$0	\$0	\$2,832,855	\$0	\$2,832,855
BMS-025	Asphalt Repair and Replacement	\$0	\$0	\$0	\$0	\$0	\$241,792	\$0	\$0	\$0	\$0	\$0	\$241,792	\$0	\$241,792
BMS-026	Concrete pavement replacement	\$0	\$0	\$0	\$0	\$18,725	\$248,305	\$0	\$0	\$0	\$0	\$0	\$267,030	\$0	\$267,030
BMS-027		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BMS-028		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BMS-029		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BMS-030		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bedford Middle School		\$0	\$0	\$1,185,744	\$5,869,604	\$8,662,457	\$3,322,952	\$0	\$0	\$0	\$0	\$0	\$19,040,756	\$0	\$19,040,756
Coleytown Middle School (Renovation Complete January 2021, on 2021 Priority List, 21DASY158099RNV0621) 21.07% REIMBURSEMENT															
		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Westport Capital Project Forecast
through FY 27
Summary
DRAFT

Project #	Capital Non-Recurring Expenditures														
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSGR Reimbursement	Estimated District Share
Coleytown Elementary School															
CES-001	New Split System A/C for IT Closet	\$0	\$0	\$76,381	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$76,381	\$0	\$76,381
CES-002	RTU3 & AHU 5-ton Main Office (PENDING UNDERWAY)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-003	Media Center and Main office upgrades	\$0	\$0	\$15,000	\$107,465	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$122,465	\$0	\$122,465
CES-004	Unit ventilator replacement	\$0	\$0	\$49,469	\$594,327	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$643,796	\$0	\$643,796
CES-005	Air Handling Equipment	\$0	\$0	\$14,353	\$176,064	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$190,417	\$0	\$190,417
CES-006	Ceiling Tile Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-007	Flooring Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-008	Asphalt Replacement	\$0	\$0	\$188,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$188,915	\$0	\$188,915
CES-009	Update Food Service Equipment	\$0	\$0	\$0	\$11,363	\$144,935	\$0	\$0	\$0	\$0	\$0	\$0	\$156,298	\$0	\$156,298
CES-010	Asphalt Replacement	\$0	\$0	\$0	\$0	\$0	\$877,572	\$0	\$0	\$0	\$0	\$0	\$877,572	\$0	\$877,572
CES-011	Masonry Repointing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-012	Replace Metal Railings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-013	Replace Exterior Door Trim	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-014	Casework Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$1,040,578	\$0	\$0	\$0	\$0	\$1,040,578	\$0	\$1,040,578
CES-015	Roof Repairs (Various Years	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-016	Asphalt Paving - COMPLETE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-017	Modular Classroom Installation	\$0	\$766,488	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$766,488	\$0	\$766,488
CES-018		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-019		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-020		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-021		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CES-022		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Coleytown Elementary School		\$0	\$766,488	\$344,118	\$889,219	\$144,935	\$877,572	\$1,040,578	\$0	\$0	\$0	\$0	\$4,062,910	\$0	\$4,062,910
Greens Farms Elementary School															
GF-001	New Ductless AC Split for IT Closet	\$0	\$0	\$72,368	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,368	\$0	\$72,368
GF-002	Asphalt Repair and Replacement - COMPLETE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
GF-003	Replacement of Lintels and Misc Metals	\$0	\$0	\$0	\$6,566	\$82,017	\$0	\$0	\$0	\$0	\$0	\$0	\$88,583	\$0	\$88,583
GF-004	Roof Replacement and Repair	\$0	\$0	\$50,000	\$2,342,474	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,392,474	\$0	\$2,392,474
GF-005	Replace rusted metal toilet partitions	\$0	\$0	\$15,000	\$115,561	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$130,561	\$0	\$130,561
GF-006	Remove existing telescoping platform with retractable	\$0	\$0	\$0	\$7,670	\$95,818	\$0	\$0	\$0	\$0	\$0	\$0	\$103,488	\$0	\$103,488
GF-007	Replace Indoor AHU4 with dehumidifer, 8,200 CFM capacity	\$0	\$0	\$17,132	\$205,827	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$222,959	\$0	\$222,959
GF-008	Clean Exterior Masonry	\$0	\$0	\$0	\$18,737	\$234,065	\$0	\$0	\$0	\$0	\$0	\$0	\$252,802	\$0	\$252,802
GF-009	Major Maintenanane of 265-ton water cooled chiller	\$0	\$0	\$10,606	\$127,421	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$138,027	\$0	\$138,027
GF-010	Asphalt Repair and Replacement - COMPLETE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
GF-011	Asphalt Repair and Replacement - COMPLETE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
GF-012	Replace VAV Boxes	\$0	\$0	\$0	\$40,833	\$510,084	\$0	\$0	\$0	\$0	\$0	\$0	\$550,917	\$0	\$550,917
GF-013	Update general food service equipment	\$0	\$0	\$0	\$7,576	\$94,635	\$0	\$0	\$0	\$0	\$0	\$0	\$102,211	\$0	\$102,211



Westport Capital Project Forecast
through FY 27
Summary
DRAFT

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		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSGR Reimbursement	Estimated District Share
GF-014	Replace Acoustical Ceiling Tiles	\$0	\$0	\$0	\$0	\$52,689	\$684,320	\$0	\$0	\$0	\$0	\$0	\$737,009	\$0	\$737,009
GF-015	Replace hot water boiler and pumps	\$0	\$0	\$0	\$0	\$63,729	\$827,695	\$0	\$0	\$0	\$0	\$0	\$891,424	\$0	\$891,424
GF-016	Asphalt Repair and Replacement - COMPLETE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Greens Farms Elementary School		\$0	\$0	\$165,106	\$2,872,665	\$1,133,037	\$1,512,015	\$0	\$0	\$0	\$0	\$0	\$5,682,823	\$0	\$5,682,823
Kings Highway Elementary School															
KH-001	Exterior stair replacement	\$0	\$0	\$13,384	\$160,792	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$174,176	\$0	\$174,176
KH-002	Replacement of plumbing fixtures	\$0	\$0	\$27,611	\$331,718	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$359,329	\$0	\$359,329
KH-003	Replacement of small indoor AHUs	\$0	\$0	\$12,091	\$145,260	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$157,351	\$0	\$157,351
KH-004	Removal of 10k gallon UST	\$0	\$0	\$89,856	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$89,856	\$0	\$89,856
KH-005	Exterior Masonry Repair	\$0	\$0	\$26,248	\$315,343	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$341,591	\$0	\$341,591
KH-006	Demolition of Modular Classrooms	\$0	\$0	\$7,159	\$86,009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$93,168	\$0	\$93,168
KH-007	Replacement of all cooridor doors and hardware on 1st and 2nd floor	\$0	\$0	\$18,967	\$227,871	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$246,838	\$0	\$246,838
KH-008	Replacement of VCT flooring	\$0	\$0	\$84,441	\$1,014,485	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,098,926	\$0	\$1,098,926
KH-009	HVAC/Mechanical Upgrades	\$0	\$0	\$50,000	\$454,863	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$504,863	\$0	\$504,863
KH-010	Replace gas fired makup air unit for kitchen, 5,000 cfm	\$0	\$0	\$15,000	\$157,946	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$172,946	\$0	\$172,946
KH-011	DOA repair/upgrades	\$0	\$0	\$15,000	\$175,998	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$190,998	\$0	\$190,998
KH-012	Upgrade Millwork	\$0	\$0	\$57,978	\$696,563	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$754,541	\$0	\$754,541
KH-013	Asphalt Repair and Replacement	\$0	\$0	\$0	\$507,780	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$507,780	\$0	\$507,780
KH-014	Electrical Distribution Panel Replacement	\$0	\$0	\$0	\$15,000	\$142,316	\$0	\$0	\$0	\$0	\$0	\$0	\$157,316	\$0	\$157,316
KH-015	Update General Food Equipment	\$0	\$0	\$0	\$6,439	\$80,440	\$0	\$0	\$0	\$0	\$0	\$0	\$86,879	\$0	\$86,879
0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kings Highway Elementary School		\$0	\$0	\$417,735	\$4,296,066	\$222,756	\$0	\$0	\$0	\$0	\$0	\$0	\$4,936,556	\$0	\$4,936,556
Long Lots Elementary School															
LL-001	Updating Wiring IT closets	\$0	\$0	\$0	\$0	\$0	\$107,675	\$0	\$0	\$0	\$0	\$0	\$107,675	\$0	\$107,675
LL-002	Remove and replace glazed structures in the art room	\$0	\$0	\$0	\$0	\$9,848	\$130,596	\$0	\$0	\$0	\$0	\$0	\$140,444	\$0	\$140,444
LL-003	Asphalt Repair and Replacement - COMPLETE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LL-004	Masonry Repairs	\$0	\$0	\$0	\$0	\$30,220	\$400,733	\$0	\$0	\$0	\$0	\$0	\$430,953	\$0	\$430,953
LL-005	Replace Aluminum Windows	\$0	\$0	\$0	\$0	\$53,657	\$711,525	\$0	\$0	\$0	\$0	\$0	\$765,182	\$0	\$765,182
LL-006	Replace Ceiling Tiles in all Classrooms	\$0	\$0	\$0	\$0	\$73,021	\$968,306	\$0	\$0	\$0	\$0	\$0	\$1,041,327	\$0	\$1,041,327
LL-007	Update foodservice equipment	\$0	\$0	\$0	\$0	\$18,030	\$239,088	\$0	\$0	\$0	\$0	\$0	\$257,118	\$0	\$257,118
LL-008	Replace half of plumbing fixtures	\$0	\$0	\$0	\$0	\$17,323	\$229,714	\$0	\$0	\$0	\$0	\$0	\$247,037	\$0	\$247,037
LL-009	Replace small indoor AHUs	\$0	\$0	\$0	\$0	\$12,727	\$168,769	\$0	\$0	\$0	\$0	\$0	\$181,496	\$0	\$181,496



Westport Capital Project Forecast
through FY 27
Summary
DRAFT

Project #	Capital Non-Recurring Expenditures														
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSGCR Reimbursement	Estimated District Share
LL-010	Repalce distribution panels at old service entrance	\$0	\$0	\$0	\$0	\$7,071	\$93,762	\$0	\$0	\$0	\$0	\$0	\$100,833	\$0	\$100,833
LL-011	Replace Boilers	\$0	\$0	\$0	\$0	\$22,500	\$298,359	\$0	\$0	\$0	\$0	\$0	\$320,859	\$0	\$320,859
LL-012	Replace pumps	\$0	\$0	\$0	\$0	\$10,977	\$145,563	\$0	\$0	\$0	\$0	\$0	\$156,540	\$0	\$156,540
LL-013	Install DX hot water coil, reheat, in 3 zones	\$0	\$0	\$0	\$0	\$77,625	\$1,029,356	\$0	\$0	\$0	\$0	\$0	\$1,106,981	\$0	\$1,106,981
LL-014	Install AC in IT Closet	\$0	\$0	\$1,125	\$13,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,925	\$0	\$14,925
LL-015	Install new pumps and BMS controls	\$0	\$0	\$0	\$0	\$4,009	\$53,162	\$0	\$0	\$0	\$0	\$0	\$57,171	\$0	\$57,171
LL-016	Replace Millwork	\$0	\$0	\$0	\$0	\$98,643	\$1,308,070	\$0	\$0	\$0	\$0	\$0	\$1,406,713	\$0	\$1,406,713
LL-017	Replace Air Handling Equipment in Classrooms, UV with Dx and BMS Controls	\$0	\$0	\$0	\$0	\$25,901	\$343,466	\$0	\$0	\$0	\$0	\$0	\$369,367	\$0	\$369,367
LL-018	Replace existing UV with CHW and BMS CONTROLS	\$0	\$0	\$0	\$0	\$19,925	\$264,223	\$0	\$0	\$0	\$0	\$0	\$284,148	\$0	\$284,148
LL-019	Asphalt Repair and Replacement	\$0	\$0	\$0	\$0	\$190,716	\$0	\$0	\$0	\$0	\$0	\$0	\$190,716	\$0	\$190,716
LL-020		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LL-021		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LL-022		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Long Lots Elementary School		\$0	\$0	\$1,125	\$13,800	\$672,193	\$6,492,366	\$0	\$0	\$0	\$0	\$0	\$7,179,485	\$0	\$7,179,485
SES-001	Concrete Repair at NE addition	\$0	\$0	\$6,566	\$80,535	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$87,101	\$0	\$87,101
SES-002	Masonry Repairs	\$0	\$0	\$0	\$37,833	\$482,543	\$0	\$0	\$0	\$0	\$0	\$0	\$520,376	\$0	\$520,376
SES-003	Asphalt Repair and Replacement	\$0	\$0	\$459,101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$459,101	\$0	\$459,101
SES-004	Structural Slab Repairs	\$0	\$0	\$17,676	\$216,827	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$234,503	\$0	\$234,503
SES-005	Replace existing storefront system at Auditorium Lobby	\$0	\$0	\$20,000	\$158,779	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$178,779	\$0	\$178,779
SES-006	Replace flooring in CRs and Auditorium	\$0	\$0	\$53,578	\$657,215	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$710,793	\$0	\$710,793
SES-007	Paint exterior buidling	\$0	\$0	\$24,535	\$300,955	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$325,490	\$0	\$325,490
SES-008	New AC for IT Closet	\$0	\$0	\$71,181	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$71,181	\$0	\$71,181
SES-009	Exterior caulk and trim repair	\$0	\$0	\$11,057	\$135,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$146,685	\$0	\$146,685
SES-010	Asphalt Repair and Replacement	\$0	\$0	\$0	\$305,605	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$305,605	\$0	\$305,605
SES-011	Masonry Repairs	\$0	\$0	\$0	\$31,947	\$407,468	\$0	\$0	\$0	\$0	\$0	\$0	\$439,415	\$0	\$439,415
SES-012	Replace slate shingles	\$0	\$0	\$0	\$7,822	\$99,763	\$0	\$0	\$0	\$0	\$0	\$0	\$107,585	\$0	\$107,585
SES-013	Update Food Service Equipment	\$0	\$0	\$0	\$10,909	\$139,137	\$0	\$0	\$0	\$0	\$0	\$0	\$150,046	\$0	\$150,046
SES-014	Replace cooling tower and pumps	\$0	\$0	\$0	\$0	\$440,980	\$0	\$0	\$0	\$0	\$0	\$0	\$440,980	\$0	\$440,980
SES-015	Replace Millwork	\$0	\$0	\$0	\$0	\$11,719	\$155,397	\$0	\$0	\$0	\$0	\$0	\$167,116	\$0	\$167,116
SES-016	Asphalt Repair and Replacement	\$0	\$0	\$0	\$0	\$0	\$822,407	\$0	\$0	\$0	\$0	\$0	\$822,407	\$0	\$822,407
SES-017	Concrete Paving Replacement	\$0	\$0	\$0	\$0	\$9,572	\$126,926	\$0	\$0	\$0	\$0	\$0	\$136,498	\$0	\$136,498
SES-018		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SES-019		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Saugatuck Elementary School		\$0	\$0	\$663,694	\$1,944,055	\$1,591,182	\$1,104,730	\$0	\$0	\$0	\$0	\$0	\$5,303,661	\$0	\$5,303,661
CIP Total		\$0	\$766,488	\$4,451,224	\$29,285,561	\$21,272,689	\$13,593,634	\$1,040,578	\$0	\$0	\$0	\$0	\$70,410,175	\$0	\$70,410,175



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		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Project Total	OSGR Reimbursement	Estimated District Share
		2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030 - 2033	Program Total	OSGR Reimbursement	Estimated District Share





Project Leaders

January 13, 2022

Mr. Thomas Scarice
Superintendent
Westport Public Schools
110 Myrtle Avenue
Westport, CT 06880

Subject: *Long Lots Elementary School*
Budget Analysis and Recommendations

Dear Mr. Scarice:

This letter serves as supplemental information to Colliers Project Leaders report dated December 16, 2021, that provides detailed documentation of the building envelope, mechanical, and electrical and systems as well as site observations adjacent to the building contributing to water infiltration into the building. Contained in this letter are our recommendations for the Long Lots facility based on our observations but also taking into consideration studies performed by Langan during the summer of 2021, and the 2019 Antinozzi Associates Master Plan Facility Study.

The Long Lots Elementary School is an aging facility originally constructed in 1953 with additions in 1962 and 1979. As documented in both Colliers and Antinozzi reports, most of the systems in the building are past their useful life with many of them dating back to the original construction of the building. Two of the major building systems are in poor condition as documented by Colliers. The building envelope and the mechanical/electrical systems.

These two major systems are primarily responsible for maintaining the indoor environmental conditions of the building. In very simple terms, they are responsible for keeping the building dry and warm (or cool.) These systems, especially in new buildings, compliment and support each other in this function. If one of these systems fails, it will typically cause the other to work harder or possibly become ineffective in its intended use. However, both systems are failing and in our professional opinion beyond their useful life where full replacement of the systems should be considered.

Based on our review of Antinozzi's Capital Implementation Plan contained within their report, we generally do not take any exceptions at this time. However, based on our reading of the reports and the proposed values of construction, we recommend that planning and design funding be provided to perform more comprehensive investigations and review of their findings. We recommend this as our understanding of their scope of work was based purely on visual observations of the physical conditions. Below are our recommendations for specific divisions of work.

HVAC Systems (Division 23): The HVAC system improvements comprise \$28.7 million of the total \$96 million in proposed improvements by Antinozzi. We recommend that the HVAC system improvements be reviewed in a holistic manner versus on an individual component basis. Simply replacing units on a one-to-one basis without reviewing the systems as a collective whole may lead to a less effective and/or efficient system. Many of the current systems are original systems that do not possess current design methodologies and technologies.

Finishes (Division 9): The proposed finishes comprise \$13.3 million of the \$96 million in proposed improvements. Most of the proposed finish projects consist of either ceiling tile replacement or flooring replacements. There are some painting recommendation and a few other finish recommendations, but the vast majority lie between ceiling tiles and flooring.

Based on our review of their report and our experience with older buildings, we find that many of the areas being recommended for replacement are associated purely with aesthetics. There will certainly be areas in need of repair such as floor cracking, tile delamination or other failures but we recommend these areas be addressed on a case-by-case basis when presenting a safety hazard. The recommendation to replace large areas of ceilings or flooring based purely on age or aesthetics should be weighed against other proposed work and balanced against the available funding.

Exterior Improvements (Division 32): These improvements comprise \$15.1 million. Most of these costs are repaving of lots and driveways. This information is being provided due to the large percentage of the total costs.

The total cost of the HVAC, Finishes, Exterior Improvements, and Thermal and Moisture Protection (Division 7, mostly roofs) make up 82% of the total costs proposed by Antinozzi.

Six other divisions comprise 14% (\$13.5M) of the \$96 million in proposed improvements. These are masonry, woods and plastics (cabinets primarily), openings (doors and windows), specialties (mostly

Mechanical and Electrical Systems

As reported by Colliers, the mechanical and electrical systems are nearing their end of life and recommended to be replaced. Our assumption is that they would be replaced in full with current technology and systems and not replaced in kind. In doing so there are many factors to consider when contemplating such a project in an occupied school of this age. Some of these factors include but are not limited to:

- Construction phasing in an occupied school
- Removal of ceiling and wall systems necessary to install the systems and replacement thereof
- Unforeseen conditions
- Hazardous materials abatement
- Above ceiling clearances
- Project Costs
- Reimbursement

Installation of these systems throughout a building that is fully occupied will require extensive phasing, coordination and ultimate disruption to the school operations. In addition, the duration of the project would be extended due to the limited amount of area a contractor may take at one time or restrictions to work during summer breaks, holidays or even second shift.

Mechanical and electrical systems are installed above ceilings and through walls. To install them in these concealed spaces, the finished ceilings and walls must be removed to allow access to the space above or behind such a wall. The ceilings contain lighting fixtures, emergency devices and other systems that require removal and ultimate replacement. In our experience, these systems are typically replaced with new systems and not the old systems that were removed. Walls and their finishes will need to be replaced with new materials also.

When working in buildings of the 50s and 60s era, there are always hidden conditions within a building that are unforeseeable. The possibilities are endless but must be accounted for when budgeting for such a project.

The likelihood of hazardous materials being present above ceilings and behind walls is very likely as well as hazardous materials that were used in the original construction of these systems. Old boilers may contain asbestos linings. Pipes were typically wrapped with insulation containing asbestos. Some

walls may contain vermiculite that is a suspected carcinogen as well. Abatement of these materials will need to be accounted for.

New mechanical systems always consist of supply and return ductwork that allow the proper exchange of air to the building. The ductwork must be able to fit between the finished ceiling and the roof deck. Older building sometimes has limited ceiling space to allow such installation.

Probably the most important factor is the cost of replacing these systems. Just the systems alone not including the aforementioned factors of phasing, unforeseen conditions and possibly hazardous materials abatement will cost in the millions of dollars. To provide a rough order of magnitude, Colliers recently received bids for a new elementary school in Connecticut where trade bids for electrical, HVAC, and other required trades for the building were submitted. Excellent bid coverage was provided for this project thus we feel confident in the values.

The successful HVAC and building controls bid were \$51.30 per square foot for a building approximately 103,000 square feet which is similar to Long Lots. The successful electrical contractor bid (not including security, audio visual, telecommunications or fire alarm trades) was \$35.59 per square foot. Applying these square foot costs to the 109,000 gross square feet of building at Long Lots equates to \$5,591,700 for HVAC and \$3,879,310 for electrical. In total, the equal \$9,471,010 which is for the trade costs alone not including, demolition of conditions, general conditions which are estimated to be 15% of the trade costs as well as a recommended owner's contingency for unforeseen conditions.

Building Envelope Replacement

As described in our assessment, the building envelope consists of the roof; the vertical surfaces consisting of walls, doors, window, and louvers; and the building slab and foundation. The only component of the building envelope that is in fair condition is the roof. Having been replaced in 2008, the roof warranty expires in 2028 thus there is an additional 6-years of warranty remaining and if maintained correctly could last longer. However, thermal imaging indicates wet insulation in select areas of the roof.

The exterior walls, windows, and doors of the building have been documented to be in poor condition and likely responsible for air and moisture intrusion into the building. Most of the window systems are original single-pane and some double-pane construction that we have documented allow air infiltration via the use of thermal imaging. The skylights in the art room are leaking and are

recommended to be replaced with solid roofing. Most of the doors are rusted and show water leakage, lack of seals or lack of insulation. In general, the entire vertical envelope is ineffective and inefficient.

Finally, there are basement and crawl spaces without vapor barriers on the bottom side of the building that prevent moisture intrusion from the ground. Interior walls that are below the exterior ground surface display evidence of moisture penetrating through the foundation also. This condition leads to interior condensation.

In summary, the entire building envelope is considered compromised and in need of replacement. This includes the roof, exterior walls, windows, door and louvers. Like the mechanical and electrical systems, we assume that the systems would utilize current systems installed in today's systems. Many of the same factors noted for the mechanical and electrical system project would need to be considered for the building envelope.

With respect to costs, we received an estimate from the construction manager for the same project noted earlier that provided an estimate of the exterior walls, window and doors for the project. (Note: bids received for the project are not submitted by building system thus we cannot reference the bids for this analysis). The construction manager estimated these systems to be \$5,659,065 for the new school 103,296 gross square feet in size. This equates to \$54.78 per square foot. Applying this to the Long Lots building area equates to approximately \$5,971,558 in 2021 dollars. This is based on an estimate but is likely to be higher as bids for this specific project came in over budget by about 7%. Conservatively, we'll assume the lower estimated amount for this discussion. The estimated cost above does not include hazardous materials abatement (if applicable), demolition of existing conditions, general conditions or owner's contingency.

Should the roof be replaced, the estimated cost to do so is 80,458 s.f. of roof multiplied by \$20.22 per square foot (bid received for Saugatuck Elementary School in 2021) equals \$1,626,860 in 2021 dollars.

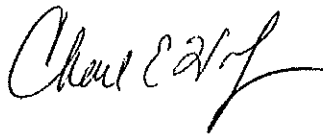
The building envelope, not including improvements for the exposed ground conditions under the building, are roughly \$7.6M plus any additional cost for hazardous materials abatement, demolition of existing conditions, general conditions or owner's contingency.

We estimate the minimum cost to replace these systems to be roughly \$22 million for the entire building. (\$9.5M + \$7.6M multiplied by 15% for general conditions then multiplied by 10% for owner contingency).

In consideration of the mechanical, electrical, and building envelope systems combined with the recent indoor environmental challenges studied by Langan as well as the age of the building and its interior conditions, we recommend that Westport Public Schools consider executing a holistic review of building and potential options for either renovating or replacing the facility in full. Should the district concur with this recommendation, we would also recommend postponing execution of any recommendations in Antinozzi's report unless it presents a health or safety hazard.

In closing, we thank you for the opportunity to assist the district with the evaluation of the Long Lots Elementary School. Should you have any questions regarding this letter or our December 16, 2021, report, please do not hesitate to reach out to me or my team members who prepared that report.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles E. Warrington, Jr." with a stylized flourish at the end.

Charles E. Warrington, Jr., P.E.
Director, Project Management

cc: Mr. Elio Long, Chief Financial Officer
Mr. Theodore Hunyadi, Director of Facilities



PROPERTY CONDITION ASSESSMENT Long Lots Elementary School



PREPARED BY:
Colliers Project Leaders USA NE,
LLC
12/16/21

PREPARED FOR:
Westport Public
Schools,
Town of Westport CT.
Long Lots Elementary
School

Table of Contents

I. Property Overview.....	5
II. Observations and Recommendations	17
III. Building Envelope Survey Findings	22
IV. HVAC Commissioning and Testing	56
V. Functional Testing	61
VI. Commissioning Issues Log	63
VII. Limiting Conditions.....	64
VIII. Disclaimer.....	65
IX. CPL Inspection Team:	66

DISCLAIMER

The scope of this conditions assessment did not test for mold.

Other hazardous materials that may be present in the building constructed in this timeframe may contain hazardous materials. This condition assessment does not include a study of hazardous materials.

I. Executive Summary

Colliers Project Leaders USA NE, LLC ("CPL") is pleased to present the Property Condition Assessment (PCA) for Westport Public Schools. The purpose of this PCA is to determine the current condition of Long Lots Elementary School and provide recommendations for repairs and upgrades.

Due to the age and condition of the building structure and interior systems, significant repairs and capital equipment replacement are recommended. Observations of the building enclosure and roof show the need for extensive repairs, most notably structural cracks of the chimney interior block in the gymnasium, lack of vapor barrier below the building structure, water infiltration of the building enclosure at the roof, curtain wall, exterior finish system, and portions of the brick exterior. In addition, many of the mechanical and electrical systems are nearing or at the end of their useful life. The boilers are original to the building, are inefficient relative to new models, and are experiencing costly repairs to maintain their operation. The chillers and other direct expansion cooling systems utilize R-22 refrigerant, a greenhouse gas which has been phased out of operation by legislation. Many of the remaining heating, ventilating, and air conditioning systems (HVAC) are antiquated, relatively inefficient designs which coupled with the envelope issues observed lead to increased energy consumption. Approximately half of the electrical infrastructure (breakers, panels, branch wiring, and end devices) and the fire alarm system should be replaced.

While a recent energy service performance contract (ESPC) identified and implemented low-payback measures, including some HVAC controls upgrades and interior lighting replacements, the short payback term precluded investment in higher payback capital equipment replacements. Facility staff appear to be diligent in routine maintenance, however the antiquated equipment, varied controls strategies, and compromised building enclosure require a comprehensive approach to truly improve the indoor conditions and reduce energy consumption.

Long Lots Elementary School, 13 Hyde Lane, Westport CT

Inspection Performed by: **Colliers Project Leaders**

Interviews and Document Review

The following people were present during the MEP & Building survey:

NAME	TITLE	REPRESENTING
Theodore Hunyadi	Director of Facilities & Securities	Westport Public Schools
William Gonzalez	Office Coordinator for Facilities	Westport Public Schools

Luigi Caputo	Technical Consultant	Environmental Systems Corporation
Adam Holzschuh	Senior Project Manager	Colliers Project Leaders / Mechanical Systems
Ravi Chavan	Project Manager	Colliers Project Leaders /Mechanical Systems
Terence Connolly	Associate Director	Colliers Project Leaders / Envelope Survey
George Barnes	Project Manager	Colliers Project Leaders /Envelope Survey
Andrew Kindya	Director	Colliers Project Leaders /Electrical Systems
Dan Maxwell	Facilities Staff – HVAC	Westport Public Schools
Tom Carr	Facilities Staff – Plumbing/Heating	Westport Public Schools
Calvin Terpstra	Facilities Staff – Electrical	Westport Public Schools
David Cavallaro	Facilities Staff - HVAC	Westport Public Schools

The following systems and documents were reviewed:

- 1: Building Management System and Controls Front End
- 2: Crawl Space & Tunnels Drawing
- 3: Mechanical spaces, equipment, and typical service areas

Property Profile

Location:	Long Lots Elementary School, 13 Hyde Lane, Westport CT
Area of Building:	108,881 Square Foot. 40,000 is unusable for academic program needs. The 40,000 s.f. would need to be re-configured to meet the needs.
Number of Stories:	Two
Occupancy Type:	K-12 school. School – Built as a Junior High School being used as an elementary school. Space in the building is reported to be not suitable for use as an elementary school.
Year Built:	Original 1953 with additions in 1962, 1973 and 1979. The 200 wings had a fire and was re-built.
Building Code:	Code upgrades performed in 1993
Exterior Walls:	Two main systems were observed on the building Brick masonry with a concrete masonry unit backup wall and External Finish System.

Exterior Windows:	Single pane window system and entrance doors. Operable metal frame windows with hopper windows that swing into the building.
Roof:	Modified Bitumen Roof with a failing cap sheet.

II. Property Overview

A. Property Summary

1) Architectural

Long Lots Elementary School is located on 13 Hyde Lane in Westport, CT. The school is a two-story structure with a main floor and a lower level. The original school was built in 1953 and received its first renovation in 1957. Two additions were completed to the North and South in 1962, with renovations in 1971 and another addition added in 1979. The facility received multiple improvements and Code upgrades during 1993. Most recently the facility underwent an energy savings performance contract (ESPC) project that included several controls and lighting upgrades. The current facility is approximately 108,881 SF.

The building houses approximately 42 classrooms and serves about 580 students per year. Various spaces in the building include a library, cafeteria, and auditorium. The outdoor areas consist of a courtyard, basketball court and playground.

The building uses electric energy purchased from Eversource and heating is provided by gas fuel purchased from Southern Connecticut Gas company.

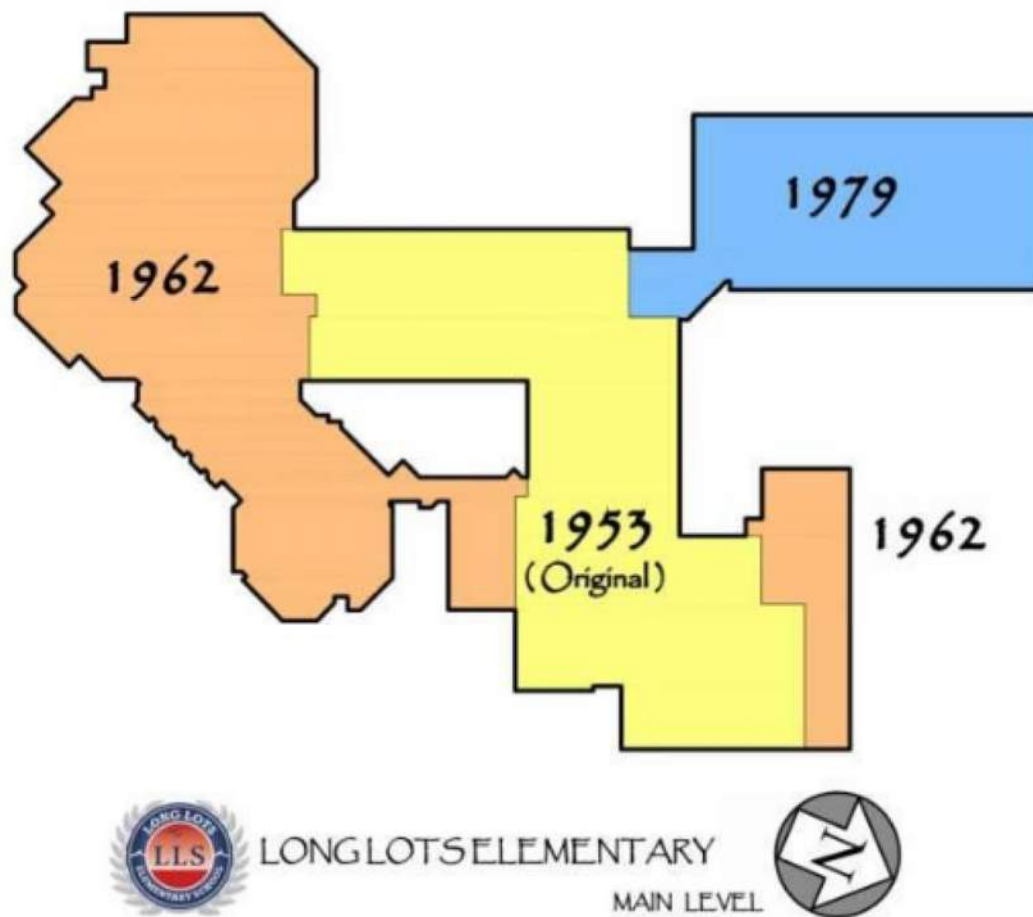


Figure 1: Site plan showing the building layout and construction dates

The Main floor consists of several classrooms, central office, auditorium, library, and gymnasium. The lower level consists of classrooms located to the North and South of the building and the mechanical space in the older section of the building. The diagram below provides a layout of the building with approximate location of the different uses within the building.

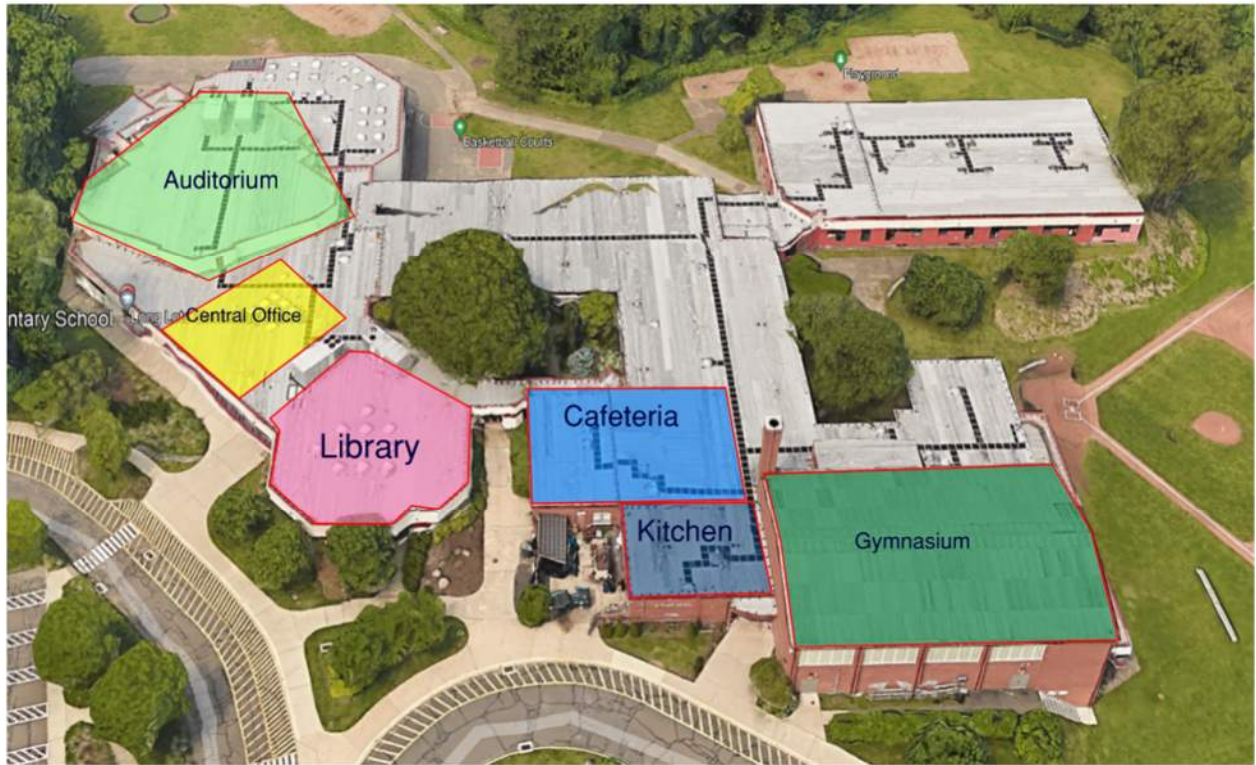


Figure 2: Site plan showing the building layout and space uses.

2) Mechanical

Boilers:

The building is heated by two (2) H.B Smith H.B. Smith Series 440-20 sectional CI dual fuel, steam boilers B-1 and B-2. Another third Weil-McLain steam boiler B-3 is abandoned in place due to problems related to installation and operation of the boiler. The boilers were manufactured in 1953 and are served by updated Power Flame burners. Although the burners are dual fuel the boilers now predominantly operate on natural gas. The boilers, condensate pump systems, fuel oil pumps and accessories are past their useful life and installation is aged. The steam piping is more than 60 years old.

The boilers feed heating steam to original building steam radiation system, gymnasium heating and ventilation unit, and kitchen make-up air unit. The building also houses two (2) steam to hot water heat exchangers that generate heating hot water for all roof top units and reheat coils, wing 200 unit ventilators and 4-pipe unit ventilators serving rooms 5, 6, 7, 101, 103 and 105.



Figure 3: Steam boilers original to the building (cr 1953).



Figure 4: Steam to hot water HX in the boiler room

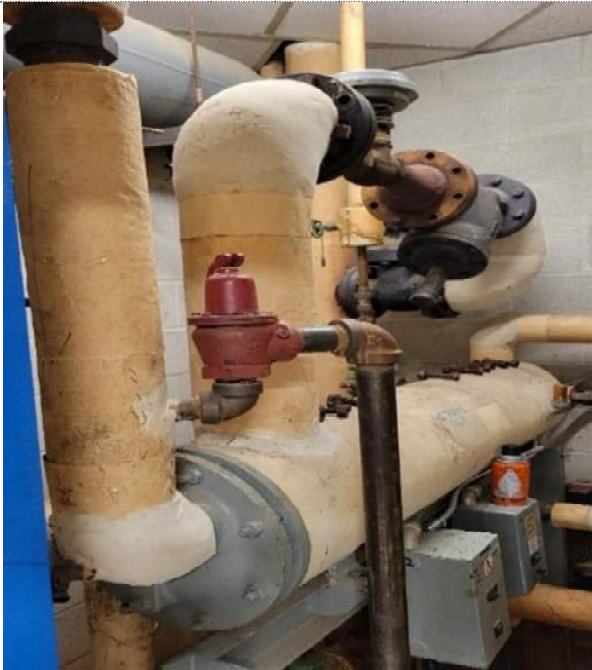


Figure 5: Steam to hot water HX for wing 200



Figure 6: Heating HW pumps in boiler room

Steam Radiation and Window AC Units

The original 1953 building is heated with steam radiation which are controlled via digital thermostats. The digital thermostats can be monitored and controlled by the BMS. The thermostats send digital signal to a controller that uses EP switches to control pneumatic valves serving the steam radiators.

The cooling is provided by window air conditioners which are 0.75 to 1.0 ton in capacity each. The air conditioners are enabled/disabled by the BMS.



Figure 7: Steam radiation and window AC unit in the original building

Roof Top Units (RTU)

The Auditorium is served by two custom made Seasons-4 manufactured roof top units RTU-MZ-1N & RTU-MZ-1S. These units are equipped with DX cooling and hot water heat. Each unit consists of two (2), R-22 refrigerant compressors rated for 460V, 27.6 Amps (RLA). The RTU supply fan is equipped with variable frequency drive (VFD). The unit is designed as hot-deck/cold-deck unit with three zones. Recently the zone dampers have been converted to DDC and controlled and monitored via BMS. The fan motor has been replaced with VFD duty high efficiency motor and equipped with a VFD.

The Main Office is served by Seasons 4 manufactured constant air volume unit RTU-MZ-2. The unit is equipped with DX cooling and hot water heat. The RTU consists of two (2) stage cooling using R-22 refrigerant compressors rated for 460V, 27.6 Amps each. The unit is designed as hot-deck/cold-deck unit. The fan motor has been replaced with VFD duty high efficiency motor and equipped with a VFD.

The Library is served by Seasons 4 manufactured constant air volume unit RTU-MZ-3. The unit is equipped with DX cooling and hot water heat. The RTU consists of two (2) stage cooling using R-22 refrigerant compressors rated for 460V, 18.4 Amps each. The unit is designed as hot-deck/cold-deck unit with two zones. The zone dampers are pneumatic controlled and cannot be accessed by the BMS. The fan motor has been replaced with VFD duty high efficiency motor and equipped with a VFD.

The Music Room is served by Trane manufactured constant air volume unit RTU. The unit is equipped with DX cooling. The name plate data for compressor rating was not available. It is reported that the unit is scheduled for replacement.

Heating & Ventilation Units (HV)

The gymnasium is served by two Carrier's AERO 39M heating and ventilation units. Each unit is equipped with two steam heating coils, supply fan VFD, modulating outside air, mixed air and relief air dampers and exhaust fan that operates during economizer mode operations.

Units Unit Ventilators (UV)

The 200 wing classrooms are served by 13 unit ventilators with air cooled condensers mounted on the roof of the building. The units are manufactured by Lennox and are approximately 3 ton each in capacity. The condensing units use now phased out R-22 refrigerant. The units are equipped with economizer dampers, occupancy sensor based temperature controls and CO₂ based ventilation control.



Figure 8: Unit ventilator with hot water heat and DX cooling original to the 200-Wing construction.

All of the unit ventilators for 200-wing have pneumatic control valves for heating hot water. The valves are controlled by electric thermostat using EP switches. The units can be controlled and monitored from the BMS.

Chillers

The building cooling is provided by two Trane manufactured air cooled chillers. These chillers are Intellipak series machines with older R-22 refrigerant and approximately 20 ton capacity each. There are two compressors per chiller and each compressor is rated for 460V, 17.2 Amps. One chiller was observed to be

operating to deliver 43.2°F chilled water temperature and the return water temperature was measured at 49.3°F when the outside dry bulb temperature (OAT) was 90.6°F. The chillers are designed to operate in a lead/lag control however only one chiller typically operates at a time. The constant volume chilled water pump and the chiller operates continuously whenever the OAT goes above 67°F.

These chillers are more than 20 years old and past their useful life.

4-Pipe Fan Coil Units

The South-West classrooms (room 5, 6, 7, 101, 103 and 105) are served by 4-pipe fan coil units with outdoor air damper for ventilation. The heating and cooling are provided by hot water and chilled water respectively.



Figure 9: Four-Pipe Fan Coil Unit.

Kitchen make-up air unit

The kitchen is served by a 100% outdoor air unit with pneumatic controls and steam heating coil. The unit serves the kitchen and café area. It is reported that the kitchen hood exhaust unit is not interlocked with the make-up unit.



Figure 10: Kitchen Make-up Air Unit above ceiling.



Figure 11: Kitchen exhaust hood.

All classrooms in the old section of the school use window air conditioners for cooling. Dehumidifiers are also observed to be used in all classroom spaces and some common areas throughout the school building.

The table below identifies different HVAC systems in the school including their service location, schedule, fan speed and their ventilation control.

Unit	Space serving	Demand Ventilation?	VFD controls	Damper min position	Occupied Mode Schedule M-F
HV-1	Gym	Yes	Yes	10%	6:30 am-9pm (M-Th); 6 am-9pm (F)
HV-2	Gym	Yes	Yes	10%	
RTU-MZ-1N	Auditorium	Yes	Yes	15%	5 am-9:30pm
RTU-MZ-1S	Auditorium	Yes	Yes	10%	5 am-9:30pm
RTU-MZ-2	Main Office	No	No		4 am-9:30pm
RTU-MZ-3	Library	Yes	Yes	10%	6:30 am-9:30pm
RTU	Music Room	No	No	N/A	5 am-9:30pm
13 Unit Ventilators	200 Wing	Yes	No	9%	5 am - 9pm
7 Fan Coil Units (4-pipe)	S West Classrooms level 1	Yes	No	9%	5 am - 9pm
Kitchen MAU	Kitchen and Cafe	100% OA	No	N/A	Manual

Domestic Hot Water

Domestic hot water (DHW) is generated by an AO Smith manufactured BTR-120 gas fired water heater. The heater has an input capacity of 120MBH and recovery rate of 120 gal/hr. The DHW is circulated by a Bell & Gossett recirculating pump. The DHW heater appears new and has a built year of 04/2019.



Figure 12: AO Smith 120MBH domestic hot water heater.

3) Building Envelope

- a) All six surfaces of the building have building enclosure issues. The roof, exterior walls, window and entrance door systems, the slab-on-grade, building foundation walls and site grading are all contributing to water and moisture infiltration and heat and conditioning loss through the building enclosure.

4) Electrical

- a) The electrical distribution serving the building consists of a variety of aged panels. Due to the varying age, some of the existing equipment is at the end of its useful life, some is approaching the end of its useful life and some of the existing equipment is in acceptable condition. Some of the older panels are Federal Pacific Electric (FPE) and should be replaced immediately due to known problems with the equipment.

The age and condition of the distribution cables, branch wiring, disconnects, starters, end devices, etc. varies greatly. While some of the listed items are newer, many of the items are at the end of their useful life and should be replaced.



Figure 13: Newer Square D panel serving the 200 wing



Figure 14: Old FPE panel serving the 200 wing



Figure 15: Old FPE panel serving the kitchen area



Figure 16: Older General Electric switchboard serving 100 wing



Figure 17: Old FPE panel serving boiler room



Figure 18: Old FPE panel outside the boiler room



Figure 19: GE panel located in the electrical room



Figure 20: GE panel near the gym

b) Emergency Power

Emergency power is provided to the building from a new exterior mounted Cummins 125kW diesel generator. The generator, installed in 2021, has a sub-mounted fuel tank. The unit is in new condition and should not be scheduled for replacement for two decades if maintained properly.

The emergency generator is connected to a 400 amp 480 volt ASCO automatic transfer switch (ATS). The ATS is in new condition and should be relatively maintenance free for a number of years.



Figure 21: New 125kW Cummins emergency generator



Figure 22: New 400amp ASCO Automatic Transfer Switch

c) Fire Alarm

The installed fire alarm system is at least a decade old and should be scheduled for replacement within the next few years.

d) The building interior lighting was observed to be LED fixtures or LED retrofits.



Figure 23: Recessed LED fixtures in classrooms, library, and office spaces



Figure 24: Surface mount LED fixtures in kitchen



Figure 25: Exterior LED WallPak fixture



Figure 26: Can light fixtures by rear doorway canopy

All of the interior spaces were observed to have recessed or surface mount LED fixtures. Occupancy sensors were observed in classrooms. The hallway in the old section of the school appears to have LED lamps retrofitted in existing linear florescent fixtures.

The building exterior lighting was observed to be LED WallPak fixtures. Some of the interior and exterior canopy can light fixtures appeared to be older fixtures and may consist of incandescent or metal halide light bulbs. Several of the exterior light fixtures were observed to be operating during daytime. The exterior lighting is controlled by a timeclock.

III. Observations and Recommendations

A. Structural Frame and Building Envelope

Sr.#	Equipment / System	Observation Narrative	Recommendation
1	Building Structure	<ul style="list-style-type: none">• Structural block cracks observed inside the gym at the Building Chimney	<ul style="list-style-type: none">○ Have the cracks and chimney evaluated by a structural engineer. Possibly replace the chimney and or the interior blocks laminated over the chimney at the interior gym wall section adding a thermal break. Provide movement joint between the chimney and the interior block wall.
2	Building Structure	<ul style="list-style-type: none">• Tunnel unexcavated with no vapor barrier.	<ul style="list-style-type: none">○ Encapsulate soils with a vapor barrier.
3	Building Structure	<ul style="list-style-type: none">• Surface water infiltration into the building.	<ul style="list-style-type: none">○ Regrade building grounds and add yard drains.
4	Foundation and masonry repairs	<ul style="list-style-type: none">• Correct flooding into building from the courtyard.	<ul style="list-style-type: none">○ Excavate and install courtyard foundation waterproofing, insulation around the entire perimeter, footing drains and yard drains, revise grading.
5	Foundation and masonry repairs	<ul style="list-style-type: none">• Tree concerns at foundation due to root and branch damage.	<ul style="list-style-type: none">○ Remove trees within the drip edge overgrowing the roof line impacting the roof and potential root damage at the foundations.
6	Building Enclosure	<ul style="list-style-type: none">• Outside air infiltration into the kitchen at the generator	<ul style="list-style-type: none">○ Improve the building enclosure, window, and door systems in the around the generator and extend the generator exhaust system. Improve control of makeup air for the kitchen.
7	Building Enclosure	<ul style="list-style-type: none">• The unit ventilators are allowing the infiltration and exfiltration of air through the building enclosure	<ul style="list-style-type: none">○ Unit ventilators are recommended for replacement under MEP scope. It is recommended to patch the building enclosure at the removed units.
8	Building Enclosure	<ul style="list-style-type: none">• Air infiltration from window air conditioners system	<ul style="list-style-type: none">○ Window air conditioners will be removed under HVAC upgrades. These openings will need to be properly infilled.

Sr.#	Equipment / System	Observation Narrative	Recommendation
9	Skylight in Room 6	<ul style="list-style-type: none"> The skylight system above room six has had many leaks and shows signs of many repairs 	<ul style="list-style-type: none"> The skylight should be replaced with roofing.
10	Building Roof	<ul style="list-style-type: none"> The roof has become brittle as the delaminating cap sheet blisters and has had many maintenance issues 	<ul style="list-style-type: none"> Roof is recommended to be replaced in the next five years.
11	Building Roof	<ul style="list-style-type: none"> Roof top unit gaskets and pans are leaking. 	<ul style="list-style-type: none"> The RTU replacement is covered in the MEP portion. This estimate covers the curbs and associated roof work.
12	Building Roof	<ul style="list-style-type: none"> Roof drain system and piping is in poor condition 	<ul style="list-style-type: none"> Replace the entire roof drain piping system.
13	Window System	<ul style="list-style-type: none"> The single pane curtainwall and window systems are leaking and have no seals 	<ul style="list-style-type: none"> Kalwall panel system and windows are recommended to be replaced.
14	Exterior Wall Systems	<ul style="list-style-type: none"> Exterior wall lacks air barrier and insulation. EIFS Delamination 	<ul style="list-style-type: none"> All the External Insulating Finish System needs to be removed and replaced. The masonry walls need to either be replaced or have a cavity wall created with an air barrier and insulation.
15	Exterior doors & Store front	<ul style="list-style-type: none"> Wind driven rainwater infiltration is reported 	<ul style="list-style-type: none"> The exterior doors and store front entrances need to be replaced due to water leakage, no seals, inefficiency, and lack of insulation.
16	Roof access Ladders	<ul style="list-style-type: none"> The ladders on the roof are very loose at the anchor points 	<ul style="list-style-type: none"> The wall needs to be opened to provide adequate blocking, patched, and properly anchor the ladders to the building.

B. Mechanical Systems

Sr.#	Equipment System /	Observation Narrative	Recommendation
17	Steam Boilers	<ul style="list-style-type: none"> Boilers are 60 year old and beyond useful life. One of the 3 boilers is abandoned in place due to design and operational issue. Facility personnel note extensive repairs have been required to maintain the boilers operation. 	<ul style="list-style-type: none"> Investigate replacing steam heating system with energy efficient alternative.
18	Steam and Condensate piping	<ul style="list-style-type: none"> Steam and condensate piping is original to the construction (60 years). Steam traps and devices are located in crawl spaces and tunnels from classroom 9 through gymnasium. These are not accessible for inspection and repairs. 	<ul style="list-style-type: none"> Investigate replacing steam heating system with energy efficient alternative and eliminate steam system.
19	Heating piping insulation	<ul style="list-style-type: none"> Insulation is missing or damaged in several locations of the heating system piping and devices. No insulation is present on the steam to hot water heat exchanger in boiler plant. 	<ul style="list-style-type: none"> Insulate heating system piping and devices.
20	Hot water pumps and heat exchanger	<ul style="list-style-type: none"> The hot water pumps and heat exchanger are not available on the BMS. Pump VFD speed control appears to be temperature based. 	<ul style="list-style-type: none"> Add pumps and heat exchanger control valves to BMS. Verify pump VFD control sequence and pump speed modulation. Implement temperature reset based on building load and outdoor air temperature.

Sr.#	Equipment System /	Observation Narrative	Recommendation
21	RTU-MZ-1N, RTU-MZ-1S, RTU-MZ-2, RTU-MZ-3.	<ul style="list-style-type: none"> RTUs were originally designed as constant volume hot-deck/ cold-deck units and 30+ year old. RTU refrigerant is R-22 and phased out of production. RTU fan motor VFD is programmed to operate as two speed (high/low) only. 	<ul style="list-style-type: none"> RTU replacement to be considered as long-term plan. Replace R-22 refrigerant with newer higher efficiency refrigerant such as R-134a or R410a. Implement space temperature-based fan speed control.
22	AHU-1 & 2 (HV Units serving gymnasium)	<ul style="list-style-type: none"> RTU fan motor VFD is programmed to operate as two speed (high/low) only. <p><i>Note: Heating is provided by two steam coils per unit.</i></p>	<ul style="list-style-type: none"> Implement space temperature-based fan speed control.
23	Unit Ventilators (Wing 200)	<ul style="list-style-type: none"> Units are original to the building construction (30+ years) and past their useful life. DX cooling is provided by R-22 refrigerant compressors. 	<ul style="list-style-type: none"> Investigate replacing unit ventilators with energy efficient alternative.
24	Air Cooled Chillers	<ul style="list-style-type: none"> Chillers are more than 25 years old and past their useful life. Chiller refrigerant is R-22 and phased out of production. Chilled water pumping is constant volume primary only and pump operates continuously when OA temperature is above setpoint. 	<ul style="list-style-type: none"> Investigate replacing chillers with energy efficient alternative or heat pump chiller. Investigate variable flow pumping design.
25	Exhaust Fan serving Room 9	<ul style="list-style-type: none"> The exhaust fan serving Room 9 appears to have manual control and was observed to be continuously operating. 	<ul style="list-style-type: none"> Implement digital controls to schedule exhaust fan serving room 9 based on occupancy and/or space temperature.
26	Kitchen Make-up Air Unit and Hood Exhaust Fans	<ul style="list-style-type: none"> Kitchen Make-up air unit is pneumatically controlled and operates continuously during occupied time to provide 100% outside air. 	<ul style="list-style-type: none"> Replace kitchen make-up and hood exhaust with variable speed unit. The new unit to be equipped with kitchen hood controls.

Sr.#	Equipment System /	Observation Narrative	Recommendation
		<ul style="list-style-type: none"> Make-up unit is equipped with steam heating coil. Kitchen hood exhaust fan is manually controlled and operates continuously during occupied time. 	

C. Electrical Systems

Sr.#	Equipment System /	Observation Narrative	Recommendation
27	Electrical Distribution	<ul style="list-style-type: none"> Significant portions of the equipment are past useful life. 	<ul style="list-style-type: none"> Replace ½ of the electrical distribution panels and associated feeders within the building.
28	Electrical Branch Wiring & End Devices	<ul style="list-style-type: none"> Equipment is past useful life. 	<ul style="list-style-type: none"> Replace ½ of the electrical branch wiring and end devices within the building.
29	Fire Alarm System	<ul style="list-style-type: none"> Equipment is nearing the end of useful life. 	<ul style="list-style-type: none"> Replace entire fire alarm system (panel, wiring, devices, etc.).
30	Exterior Lighting	<ul style="list-style-type: none"> Equipment is nearing the end of useful life. Equipment is inefficient. 	<ul style="list-style-type: none"> Replace remainder of non-LED lighting fixtures (doorway canopy). Investigate, repair, replace lighting controls on nonfunctioning exterior lighting controls.

IV. Building Envelope Survey Findings

Structural Failure at the building Chimney

Cracking in the gym masonry wall and heat transfer from the building chimney observed visually and in the thermal scan. These cracks are a major concern both from a structural perspective and a water infiltration concern. These cracks should be evaluated by a structural engineer.

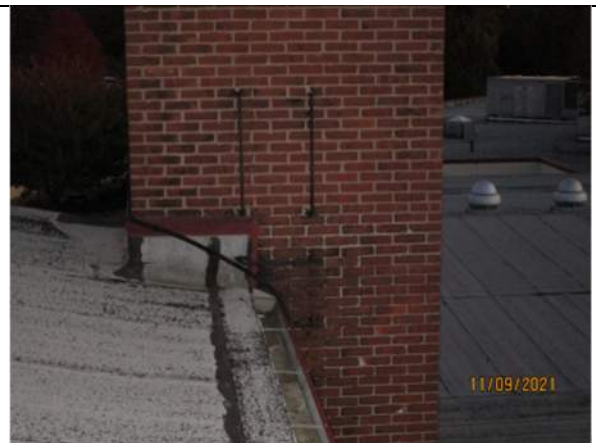
It's not clear if the heat transfer from the chimney is from conduction or if the cracks visible in the gym wall continue into the chimney and this is a direct heat source from the chimney. There are no visible expansion joints at the common wall with the chimney. The building movement against the rigid chimney needs to be evaluated by a structural engineer.



View of the chimney at the gym adjacent to the Kalwall panels.



Cracks observed in the block wall of the gym at the common wall to the building chimney.



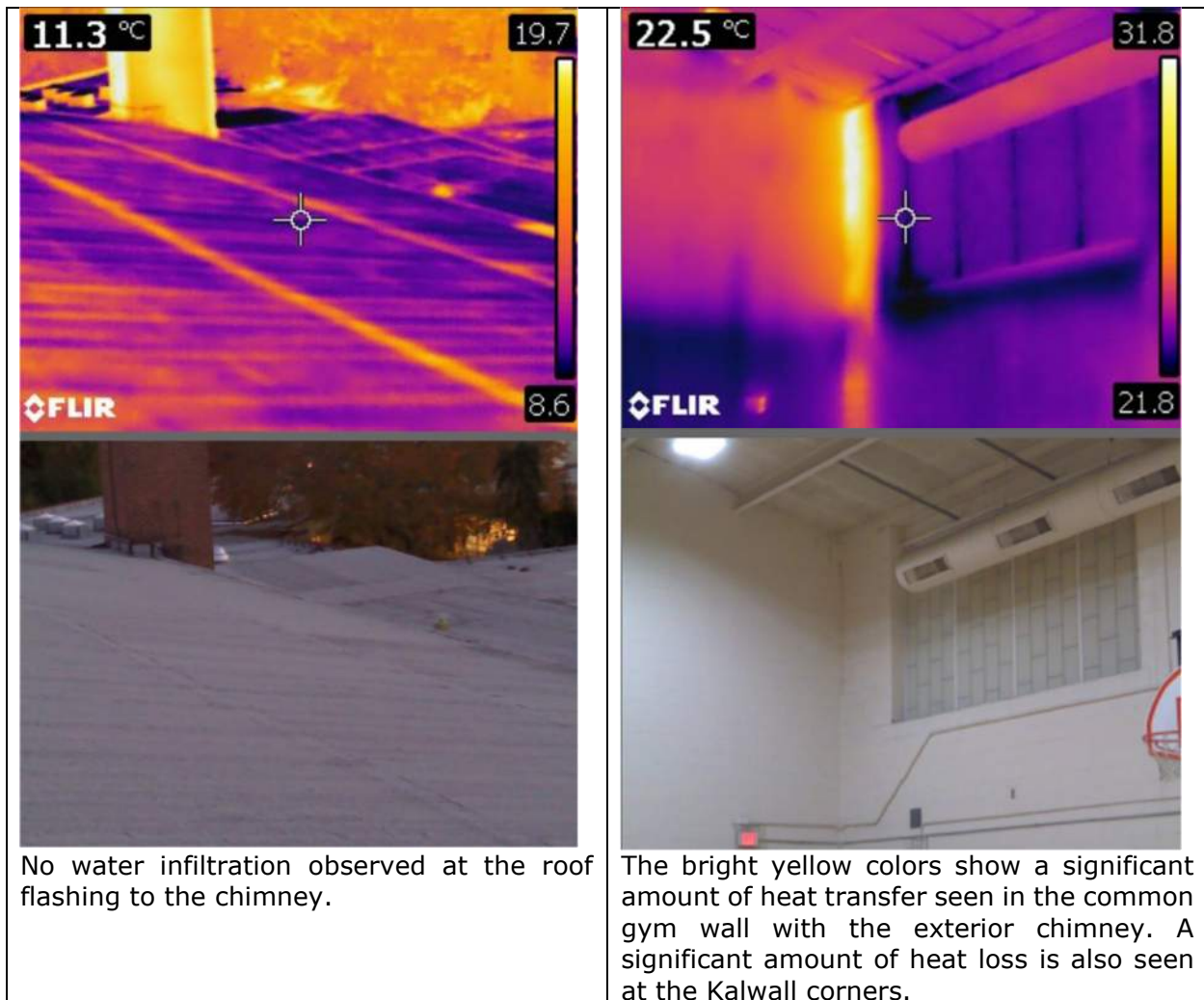
Building chimney at the roof intersection. No sign of water infiltration in the roof.

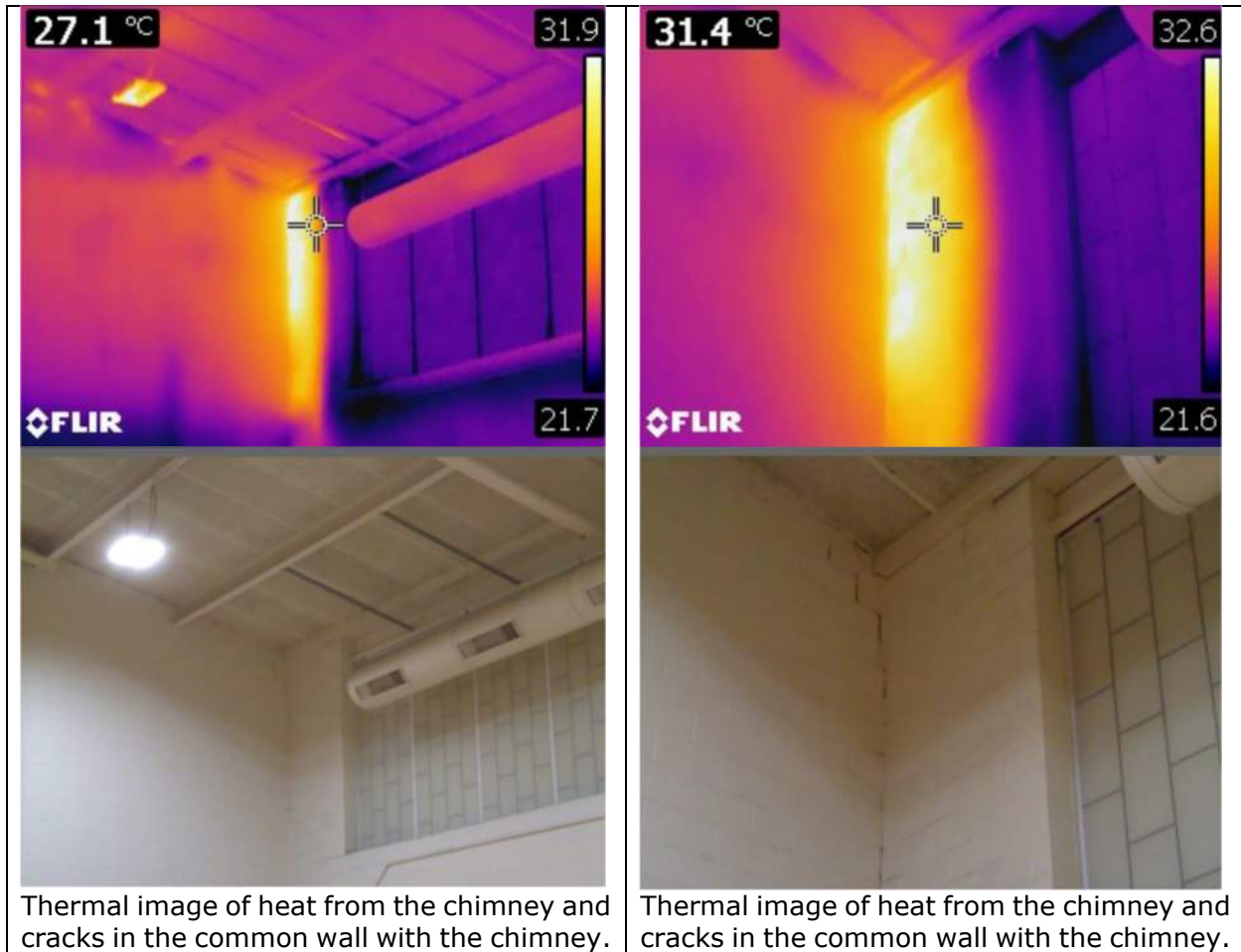


Cracks in the gym wall up to the roof level. Cracking in the masonry wall in the gym at the roof line.



Cracking continues to the opening.





Foundation Water Infiltration





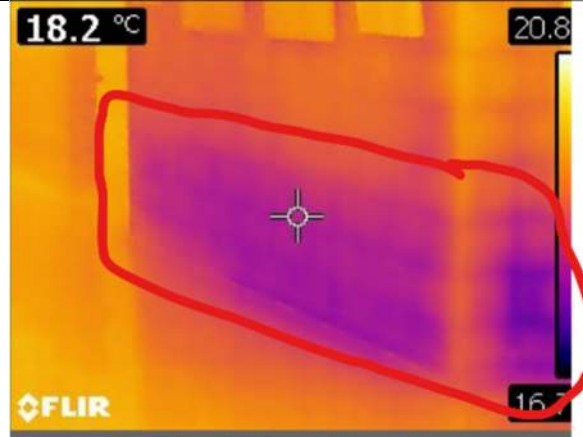
The sump pump discharges onto the roof as there is no drain in the courtyard.



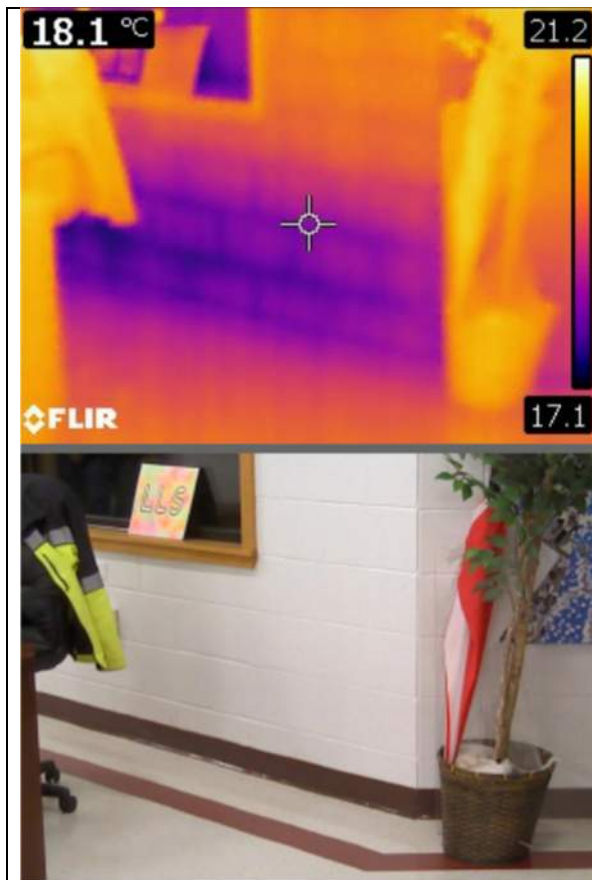
This corner near the ramp is where the water was actively observed entering the building.



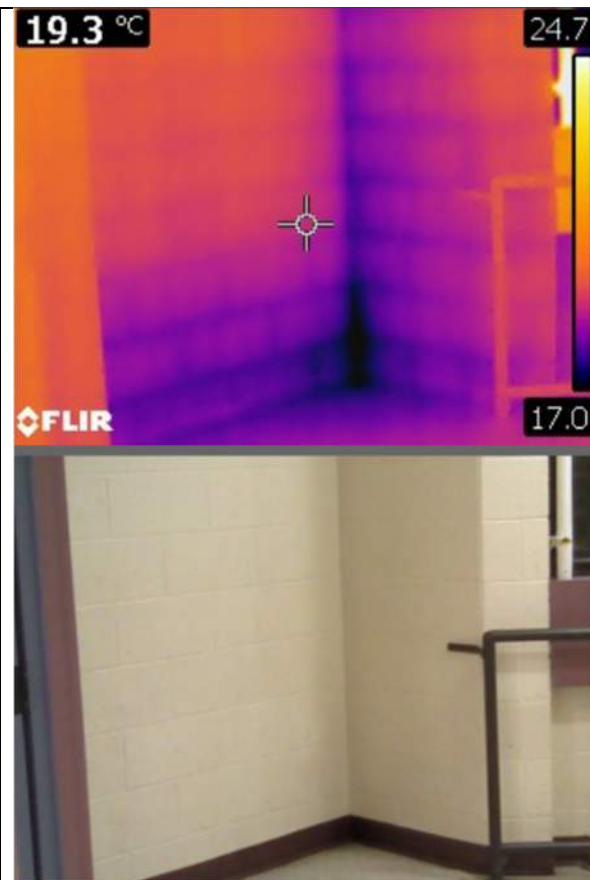
Thermal patterns show cooler temperatures at the foundation wall. This thermal pattern is consistent with missing foundation insulation, wet block, condensation. Efflorescence can be seen on the brick which is an indication of moisture in the masonry wall.



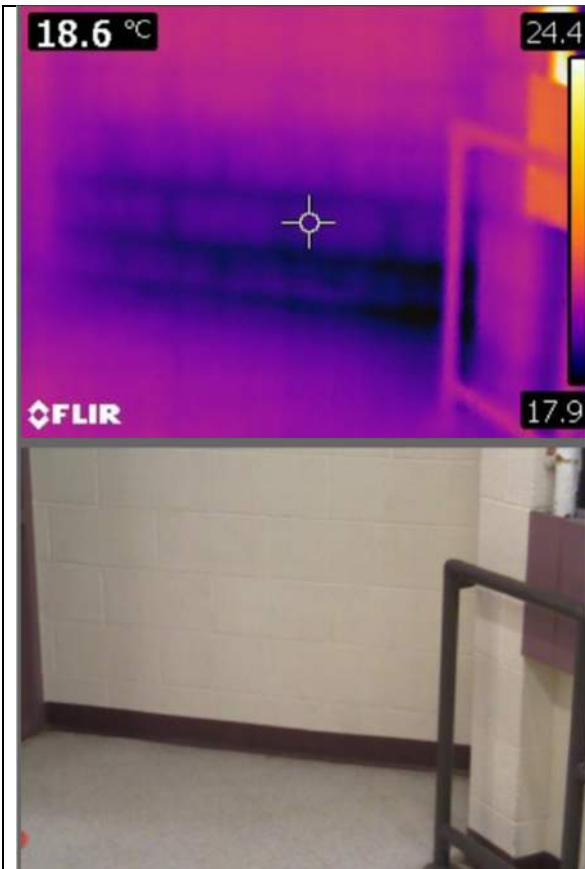
Thermal patterns show cooler temperatures at the foundation wall. This thermal pattern is consistent with missing foundation insulation, wet block, condensation.



Thermal patterns show cooler temperatures at the foundation wall. This thermal pattern is consistent with missing foundation insulation, wet block, condensation.



Thermal patterns show cooler temperatures at the foundation wall. This thermal pattern is consistent with missing foundation insulation, wet block, condensation.



Thermal patterns show cooler temperatures at the foundation wall. This thermal pattern is consistent with missing foundation insulation, wet block, condensation.



The masonry wall extends below grade with no apparent foundation or waterproofing membrane.



Evidence of hydraulic water pressure against the below grade wall and water infiltration into the building.

Tunnel unexcavated soils with no vapor barrier

Estimated exposed dirt - Matt Mayer's from Langdon Associates mapped the tunnels. Langdon has prepared a report to indicate the exact extent of the exposed soils in the tunnels. Exposed soils emit water vapor in the tunnels and eventually the building.



Access to room 19 with a door into the utility tunnels under the building.

Suspect insulation materials on pipes are deteriorating so the tunnels were not investigated.



Soils with no vapor barrier allow moisture vapor from the ground into the building.

Observed the unexcavated soil condition through the room 9 hatch.



Surface Water infiltration

Sandbags observed in place to prevent surface water from infiltration the building. Site grading changes will be needed to correct water infiltration plus the addition of area drains.



Tree Concerns

Courtyard 24" beech tree canopy overlaps the building. This has the potential to cause multiple issues. The root system extends as far as the canopy of the tree and will impact the building foundation, the tree branches are in contact with the roof and will cause damage to the roof membrane and flashing, the leaves from the tree are collecting on the roof and will impact the function of the roof drains.



Additional trees overgrow the roof line and should be removed to prevent roof and foundation damage.



Outside air infiltration into the kitchen at the generator

It was reported when the diesel generator is operating the diesel smell is evident in the kitchen. This is a sign of a failed building enclosure and improper balancing of the ventilating system allowing outside air to be pulled into the kitchen. It is reported that the kitchen exhaust hood has no control link between the cooking line hood and makeup air. The kitchen exhaust is likely causing negative air pressure in the kitchen and the poor building enclosure construction is likely allowing these fumes to be drawn into the building through the walls, windows, gaps around the doors and the window air conditioning unit.



The generator exhaust stack should be extended and directed above the roof level. The windows, doors and exterior wall system should be replaced with an airtight building enclosure.

A makeup air unit should be provided to correct the negative air balancing issue in the kitchen.

Facilities reports that the generator belongs to the Town.



Roofing

Offshore Roofing – Joe Kiss, PM - Contractor for Westport




Johns Manville warranty engaged due to Separating and off gassing issues.

30 Points of blistering recorded.

10 points of blistering have moisture into the substrate but not apparent inside the building.

The Johns Manville Roofing Report will provide greater detail for the roof condition.



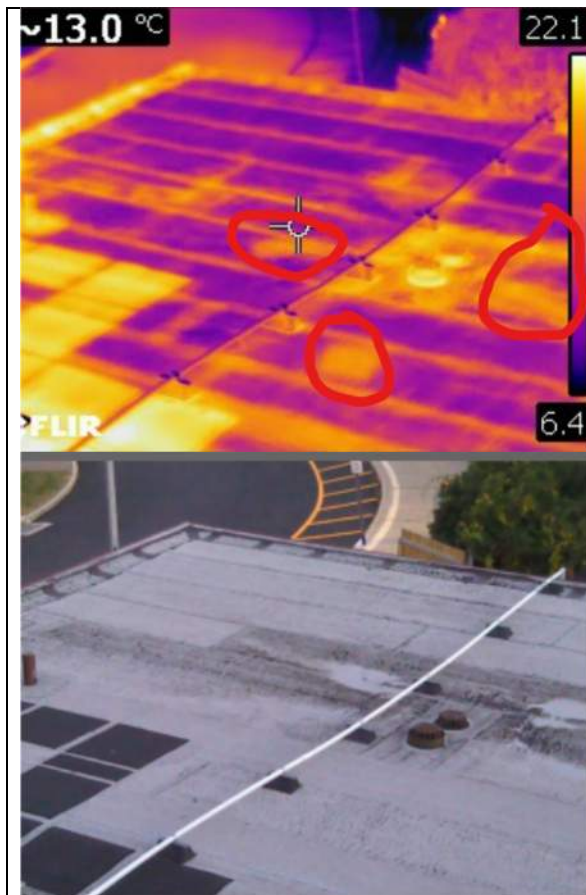
<p>Roofing cap sheet is delaminated from the lower plies of roofing.</p> <p>The roof blisters are causing water infiltration to the lower plies of roofing both through cracks in the cap sheet and condensation building up in the blisters. The moisture trapped in the blisters will deteriorate the roof at an accelerated rate.</p>	
<p>Annual and semi-annual roof inspections are performed on Long Lots. The maintenance of the roof is evident. Leaks have been chased for years with new sealant observed at cracks, joints, pitch boxes and repairs.</p>	
<p>The roof is very fragile. The blister spots are easy to damage if walked on especially in the colder temperatures in addition the bitumen is getting cracked and brittle.</p> <p>The life expectancy of this roof is 10 – 20 years and it is showing signs of wear.</p>	

This roof is not impact resistant to falling branches. As mentioned above some trees overhang this building and should be removed.

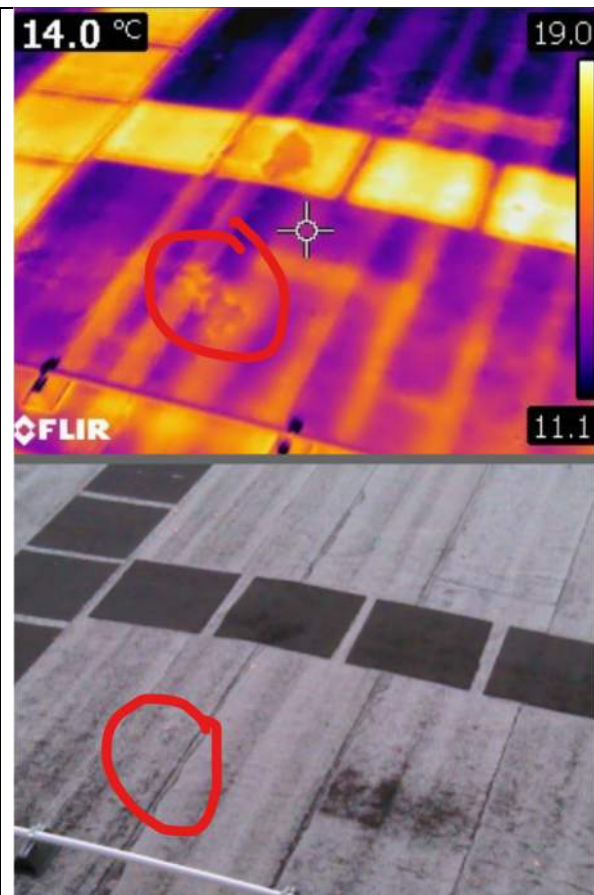


Puddling will cause a modified bitumen roof to wear down faster. The building maintenance team is doing an excellent job of preventing puddling by keeping the roof drains clean. No leaf clogged roof drains were observed during the site visit despite leaves actively falling on the roof from overhang trees.

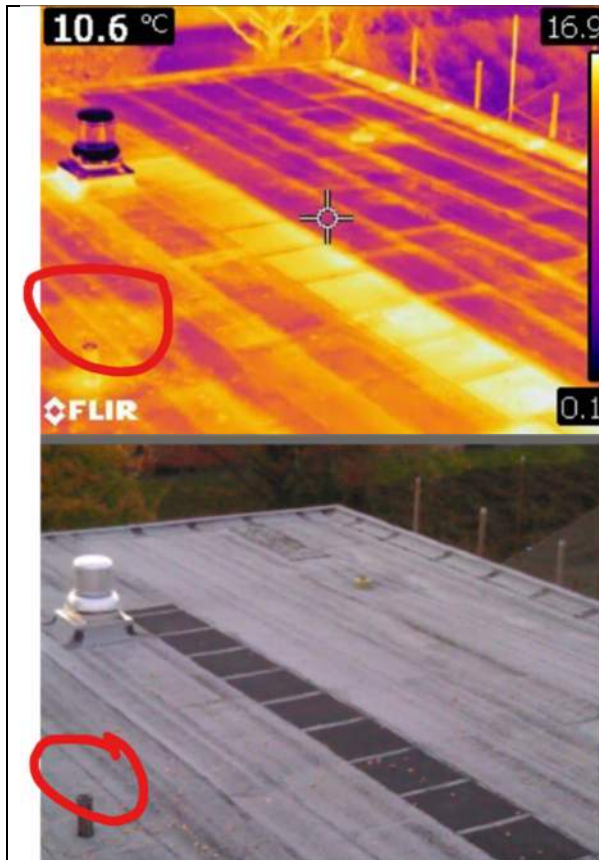




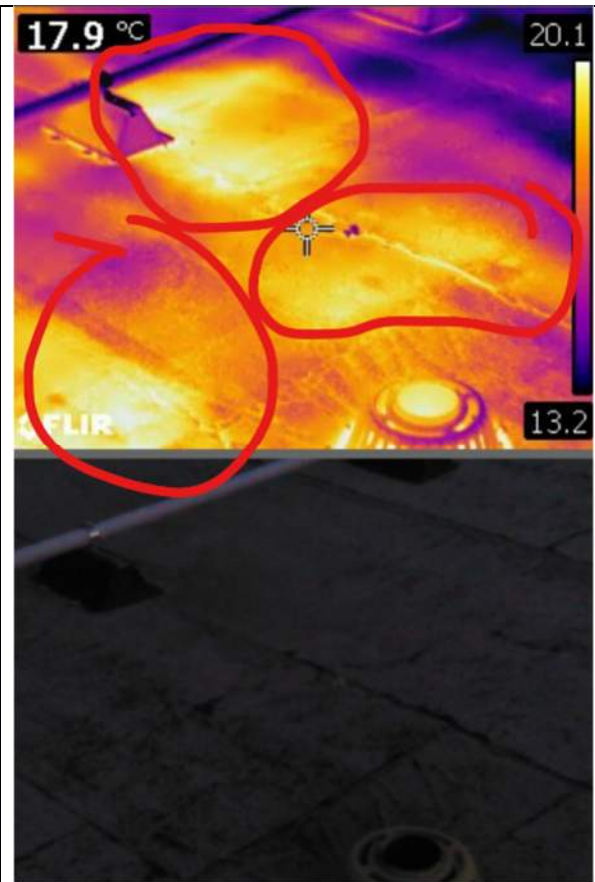
The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



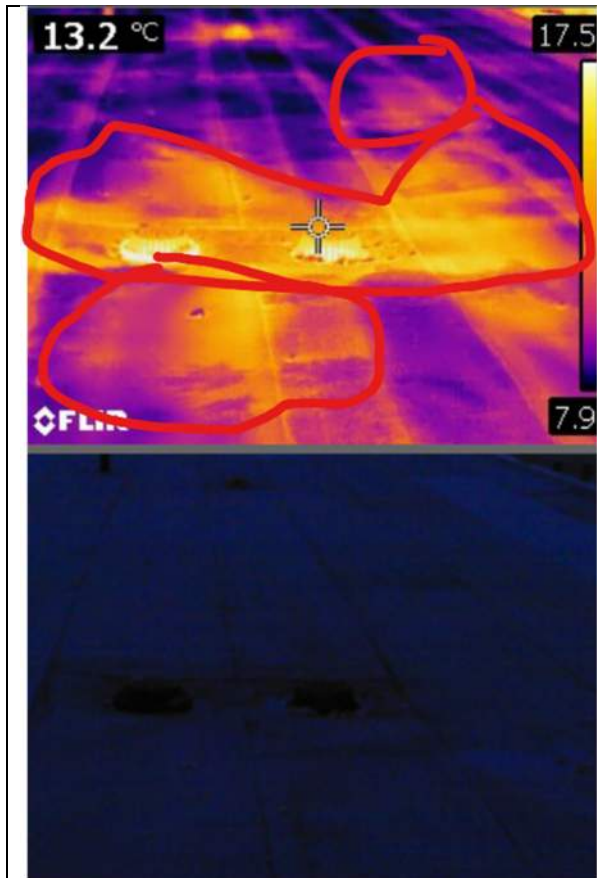
The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



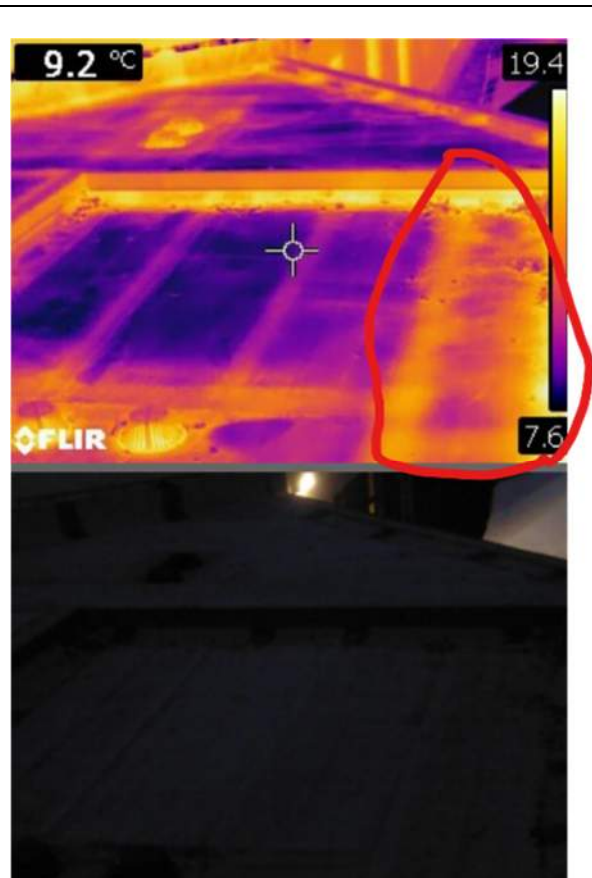
The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



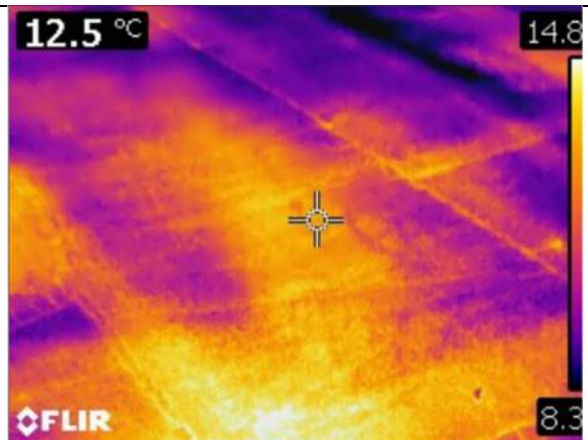
The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



This location appears to be an infilled roof curb roofed over flush to the roof with no insulation.



The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.



The brighter colors are thermal patterns consistent with wet insulation below the roof membrane.

Unit Ventilators

The unit ventilators have an internal screen that is not accessible. These units are completely clogged and have no way to efficiently service the unit.



The openings and the clogged dampers allow moisture into the building – snow blows through the ventilators.



Water observed withing the backside of the External Finish System that poured out of the wall assembly when the unit ventilator was removed. This is an indication that water is trapped behind the finish system reducing the effectiveness of the insulation and causing issues associated with water trapped in a wall system. This was in the 200-wing building.

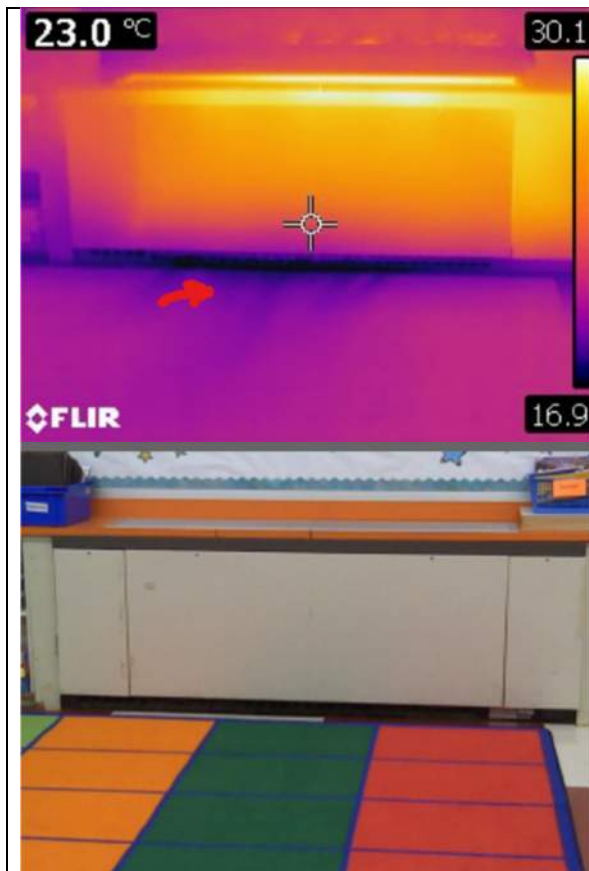




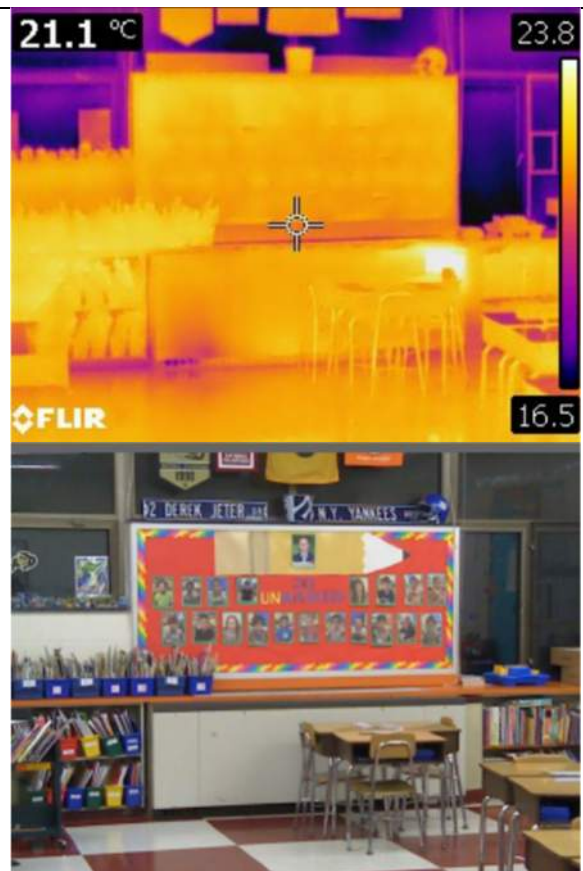
Unit ventilator in place at ground level. Cold air and surface water have an open pathway into the building.



Wide open-air gap at the unit ventilator into the building.



A very noticeable draft of cold outside air can be seen below the unit ventilator cabinet. The draft appears as the dark wispy fingers on the floor. The darker colors are the cooler temperatures, and the brighter colors are the warmer temperatures.



Cold air seen at the base of the unit. A hot spot at the controls at the top right of the cabinet. A cold draft of outside air seen at the operable window to the right of the tack board. Drafts seen around the hopper window to the left of the tack board.

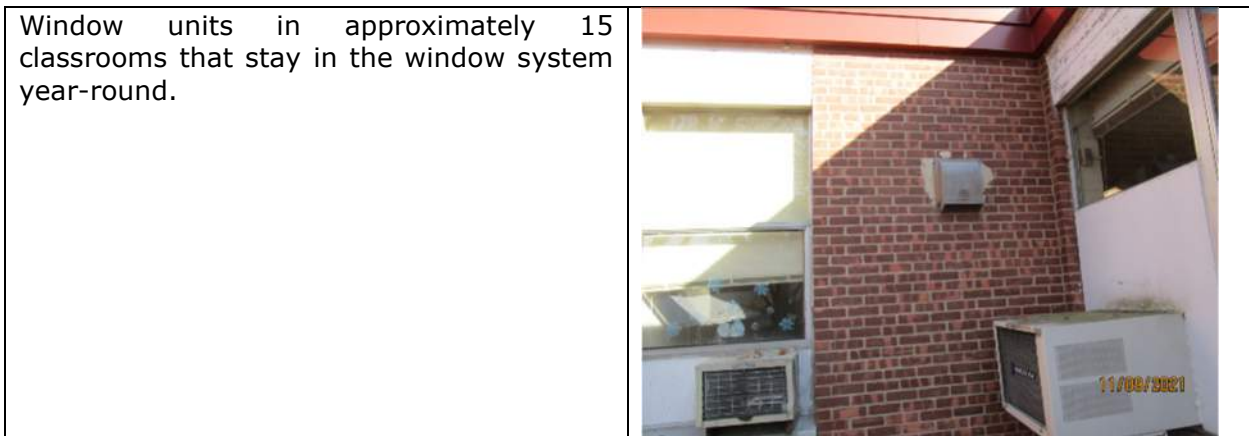
Skylight issues in Room 6

On-going issue with the skylights. Water infiltration issue has been on-going, and several attempts have been made to mitigate the water leaks. Sealant has been applied to the skylight joints. Solar heat gain issue – the skylight has been whited out to try to reduce the amount of solar heat gain in the space.





HVAC window units



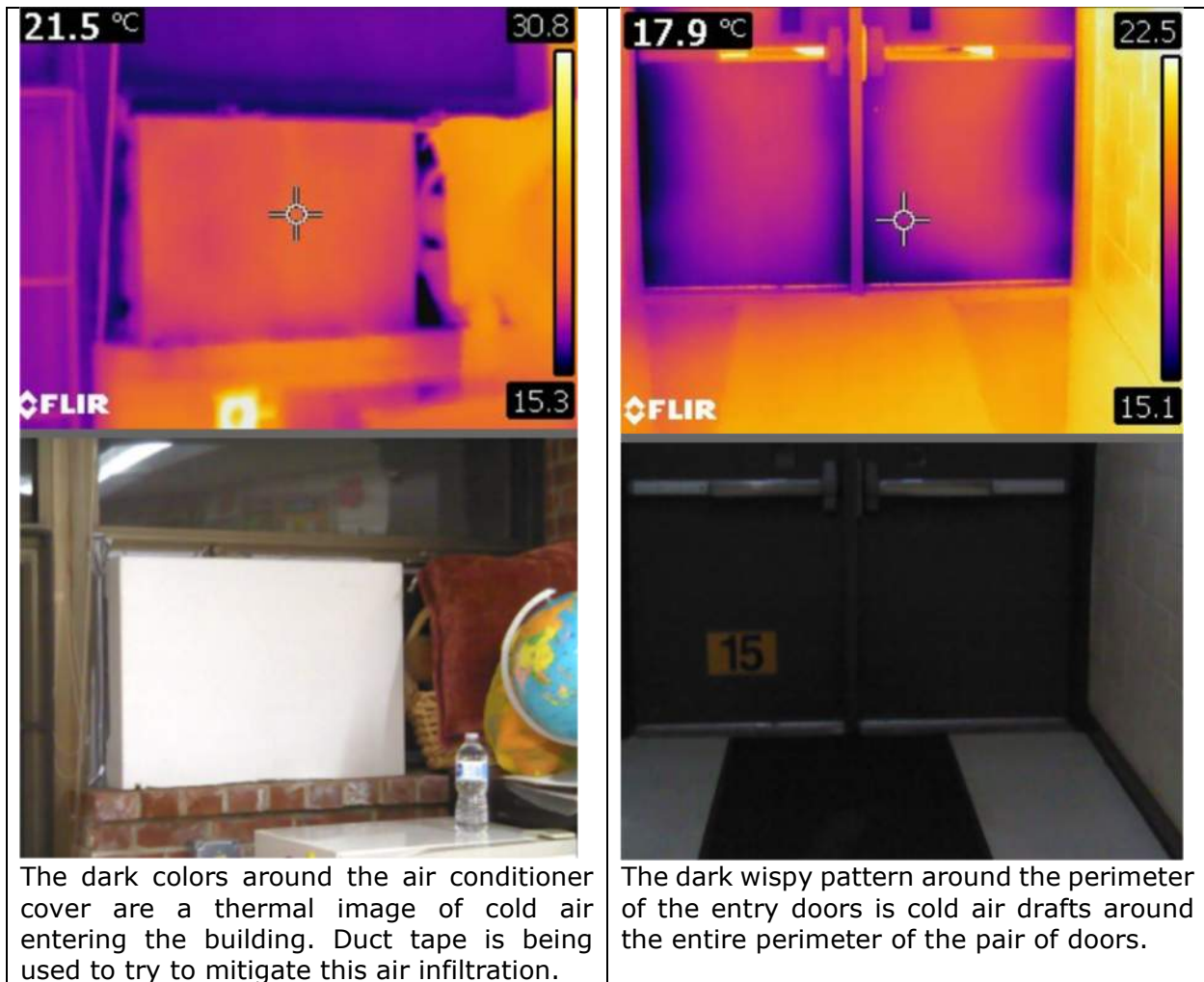
Approximately half the building has window units.
These are large 3-ton window units.



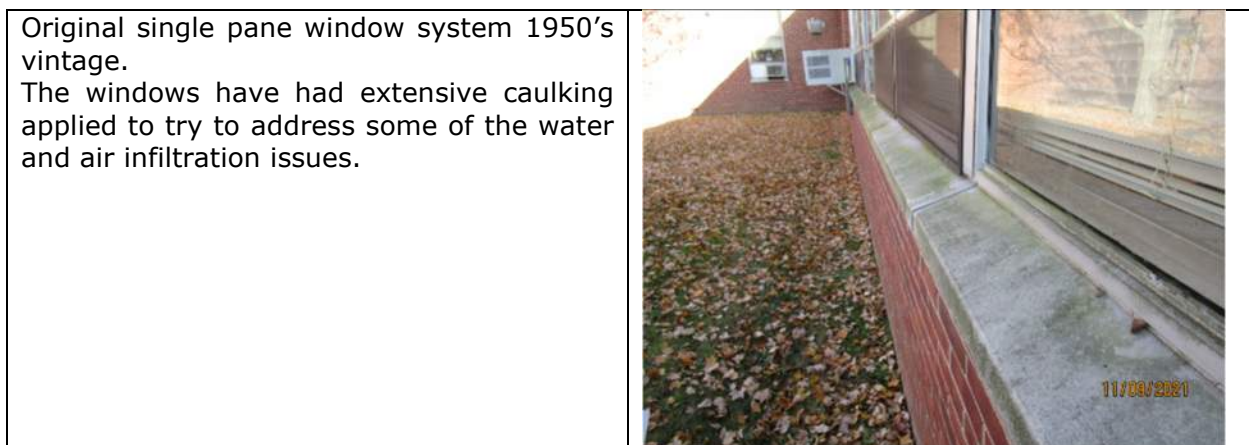
The wisps of black seen at the hopper window and around the air conditioner are cold air drafts into the building.



The cold air draft around the air conditioner cover can be clearly seen by the dark colors around the unit.



Window System

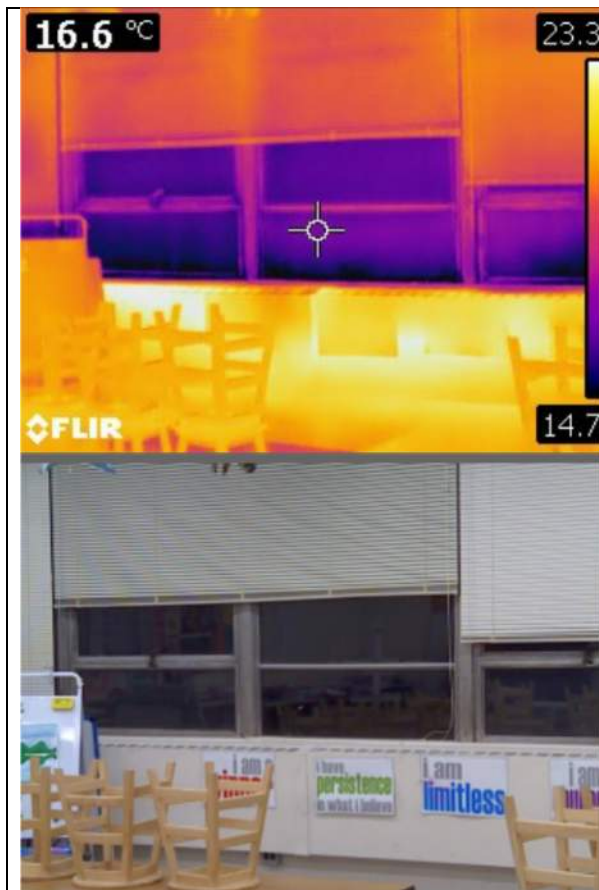


Single vents have been installed to try to ventilate the brick cavity space. This ventilation is not adequate. Convection is required to properly ventilate a cavity space with vents at the bottom and top of the wall.

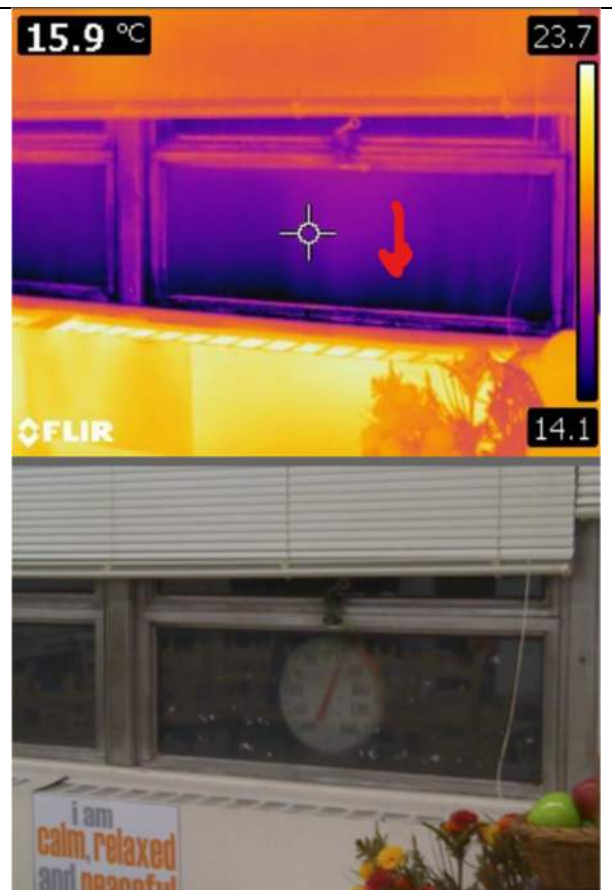


Kalwall System observed in the thermal scans to have air leakage at the perimeter and thermal bridging between the panels.

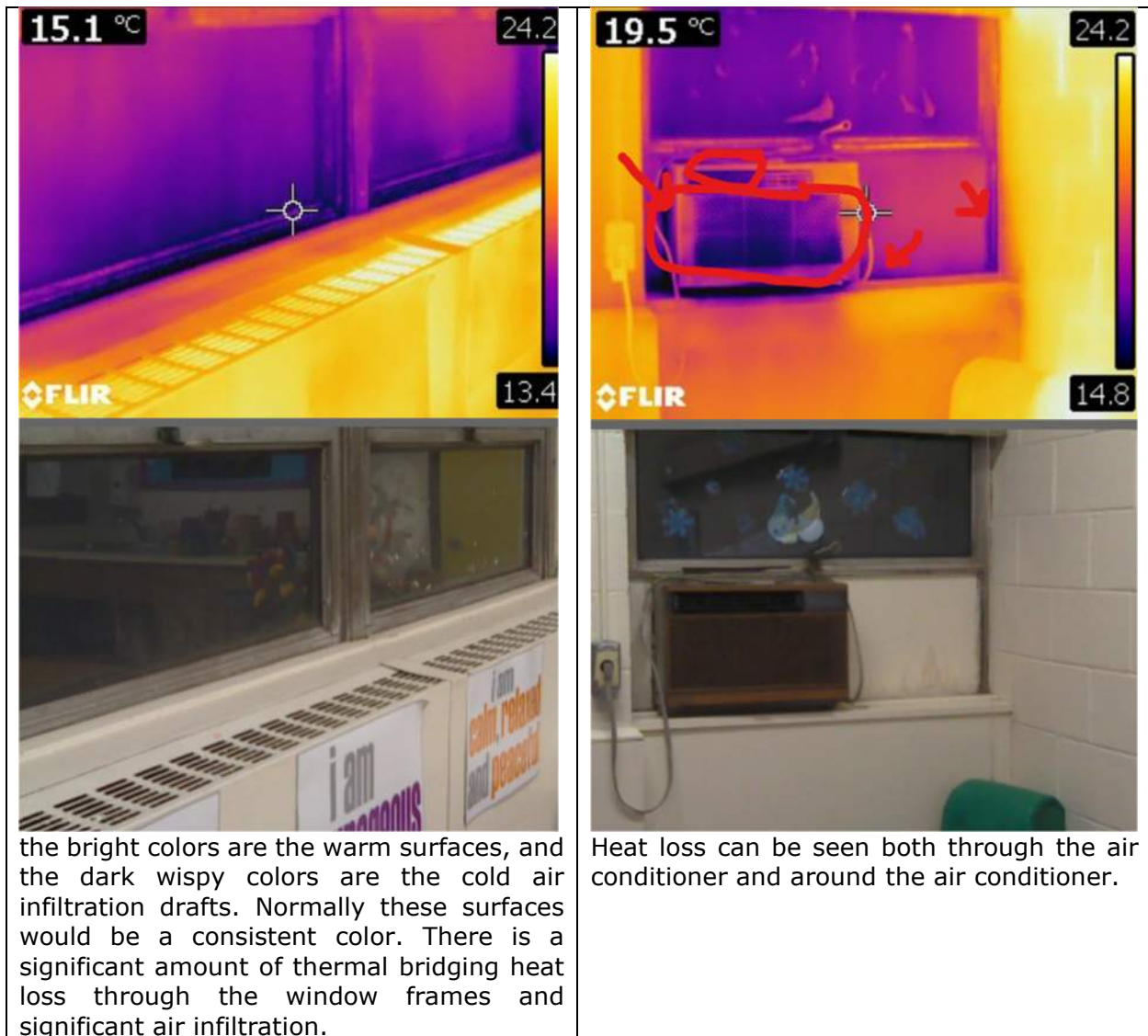


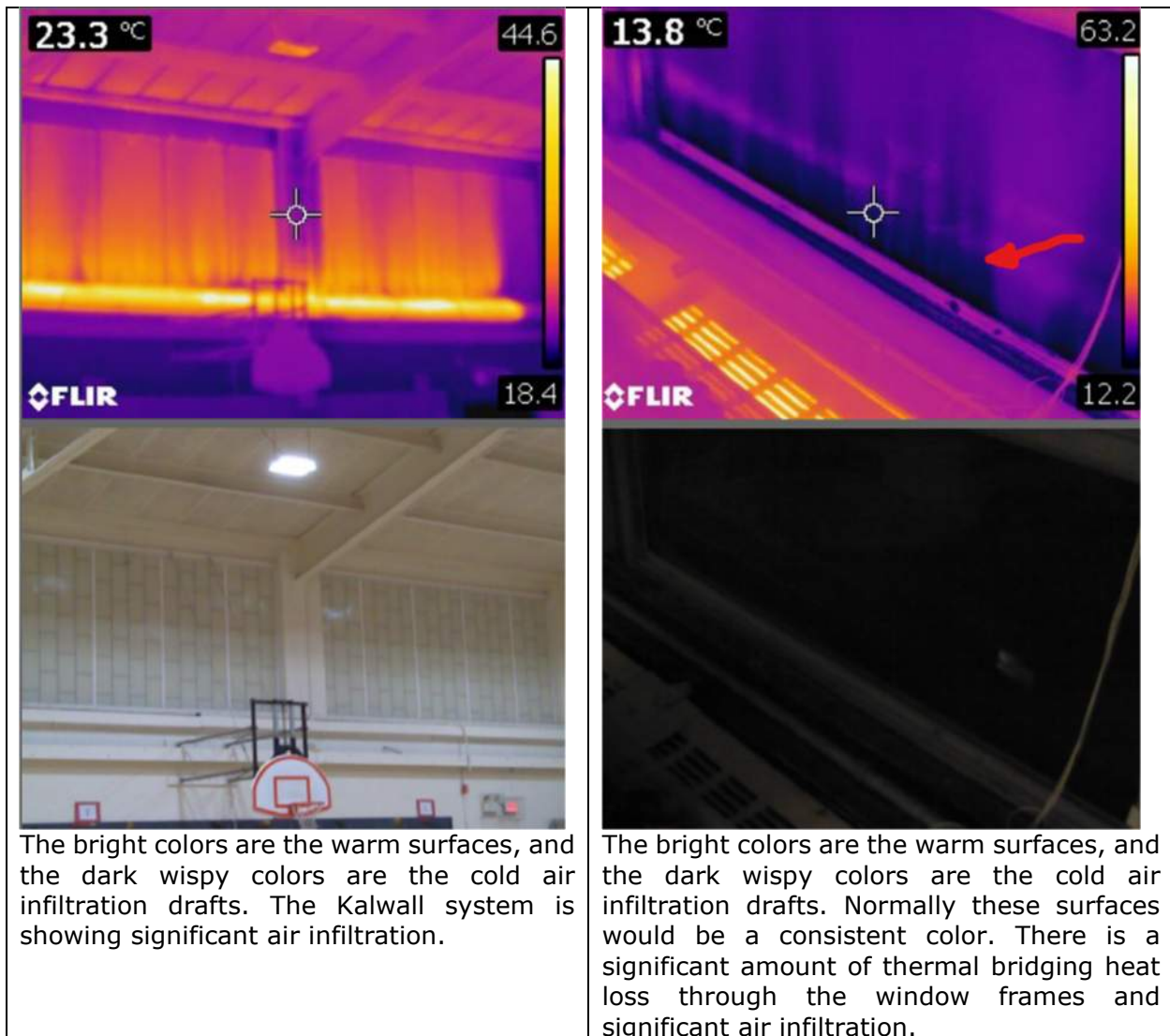


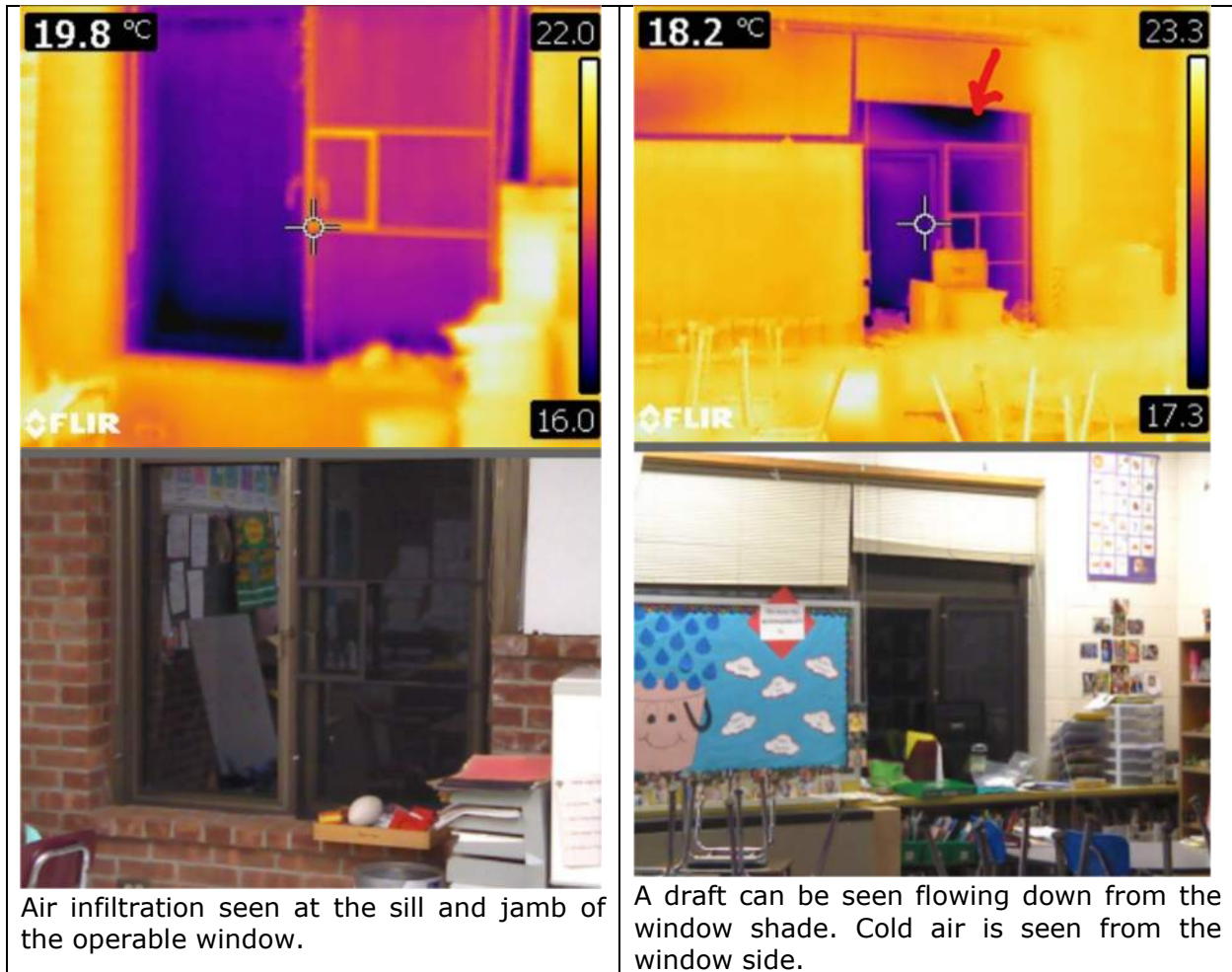
The bright colors are the warm surfaces, and the dark wispy colors are the cold air infiltration drafts. Normally these surfaces would be a consistent color. There is a significant amount of thermal bridging heat loss through the window frames and significant air infiltration.



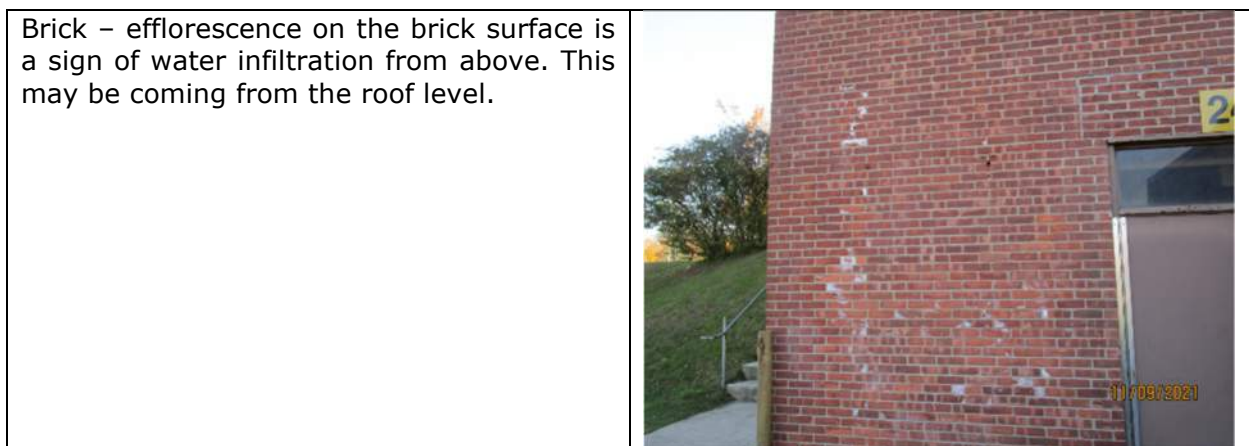
The bright colors are the warm surfaces, and the dark wispy colors are the cold air infiltration drafts. Normally these surfaces would be a consistent color. There is a significant amount of thermal bridging heat loss through the window frames and significant air infiltration.







Exterior Wall Systems





Extensive sealant has been applied to the door lintel. The water infiltration is likely coming from the brick wall cavity from a source higher on the wall or at the roof flashing.

External Finish Systems



Entry soffit does not have any venting resulting in likely condensation building up in the ceiling cavity. The moisture shows signs of suspect materials on the ceiling surface.



Organics appear to be growing on the surface of the finish system. Water being trapped behind the system has been observed at the unit ventilators and the base of the finished system walls.





Cracks in the finish system have been sealed to try to prevent water infiltration.



Vent into finish system soffit.



View inside the finish system soffit reveals that the gypsum sheathing on the exterior wall has no vapor barrier allowing drafts of outside air into the building.



All the base trim and control joints appear to have expansion damage from water exfiltrating the system and expanding when leaving the system.



Ice damage at base trim and control joint.

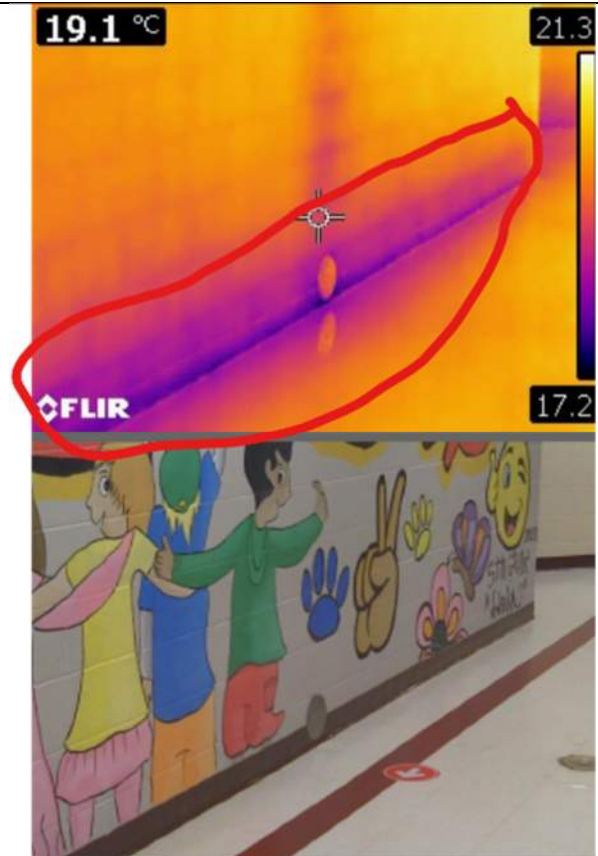


Little to no ventilation in the soffits.

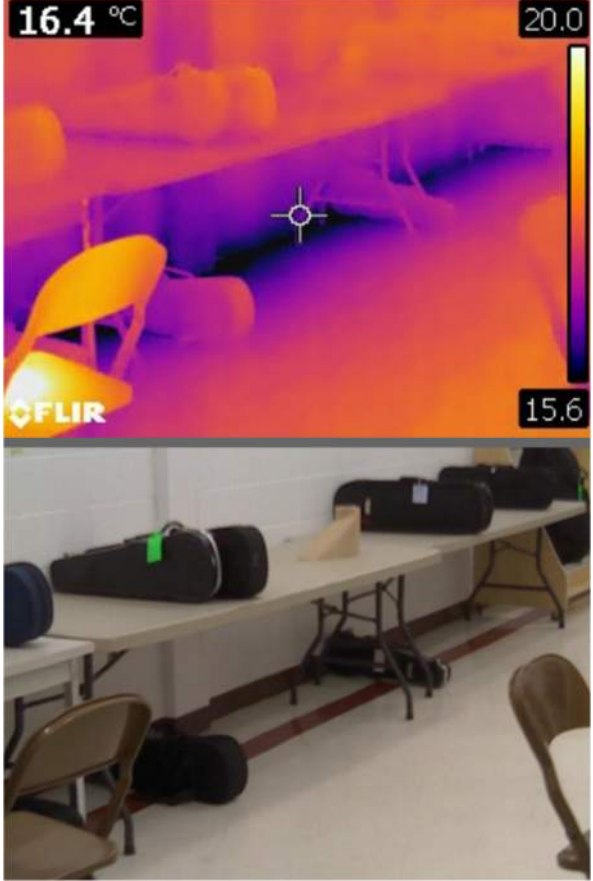



Insulation in the exterior walls is not properly installed. The vapor barrier should be overlapped and sealed from each section of insulation. Without the continuous vapor barrier airflow is free to infiltrate and exfiltrate the building.

A damp patch on a wall is usually much cooler than the surrounding surface and when moisture-laden air meets a colder surface, it causes condensation. Several areas with thermal images with a temperature variation that are consistent with condensation have been identified. Condensation damp areas can lead to microbial growth. If condensation is not dealt with it will go on to cause mold growth.



The foundation has no thermal break between the exterior foundation and the floor slab inside of the building causing a cold spot on the walls and floor that can lead to condensation.

 <p>Cold thermal bridge at the exterior walls.</p>	 <p>Interior walls thermal pattern as an example of a wall to floor slab with no thermal bridge to the exterior.</p>
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Roof Top Units

The rooftop units have been reported to have corroded pans that have rusted through and caused leaks into the building. The housing itself does not leak but the internal collection pans for condensation have failed.

The RTU pans have been re-gasketed and caused extensive water infiltration into the auditorium. This resulted in a major project to mitigate the mold caused by this water infiltration into the auditorium.



Wind Driven Rain Issues

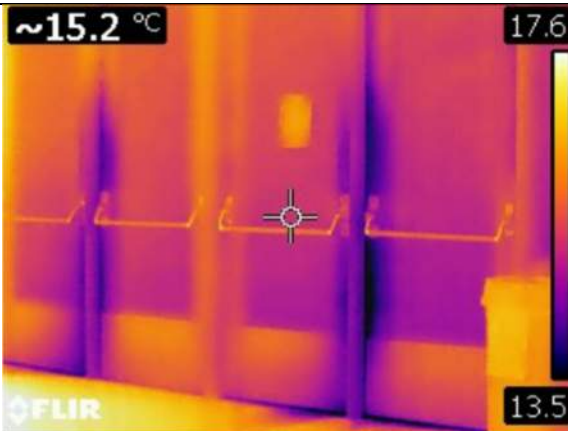
Wind driven rain issues have been reported at the main entrance, storefront door areas, library entrance, rooftop man door access above the auditorium at the threshold. Snow has also been reported blowing through the gaps around the doors.



Visible gaps in the weather stripping at the doors observed.



Deteriorated exterior walls systems observed.



Thermal image consistent with air infiltration observed around all the entry doors.



Thermal image consistent with air infiltration observed around all the entry doors.



Pitch box issues

Water infiltration was reported at the supply and return lines at the roof top units. This infiltration has been corrected.



Pitch box at the guardrail has been refreshed.

Roof drain piping issue reported

A roof drain body and piping that had been replaced was observed in the office. There was a hole in the pipe indicating that the roof drain system has exceeded its lifespan.



Roof access Ladders – Anchors to the building

The access ladders on the roof levels have failed anchoring systems. The anchors have pulled out of the building and as a result the ladders are very loose. This is causing a potential water infiltration issue at both ladders.

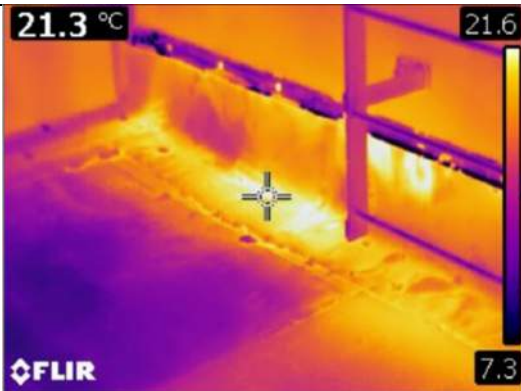




Roof ladder pulling away from the building causing the sealant around the anchors to tear allowing water into the wall.



Thermal pattern consistent with water infiltration at the roof ladder possibly caused by the movement of the ladder due to the loose anchors.



Thermal pattern consistent with water infiltration at the roof ladder possibly caused by the movement of the ladder due to the loose anchors.

V. HVAC Commissioning and Testing

The building HVAC systems consist of multiple types of roof top units, air handling units and unit ventilators. All major mechanical equipment is controlled by Environmental Systems Corporation (ESC) building management system (BMS) via direct digital controls (DDC).

A detailed testing of the various devices and sensors enabling the HVAC system to implement automatic temperature control (ATC) was conducted and the observations and deficiencies are provided in the sections below.

General Observations

1. HV units are located on the bulkhead above the gymnasium.
2. The chiller and the constant volume chilled water pump operates continuously when the OA temp goes above 67°F. Only one chiller runs at a time, and the chillers are rotated every 168 hours (approximately 1 week).
3. All units' filters are MERV 8 and have been replaced on 04/21. RTU MZ-2 filters were observed to be dirty, and stalled water was observed at the base of the unit.



RTU-MZ-2 filters

4. The RTU and HV units were running in 100% return air and OA dampers fully closed.
5. During the pandemic the units were running in occupied mode 24/7; however, since the government approval the units have been switched back to follow occupancy based programmed schedules.
6. All Exhaust Fans are controlled by Tork-time clocks. The BMS monitors ON/OFF status of the fans. The Tork time clock serving the West wing was observed to be faulty and is recommended for replacement. All of the Exhaust Fans serving the West wing were observed to be Off.
7. The RTU for the music room was observed to be not operating. The music room HVAC system is operated by pneumatic controls and the status is monitored by the BMS. Space temperature in the music room was measured to be 78°F and the

pneumatic thermostat setpoint was not visible. It is reported that the facilities are working on replacing the unit.

8. The fan coil unit's outdoor air (OA) dampers are located outside the classrooms a couple of inches above the ground level.



OA grills on the outside wall for fan coil unit ventilation.

9. The OA dampers of the RTU and HV are located away from exhaust fans.



OA louvers on the exterior of wall of the building as observed from the roof.

Operations & Maintenance Practices/Tasks:

Starting July of 2021, facilities staff and ESC have been working on evaluating and fixing issues with the units on site including properly locating sensors, replacing missing sensors, providing proper size and type of filters, and checking the operation of the units. The observation and findings of these tests are included under section five 'Functional Testing' of this report.

Sequence of Operations:

RTU-MZ-1N, MZ-1S, MZ-2 and MZ-3

Cooling Mode

Whenever the space temperature rises above the space temperature setpoint the cooling mode on the RTU will be enabled.

If the unit is operating in Occupied Mode, then Fan VFD turns ON at maximum fan speed and 1 (first stage) Compressor turns ON.

After 5 minute delay if the space temperature stays above setpoint then the stage two (2nd) compressor turns ON.

If space temperature drops below space setpoint+1.5°F for 5 minutes, then the 2nd compressor turns OFF.

If the cold deck temperature drops below cold deck setpoint, then the Fan VFD turns down to minimum fan speed.

If space setpoint is satisfied, then the first stage (1st) compressor turns OFF after 5 minute delay and the fan stays operating at minimum fan speed.

Cold deck and hot deck dampers modulate based on space temperature (pneumatic controls)

Ventilation Control

Outside air dampers stay closed during normal operation. If space CO₂ increases above CO₂ setpoint, then OA damper modulates Open, Return damper modulates closed and supply Fan VFD modulates fan speed to maximum.

Economizer mode: (Applicable to the main office RTU only)

No economizer setpoint set up for RTU-MZ-1N, MZ-1S and MZ-3

When OA temperature is below Economizer setpoint, OA damper modulates open to 100%, Return air damper modulates closed to 0%.

Unoccupied mode:

The RTU fan remains OFF during scheduled unoccupied mode and the space temperature setpoint is reset to maintain unoccupied heating and cooling setpoints.

If space temperature increases above the unit's unoccupied cooling setpoint then the RTU turns ON to maintain unoccupied cooling setpoint. Similarly, if space

temperature drops below the unit's unoccupied heating setpoint then the RTU turns ON to maintain unoccupied heating setpoint.

HV Units (Serving Gymnasium)

Summer mode:

During summer mode operations the supply fan is operating at minimum fan speed. Unit's return air damper is 100% open.

Ventilation Control

When space CO₂ increases above CO₂ setpoint, the OA damper modulates open, the relief air damper also modulates open, and the return air damper modulates close. The fan speed is set to maximum fan speed.

When CO₂ setpoint is satisfied, the OA damper modulates closed after a delay. The relief air damper modulates closed, and the return air damper modulates Open. Fan Speed modulates to its low speed setpoint.

Unit Ventilators (UV) with DX Cooling:

Cooling mode:

Whenever the space temperature rises above the space temperature setpoint the cooling mode (DX cooling) on the unit ventilators will be enabled.

Occupied Mode:

During occupied mode the fan operates continuously, and the condenser turns ON.

If the space occupancy sensor detects motion, the unit will work to maintain occupied setpoints, else the unit will maintain standby setpoint.

Ventilation Control

If space CO₂ increases above CO₂ setpoint, then OA damper modulates Open and the Return air damper modulates closed.

Economizer mode:

When OA temperature is below Economizer setpoint, OA damper modulates open to 100%, Return air damper modulates closed to 0%.

If OA temperature at any one of the units is much lower than economizer setpoint, then OA temperature is set as global OA temperature.

Units Ventilators (UV) – 4 pipe system:

Cooling mode:

Whenever the space temperature rises above the space temperature setpoint the cooling mode on the UVs will be enabled and chilled water valve will modulate open.

Heating mode:

Whenever the space temperature drops below the space temperature setpoint the heating mode on the UVs will be enabled and hot water valve will modulate open.

Occupied Mode:

During occupied mode the fan operates continuously. If the space occupancy sensor detects motion, the unit will work to maintain occupied setpoints, else the unit will maintain standby setpoint.

Ventilation Control

If space CO₂ increases above CO₂ setpoint, then OA damper modulates Open and the Return air damper modulates closed.

Economizer mode:

When OA temperature is below Economizer setpoint, OA damper modulates open to 100%, Return air damper modulates closed to 0%.

If OA temperature at any one of the units is much lower than economizer setpoint, then OA temperature is set as global OA temperature.

VI. Functional Testing

The table below provides the functional test results for the HVAC equipment

Westport Public Schools										
Long Lots Elementary School HVAC Testing										
Date:	August 2021'									
Testing Modes										
Equipment ID	Area / Service	Test Date	Occupied Mode	VFD Fan Speed Modulation	Cooling Mode	Heating Mode	Economizer Mode	CO2 Ventilation Mode	Unoccupied Mode	Observations / Comments
HV-1	Gym	8/24/2021	Pass	2- speed VFD setup	N/A	Deferred seasonal test	N/A	Pass	N/A	Outside air dampers were 100% closed
HV-2	Gym	8/24/2021	Pass	2- speed VFD setup	N/A	Deferred seasonal test	N/A	Pass	N/A	Outside air dampers were 100% closed
RTU-MZ-1N	Auditorium	8/24/2021	Pass	2- speed VFD setup	Pass	Deferred seasonal test	Fail - Not set-up	Pass	Pass	Outside air dampers were 100% closed
RTU-MZ-1S	Auditorium	8/24/2021	Pass	2- speed VFD setup	Pass	Deferred seasonal test	Fail - Not set-up	Pass	Pass	Outside air dampers were 100% closed
RTU-MZ-2	Main Office	8/24/2021	Pass	2- speed VFD setup	Pass	Deferred seasonal test	Pass	Pass	Pass	Outside air dampers were 100% closed. Unit MZ-2 filters were dirty, and stalled water was observed at the base of the unit.
RTU-MZ-3	Library	8/24/2021	Pass	2- speed VFD setup	Pass	Deferred seasonal test	Fail - Not set-up	Pass	Pass	Outside air dampers were 100% closed
RTU	Music Room	8/24/2021	Unit was off - Manually enabled	N/A	Fail	Deferred seasonal test	Fail	Fail	Fail	Facilities is working on replacing the unit

Functional Testing of RTUs and HV Units

Westport Public Schools								
Long Lots Elementary School HVAC Testing								
Date:		August 2021'						
Equipment ID	Date Test	Area / Service	Supply Air Temperature	Space Temperature Sensor	Mixed Air Temperature	Outside Air Damp	Freeze Stat Operation	Comments / Observations / Issues
UV-5	7/7/2021	Wing 200 - Room 207	Pass	Calibrated - Pass	Fail - Sensor needs replacement	Pass	Pass	Found bad set of contacts on controller for fan status and moved it. Tested ok.
UV-14	7/7/2021	Wing 200 - Room 208	Pass	Pass	Pass	Pass	Pass	Found bad current sensor and replaced. Verified ok. HVAC occ sensor not working. Light occ sensor not working.
UV-13	7/7/2021	Wing 200 - Room 209	Pass	Pass	Pass	Pass	Pass	
UV-4	7/7/2021	Wing 200 - Room 206	Pass	n/a	n/a	n/a	Pass	Changed the outside air damper actuator. Also changed bad blower motor. Both now working correctly. Also replaced the controller that had a bad room sensor input.
UV-11	7/29/2021	Wing 200 - Room 212	Fail - Needs to be replaced	Pass	Pass	Pass	Pass	Needs new filters.
UV-2	7/29/2021	Wing 200 - Room 204	Pass	Pass	Pass	n/a	Replaced	Auto reset low limit stat, should add a manual reset freeze stat (N/C) 8/20/21. Replaced freeze stat with manual reset
UV-1	7/29/2021	Wing 200 - Room 203	Pass	Pass	Pass	Pass	Pass	Need 8x28 size filter. Found unit is tied into refrigeration lines of room 212. The controllers are configured that if the units do not see fan status in a/c mode the dx cooling will stay on and the units will ice up. In heat mode if we lose fan status the outdoor air dampers stay open, which could freeze the coil. Recommendation: (1) Clean all condenser coils then verify refrigerant charges in systems. (2) Reprogram all the controllers to disable the dx in summer if no fan status and close the OA dampers in winter mode if no fan status.
UV	7/29/2021	Room 101	n/a	Pass	n/a	Pass - linkage corrected	Pass - controller status not correct	Chilled water valve and Hot water Valve were tested and operation verified. Need to change controller to obtain correct unit status.
UV	7/29/2021	Room 103	n/a	Calibrated - Pass	n/a	Corrected - Pass	Pass - controller status not correct	Chilled water valve and Hot water Valve were tested and operation verified. Need to change controller to obtain correct unit status.
UV	7/29/2021	Last unit in communication line.	n/a	Pass	n/a	Pass	Pass - controller status not correct	Chilled water valve and Hot water Valve were tested and operation verified. Need to change controller to obtain correct unit status.
Kit Make-up Air	8/20/2021	Kitchen	n/a	n/a	n/a	Pass	Works, however needs EP switch to open heating valve	Heating actuator tested ok
General Note	8/20/2021	200 Wing						Cleaned all the condensers on the roof that serve the 200 wing
Auditorium RTU North	8/20/2021	Auditorium	Pass	Calibrated - Pass	Pass	Pass	Pass	
UV-6	8/20/2021	Wing 200 - Room 210	Fail - Needs to be replaced	Pass	Pass	Pass	Pass	
UV-3	8/20/2021	Wing 200 - Room 205	Pass	Pass	n/a	8/20/21-Actuator replaced and tested	Pass	Current sensor installed and checked. Needs new fan speed transformer. Blower runs when it should not be running.
UV-12	7/16/2021	Wing 200 - Room 211	n/a	Replaced	n/a	n/a	n/a	7/16/21: Replaced bad temperature sensor
UV-10	7/29/2021	Wing 200 - Room 202	Pass	Pass	Pass	n/a	Pass	
UV-9	7/29/2021	Wing 200 - Room 201	Fail - Needs to be replaced	Pass	Pass	8/20/21- Replaced and tested ok	n/a	Updated graphics to remove CO2 sensor and match to actual equipment.
UV-8	7/29/2021	Wing 200 - Room 200	Pass	Pass	Pass	n/a	Pass	Updated graphics to remove CO2 sensor and match to actual equipment. Need to check refrigerant charge.
UV-8 Notes	7/29/2021	Wing 200 - Room 200						No filter installed, need 8x28 size filter. Unit tied to refrigeration lines of room 212. 8/20/21- Window A/C replaced.

Functional Testing of Unit Ventilators serving Wing 200

VII. Commissioning Issues Log

Commissioning Issues Log

Updated: 8/25/2021

Issue Status

"OP" or Open indicates a resolution has not been agreed upon.

"CL" or Closed indicates that the resolution was verified to be incorporated.

"IP" or In Process indicates resolution agreed upon, but not completed and confirmed.

"CL+" indicates resolution complete awaiting verification. (date entered in Action col)

"CL-" indicates Closed (with date), but will be shown for one more printing.

"IP+" indicates IP, but needs additional discussion.

Issues
Open 13

Issue Num	Status	Equipment	Dates Entry	Issue Details and Impacts (list equip tag and zone)	Response or Action by Contractor, A/E, CxP or Owner (give date and initials)	By
1	OP	AHU/HV	8/25/2021	BMS outside air RH reading innacurately (100%).		
2	OP	RTU-MZ-2	8/25/2021	Observed standing water at the economizer/filter compartment of the RTU. Condensate not draining properly		
3	OP	RTU-MZ-2	8/25/2021	No alert on the BMS for condensate overflow		
4	OP	RTU-MZ-1N,S	8/25/2021	Facilities observed condensate not properly draining in both units. The filter compartment of MZ-1N looked damp		
5	OP	RTU-MZ-1,3	8/25/2021	VFDs were installed in 3 units, however the control sequencing in the BMS is set up so the units run at either min or max speed. The min and max speeds were taken from a previous energy saving study.		
6	OP	OA dampers	8/25/2021	Unsure if snowline was considered when the OA dampers (induction and HV units) locations were chosen		
7	OP	RTU-Music room	8/25/2021	RTU observed off. Facility staff turned down the thermostat in the music room but the unit was unable to cool down the room.		
8	OP	BMS	8/25/2021	The BMS only shows the signals/command to the HVAC units but it isnt set up to monitor the operation of compressors, or dampers.		
9	OP	Exhaust fans	8/25/2021	Exhaust fans at the 200 Wing were observed off. Tork timer faulty needs to be replaced		
10	OP	Exhaust fans	8/25/2021	Exhaust fans operation can be monitored in the BMS but there were no alarms set up that notified the 200 wing fans stopped running		
11	OP	RTU-MZ-2	8/25/2021	Filters observed dirty. Need to be replaced		
12	OP	Induction Units	8/25/2021	Area by the return intake observed dirty, needs to be cleaned regularly		
13	OP	Chillers	8/25/2021	Broken pressure gauges		
14						
15						
16						
17						
18						

Table 1: Commissioning Issues Log

VIII. Limiting Conditions

The observations described in this report are valid on the dates of the investigation under the conditions noted in the report. We prepared this report for the exclusive use of Westport Public Schools (hereinafter "Client") and their successors and assignees. CPL does not intend any other individuals or party to rely upon the report without our express written consent. If another individual or party relies on the report, they shall indemnify and hold CPL harmless for any damages, losses, or expenses they may incur as a result to its use.

The report is limited to the visual observations made during our inspection. We did not remove surface materials, conduct any destructive or invasive testing, move furnishings or equipment, or undertake any digging or excavation. Accordingly, we cannot comment on the condition of systems that we could not see, such as buried structures and utilities, nor are we responsible for condition(s) that could not be seen or were not within the scope of our services at the time of inspection. We did not undertake to completely assess the stability of the buildings or the underlying foundation soil since this effort would require excavation and destructive testing. Likewise, this is not a seismic assessment.

We do not render an opinion on uninspected portions of the facility.

We did not perform any computations or other engineering analysis as part of this evaluation, nor did we conduct a comprehensive code compliance investigation. The report is not to be considered a warranty of compliance investigation. The report is not to be considered a warranty of condition, and no warranty is implied. Any photographs are an integral part of this report and must be included in any review.

If cost estimates are presented, they are estimates only. The estimates are based on our general knowledge of building systems and the contracting/construction industry. When appropriate, we have relied on standard sources to develop cost estimates. However, items for which we have developed cost estimates (e.g., structural repairs), no standard guide for developing such estimates exists.

We have performed no design work as part of the study, nor have we obtained competitive quotations or estimates from contractors as this also is beyond the scope of the project. The actual cost to remedy deficiencies and deferred maintenance items that we have identified may vary significantly from estimates and competitive quotations from contractors.

IX. Disclaimer

It is agreed and understood that this report is for the exclusive use of the Client and is not to be reproduced or copied.

While CPL has agreed to take reasonable steps to evaluate the building and its systems, the Client acknowledges and agrees that CPL shall have no liability or responsibility whatsoever arising out of or with respect to the commission of, utilization of or reliance upon the contents of this report by the Client including without limitation for any injury or death to any person, loss or damage to any property, loss of profits or business interruption, indirect or consequential damages, or for any other costs, losses or damages whatsoever or kind suffered by the Client. Without limiting or affecting the generality or interpretation of the foregoing, CPL shall not be liable or responsible for its failure to identify the existence of any of the following or issues arising therefrom:

1. Existence of an environmental hazard or condition, including, but not limited to, oil and petroleum products, toxic, reactive combustible, corrosive contaminants, wildfire, geologic or flood, except for evidence of environmental hazards visually identifiable without utilizing intrusive or chemical testing procedures;
2. Existence of conditions related to animals, rodents, insects, wood-destroying insects, organisms, mold or mildew;
3. Geotechnical, engineering, structural, architectural, geological, hydrological, land surveying or soils-related examinations;
4. Factors related to any systems, structures or components of the facility including but not limited to: efficiency, durability, costs to operate, fair market value, marketability, quality or advisability of purchase;
5. Systems, structures or components of the facility which are not permanently installed;
6. Compliance with installation guidelines, manufacturers' specifications, building codes, ordinances, regulations, covenants or other restrictions, including local interpretations thereof;
7. Some components of the property may be inaccessible for examination or concealed from view. Examples would include mechanical equipment suspended from or concealed by high ceilings, or access restricted by adjacent improvements;
8. As-built construction plans and operation and maintenance records may not be available or accurately reflect existing conditions at the time of review; and
9. Some system components or latent problems may be completely hidden from view in the facility.

X. CPL Inspection Team:

Adam Holzschuh, Sr. Project Manager

Andrew Kindya, Director

Terence Connolly, Associate Director

Ravi Chavan, Project Manager

George Barnes, Project Manager

	SECTIONS			SPACE	
	CES	SSP	Combined	CES	SSP
FY 23 (Proj.)	24	7	31	77%	23%
FY 22	23	7	30	77%	23%
FY 21	22	8	30	73%	27%
FY 20	21	7	28	75%	25%
FY 19	19	7	26	73%	27%
FY 18	19	7	26	73%	27%
FY 17	19	6	25	76%	24%
FY 16	20	6	26	77%	23%
FY 15	21	5	26	81%	19%
FY 14	22	5	27	81%	19%



WESTPORT PUBLIC SCHOOLS 2021-2022 BOARD OF EDUCATION MEETING CALENDAR

School in Session
 BOE Meeting Dates

KEY DATES

Aug 26-27, 30	Professional Development
Aug 31	First Day of School
Sept 6	Labor Day
Sept 7	Rosh Hashanah
Sept 16	Yom Kippur
Oct 13	Early Release/Professional Development
Nov 2	Election Day – Professional Development
Nov 24	Early Dismissal
Nov 25-26	Thanksgiving Recess
Dec 24-Jan 1	Winter Recess
Jan 17	Martin Luther King Jr. Day
Feb 21	Presidents' Day
Feb 18	Professional Development
Feb 21-25	February Recess
March 23	Early Release/Professional Development
Apr 15	Good Friday
April 15-22	Spring Recess
May 30	Memorial Day
June 16	Last Day of School/Graduation (Early Release)

July 2021						
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August 2021						
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September 2021						
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October 2021						
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November 2021						
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December 2021						
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January 2022						
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February 2022						
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March 2022						
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April 2022						
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May 2022						
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29	30	31				
June 2022						
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