École Varennes Building Condition Assessment

June 6, 2022

Planning for the Future: The Next 5 Years

Based on the current building condition assessment, École Varennes will require:

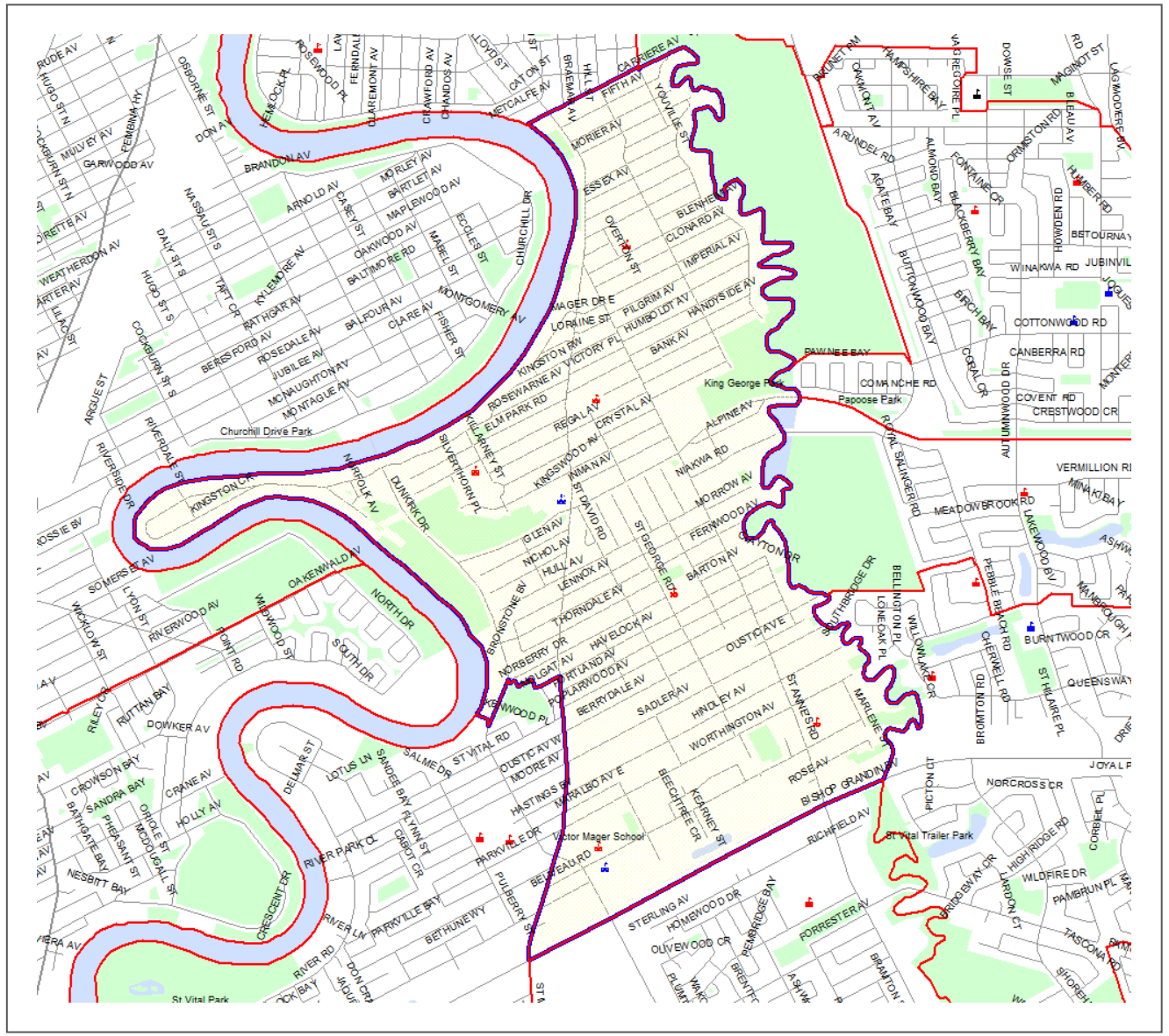
- Numerous renovations and an addition to the existing building

OR

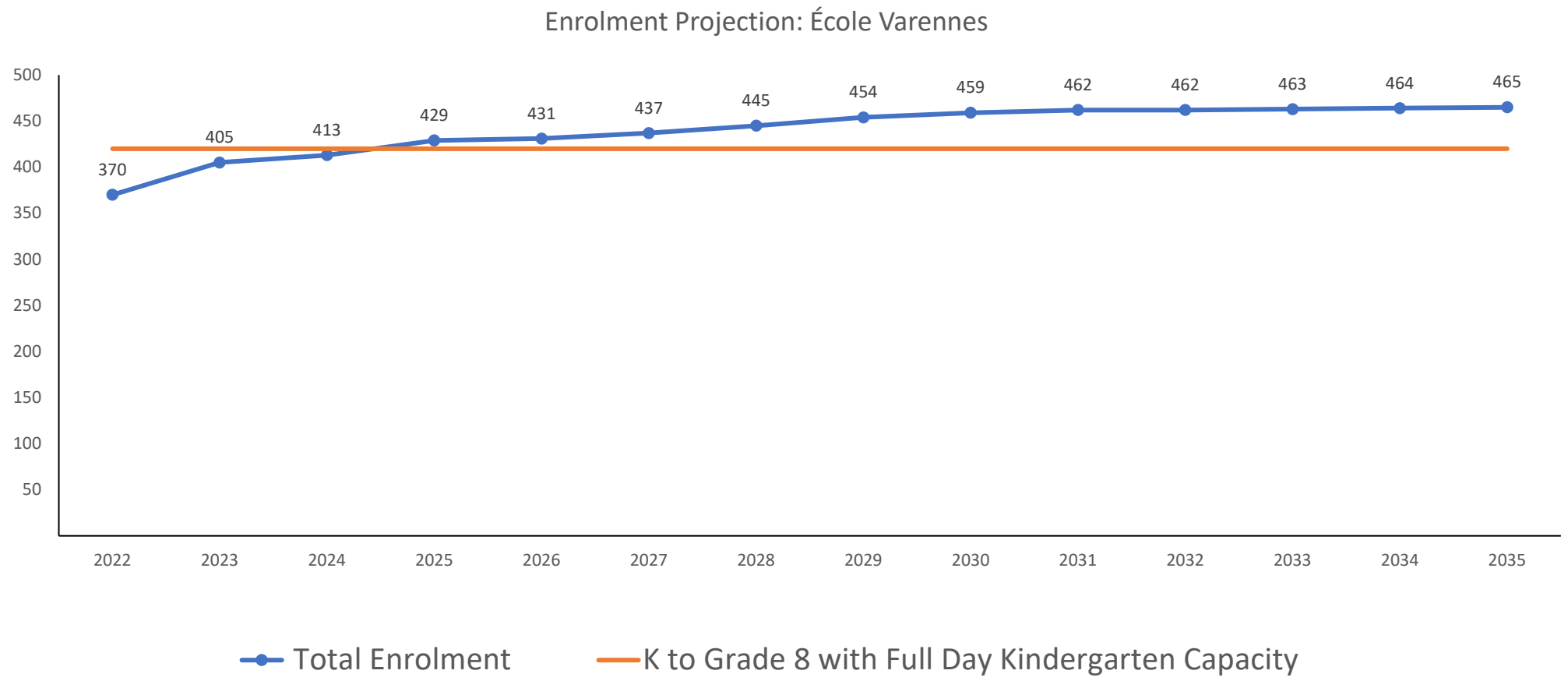
- A new building – students would continue attending the current École Varennes building until a new building is ready for occupancy
  - *This is the Senior Leadership Team's recommendation being brought to the Board of Trustees on Tuesday, June 7 based on the building condition assessment*

École Varennes

- Kindergarten to Grade 8
- School Capacity (420)
- High School (9-12)
  - Collège Jeanne-Sauvé
- Catchment Boundary:
  - Varennes
  - Elm Park
  - Glenwood
  - St. George
  - Norberry
  - Lavallee
  - Alpine Place
  - Worthington
- English schools in catchment boundary:
  - St. George School
  - Windsor School
  - Lavallee School
  - Victor Mager School
  - Glenwood School



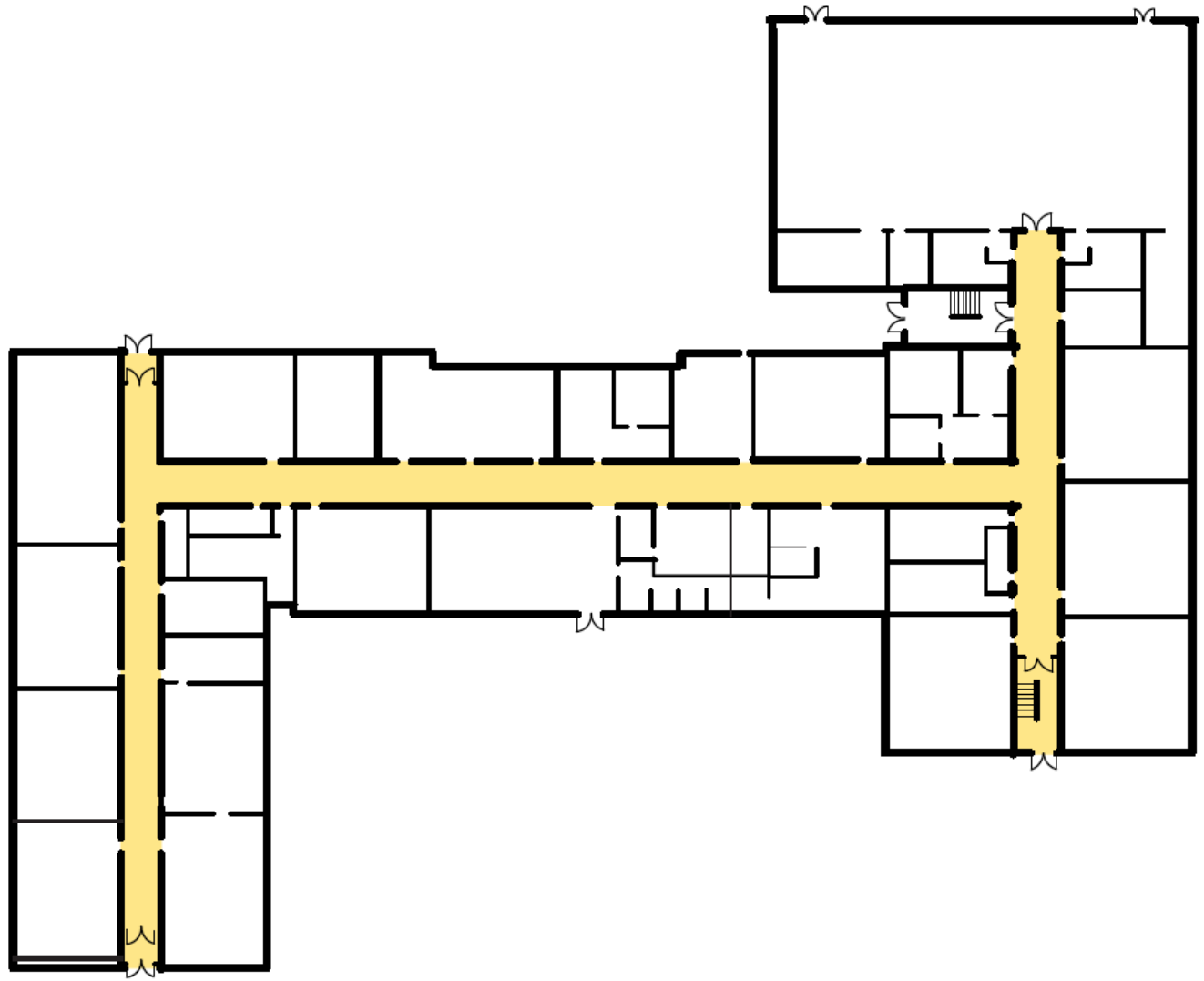
Enrolment Projection



ÉCOLE
VARENNES

22 Varennes Avenue (204) 253-1375

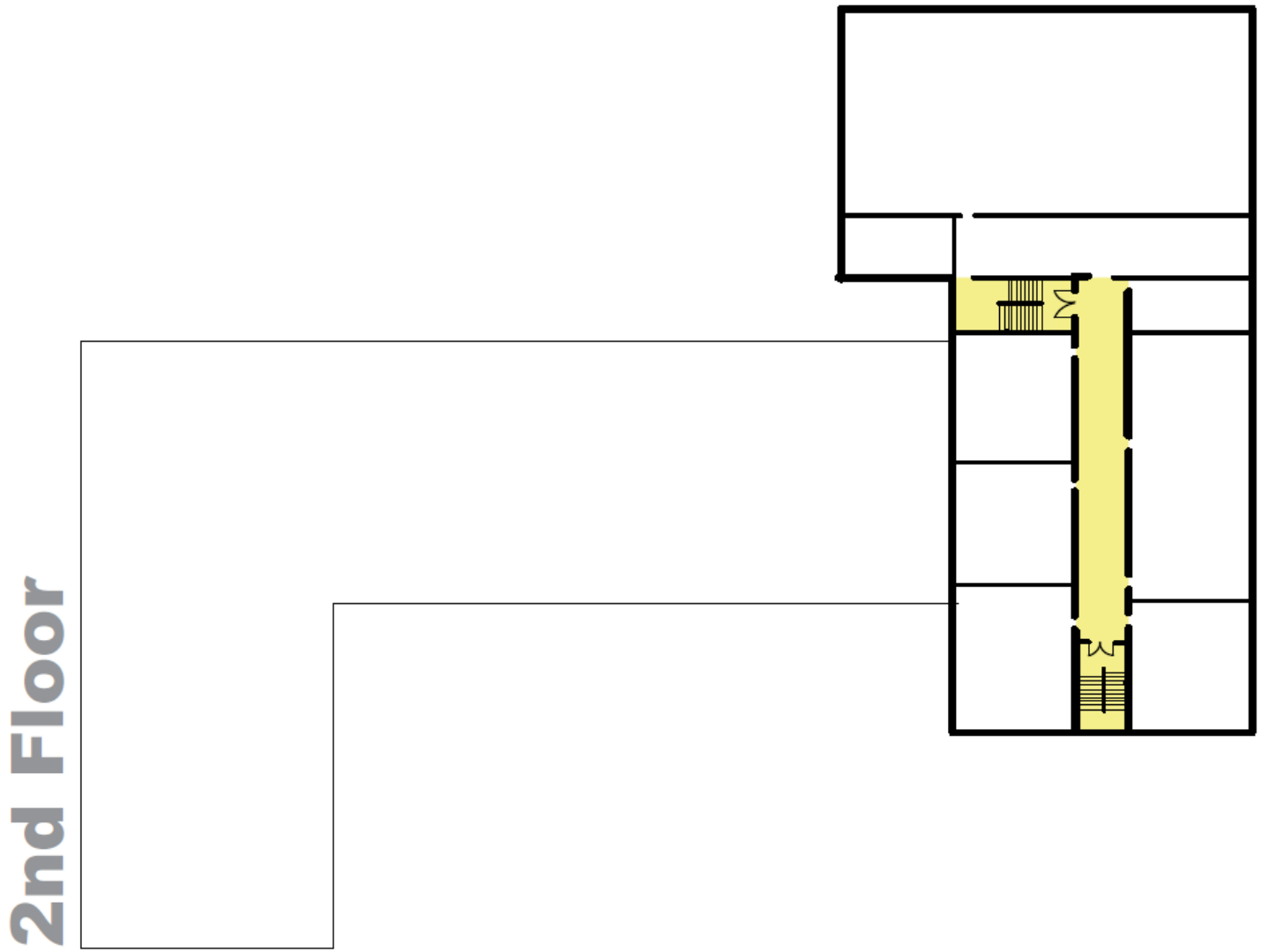
DIVISION SCOLAIRE
LOUIS RIEL
SCHOOL DIVISION



Main Floor

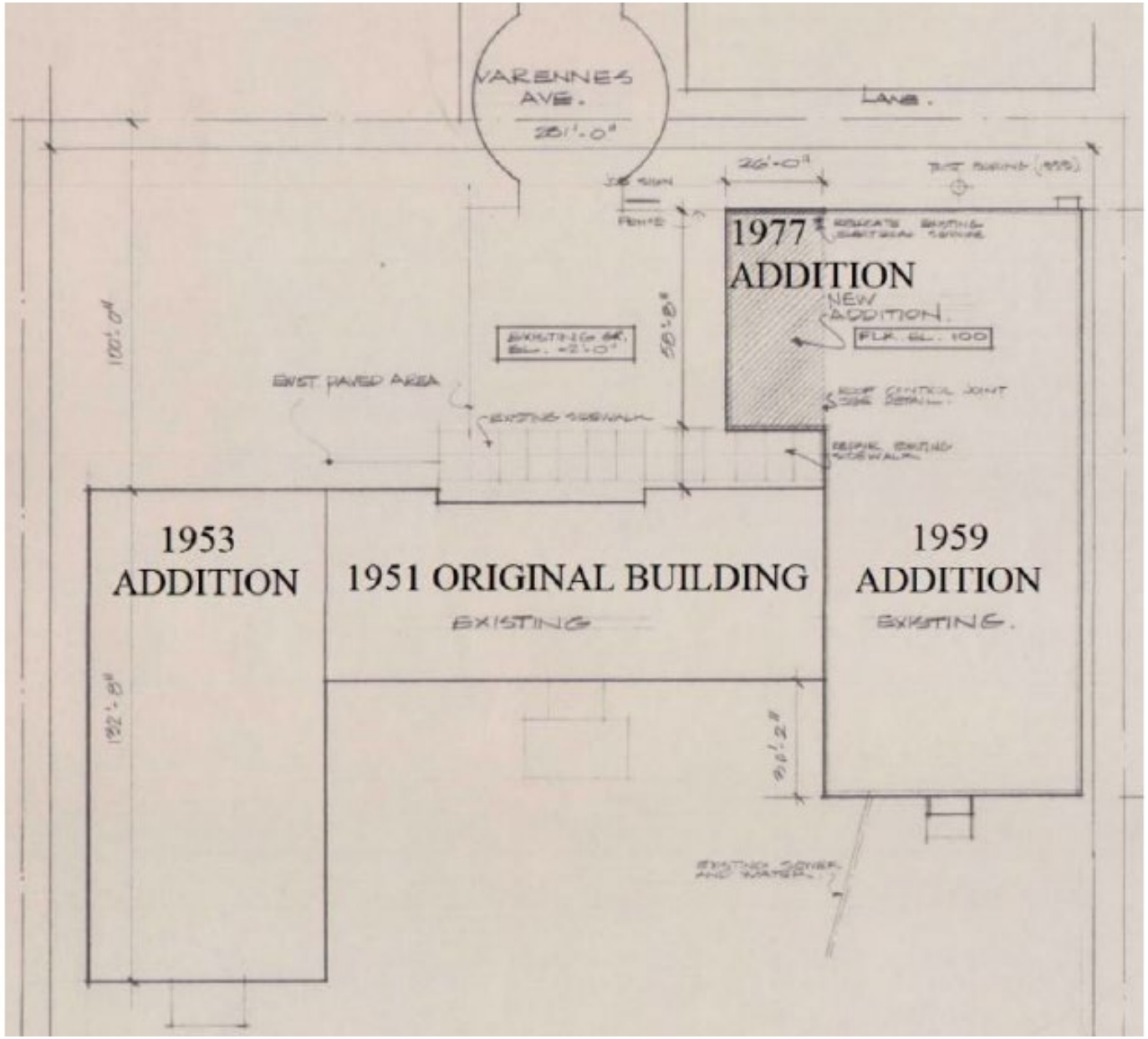
ÉCOLE
VARENNES
22 Varennes Avenue (204) 253-1375

DIVISION SCOLAIRE
LOUIS RIEL
SCHOOL DIVISION



Background

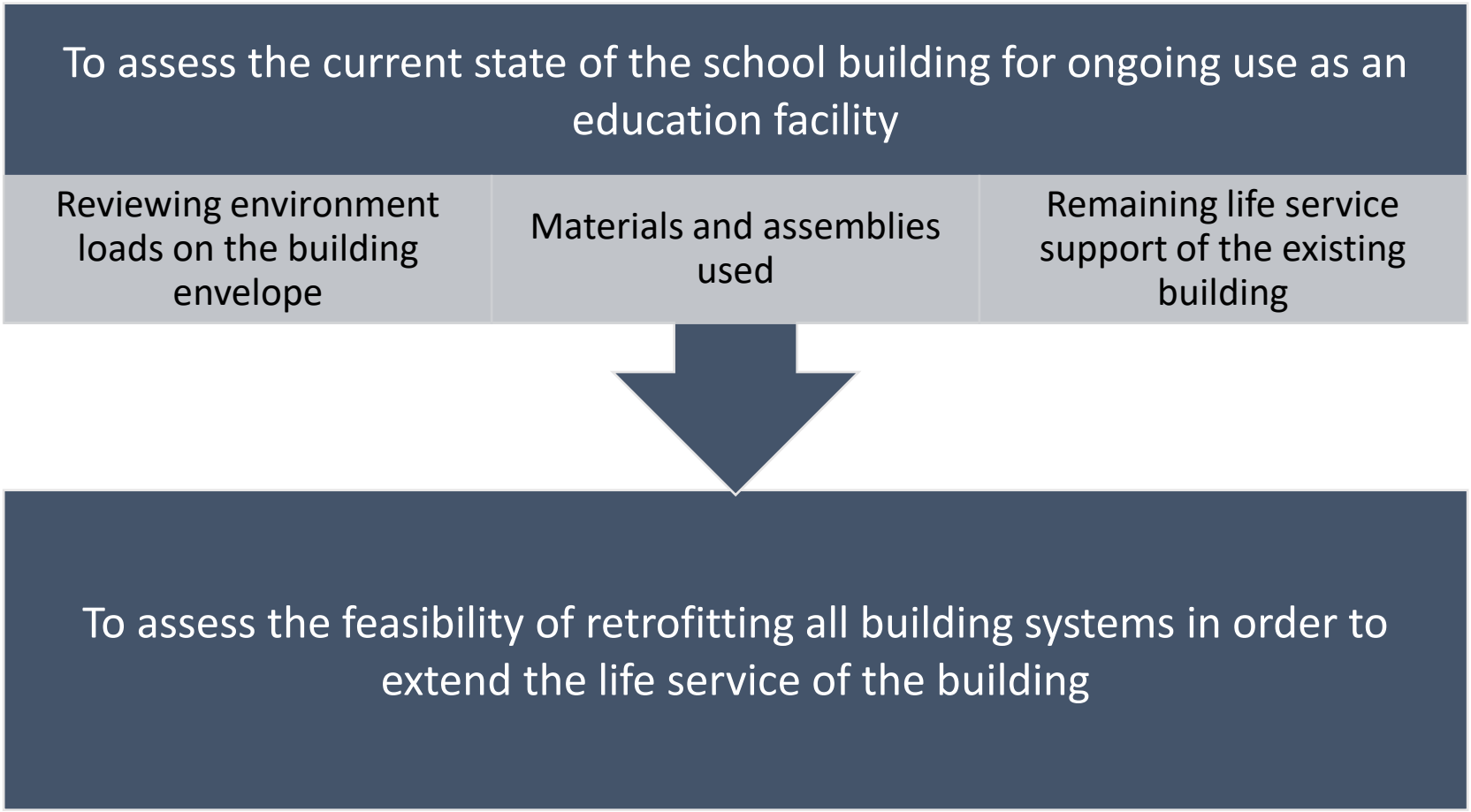
- Originally built in 1951 with a temporary life service of 25 years
- Three additions
  - 1953 (69 years)
  - 1959 (63 years)
  - 1977 (45 years)



Year	Project Description	Budget
2003	Replacement of ceiling tiles on main and second floor south end	$5,000
2010	Refinished Gymnasium floor	$90,000
2012	Replacement of counter and partitions in Boys and Girls Washroom	$9,000
2013	Replacement of ceiling tiles and lights in North hallway	$15,000
2013	Replacement of South-west door frames	$4,200
2014	Replacement of Boiler	$870,000
2015	Raise south fence around playground	$8,000
2016	Relocation of VP and Gymnasium office	$20,000
2017	Review of School Entrance - Design Proposal	$11,000
2017	Repair stucco	$30,000
2018	Renovation of Classroom 10	$20,000
2018	Replacement of Lockers	$15,000
2019	Replacement of Main Entrance Door and Frame	$12,000
2019	Renovation of Family Centre Kitchen	$20,000
2020	Removal of wall between classrooms	$30,000
2020	Replacement of flooring in Library and build two new offices	$54,000
2022	Replacement of PA system	$16,000

SCHOOL	PROJECT TITLE	FUNDING	STATUS	ESTIMATED PROJECT COST
General Vanier School	Universal Toilet/Change Room	PSFB	Completed	$191,311.46
J H Bruns Collegiate	Universal Toilet/Change Room	PSFB	Completed	$134,697.13
J H Bruns Collegiate	Roof Replacement	PSFB	Completed	$692,478.15
College Jeanne Sauve	RTU Replacement	PSFB	Completed	$127,096.00
Hastings School	Elevator & Universal Toilet/Change Room	PSFB	Completed	$1,558,601.00
Niakwa Place Collegiate	Lighting Retrofits	CIAF	Completed	$158,512.00
Windsor Park Collegiate	Lighting Retrofits	CIAF	Completed	$209,000.00
Ecole Van Belleghem	Lighting Retrofits	CIAF	Completed	$49,806.33
Ecole Howden	Lighting Retrofits	CIAF	Completed	$48,921.04
Windsor School	Boiler Replacement	PSFB	Completed	$666,889.52
Lavallee School	Relocatable Demolition	PSFB	Completed	$58,200.00
Sage Creek -	Land Acquisition	PSFB	Completed	$5,224,272.00
Frontenac School	Universal Toilet/Change Room	PSFB	In progress	$142,795.00
Dr. D.W. Penner School	Universal Toilet/Change Room	PSFB	In progress	$164,190.00
Nelson McIntyre Collegiate	Universal Toilet/Change Room	PSFB	In progress	$180,000.00
Marion School	Building Envelop	PSFB	In Design	$4,368,933.00
College Jeanne Sauve	16 Classroom addition, Music Room, Fitness Room & Science Lab	PSFB	In Design	$11,751,158.00
College Jeanne Sauve	Science Classroom	PSFB	In Design	$700,000.00
Windsor Park Collegiate	Science Classroom	PSFB	In Design	$700,000.00
Nelson McIntyre Collegiate	Science Classroom	PSFB	In Design	$700,000.00
J H Bruns Collegiate	Science Classroom	PSFB	In Design	$700,000.00
Arts & Technology Centre	Roof Replacement	PSFB	In Design	$2,034,688.00
St. George School	Roof Replacement	PSFB	In Design	$1,050,000.00
Shamrock School	Roof and wall Replacement	PSFB	Approved	$1,800,000.00
Glenwood School	Elevator, Universal Toilet/Change Room, Roof Replacement	PSFB	Approved	$2,250,000.00
J H Bruns Collegiate	Structural Roof Upgrade	PSFB	Approved	$1,200,000.00

Rationale: Assessment



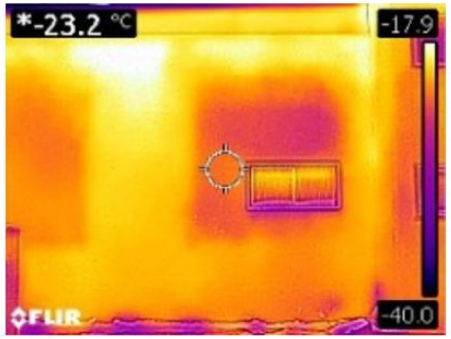
Methodology

- Tower Engineering Group
- Site visits were performed in January 2022
- Original as-built drawings
- Only visual observations were made and no invasive openings in the walls or diagnostic tests were performed
- Infrared (IR) thermography was conducted during the building analysis as an additional non-invasive diagnostic tool using both a FLIR C2 and Fluke TiR32 infrared camera.

IR Image

Visible Light Image

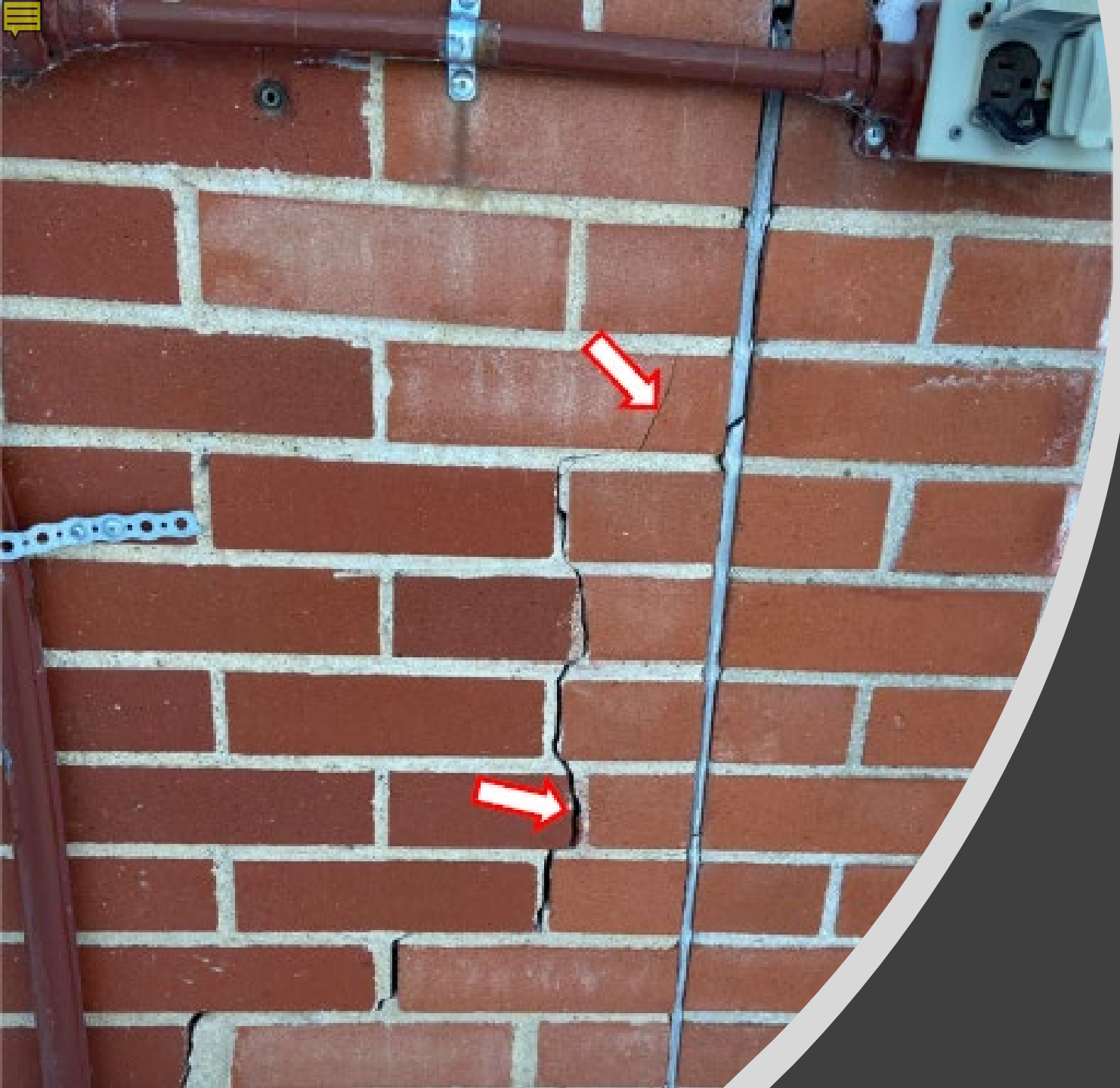
Camera	Date	Exterior Temp.	Interior Temp.	Spot Temp.	Emissivity
Fluke TiR32	2022-01-13	-12.6°C	20.0°C	VARIES	0.95



IR Image

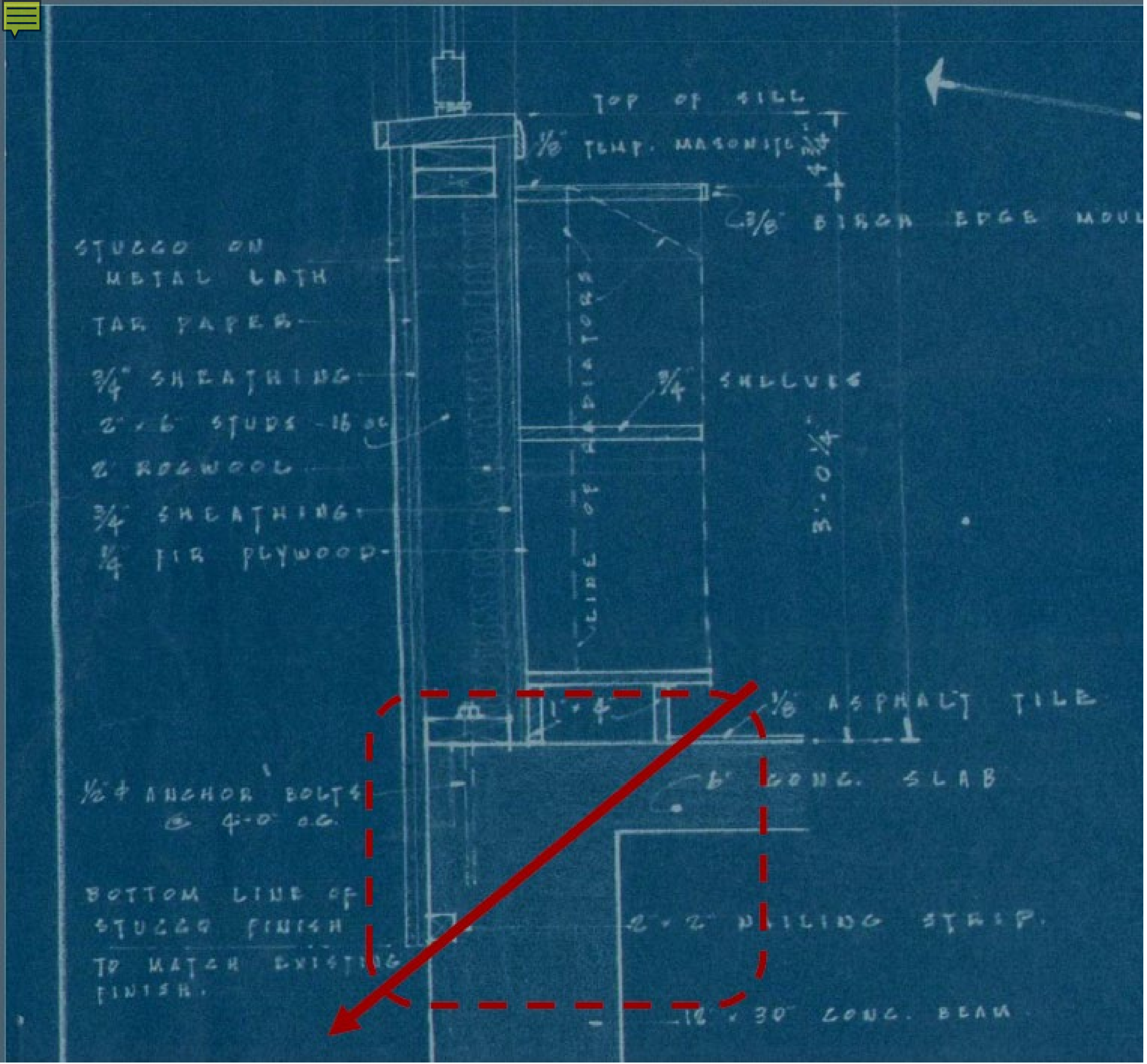
Visible Light Image

Camera	Date	Exterior Temp.	Interior Temp.	Spot Temp.	Emissivity
FLIR C2	2022-01-14	-18.4°C	20.0°C	- 23.2°C	0.95

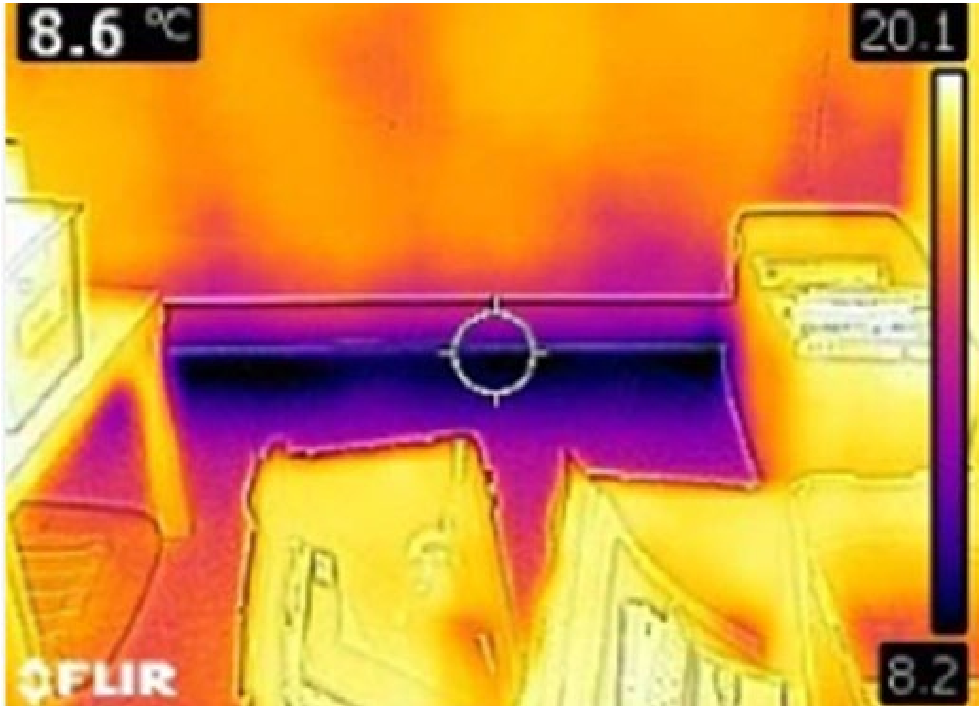


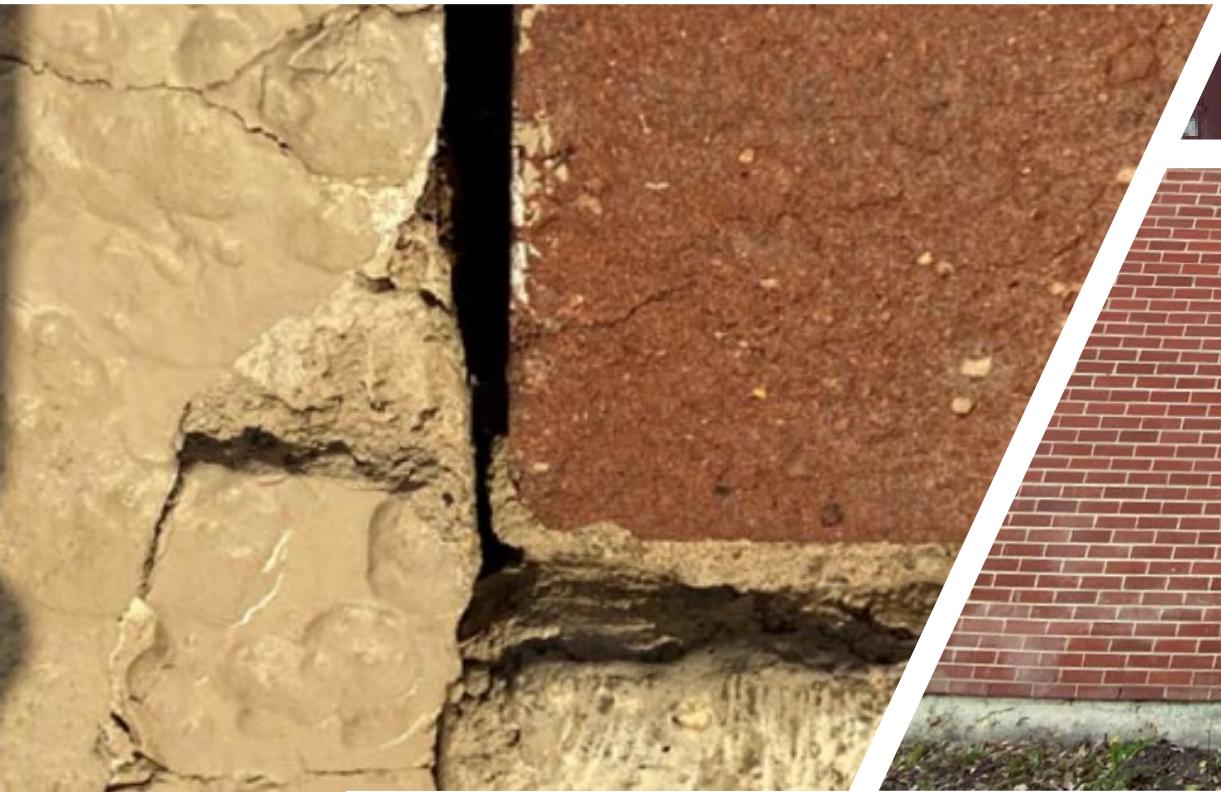
Building Envelope Assessment

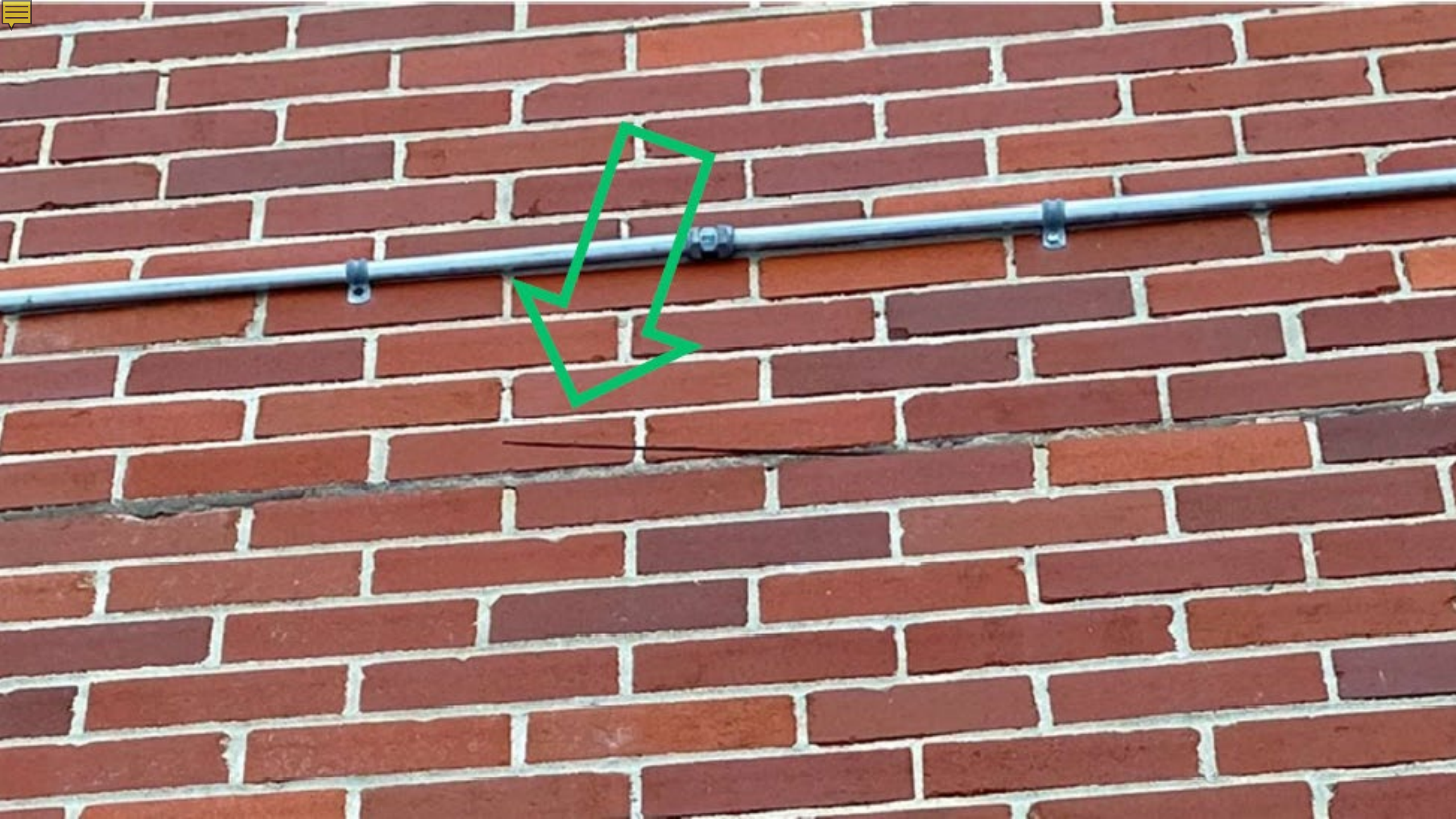
Key Findings

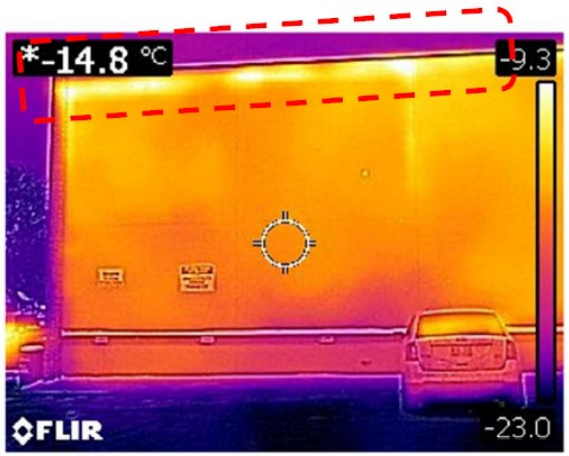

TOP OF SILL
1/8" TEMP. MASONITE
3/8" BIRCH EDGE MOUL
STUCCO ON METAL LATH
TAR PAPER
3/4" SHEATHING
2 x 6 STUDS - 16 OC
2" ROCKWOOL
3/4 SHEATHING
1/4 FIR PLYWOOD
LINE OF RADIATORS
3/4 SHELVES
3'-0 1/4"
1 x 4
1/8" ASPHALT TILE
6" CONC. SLAB
1/2" ϕ ANCHOR BOLTS @ 4'-0" O.C.
BOTTOM LINE OF STUCCO FINISH TO MATCH EXISTING FINISH.
2 x 2 NAILING STRIP
18 x 30" CONC. BEAM


11.4 °C
19.6


8.6 °C
20.1
8.2
FLIR

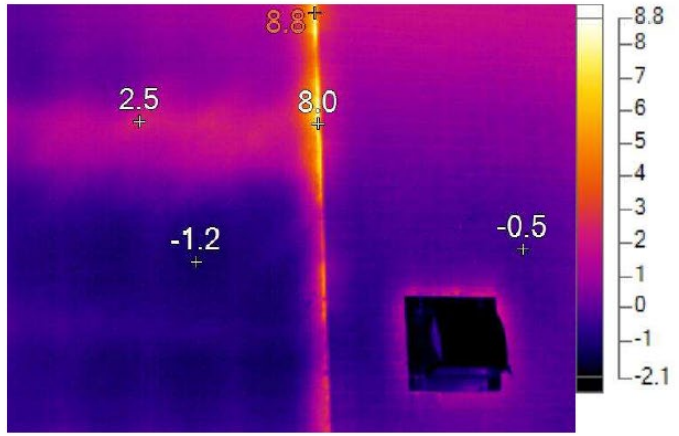






IR Image

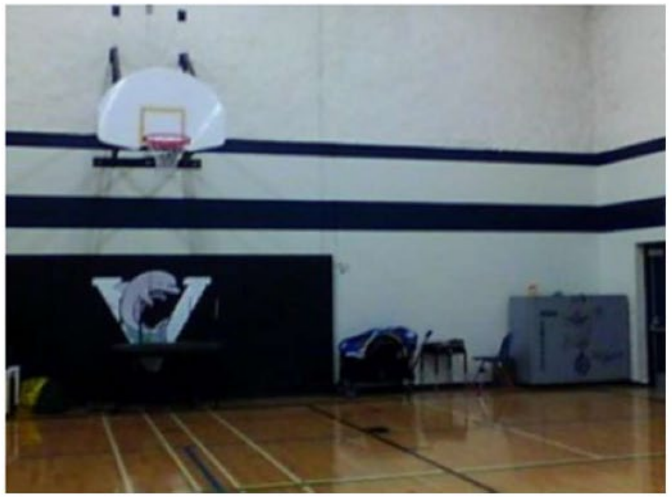
Visible Light Image



IR Image

Visible Light Image

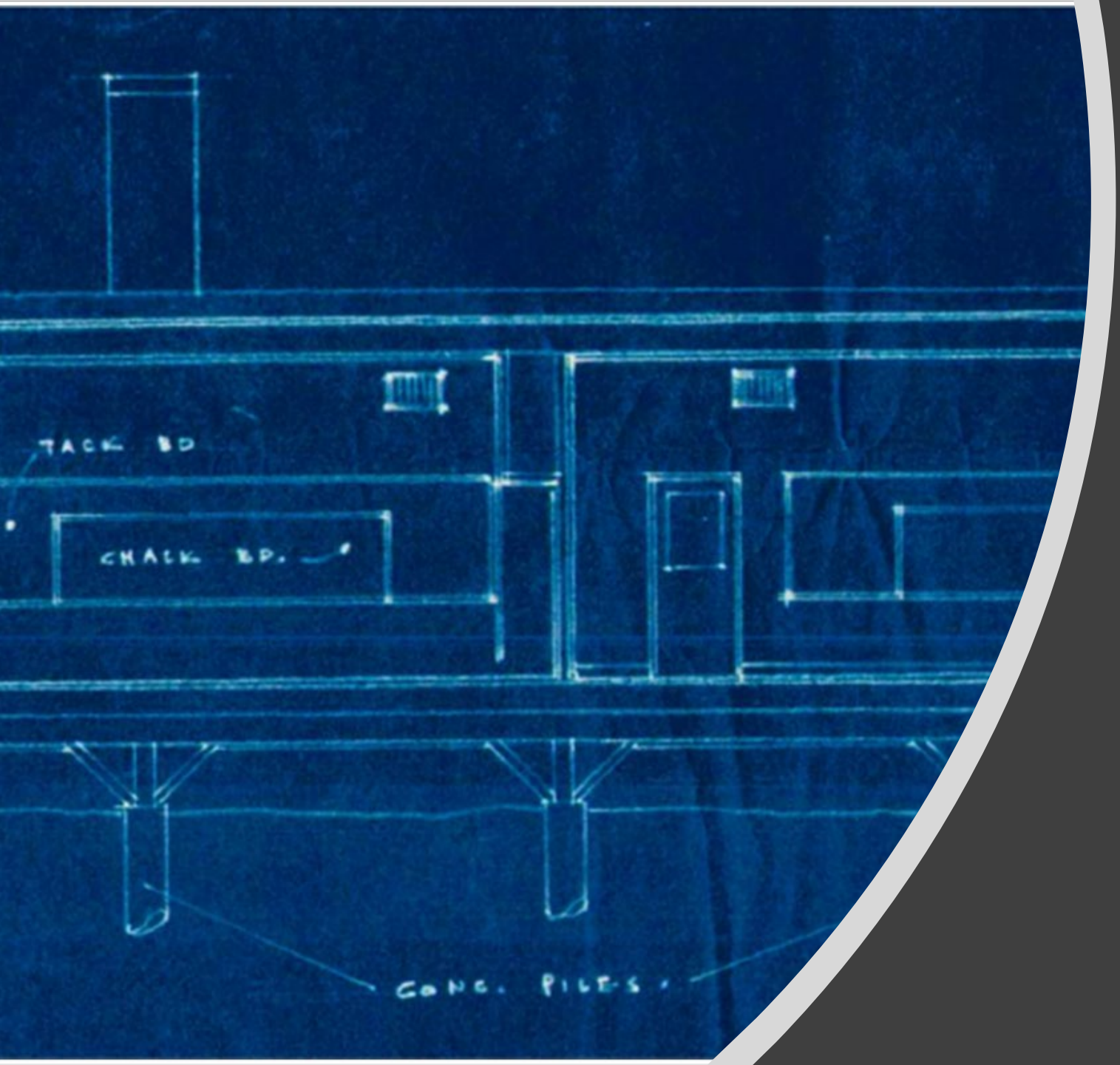
IR Image



Visible Light Image

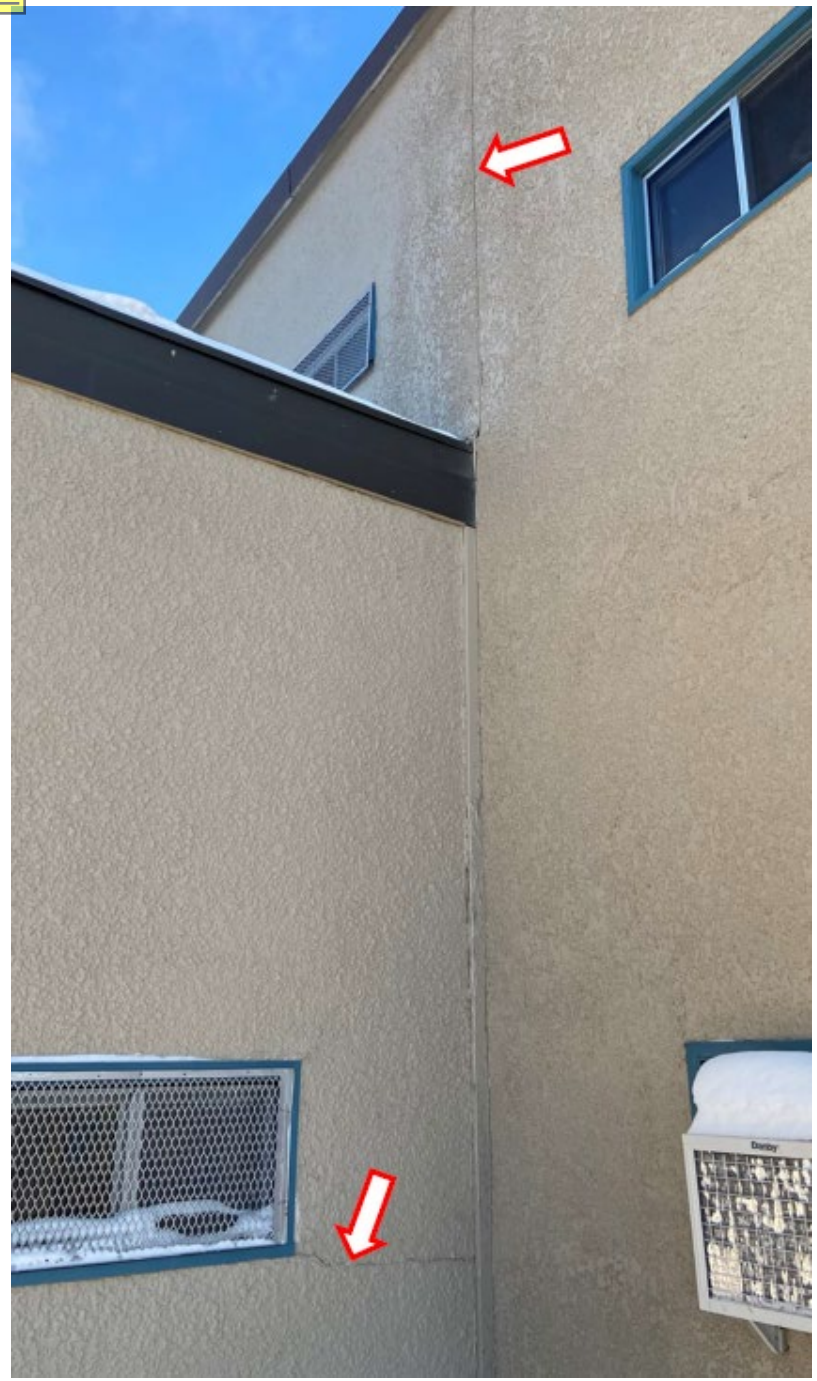
Building Envelope Recommendations

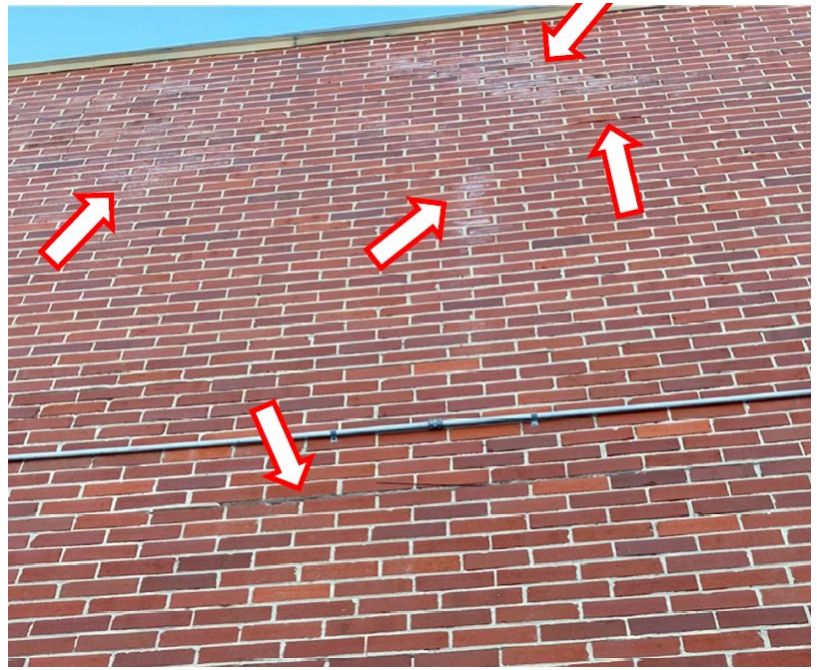
- Inspect and address the exterior masonry wythe
- Reinforce the ladder truss masonry
- Upgrade air, moisture and thermal barriers of the building to meet the current code requirements including:
  - Address the potential water ingress issues with regards to the exterior stucco separation from windows and entrance masonry, non-compliant caulking at window frames, cracking of surface stucco layer due to lack of control joints in stucco, water ingress at grade level stucco-asphalt junction
  - Replace existing windows with fully-functioning new operable windows that provide continuity of the building envelope.
  - Address the air leakage and durability of the material components of the parapet and roof-exterior wall junction in the 1959 & 1977 Addition
  - Address thermal bridging issues and continuity of the thermal barrier at both grade and roof details across entire building



Structural Assessment

Key Findings





Structural Recommendations

- Remove sulphate rich soils in upper layer of crawlspace down to a level below the finished surface and replace with well-drained granular fill
- Remove exterior concrete down to sound concrete and confirm the level of corrosion on internal steel reinforcement; repair as necessary. This may require temporary shoring, depending on the extent of the sulphate damage affecting the concrete
- Remove corrosion, add extra reinforcement (as required) and provide structural patches all around each pier and pile
- Provide a waterproof coating around the perimeter of the repaired concrete
- Confirm existing crawlspace drainage system is working – the mechanism triggering the sulphate attack is driven by water – if the crawlspace is routinely wet, this will initiate the damage to the concrete. A properly working sump pit and drainage system in the crawlspace is essential.
- Temporary stabilization of exterior brick is highly recommended

Electrical Assessment

Key Findings

Electrical Assessment: Key Findings

To meet current codes:

- Fire alarm monitoring must be replaced
- Pull stations need to be lowered
- Visual fire alarm indicators must be installed in all rooms

Electrical Assessment: Key Findings

- Existing exit lights are operational but appear to be at the end of their life span and not all meet minimum code requirements.
- Majority of the battery banks for emergency lighting are antiquated and additional heads be installed.

Electrical Recommendations

- All duplex receptacles should be replaced.
- Fire Alarm system should be replaced to meet current code requirements.
- Pull Stations to be installed at accessible height (not above 1200 mm).
- Existing exit lights should be replaced
- Emergency lights and battery banks should be replaced, and additional head should be installed
- Lighting throughout be upgraded to new energy efficient LED fixtures, complete with lighting control where applicable.

Mechanical Assessment

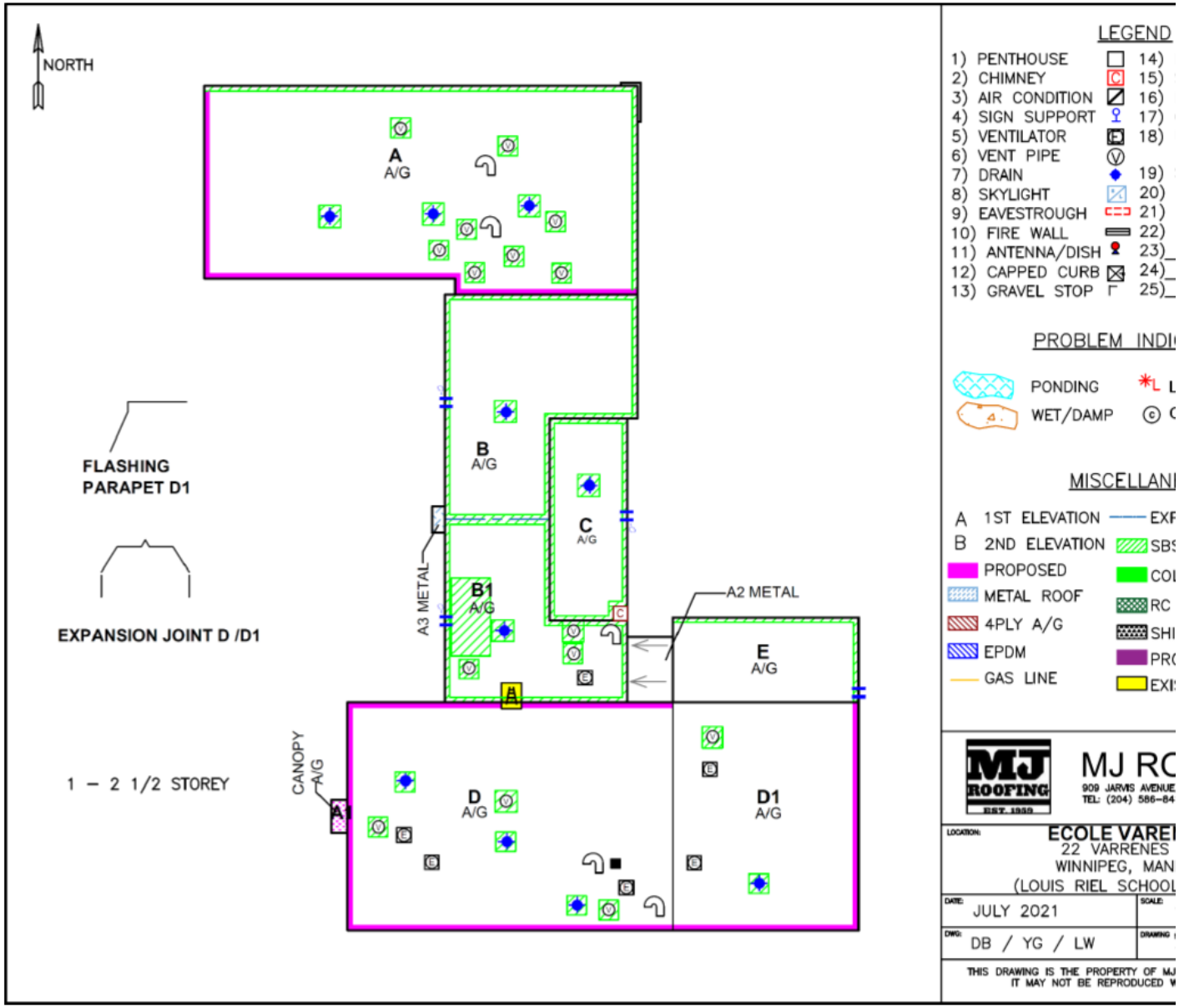
Key Findings

Mechanical Assessment: Key Findings

- Boiler was installed in 2014 and is in good working condition.
- Air handler units are original installs but are in decent working condition. All components such as blower motor, hydronic coils, bearings, controls, are still relatively interchangeable.
- The central air handler unit within the mechanical room is both loud and a source of vibration based on the motor setting. The existing air handler has no cooling.
- Outdated controls for the existing air handling unit are part of the original install and cause of performance issues.
- Some rooms on the main floor such as the front Office back work area and the Quiet Room do not have supply diffusers at all. Some of the rooms, such as the Library, appear to be underserved for the size and occupancy load.
- Existing building sanitary is mainly cast iron in the crawlspace. The cast iron pipe appeared weathered and showing signs of rusting. There were instances of copper sanitary as well as some ABS tied back into the cast iron.

Roof Assessment

Key Findings



LEGEND

1)	PENTHOUSE	14)	
2)	CHIMNEY	15)	
3)	AIR CONDITION	16)	
4)	SIGN SUPPORT	17)	
5)	VENTILATOR	18)	
6)	VENT PIPE		
7)	DRAIN	19)	
8)	SKYLIGHT	20)	
9)	EAVESTROUGH	21)	
10)	FIRE WALL	22)	
11)	ANTENNA/DISH	23)	
12)	CAPPED CURB	24)	
13)	GRAVEL STOP	25)	

PROBLEM INDI

PONDING

WET/DAMP

MISCELLANI

A 1ST ELEVATION

B 2ND ELEVATION

PROPOSED

METAL ROOF

4PLY A/G

EPDM

GAS LINE

EXF

SBS

COI

RC

SHI

PRO

EXI

MJ ROOFING EST. 1959

MJ RO

909 JARVIS AVENUE

TEL: (204) 586-84

LOCATION:

ECOLE VARE

22 VARRENES

WINNIPEG, MAN

(LOUIS RIEL SCHOOL

DATE: JULY 2021

SCALE:

DWG: DB / YG / LW

DRAWING

Roof Recommendations

- Roof system must be fully removed and replaced during the re-roofing, including a recommended minimum R-30 thermal resistance.

Accessibility Improvements

- Pave path from bus drop-off to nearest access door
- Replace exterior double leaf doors to provide compliant door and frame to meet standard (39” doors) where possible
- New compliant ramps for entrances and exits
- Universal Accessible Washroom
- Install Elevator
- Universal Toilet Room on each floor
- Accessible Door Operators
- Replace door hardware to handle operable by closed fist
- Provide directional accessibility signage

Additional Considerations

- Noise transfer and acoustic issues were noted especially when the school is at full occupancy
  - Quantified sound transmission testing could be conducted in order to further investigate the extent of noise transfer issues and determine the level of renovation required for the interior walls.
- Student Water closets

The current quantity of student water closets (WC) are as follows:

Women WC	Women Accessible WC	Men WC	Men Accessible WC	Men Urinal
11	0	5	1	8

  - In anticipation of the enrollment growth from 358 up to the expected 400-470, renovations would need to incorporate 7 male WC, 13 female WC and an accessible female WC in order to bring the school up to the current MBC.

Summary

- **Major renovations to the building are required**
  - To extend the life service of the building,
  - Upgrade the school to meet the current Manitoba Building Code,
  - Provide acceptable conditions for the current occupants, and
  - Accommodate the expansion necessary to meet the growing student population.
- Considering the extent of the building envelope upgrades deemed necessary to meet these functional and operational requirements, **the design of a new school building should be considered**.

Next Steps

May 24 – Consultation with staff

June 6 – Consultation with community

Senior Leadership Team presents recommendation to June 7 Board meeting

Board considers recommendation

Communication of Board decision to the Manitoba Government

Questions?

Additional questions or comments? Share your thoughts through our Exit Survey