BUILDING CONDITION ASSESSMENT

4/22/2025

120 Sunset Drive, Fredericton NB

[Non-invasive visual inspections and investigations only]

PREPARED BY: G. Paul Dayton, P. Eng.

DAYTON ENGINEERING Ltd.

TABLE OF CONTENTS

24013 – 120 SUNSET DRIVE, FREDERICTON

REPORT OVERVIEW

- COMMENTARY
- REPORT SUMMARY
- INSPECTION PROTOCOLS
- INSPECTION REPORTS BY BUILDING/COMPLEX
    - 1 STRUCTURE
    - 2 ROOFING
    - 3 EXTERIOR
    - 4 ELECTRICAL
    - 5 PLUMBING
    - 6 VENTILATION
    - 7 INTERIOR
    - 8 ENVIRONMENT

GENERAL DESCRIPTION

The property is located at 120 Sunset Drive, Fredericton, NB. The lands are fairly level and safely above the posted flood elevations for the area. The lands are further improved with a two-story wood-framed Residential (Part 9) multi-unit residence of senior citizen occupancy.

The building is comprised of 2 exit stairwells, 24 – 2 bedroom assisted living apartment units, and laundry facilities on each level. The building is situated on conventional concrete frost-wall foundations with slab-on-grade.

This building is clad with a majority of brick masonry with accent panels of primarily wood siding. The main entrance is located on the west end of the north face and has been clad with a cement board siding.

The building is sprinklered, reported as 669 m^2 (7,200 ft^2) in footprint and ~5.79 m (19ft) in height.

The building has basic Mechanical and Electrical systems with in-unit NB Power rental hot water heaters and electric baseboard heating. There is a central corridor split-system Heating & Air-Conditioning unit located on the East end exterior at ground level with the AHU located in the Laundry room. This system services corridors, but no air-conditioning or fresh-air systems are present within rental suites.

The building is situated within the City of Fredericton's zoning By-Laws and is currently classified as I-2 (Institutional Zone Two). The subject property is found to be in conformity with the current zoning with adequate set-backs, green space, and parking present.

CONVENTIONS USED IN THIS REPORT

The following conventions have been used in this report:

Non-Code conforming: denotes current conditions present which are in violation of the presently adopted National Building Code of Canada 2015 Edition and current amendments and applicable local codes & standards.

Minor Concern: denotes a system or component which does not meet present-day standards and should be considered for upgrade or replacement. Minor concerns do not lend to degradation of structure or pose a serious risk to the building or its tenants in the immediate future, but may eventually be required.

Major Concern: a system or component which is considered significantly deficient, may lead to structural damage over time, or is unsafe. Significant deficiencies need to be corrected and may involve significant expense

Life & Safety: denotes a condition that is unsafe, is non-compliant for Barrier Free standards, or is a fire code violation and in need of prompt attention.

Improve: denotes improvements which are recommended but not required to meet the intended use and occupancy standards.

Monitor: denotes a system or component needing further investigation and/or monitoring in order to determine if at risk or if repairs are necessary.

Recommended Testing: denotes an area of concern which needs verification due to materials discovered or based on the age of construction, which can only be verified by scientific testing methods.

CONDITION REPORT SUMMARY

Following you will find a synopsis of the potentially significant concerns, non-conformances, and improvements that should be budgeted for. Other significant improvements, outside the scope of this inspection, may also be necessary. Please refer to the body of this report for further details on these and other recommendations.

INSPECTION CRITERIA

Purpose

The purpose of this study was to provide observation and report on the physical condition, areas of concern, code and safety non-conformances, and overall condition and maintenance of the identified property. This report addresses items that are believed to be significant for the continued operation and life-span of the facilities in its current usage and occupancy classification.

Scope of Investigations

The Scope of the investigation was limited to a visual, non-invasive inspection of all accessible areas of the facility. The investigation was thorough and encompassed tenancy spaces, common areas, mechanical and electrical systems, and exterior components. The structural bearing systems were identified, structural components were inspected where accessible, and code conformance was investigated. Interior environment was investigated for areas of moisture, humidity, and temperature concerns as well as any signs of contamination or infestation. Where concerns were identified, potential causes and recommended solutions are provided. RF and IR Equipment was utilized to measure humidity in air and walls as well as dewpoints and temperature variance to help identify areas of risk that may affect air quality and building condition.

Dayton Engineering Ltd. has prepared a single comprehensive Building Condition Report for the structure located on the identified property. Along with identifying present building conditions, suggestions for repairs and upgrades of selected items that are not non-compliant or items that relate to occupancy and use standards are also included. Suggestions made typically add to the life span of the structure, improve the safety of operations, or improve occupancy standards.

No physical testing has been performed on any materials, and the scope of this investigation was strictly non-invasive unless noted otherwise.

REPORT OVERVIEW

A complete and comprehensive investigation of the building located at 120 Sunset Drive, Fredericton, was carried out for the purposes of providing insight into the quality, condition, and code conformance of the structure.

The facility was constructed circa 1982 as a 24 Unit assisted living facility. The current occupancy is classified as a higher risk occupancy and should be given close scrutiny in areas of lift safety due to the nature of the occupancy. The building is sprinklered throughout and falls under Part 3 of the 2015 NBCC.

A partial code review was performed based on the presently adopted 2015 code for this region. Some minor contraventions were noted that could impact on the use and operation of this facility in its present configuration in the event of any major renovations or repairs. The facility is found to be non-compliant in the areas of National Energy Code requirements, sound ratings, ULC certifications (doors are non-compliant), and Exits (stairs are non-compliant).

The exterior wall assembly is of major concern due to the identified areas of rot in the wood siding and many areas of excessive thermal transfer identified with infra-red scans.

The overall facility is well-maintained with regular maintenance. The non-conformances identified are not considered to be detrimental, although there are associated costs that could arise should compliance be made mandatory.

PROJECT SUMMARY

Property Identification	**York Care Center Apartments**
Street Address	**120 Sunset Drive**
City, Province	**Fredericton, New Brunswick**
Primary Use:	**Senior Citizen Apartments**
Year Built & Age	**1982, 45 years old**
Number of Stories	**Two**
Building Footprint	**669 m^2 (7200 ft^2)**
Number of Units	**24 - 2 Bedroom**
Reported Occupancy	**100%**
Reported Site Area	**3283 m^2 (38567 ft^2)**
Flood Zone	**No**
Seismic Zone	**No**
Parking	**Adequate**
Out-buildings	**NA**
Superstructure	**Wood Frame**
Basement	**Conventional Concrete Frost Wall**
Exterior Façade(s)	**Brick, Vinyl Siding**
Roof(s)	**Asphalt Shingle**
Heating	**Electric Baseboard**
Air-Conditioning	**Common area rooftop AHU**
Hot Water	**Electric (NB Power Rentals)**
Electrical Wiring	**Copper**
Fire - Sprinkler	**None**
Fire Alarm System	**Addressable**

INSPECTION OVERVIEW

ITEM	Excellent	Good	Fair	Poor	ACTION	IMMEDIATE NEEDS	CAPITAL RESERVES
SITE IMPROVEMENTS							
Topography		X			NM		
Storm Drain System		X			NM		
Parking Pavement, Curbs & Gutters				X	RR	$ 3,500.00	$ 52,000.00
Sidewalks				X	RR		
Utilities		X			NM		
Landscaping			X		NM		
Site Lighting			X		NM		
Site & Building Signage		X			NM		
STRUCTURAL SYSTEMS & BUILDING ENVELOPE							
Foundations		X			NM		
Structural Systems		X			NM		
Exterior Walls / Envelope				X	RR	$ 12,850.00	$ 28,750.00
Windows & Frames			X		NM		
Exterior Doors & Frames		X			NM		
Stairs (Interior & Exterior)				X	RR		$ 15,500.00
Ancillary Roof Canopies		X			NM		
Roof Coverings				X	RR		$ 32,000.00
Roof Drainage		X			NM		
MECH, ELEC, PLUMBING SYSTEMS							
Heating & Ventilation		X			NM		
Air Conditioning		X			NM		
Electrical System		X			NM		
Potable Water Distribution System		X			NM		
Water Heaters		X			NM		
Faucets & Fixtures		X			NM		
Gas Distribution System		X			NA		
VERTICAL TRANSPORT CONVEYING SYSTEMS							
Elevators / Escalators					NA		
INTERIOR ELEMENTS							
Interior Finishes		X			NM		
Floor Coverings		X			NM		
LIFE SAFETY & BARRIER FREE							
Parking, Signage & Ramps		X			NM		
Unit Accessibility			X		NM		

Code Compliance				X	IR		$ 28,800.00
Emergency & Fire Protection		X			NM		
BASE COST ESTIMATES						$ 16,350.00	$ 157,050.00

***Action: NC = Non-Conforming, NM = Normal Maintenance, IR = Immediate Repair, RR = Replacement Reserves, NA = Not-Applicable, FI = Further Investigation, NI = Needs Improvement**

REPORT SUMMARY

NBCC 2015 CODE RELATED ITEMS

Non-Code conforming and Life Safety Concerns:

- Stair headroom clearance non-conforming
- Entry doors and Frames not ULC rated, recommend changing to "Safe-n-Sound" doors
- R-values are non-conforming to present NBCC 2015 building code. R-Value Improvement is recommended
- Replace Unit Entry doors with ULC Rated Entries (Recommend Safe-n-Sound doors)
- Replace non-labeled service room doors with new properly rated doors and frames with self-closing hardware.

Minor Concern:

- Cement siding should be monitored for further deterioration
- Parking surfaces are due for replacement or topping on East parking area
- BX wire in laundry requires replacement with conforming connections and supply.
- Upgrade worn receptacles
- Repair corridor flooring where humped and cracked on ground floor corridor
- Add support to underside of attic trusses over corridor and repair insulation at leak.

Major Concern:

- Further investigate exterior wall assemblies behind failing wood siding and beneath windows for signs of rot/deterioration from water infiltration.
- Exterior wood siding is due for replacement

Improve:

- Roof membrane should be included in 5 year capital reserves
- Cover painted wood fascia's with metal flashing or similar facing to protect and extend life
- Wood soffits, fascia's, and trims should be protected with metal flashings to extend life
- Sidewalks are worn and should be considered for upgrade for aesthetic purposes
- HRV fresh-air systems are recommended for suites
- Independent Mini-splits are recommended for each suite to provide more efficient heating and add mechanical cooling for better comfort
- Fresh air HRV system is recommended in each unit (See mechanical commentary)

Monitor:

- Perform annual service and certification of Fire Protection systems

1.1 DESCRIPTION OF STRUCTURE

Foundations:	Conventional Concrete Frost Wall
Structural Framing	Wood Frame
Floor Structures:	Wood Frame
Wall Structures:	Wood Frame
Roof Structures:	Engineered Wood Truss

STRUCTURE OBSERVATIONS

General Comments

The Building Structure is constructed as a Part 9 (residential), 3 Storey, sprinklered wood frame structure and was constructed circa 1982-83. The foundations are constructed as conventional concrete frost-walls (See FIG 1.1). The foundation walls have very limited visibility (~6" Exposure) but showed no signs of differential movement. Foundation cracking was noted at consistent intervals with no visible differential movement which is common with un-reinforced concrete walls (See Fig 1.2). The roof system is a conventional engineered wood truss (See FIG1.3) clear span with ½" plywood sheathing with H-clips (see FIG 1.4). The attic space is properly separated above each occupancy (See FIG 1.4).

There were some no substantial cracks or signs of movement. There is concern noted with exterior wall assemblies due to water infiltration through the outer façade (See Exterior Commentary).

There were no further significant structural concerns noted beyond those mentioned above.

LIMITATIONS OF STRUCTURE INSPECTION

As per the identified scope of this inspection, this is a visual inspection limited in scope by (but not restricted to) the following conditions:

- Structural components concealed behind finished surfaces could not be inspected
- Only a representative sampling of visible structural components were inspected
- Engineering or architectural services such as calculation of structural capacities, adequacy, or integrity are not part of a BCR (Building Condition Report).

Structural Observations & Recommendations

- Further investigate exterior wall assemblies for signs of rot/deterioration from water infiltration.

Fig 1.1

Fig 1.2

Fig 1.3

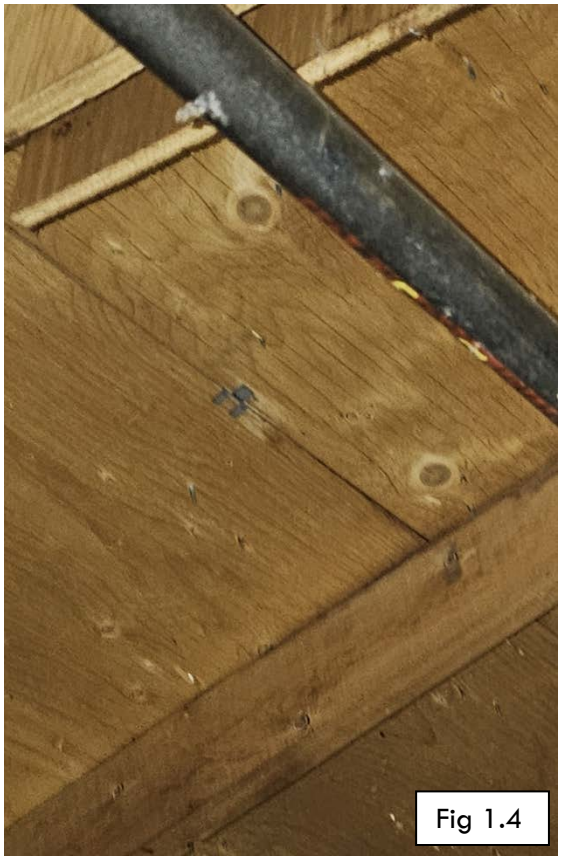


Fig 1.4

1.2 DESCRIPTION OF ROOFING

Roof Covering: Asphalt Shingle

Roof Flashings: Aluminum flashing & Drips

Jacks and Boots: Rubber

Method of Inspection: No access, visual zoom only

ROOFING OBSERVATIONS

General Comments

Maintenance personnel advised there was no roof access present for this facility so a thorough roof inspection could not be performed. Investigations were performed with the use of photographic viewing. The roof structure was identified as ½" plywood sheathing with H-clips which was minimum code at the time of construction. This system creates a very weak roof surface which is extremely susceptible to failure with any significant water infiltration. The weakness of the sheathing layer is known to have excessive deflection under snow loads which leads to permanent "waviness" with permanent deflections which was noted where the roof could be viewed (See FIG 2.1). The asphalt shingle roof membrane has a 25 year manufacturers projected life span when installed and maintained in accordance with the manufacturers recommendations. Data was not made available regarding the actual installation year, however curling and degradation of the shingles was noted were viewed and based on appearance the expected remaining life is estimated to be in the 5-7 year range.

There was no evidence of any leaks when investigated from within the attic and the sheathing was noted to be in good condition with no evidence of rot (See Structural Commentary). The roof is poorly vented with no visible soffit or true-vents present. Ridge venting and there was no evidence of condensation within the attic.

Soffits appear to be cementitious and non-vented for fire protection (See Fig 2.1).. Covering of painted plywood with more durable product (ie metal flashing) is recommended before plywood degradation is beyond reasonable repair.

Roofing Observations & Recommendations

- Roof membrane should be included in 5 year capital reserves
- Cover painted wood fascia's with metal flashing or similar facing to protect and extend life

Fig2.1

Fig2.2

Fig2.3

1.3 DESCRIPTION OF EXTERIOR

Wall Covering:	Combination of Brick Masonry, Wood Siding, and cement siding
Eaves, Soffits, and Fascia's:	Cementitious soffits and eaves
Window/Door Frames and Trim:	Vinyl windows, aluminum entrances
Parking & Drives surfaces:	Asphalt parking surface
Surface Drainage:	Sloped to Catch-basins

EXTERIOR OBSERVATIONS

General Comments

The exterior façade is comprised primarily of Brick Masonry and wood siding with large corner accents of colored brick masonry (See FIG 3.1). There is also a small amount of Hardi-plank cement siding on the North-West end of the building. Hardi-plank was recalled for some time due to the breakdown of the products binders before being reformulated into the new product line. Based on the era of installation it is possible this is from the original discontinued product line. The wood siding is showing significant evidence of absorption with areas of significant rot (See Fig 3.2-3.3). There is concern of possible water damage and rot in the exterior wall cavities due to the damage noted on the siding. Further investigation is recommended into the interior condition of the exterior walls.

There were several holes through the siding that requires proper sealing and flashing, of note were cut holes on the North-west cement siding wall (See FIG 3.4), and various wood siding penetrations (See FIG 3.5).

There are large brick masonry panels separated by the wood siding sections. The masonry was found to be in good repair with proper weeping (See Fig 3.6).

Soffits, fasciae, and trims are painted wood and plywood. The upper soffits appeared to be cement board while window bump-outs were plywood soffits and wood trims (See FIG 3.7). It is recommended that exposed wood surfaces be protected with metal flashings to extend life as there are visible signs of deterioration.

Exterior entrances are commercial aluminum and were found to be operating as intended. (See FIG 3.8-3.9).

Windows are residential style Vinyl slider windows (See FIG 3.7-3.9) and were found to be in fair condition. Sealants around windows have failed in many areas (See FIG 3.10) and should be resealed immediately.

The frost-wall foundations were found to protrude above grade the required 150 mm. Grading was found to be minimal, but no water infiltration was identified, and all finished floor areas are above exterior grade.

Parking surfaces are constructed of asphalt and were found in fair condition on the North-western parking area but the eastern lot was badly cracked and due for resurfacing (See FIG 3.11). The concrete sidewalks were badly weathered but still sound with no noted abrupt grade changes or tripping hazards. The sidewalks are recommended for replacement for aesthetic purposes, but they remain functional.

Exterior Recommendations

- Exterior walls require further investigation for possible water damage and rot
- Exterior wood siding is due for replacement
- Cement siding should be monitored for further deterioration
- Wood soffits, fascia's, and trims should be protected with metal flashings to extend life
- Parking surfaces are due for replacement or topping on East parking area
- Sidewalks are worn and should be considered for upgrade for aesthetic purposes

Fig 3.1

Fig 3.2

Fig 3.3

Fig 3.4

Fig 3.5

Fig 3.6

Fig 3.7

Fig 3.8


Fig 3.9


Fig 3.10


Fig 3.11

1.4 DESCRIPTION OF ELECTRICAL

Size of Electrical Services: **208 V 600A 3PH 4W**

Service Conductors: **Cu**

Service Grounding: **U.G. Plates/Rods**

ELECTRICAL OBSERVATIONS

The building electrical system is supplied from a pad mount transformer on the North-East side of the building between Sunset Drive and the building (See Fig 4.1). The main service is a 120/208V 600 Amp 3Ø 4W service (See FIG 4.2 & 4.4). The building contains 25 meters (See FIG 4.2) which serve the individual units and 1 for the common areas. The main entrance is located on the North-East side of the facility in an electrical room serviceable only from the interior of the first level space.

Each tenancy is serviced through a sub-panel fed from the electrical room to the entry area of each unit (See FIG 4.5).

The wiring is modern properly rated material where visible and appears to be well managed throughout with labels, protected and concealed wire, and secured junctions. There was an exception noted in the laundry room where a BX cable was used to protect a feeder from beneath the floor which is not properly installed in a junction box and where unprotected wires are visible (See FIG 4.6)

The house service panels and sub-panels were randomly inspected and verified for proper wiring (See FIG 4.5 & 4.7) and no non-conformances were identified.

Devices were checked at random, GFI's were present in washrooms. Various randomly checked plugs were found to be poorly secured with worn and loose plug inserts.

The electrical penetrations appeared to be well sealed and compliant.

Electrical Observations &Recommendations

- BX wire in laundry requires replacement with conforming connections and supply.
- Upgrade worn receptacles

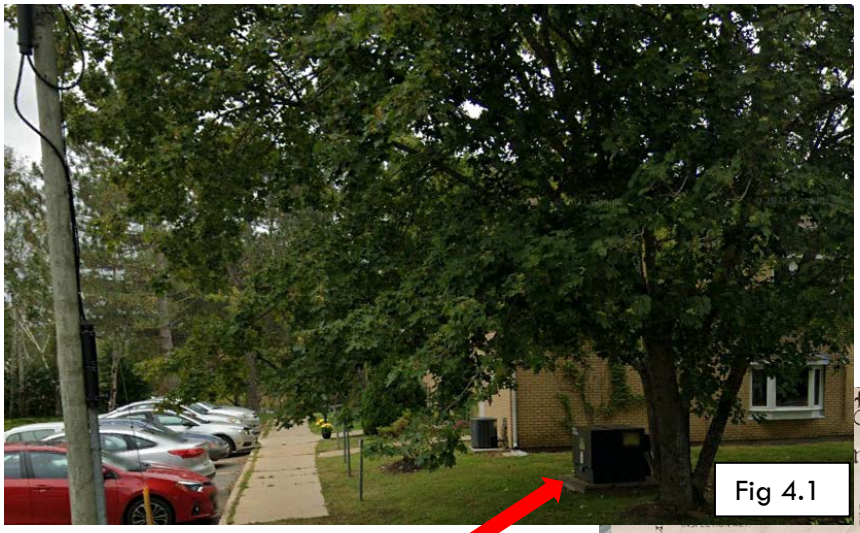
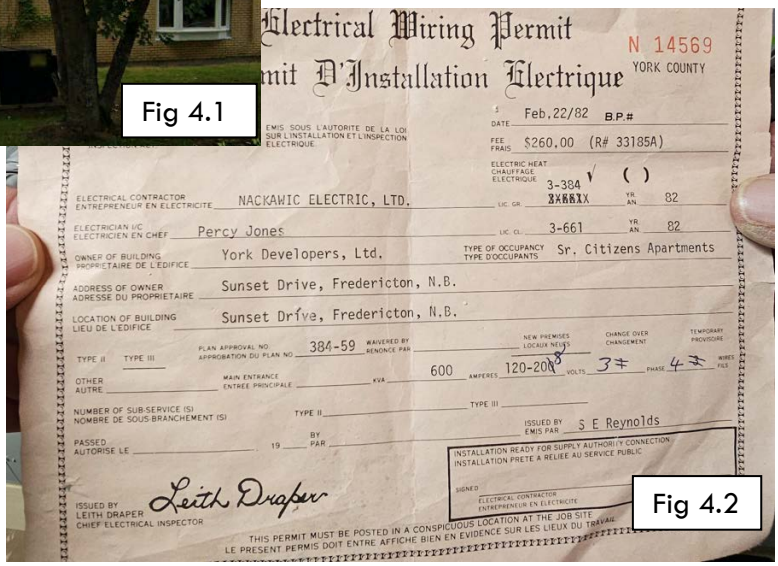


Fig 4.1



Electrical Wiring Permit N 14569
mit D'Installation Electrique YORK COUNTY

DATE Feb.22/82 B.P.#
FEE FRAIS $260.00 (R# 33185A)
ELECTRIC HEAT CHAUFFAGE ELECTRIQUE 3-384 √ ( )
ELECTRICAL CONTRACTOR ENTREPRENEUR EN ELECTRICITE NACKAWIC ELECTRIC, LTD. LIC. GR. 82
ELECTRICIAN I/C ELECTRICIEN EN CHEF Percy Jones LIC. CL. 3-661 YR AN 82
OWNER OF BUILDING PROPRIETAIRE DE L'EDIFICE York Developers, Ltd. TYPE OF OCCUPANCY TYPE D'OCCUPANTS Sr. Citizens Apartments
ADDRESS OF OWNER ADRESSE DU PROPRIETAIRE Sunset Drive, Fredericton, N.B.
LOCATION OF BUILDING LIEU DE L'EDIFICE Sunset Drive, Fredericton, N.B.
PLAN APPROVAL NO. APPROBATION DU PLAN NO 384-59 WAIVERED BY RENONCE PAR
TYPE II TYPE III
OTHER AUTRE
MAIN ENTRANCE ENTREE PRINCIPALE KVA 600 AMPERES 120-208 VOLTS 3 PHASE 4 WIRES FILS
NEW PREMISES LOCAUX NEUFS CHANGE OVER CHANGEMENT TEMPORARY PROVISOIRE
NUMBER OF SUB-SERVICE (S) NOMBRE DE SOUS-BRANCHEMENT (S) TYPE II TYPE III
PASSED AUTORISE LE 19 BY PAR ISSUED BY EMIS PAR S E Reynolds
INSTALLATION READY FOR SUPPLY AUTHORITY CONNECTION INSTALLATION PRETE A RELIEE AU SERVICE PUBLIC
SIGNED ELECTRICAL CONTRACTOR ENTREPRENEUR EN ELECTRICITE
ISSUED BY LEITH DRAPER CHIEF ELECTRICAL INSPECTOR Leith Draper
THIS PERMIT MUST BE POSTED IN A CONSPICUOUS LOCATION AT THE JOB SITE
LE PRESENT PERMIS DOIT ENTRE AFFICHE BIEN EN EVIDENCE SUR LES LIEUX DU TRAVAIL

Fig 4.2

Fig 4.3

Fig 4.4

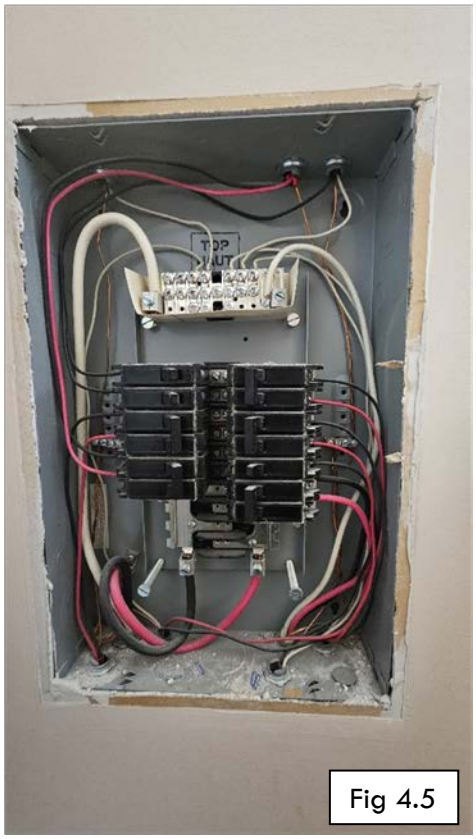


Fig 4.5

Fig 4.6

Fig 4.7

1.5 DESCRIPTION OF PLUMBING

Water supply source:	**City of Fredericton Serviced**
Service Pipe:	**Copper**
Service Entrance size:	**6" Sprinkler main supply, 1" to ¾" Domestic Supply**
Waste system:	**City of Fredericton Serviced**
Hot Water:	**Electric (NB Power Rentals)**
Water entrance location:	**Service Room North-East corner**

PLUMBING OBSERVATIONS

General Comments

The facility is sprinklered with a 6" Cast Iron supply (See Fig 5.1). The domestic water supply is a 1" take-off from the main with a reduction to ¾" supply (See FIG 5.2). The waste service for the overall complex is provided via City of Fredericton Servicing. Annual inspections were labelled and current (See Fig 5.3).

The scope of this investigation was limited to visual observation only. Domestic water service is supplied through copper piping where visible (See Fig 5.4). Waste-water piping was identified as Cast Iron below grade with a mix of copper, cast, and ABS (See Fig 5.5, 5.6). Pipe insulation was noted on much of the exposed hot and cold supply lines (See Fig 5.7). The waste system venting is copper piping (See Fig 5.4).

Plumbing fixtures appear to be original equipment (See Fig 5.8, 5.9) and are in fair condition.

The domestic hot water is fed from individual 220V 40 Gal NB Power rental hot water heaters (See FIG 5.10) located in the storage/coat room in each unit.

There was a floor drain identified in the service/water room which appears to be damaged and clogged with debris with a detached drain plate (See FIG 5.11). This requires cleaning and scope to ensure debris does not lead to clogged drains.

Plumbing System Recommendations

- There were no non-conformances noted

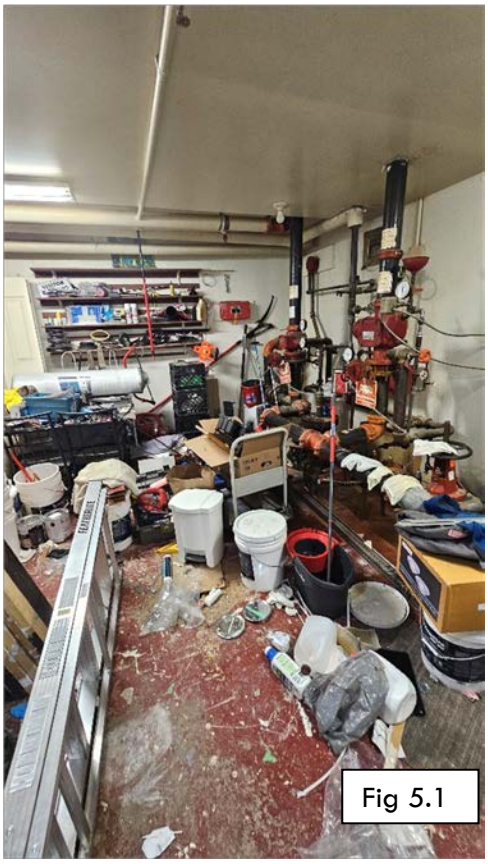


Fig 5.1

Fig 5.2

Fig 5.3

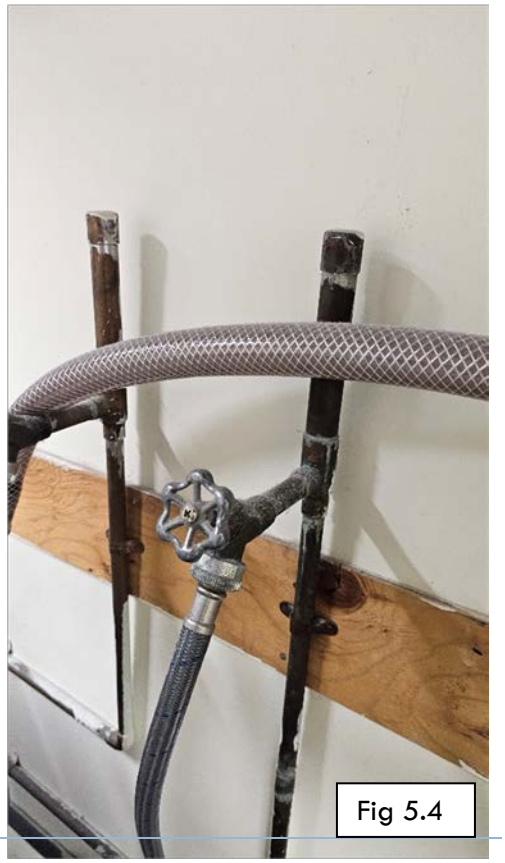


Fig 5.4

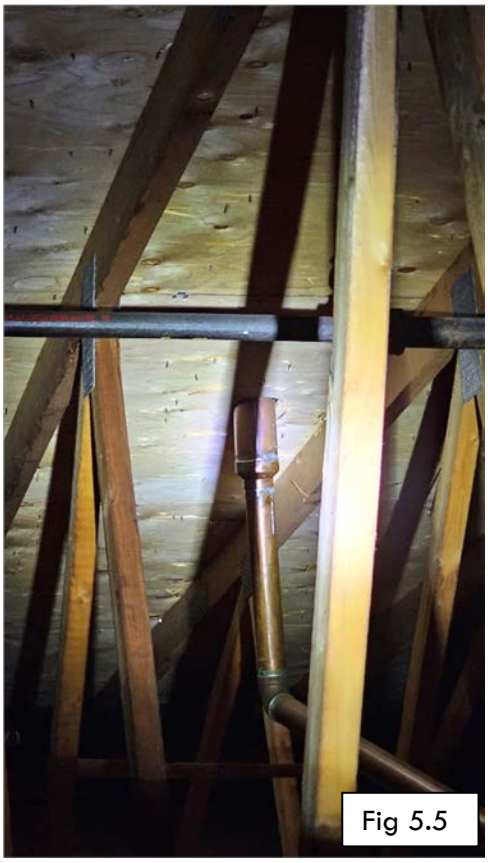


Fig 5.5

Fig 5.6

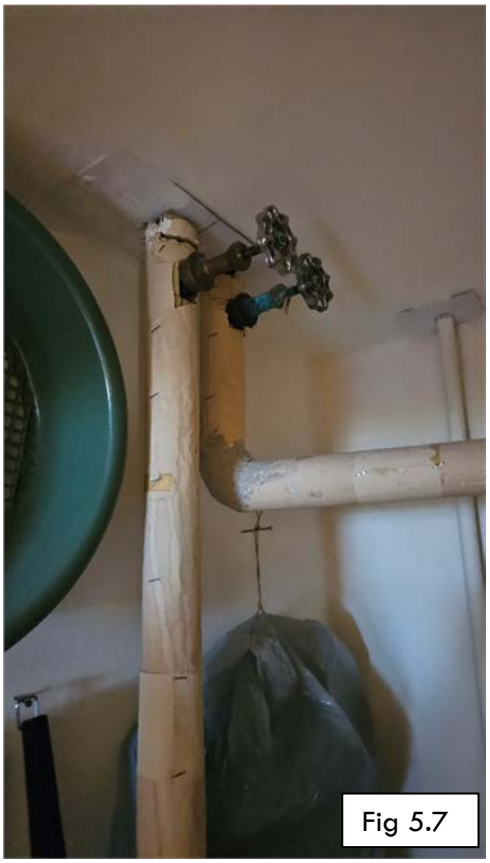


Fig 5.7

Fig 5.8

Fig 5.9

Fig 5.10

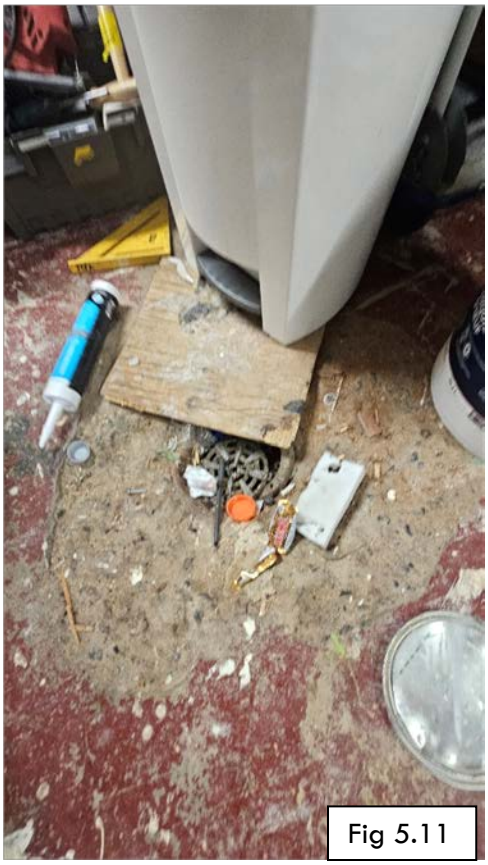


Fig 5.11

1.6 DESCRIPTION OF HEATING & VENTILATION

Heating:	**Electric Baseboard Heaters**
Cooling:	**Single roof-top Pad-mount split system AHU for common corridors, No cooling present in residential suites**
Fresh Air/Exhaust:	**There are no (HRV) fresh air supplies present, Bath-fans are present**

HEATING AND VENTILATION SYSTEMS OBSERVATIONS

General Comments

The heating source for this facility is provided by Electric Radiant Baseboard & Electric forced air heaters (See Fig 6.1, 6.2).

The common corridors are provided with mechanical cooling from a heat pump split system with AHU (Air Handling Unit) located in the Service/Laundry room (See FIG 6.3, 6.4). This unit was manufactured in 2017 and has a 22 year life expectancy.

The facility does not have proper fresh-air intake with the use of a compliant mechanical system such as an HRV (Heat Recovery Ventilator) system. HRV's provide fresh air, exhaust, and heat recovery by using exhaust air to heat incoming cold air. HRV's are industry standard in current building codes.

Units are required to contain exhaust to washrooms and kitchens and fresh supply to living rooms and bedrooms. This is typically provided by individual unit HRV's in modern construction. Minimum code allows for the use of exhaust fans and operable windows to provide fresh air and exhaust; however this does not meet current NEC requirements. Each unit is equipped with a washroom exhaust (See Fig 6.5) and kitchen exhaust (See Fig 6.6) paired with operable windows. Common corridor heating and cooling is provided with the AHU with electric coil backup heating (See Fig 6.7). The fresh air is believed to be incorporated into the AHU to meet current standards.

Overall, this facility has minimal mechanical systems with basic heating and no mechanical cooling to residential suites. Addition of Mini-split systems and HRV's to individual suites is recommended.

Heating & Ventilation Observations &Recommendations

- HRV fresh-air systems are recommended for suites
- Independent Mini-splits are recommended for each suite to provide more efficient heating and add mechanical cooling for better comfort

Fig 6.1

Fig 6.2

Fig 6.3

Fig 6.4

Fig 6.5

Fig 6.6

Trane U.S. Inc.
Manufacturer of Trane & American Standard HVAC
Tyler, TX 75707

GAM5B0A24M21EAA | 17375KPS1V | 1/3 | 2.8 | 200 – 230 | 1 Ph 60 Hz

MODEL NO. | SERIAL NO. | MOTOR H.P. | F.L. AMPS | VOLTS

Assembled in USA

FACTORY SHIPPED CONFIGURATION FOR REFRIGERANT 410A.
REFRIGERANT 22 OR 410A ONLY. DESIGN PRESSURE 480 PSI.

MFR. DATE: 9/2017

	R22	R410A
REFRIGERANT CONFIGURED FOR:		
ELECTRIC HEATER – 208 OR 240V, 60Hz, 1PH OR 3PH:	FACTORY INSTALLED ☐	MAY BE FIELD INSTALLED ☐
INTERNAL CONDENSATE SWITCH INSTALLED:	YES ☐	NO ☒

May be manufactured under one or more of the following U.S. patents:
7,014,422; 7,108,478; 7,144,219; 7,168,917; 7,381,028; 7,581,633; 8,061,415; 8,267,160; D537,517
Pursuant to Florida Building Code 13 – 610.2.A.2.1, this unit meets the criteria for a factory sealed air handler.

FLUIDE FRIGORIGÈNE 22 OU 410A UNIQUEMENT. PRESSION NOMINALE DE 480 LB/PO2.

c UL us LISTED SA11679

AIR HANDLER

ANY ONE OF THE FOLLOWING HEATERS MAY BE INSTALLED IN THIS UNIT.
INSTALLER MUST MARK ONE APPROPRIATE BLOCK IN COLUMN A.

L'UN DES GÉNÉRATEURS DE CHALEUR SUIVANTS PEUVENT ÊTRE INSTALLÉS DANS CET APPAREIL.
L'INSTALLATEUR EST TENU DE MARQUER UN BLOC APPROPRIÉ DANS LA COLONNE A.

A	TRANE HEATER MODEL	SUPPLY VOLTS	PHASE	KW	HEATER AMPS	MIN. BRANCH CIRCUIT AMPACITY	MAXIMUM OVERCURRENT DEVICE	MINIMUM HEATING BLOWER SPEED WITHOUT HEAT PUMP	MINIMUM HEATING BLOWER SPEED WITH HEAT PUMP
	NONE					4	15		
	BAYEAAC04 + + 1	208 240	1	2.88 3.84	13.8 16.0	21 24	25 25	TAP 3	TAP 4
	BAYEAAC05 + + 1	208 240	1	3.60 4.80	17.3 20.0	25 29	25 30	TAP 3	TAP 4
	BAYEAAC08 + + 1	208 240	1	5.76 7.68	27.7 32.0	38 44	40 45	TAP 3	TAP 4
	BAYEAAC10 + + 1	208 240	1	7.20 9.60	34.6 40.0	47 54	50 60	TAP 3 *1	TAP 5 *1
	BAYEAAC10LG3	208 240	3	7.20 9.60	20.0 23.1	28 32	30 35	TAP 3	TAP 5 *2
	.								
	CIRCUIT 1 . CIRCUIT 2								
	CIRCUIT 1 .. CIRCUIT 2								
	CIRCUIT 1 . CIRCUIT 2 CIRCUIT 3								

NOTE: HEATER MODEL NUMBER DIGITS " + + " = BK, LG

UNIT CABINET, PLENUM, AND OUTLET DUCT APPROVED FOR 0" CLEARANCE TO COMBUSTIBLE MATERIALS WHEN HEATERS ARE INSTALLED.

TEMPERATURE WITH ELECTRIC HEATERS 200 DEGREES F.

Fig 6.7

1.7 DESCRIPTION OF INTERIOR

Walls and Ceilings:	**Painted Gyprock**
Floor Surfaces:	**Common Area VCT & Carpet**
	Rubber Stair Treads
	Laminate & Vinyl unit floors
Doors:	**Aluminum Entrances to lobby's**
	Wood & Pressed Steel interior doors & Frames

INTERIOR OBSERVATIONS

Finishes:

Flooring – Units were randomly inspected; finishes were found to be a mixture of newer laminates (See FIG 7.1 & 7.2) and older sheet vinyl flooring (See FIG 7.3). Sheet vinyl areas are very dated and recommended for replacement. Common areas were found to be primarily VCT in corridors with newer carpet at lobby/entry (See FIG 7.4 & 7.5). VCT remains functional with a few areas of cracking where floor substrate is uneven (See FIG 7.5)

Walls - The walls throughout are painted gyprock and were found to be in good repair. Moisture readings were found to be in the safe range with no concern noted.

Ceilings - Ceilings are painted gyprock (See FIG 7.7) and were found in good repair with no concern noted.

Stairs – Stairs are located on each end of the facility for exiting. The stairs conform to present day code requirements for rise (7") but the run is non-conforming at 10 3/8" when 11" is required (See FIG 7.8, 7.9). Stairways are required to maintain a minimum headroom clearance of 2.08 m. Landing bulkheads have restricted headroom which is non-conforming 1.95 m (See FIG 7.10). Stair railings were found to be conforming.

Doors – Unit interior doors are wood veneer (See FIG 7.11). The main exterior entrances is a double aluminum commercial door (See exterior commentary). The inner vestibule and corridor doors are pressed steel (See FIG 7.12-7.13). Entrances are in conformance with the present use exiting requirements. Door hardware was found to be functional and in good condition. Unit entry doors do not meet current fire rating requirements as they are not UL Certified (See FIG 7.14 and Life Safety commentary).

Corridors

Corridor walls were found in good condition and properly rated. Corridor ceilings are T-bar and on the top level there was water damage noted (See FIG 7.15). Closer investigation revealed that the ceilings remain unfinished above T-bar with no strapping and only Vapor barrier carrying the fiberglass attic insulation. There was evidence of leaking which could be a roof leak or condensation that has caused the vapor barrier to drop (See FIG 7.16) causing ponding of water leading to the noted damages.

Recommendations/Observations

- Repair corridor flooring where humped and cracked on ground floor corridor
- Add support to underside of attic trusses over corridor and repair insulation.

Non-conformances

- Stair headroom clearance non-conforming
- Entry doors and Frames not ULC rated, recommend changing to “Safe-n-Sound” doors

Fig 7.1

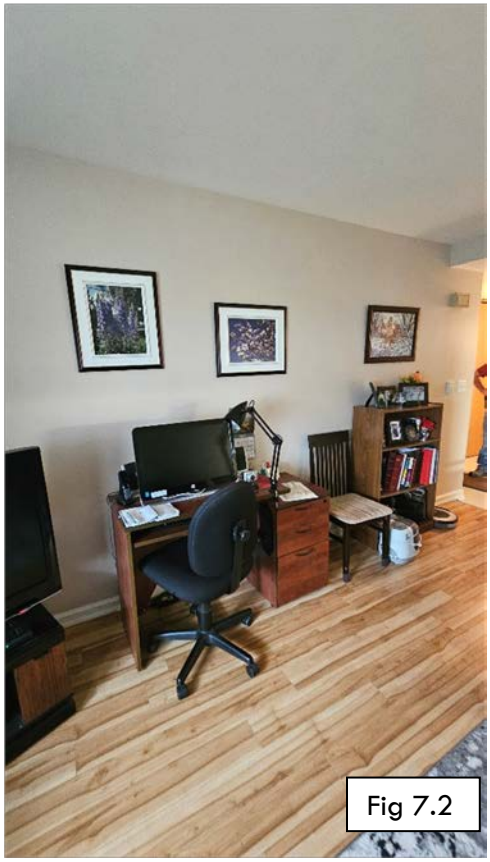


Fig 7.2

Fig 7.3

Fig 7.4

Fig 7.5

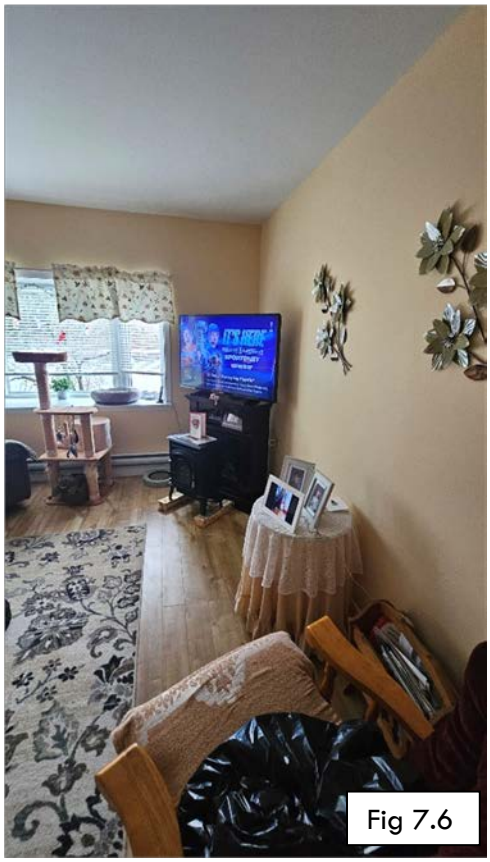


Fig 7.6

Fig 7.7

Fig 7.8

Fig 7.9

Fig 7.10

Fig 7.11

Fig 7.12

Fig 7.13

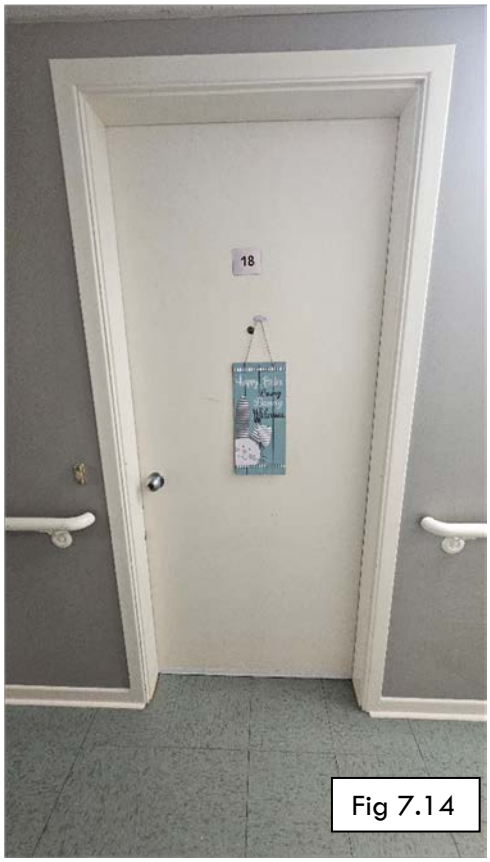


Fig 7.14

Fig 7.15

Fig 7.16

1.8 DESCRIPTION OF ENVIRONMENT

General Comments

A buildings environment is perhaps the most important component of a buildings overall health and is also one of the most difficult to evaluate. To identify concerns, consideration of personal senses is the most effective way to investigate. As such, careful attention is paid to odors, humidity, freshness of air, comfort of breathing, as well as quantitative measurable aspects utilizing IR cameras, Protometers to determine relative humidity, dew point, condensation issues, etc. During inspection spaces are checked for odor, humidity, signs of mold, temperature variations, and any evidence of infestations.

A critical component for a healthy environment is insulation and vapor barrier components. The wall assembly is inspected using moisture sensors and an IR Camera. Inspection of exterior walls revealed many cold zones with missing or damaged insulation and very poorly insulated assemblies (See Example FIG 8.1).

Electrical devices penetrate vapor barrier without the use of vapor shiel boxes and have led to cold zones that are at risk of condensation (See FIG 8.2).

Attic insulation R-values are also non-conforming with <R40 values and many areas of wet/missing insulation were noted through the IR scans (See FIG 8.3)

Windows show signs of cold infiltration around perimeters and trims. Air movement could also be felt in these zones (See FIG 8.4). Windows are expected to be "chinked" (stuffed with FG Batt insulation) based on age of construction which allows infiltration and air movement. Exterior sealants are also failing which can increase air transmission. Low expansion PU foam insulation is recommended around windows. Given the age of windows and building construction, a closer invasive investigation of a random selection of wall assemblies around and beneath windows is recommended to ensure no structural rot is present.

Fresh air is also a critical component to maintaining a healthy building. For the present use, minimum code considers operable windows and mechanical exhaust fans as an acceptable alternative to mechanical ventilation. This does not hold true unless the openings are allowing fresh air to enter. Although it is possible to open the windows to allow fresh air in, this does not provide equivalent air changes to mechanical systems. A mechanical HRV system is recommended in each unit for overall building health and present code compliance.

Environmental Recommendations/Observations

- R-values are non-conforming to present NBCC 2015 building code. R-Value Improvement is recommended
- Fresh air HRV system is recommended in each unit (See mechanical commentary)
- Investigate exterior walls beneath window for signs of rot or water infiltration

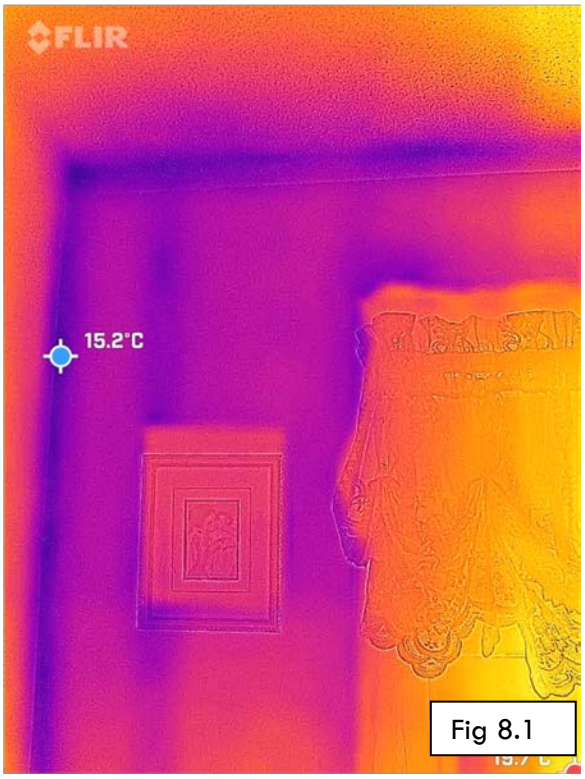


Fig 8.1

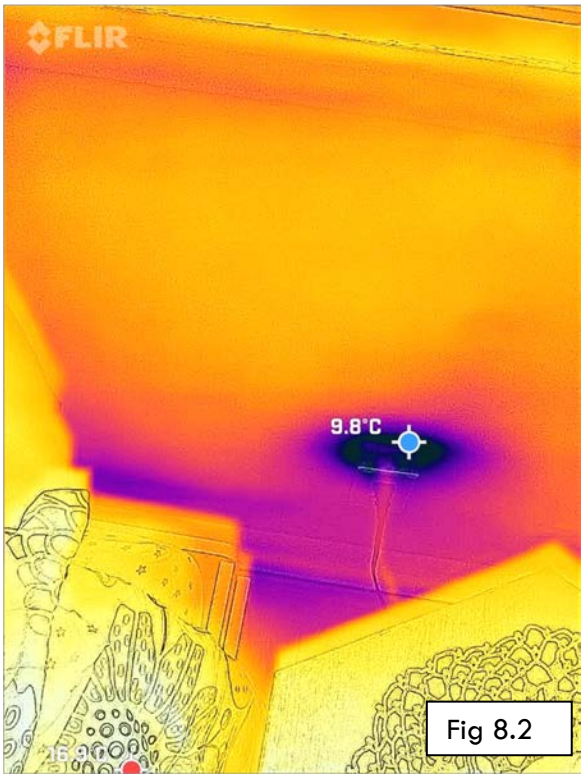


Fig 8.2

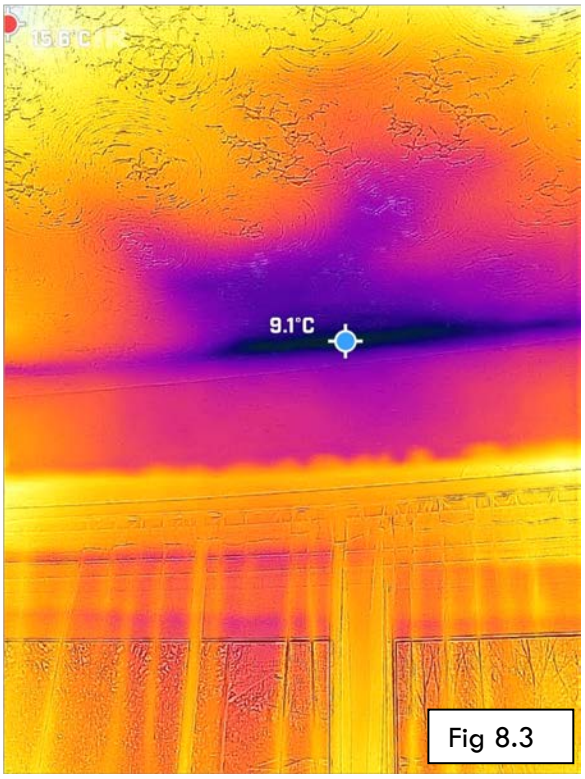


Fig 8.3

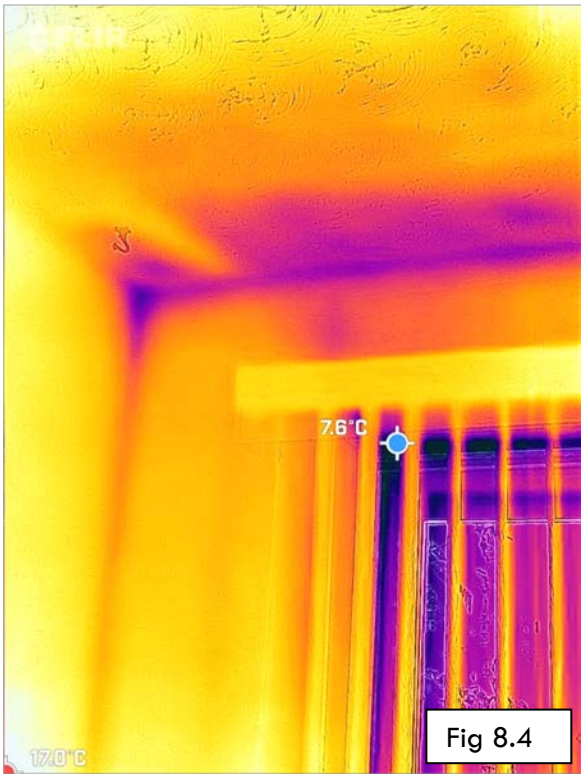


Fig 8.4

1.9 DESCRIPTION OF LIFE SAFETY AND ACCESSIBILITY

Installed Components: **No fire alarm system present**

Minimum code compliant line-voltage detectors each unit

LIFE SAFETY & ACCESSIBILITY OBSERVATIONS

General Comments

This structure contains NBCC Part 9 (Or Part 3 Group C equivalent) use and classifications for Multi-residential occupancy. The facility is required to be constructed to a NBCC 2015 Part 9 residential standards to be conforming based on code criteria.

The building is sprinklerd throughout (See FIG 9.1) and contains an addressable FA system which is managed by Quality Sound and Alarm. There is a conforming and certified operational FA System in place.

ULC Labelling was not present on entry doors or several other doors which require separation (See FIG 9.2) but major exit and stairwell doors and frames contained proper ratings.

Exit Doors into stair-wells are required to self-close and provide fire rated separation and smoke seal. Doors were found to contain proper hardware and were latching properly (See FIG 9.3).

Emergency lighting was tested and passed test circuit testing (See FIG 9.4). Emergency exits were clearly labelled (See FIG 9.5).

Fire extinguishers were present as required and testing is current (See FIG 9.6).

Service areas require fire separations of 1 hour rating. Penetrations were found to be well sealed and in conformance where viewed.

As this facility contains a fire protection system, pull stations and alarm bells in common areas are required. These systems were found to be compliant with current standards (See FIG 9.7-9.9).

Fire & Safety Recommendations/Observations

- Replace Unit Entry doors with ULC Rated Entries (Recommend Safe-n-Sound doors)
- Replace non-labeled service room doors with new properly rated doors and frames with self-closing hardware.
- Perform annual service and certification of Fire Protection systems

Fig 9.1

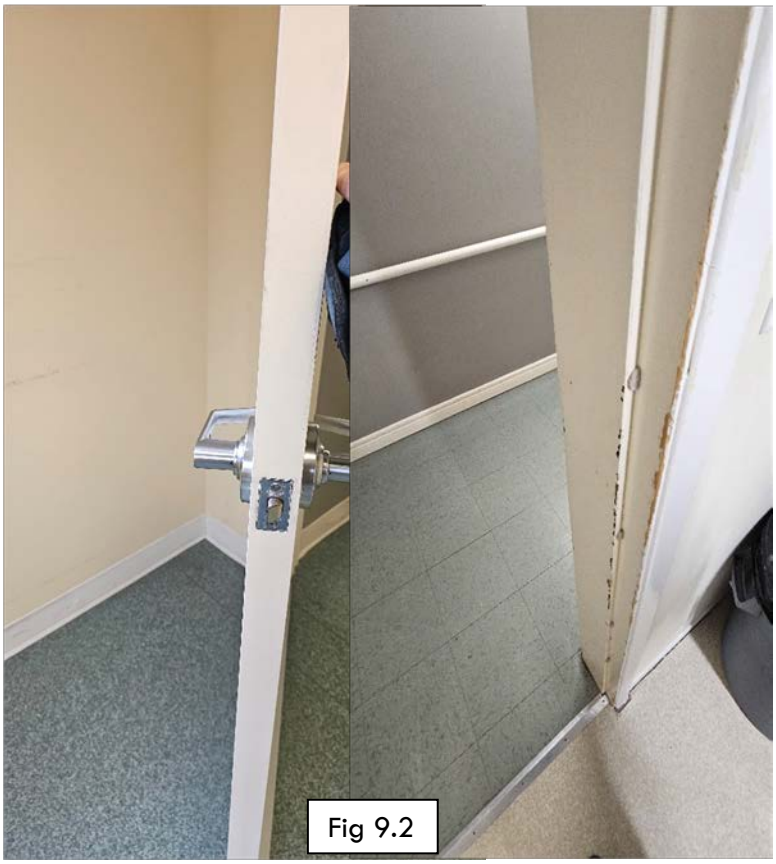


Fig 9.2

Fig 9.3

Fig 9.4

Fig 9.5

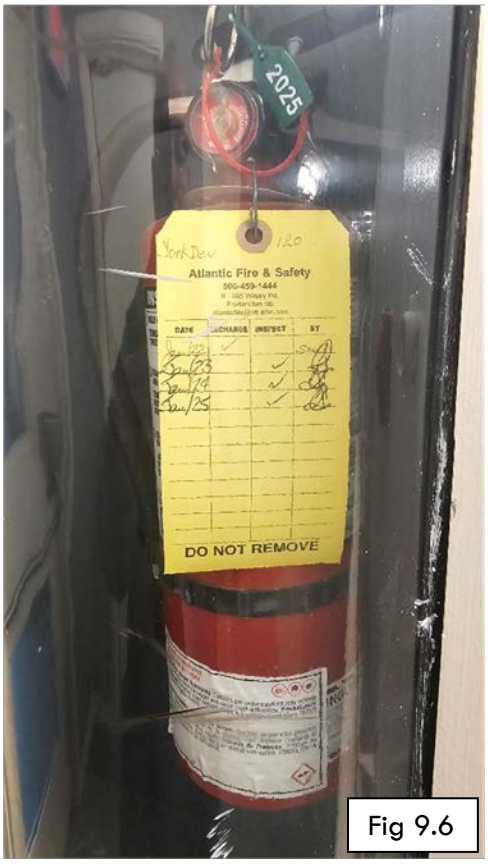


Fig 9.6

Fig 9.7

Fig 9.8


Fig 9.9