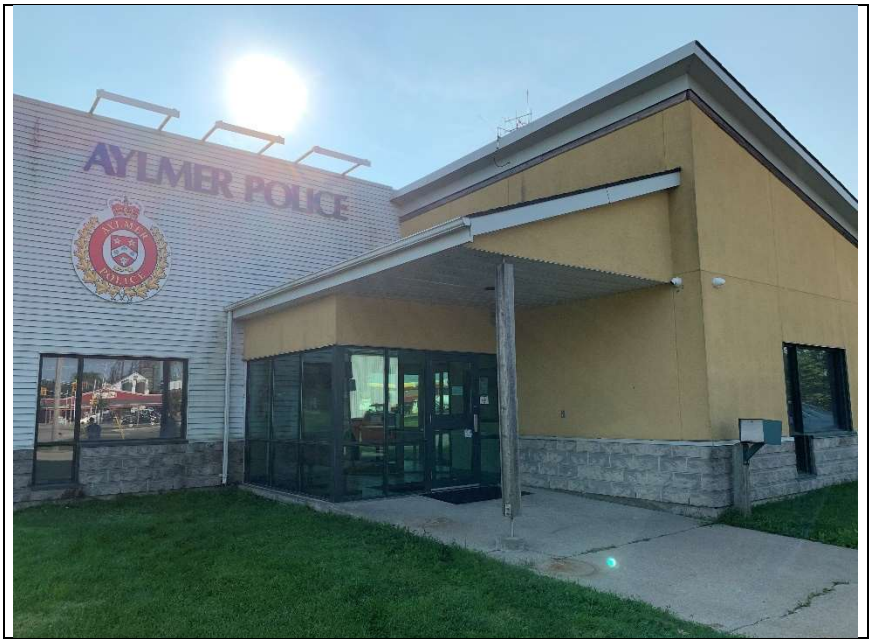
# Property Condition Assessment & Facility Condition Index Analysis




## Aylmer Police Office
## 20 Beech Street East,
## Aylmer, Ontario

**Prepared for:**

**Town of Aylmer**
**46 Talbot Street West,**
**Aylmer, Ontario**
**N5H 1J7**

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# 1 Introduction

## 1.1 Terms of Reference

IRC Building Sciences Group (IRC) was authorized by the Town of Aylmer to perform a Property Condition Assessment & Facility Condition Index Analysis for the Aylmer Police Office property located at 20 Beech Street East in Aylmer, Ontario. The property was developed circa 1996. The site building has been described in section 1.3 of this report. The purpose of the assessment was to evaluate the condition of the primary building components, complete with recommendations for repair and/or replacements within the next 30-year period.

## 1.2 Scope of Work

The work was performed in general accordance with IRC proposal and the Town of Aylmer request for proposal. This work included:

- Review of all drawings and documentation made available to IRC for review.
- Performance of a site review of the buildings' primary components to evaluate the physical condition and standard of components.
- Preparation of Property Condition Assessment report noting general observations and component conditions, together with recommendations for future repair options and associated budgetary costing.
- Develop a 30-year cash flow projection, listing each of the identified components that will require repair, retrofit or replacement.
- Performance of a Facility Condition Index (FCI) analysis to determine the current value of the facility in comparison to the capital replacement costs.

## 1.3 Description

The site is developed with a single-storey building. IRC was informed that the intended use of the building has not changed since the building's construction. The police office building has the following distinct sections:

- The west portion which includes the office and police testing, evidence storage, and accommodation facilities
- The east portion which includes the holding cells, attached garage, and mechanical, electrical, and storage rooms

The structures of the building have been described below.

| General Description | |
|---|---|
| **Foundation & Exterior Wall Components** | The building is constructed with a concrete slab-on-grade foundation with concrete block masonry perimeter walls, steel stud walls, and H.S.S. columns supporting a combination of pre-engineered wood trusses and corrugated steel decking and wood joists and wood decking.<br>The exterior walls are clad with a combination of aluminum siding and Exterior Insulation and Finishing Systems (EIFS), with some areas of split faced concrete block masonry. |
| **Roof Components** | The roof consists of a combination of sloped architectural shingle roofing and a low slope Ethylene Propylene Diene Monomer (EPDM) single ply roofing system. The type and condition of the insulation could not be determined as the scope of work did not include destructive testing. |
| **Windows & Doors** | The windows are aluminum framed with fixed configurations with double glazed panels incorporating a thermal break.<br>The main and secondary entrance vestibule window wall systems consisted of a hollow metal frame construction with IGU glazing.<br>The doors are a combination of aluminum framed clear anodized doors, hollow metal frame doors, and an insulated overhead garage door. |
| **Electrical Systems** | 400A, 120/208V, 3 Phase, 4-wire main breaker panel.<br>Emergency power generator. |

| General Description | | | |
|---|---|---|---|
| **Mechanical Systems** | Two package natural gas fired heat and electrically cooled Heating Ventilation and Air Conditioning (HVAC) units with input capacities of 40,000 BTU/hr and 99,000 BTU/hr.<br>A split-system heat pump rated for 15A and 208/230V.<br>A natural gas-fired automatic storage water heater with a capacity of 151 litres and an input capacity of 40,000 BTU/hr. | | |
| **Passenger Elevator** | No | **Sprinklered** | Partial |
| **Site Components** | Asphalt paving and parking lots, concrete walkways, and site lighting. | | |

**Photographs**

Partial West Elevation


Partial South Elevation

Partial East and South Elevations


Partial East Elevation

**Photographs**

Partial North Elevation

West Visitor Parking Area

South Parking Area

East Parking Area and Access Road

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# 2 Methodology

## 2.1 General

Site assessment was conducted on September 16, 2022 by IRC staff. Observations of the exterior wall assemblies and roofs were made from the ground and roof levels.

This report was prepared based on the findings of the visual assessment and includes:

- Evaluations of the building components reviewed
- Recommendations for repairs and replacement
- Budget estimates, for all rehabilitation work, and
- Photographs of typical deficiencies.

## 2.2 Review Process

The site assessment included for a general visual review of the exterior and interior components, all mechanical and electrical installations and the site components. The review process included:

- Review of the entire building envelope
- A walk around review of roofs where rooftop access is available
- All common mechanical and electrical equipment and components, and mechanical and electrical components in the buildings
- Review of all site exterior elements.

## 2.3 Limitations

Only the specific information or locations noted in the report have been reviewed. Although every reasonable effort was taken to identify defects, latent and hidden defects may affect the accuracy of this report. No physical or destructive testing and no design calculations have been performed unless indicated elsewhere in this report.

## 2.4 Code Compliance

During the visual reviews of the buildings and properties, it has been generally determined, “in a global sense”, that compliance with the current laws and regulations governing its operations are correct unless specifically noted. Comments provided are detailed as to the nature of the non-conformance. A full code compliance review was not required as part of the Scope of Work.

## 2.5 Documentation Provided to IRC

**Construction Drawings**

- Drawing set prepared by ‘The Walter Fedy Partnership’ dated August 27, 1996.

**Other Documents**

- Roof Condition Report by ‘LaFleche Roofing’ dated July 9, 2012

## 2.6 Condition Ratings

The following definitions have been used in the text to describe the condition of each component reviewed:

| | |
|---|---|
| **Good Condition:** | No deficiencies or concerns noted. No capital expenditure is anticipated within next 10-years. |
| **Good / Fair Condition:** | Reasonable condition as whole; minor deficiencies noted. No capital expenditure is anticipated within next 10-years. |
| **Fair Condition:** | Reasonable condition as whole; deterioration and/or damage noted. Capital expenditure is anticipated within 5 – 10 years. |
| **Fair / Poor Condition:** | Deterioration and/or damage noted; component is nearing end of service life. Capital expenditure is recommended in 2 – 5 years. |
| **Poor Condition:** | Deterioration and/or damage noted; component at end of service life. Capital expenditure is recommended in 0 – 2 years. |
| **Very Poor** | Immediate action is recommended to repair or improve the condition and further investigation is recommended. |

**N/A** Component does not currently exist and installation is recommended for building functionality or as a cost-effective upgrade.

## 2.7 Priority Rating

To assess the priorities of the **short-term** repairs/replacements required **within the next 5 years** for the various components at each property, the following ratings from "A" to "E" have been used:

**Priority A – Health & Safety**

Hazardous conditions which cannot be deferred and which could lead to loss of life or critical or extremely severe injury.

**Guideline:**

This priority is for those conditions which are extremely hazardous and which, if not corrected, could lead to critical injury or loss of life. The required scope of work will generally be localized and normally include only a portion of a particular building element or building system.

**Priority B – Structural Integrity**

Conditions that lead to the deterioration of structural elements of a property must be investigated and corrected if necessary. Failure to do so may lead to unsafe, life threatening conditions and will eventually render the building structurally unsound and physically obsolete; incapable of performing the task it was designed to do.

**Guideline:**

This priority is to be assigned to the rehabilitation of structural building elements which have deteriorated to such an extent that they are no longer structurally sound and are not capable of performing their intended task. Examples such as cracked columns, severe spalling or cracked shear walls, failing shelf angles, corroded structural steel supporting members and decaying wood support members are characteristic of the priority.

**Priority C – Code Requirement**

All buildings and building systems must be upgraded so that they comply with revision to existing legislation or to the requirements of newly adopted legislation.

**Guideline:**

This priority is to be assigned to work that is required to ensure that buildings comply with new requirements brought about by changes to applicable existing legislation, such as the Fire Code, or newly adopted legislation. Building elements that have deteriorated to an extent that they no longer comply with existing codes are not assigned this priority.

**Priority D – Building Functionality**

Replacement required for building components which have a direct and significant impact on the building or operation of the building as a whole – generally limited to the building structure and envelope as well as the primary mechanical and electrical systems. These building components and systems must be maintained in order to protect the value and operational viability of the asset. This work is necessary in order to maintain quality of usage and to prevent the building from becoming physically or functionally obsolete.

**Guideline:**

Certain building systems must be maintained in order to protect the "value" and operational viability of the asset. Accordingly, work that directly and significantly affects the overall performance of a primary building system, or a major part thereof, is assigned this priority.

**Priority E – General Upgrades**

Upgrades of components that have surpassed their useful service life, that do not have a direct bearing on the safe operation or functionality of the building, i.e. not building envelope components or primary mechanical and electrical systems. Also includes upgrades with either cost-effective or other initiatives that improve the operational efficiency or marketability of the property and which are considered to have a reasonable payback or add non-tangible value.

**Guideline:**

General replacement of components that have surpassed their useful life but replacement may be deferred without affecting the safe operation and functionality of the property as a whole. Examples include carpets, appliances, asphalt paving and concrete components. This rating is also assigned to components where operating efficiencies and initiatives, and upgrades with a perceived payback may be achieved. Typically energy management, water conservation programs; and/or upgrades to improve non-tangibles such as 'curb appeal', aesthetic appearance and marketability of the building as a whole.

**Priority – None**

This priority is assigned to components where no significant repairs or replacement is expected within the next 5-year period, or where the component has no significant bearing on the operation or function of the property as a whole.

**Guideline:**

A projected priority rating of a component beyond a 5-year period cannot be accurately assessed due to the many variables that may affect the condition beyond this period. Variables such as regular maintenance, weather deterioration, general wear and tear, new technologies, changing code requirements etc. Priority ratings should be re-assessed every 5-year period when updates to the building condition assessment are recommended.

Components that are considered to have no significant bearing on the operation or function of the property as a whole, such as furnishings, office equipment, maintenance/storage sheds, benches, general site signage etc. may be assigned this rating.

## 2.8 Expenditure Type

**Recommended**

Costs accounted for in the Table of Expenditures account for the quantifiable cost of replacement recommended within the foreseeable future, i.e. next 5-years, based on the condition assessment and the industry norm for typical service life between replacement/upgrades/restoration.

**Projected**

Costs accounted for in the Table of Expenditures account for the quantifiable cost of replacement or an estimated allowance for components where the replacement date cannot be accurately assessed, i.e. 5-years and beyond, based on the condition assessment and the industry norm for typical service life between replacement/upgrades/restoration.

**Allowance**

A cash allowance is accounted for in the Table of Expenditures as the costs cannot be accurately measured either due to the work being non-cyclical in repair or replacement, or that the 'quantity' to account for cannot be calculated as a single entity. Examples include partial restoration of concrete components and foundation leak repairs.

**Discretionary**

Costs are accounted for in the Table of Expenditures for upgrades/replacement of components that are considered to be cost effective or worthwhile; however are not necessary for the continued operation of the building as it currently is. Costs may be omitted or discounted from budgets if deemed not necessary. Examples include application of concrete balcony waterproofing and installation of roof anchors, upgrade of attic insulation and replacement of older 'standard' flush toilets.

**Operating**

Costs are not accounted for in the Table of Expenditures. Expenditures that are considered to be a small capital value under $5,000 and that may be performed by maintenance staff or by contractors by under general work order. Examples include repair of damaged insect screens and singular replacements such as exterior doors that are not part of the planned expenditures.

**Maintenance**

Costs are not accounted for in the Table of Expenditures. Minor costs for the day-to-day maintenance of the building that may be completed by maintenance staff. Examples include replacement of bathtub sealants and adjustment of doors.

## 2.9 Mechanical, Electrical & Fire System Review

The estimated service life and basic remaining life of mechanical and electrical systems may be highly variable due to the quality of equipment, local environment and installation as well as the level of maintenance performed during the life of the equipment.

The remaining life expectancy for each component or system is based upon the industry norms for the equipment; including an assessment of any maintenance information provided by the Client. By using this approach, monies required for replacement or upgrades are identified in the reserve fund at the expected time of replacement. Predicting the exact replacement year is very difficult, and actual replacement may be based upon current technologies, energy efficiencies, and availability of replacement parts and frequency of repairs rather than failure of the component.

The review process for this building condition assessment does not include for a design review for the adequacy and function of the system for the particular use at this property. It is assumed that the design was to the standards of the day of installation and that the system is considered to meet the needs of the Client unless identified as deficient during interviews. See specific system Observations for details.

# 3 Executive Summary

## 3.1 Prioritization Summary

**Priority A – Health & Safety**

- There were no items that were considered to be a Health & Safety concern noted during the site review.

**Priority B – Structural Integrity**

- There were no items that were considered to be a structural concern noted during the site review.

**Priority C – Code Requirements**

- No code violations were noted during the site assessment. A full code compliance assessment was not included in the scope of work for this Building condition assessment.
- IRC was informed by the site representative that there is no recorded history of code/safety violations or tickets within the buildings.

**Priority D – Building Functionality**

- Once the roof coverings are removed during upcoming replacements, IRC anticipates finding damaged sections within the decking and sheathing that will require isolated repairs. A budgetary allowance has been carried for minor repairs of roof structural components in conjunction with roof systems replacements within the term of analysis. This allowance is to cover the cost of decking repairs and has been carried in conjunction with roofing membrane and asphalt shingle replacement.
- IRC has carried an allowance to repair the damaged sections of concrete masonry within the term of analysis. Budgetary costs include for general masonry repairs such as repointing of failed mortar joints, rebuild of cracked or spalled areas, foundation parging repairs etc. The cost does not account for major structural repair or reconstruction of the concrete block masonry as a whole.
- IRC has carried an allowance to cover the costs of future sealant replacement cycles within the next 0 to 2 years.
- It is typically not expected that all fire safety components would need to be replaced on a cyclical basis, rather as and when needed. IRC has carried an allowance for upgrades to the fire protection systems within the next 0 to 2 years.

**Priority E – General Upgrades**

- Wood trim was observed on the exterior walls below the aluminum roof flashings. The wood trim has surpassed the service life and replacement with metal flashing is recommended.
- IRC has carried an allowance for repairs to the partitions within the next 2 to 5 years.
- Budgetary cost expenditure has been allocated for replacements of approximately 20% of the interior doors and repair of the all the remaining.
- Budgetary cost expenditure has been allocated for replacement of some of the fittings. The allowance is carried keeping in mind the like-with-like criteria, actual cost will depend on the type of fittings chosen, which will be determined based on the intended use of the building.
- An allowance has been carried for repairs to the interior wall finishes.
- Budgetary cost expenditure has been allocated for replacement of some of the flooring. The allowance is carried keeping in mind the like-with-like criteria, actual cost will depend on the type of flooring chosen, which will be determined based on the intended use of the building.
- Budgetary cost expenditure has been allocated for replacement of some of the ceiling finishes.
- It is typically not expected that all plumbing fixtures would need to be replaced on a cyclical basis, rather as and when needed. Budgetary cost expenditure has been allocated for replacement of some of the plumbing fixtures.
- A budgetary cost expenditure has been allocated for the replacement of asphalt paving. Budgetary costs include for milling and overlay of the existing asphalt paving. Increased cost may be expected for repairs to any soft spots in the base course.
- An allowance of 25% of the total concrete costs have been carried in 2026 and every 15 years thereafter, based upon the degree of concrete damage noted during the site review.
- An allowance has been carried for regular upgrades to the landscaping every 5 years.
- IRC has carried an allowance for the replacement of the exterior and site lighting within the next 2 to 5 years.
- An allowance has been carried to cover small capital costs.

## 3.2 5-Year Summary Table of Expenditure

Below is a summary table of expenditures expected within the next 5-year period. The costs indicated are future value and account for inflation as outlined in *Section 5*.

Assessment and priority rating for each component cannot be accurately rated beyond a period of approximately five (5) years as the level of deterioration and maintenance within a defined period may have significant impact on the assessed rating. It is recommended that the condition assessment be reviewed each year and updated every five (5) years to re-assess condition and deterioration of each component item and meets the planning needs.

| | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|
| A Substructure | - | - | - | - | - |
| B Shell | - | $14,154 | - | - | $26,445 |
| C Interiors | - | $37,274 | - | - | $18,528 |
| D Services | - | $10,110 | - | - | $5,558 |
| G Building Sitework | - | - | - | - | $153,249 |
| Z Planning, Design, Soft Cost & Other Allowances | - | $17,331 | - | - | - |
| **TOTALS** | **$0** | **$78,869** | **$0** | **$0** | **$203,781** |

# 4 Building Condition Assessment

## 4.1 A - Substructure

| Substructure Component Summary | | | | | |
|---|---|---|---|---|---|
| **Code** | **Component** | **Priority Rating** | **Condition Rating** | **Expenditure Recommended** | **Budgetary Cost (2022)** |
| A1010.00 | Foundations – Standard Foundations | None | Good / Fair | 5 - 10 Years | $5,000 |

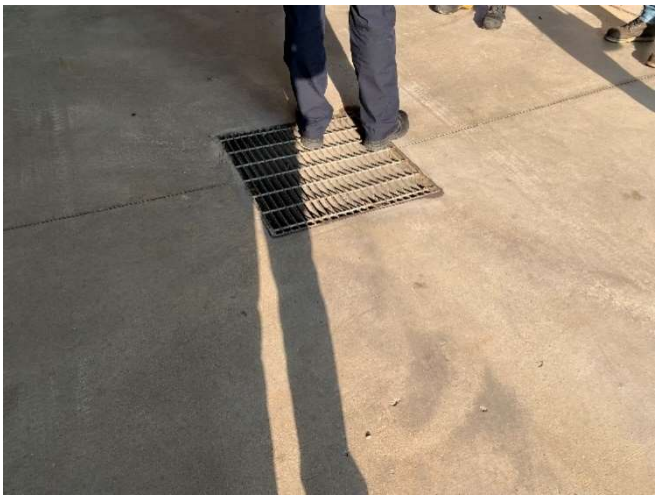
**Observations & Recommendations**

**A1010.00 Foundations – Standard Foundations**

- This item accounts for the concrete structural components including the concrete strip footings and the concrete slab-on-grade.
- The foundation walls and concrete slab-on-grade were visually reviewed from the exterior and interior of the building. There are no basements or underground levels in the building, therefore review of the building foundations and structural concrete components were limited to exposed sections.
- No destructive investigation was undertaken to review hidden structural components.
- No history of a major water damage due to flooding was reported by the site representatives.
- No major issues with the substructure were observed by IRC during the site review.
- No differential settlement was observed by IRC during the site review.
- No major deficiencies were noted by IRC during the site review.
- The building foundations and structure should last the life of the building, i.e. 80+ years and generally should require little or no repair. Structural deficiencies may become evident in the first 5 – 20 years of operation; however, it may be longer periods before any deficiencies are evident.
- It is recommended that a contingency allowance be carried for minor repairs within the next 10-years. The costs do not include for major structural repair or complete installation of waterproofing.

**Photographs**

Review of the building foundation and structural concrete components was limited to exposed sections.



Exposed section of concrete slab-on-grade observed in the attached garage at the east end of the building.

**End of Substructure Section**

## 4.2 B - Shell

| Shell Component Summary | | | | | |
|---|---|---|---|---|---|
| **Code** | **Component** | **Priority Rating** | **Condition Rating** | **Expenditure Recommended** | **Budgetary Cost (2022)** |
| B1020.00 | Superstructure – Roof Construction | None | Fair | 5 - 10 Years | $10,780 |
| B2010.10 | Exterior Enclosure – Exterior Walls – Concrete Block Masonry | D | Fair | 2 - 5 Years | $21,410 |
| B2010.10 | Exterior Enclosure – Exterior Walls – Aluminum Siding | None | Fair | 5 - 10 Years | $18,460 |
| B2010.10 | Exterior Enclosure – Exterior Walls – Stucco / EIFS | None | Fair | 5 - 10 Years | $91,020 |
| B2010.90 | Exterior Enclosure – Exterior Walls – Sealants | D | Poor | 0 - 2 Years | $10,000 |
| B2020.00 | Exterior Enclosure – Exterior Windows | None | Fair | 5 - 10 Years | $38,250 |
| B2030.00 | Exterior Enclosure – Exterior Doors | None | Fair | 5 - 10 Years | $10,000 |
| B2080.00 | Exterior Enclosure – Wall Appurtenances | D | Poor | 0 - 2 Years | $2,250 |
| B3010.10 | Roofing – Roof Coverings – Sloped Shingled Roofing | None | Fair | 5 - 10 Years | $48,080 |
| B3010.50 | Roofing – Roof Coverings – Low Slope Roofing | None | Fair | 5 - 10 Years | $23,880 |
| B3020.00 | Roofing – Roof Appurtenances | None | Fair | 5 - 10 Years | $15,800 |

**Observations & Recommendations**

**B1020.00 Superstructure - Roof Construction**

- This item accounts for the roof structural frame, the structural interior walls supporting roof decks, and sheathing.
- The roof decking is concealed at most locations; however, sections of exposed decking were observed at the meeting room and office space on the north-west end of the building, as well as in the server room at the south end of the building. As noted during the site assessment, roofs have leaked in the past and evidence of moisture damage were noted.
- Review of the structural components was limited to exposed sections. IRC was unable to review any of the columns during the site review as they are all hidden structural members. IRC was only able to review the exposed beams and wood trusses visible in the office area and meeting room.
- Based on the observations from the interior, the decking consists of corrugated steel at most locations, with a small section of wood decking above the server and evidence rooms at the south-east end of the building.
- According to the drawings provided to IRC, the roof framing at the corrugated steel decking consists of pre-engineered wood trusses supported by H.S.S. columns, steel stud walls, and reinforced concrete block walls at isolated locations. The roof framing at the wood decking consists of wood roof joists supported by H.S.S. columns.
- The roof overhangs are supported by steel rods embedded into concrete piers.
- Access on the roof was provided by an extension ladder. There is no fixed ladder or access hatch within the building.
- IRC was informed by the site representative that there is no recorded history of major impact damage occurring at the building's interior or exterior components.
- No major issues with the superstructure were observed by IRC during the site review.
- Assuming general maintenance is performed no other major expenditures are anticipated within the term of analysis.
- Once the roof coverings are removed during upcoming replacements, IRC anticipates finding damaged sections within the decking and sheathing that will require isolated repairs. A budgetary allowance has been carried for repairs of roof structural components in conjunction with roof systems replacements within the term of analysis. This allowance is to cover the cost of decking repairs and has been carried in conjunction with roofing membrane and asphalt shingle replacements.

**B2010.10 Exterior Enclosure – Exterior Walls – Concrete Block Masonry**

- This item accounts for the split faced concrete block masonry located along the lower portion of the exterior walls, and full height at some isolated locations. The split faced concrete block masonry is original to the building's construction and is considered in good condition.
- The split faced concrete block masonry was noted to be stained with moisture at some locations under the flashing connections. It appears that the flashings were not installed properly, resulting in water intrusion at the connections. Left unaddressed, deterioration of the block masonry may occur. Improvements to the water management/run-off are required at the various locations where the concrete block masonry is being saturated.
- Cracking was observed in the split faced concrete block along the north elevation. Minor crack repairs may be required and are considered an operating expense.
- Drip edges were observed along the top of the split faced concrete block.
- IRC was not informed of any issues or leaks at the exterior wall systems.
- The typical life of concrete block masonry is equal to the life of the property, i.e., 80+ years; however, masonry repairs will be required approximately every 15 – 25 year period.
- IRC has carried an allowance to repair the damaged sections of concrete masonry within the term of analysis. Budgetary costs include for general masonry repairs such as repointing of failed mortar joints, rebuild of cracked or spalled areas, foundation parging repairs etc. The cost does not account for major structural repair or reconstruction of the concrete block masonry as a whole.

**Observations & Recommendations**

**B2010.10 Exterior Enclosure – Exterior Walls – Aluminum Siding**

- This item accounts for the refinished aluminum siding observed along portions of the east, north, and west elevations.
- Staining was observed on the refinished aluminum siding. Consideration should be given to cleaning the siding for an upgraded appearance. This is a maintenance item. Cleaning of the siding should be done with a soft broom and garden hose with medium pressure nozzle. Do not use high pressure or a power washer that may penetrate water behind the siding.
- There appeared to be some sun fading to the finish of the aluminum siding. This is a typical condition and does not affect the performance of the siding.
- IRC was not informed of any issues or leaks at the exterior wall systems.
- Replacement of the siding may be coordinate with window replacement to ensure good detailing and air sealing around the perimeter of the windows.
- The typical service life of siding is 30+ years and is often replaced for aesthetic reasons rather than failure of the siding.
- IRC has carried an allowance for the replacement of the aluminum siding within the term of analysis.

**B2010.10 Exterior Enclosure – Exterior Walls – Stucco / EIFS**

- This item accounts for the Exterior Insulation and Finishing System (EIFS) cladding on the exterior walls. The EIFS is original to the building's construction and is considered to be in fair condition.
- The lower portion of the exterior walls is protected with split faced concrete block masonry.
- Staining was observed on the EIFS cladding at multiple locations. Severe staining was observed above the roof canopy on the main entrance.
- IRC was not informed of any issues or leaks at the exterior wall systems.
- IRC did not observe any major deficiencies with the EIFS. Timely repairs of any damages to the stucco are required to prevent deterioration of the system as a whole.
- The typical life of stucco / EIFS is 30 – 40 years; however, it may be expected that major restoration repairs will be required approximately every 10 – 15 year period.
- IRC has carried an allowance for the replacement of the EIFS within the term of analysis. Budgetary costs include for general stucco repairs such as patch repairs of spalled or cracked areas and refinishing of the coating. The cost does not account for complete replacement of the stucco unless indicated.

**B2010.90 Exterior Enclosure – Exterior Walls – Sealants**

- This item accounts for replacement of sealants on exterior building components, such as around window and door frames, along metal flashings, around wall penetrations, and along interfaces between different building materials.
- Most of the perimeter sealants appear to be original to the construction. The sealants were generally in fair to poor condition.
- The caulking at the EIFS transition to the split faced concrete block was observed to be in poor conditon.
- The sealants at the exterior wall transitions were observed to be in poor condition.
- The caulking at the window perimeters along the west elevation was observed to be upgraded, however, evidence of poor instillation was observed along the head of the windows.
- Poor sealants may result in air leakage and poor weather seals. The purpose of the perimeter and control joint caulking is to prevent moisture entry and air filtration to ensure the integrity of the building envelope and internal climate.
- Replacement of the caulking should be coordinated with similar component upgrades such as exterior painting and brick masonry repairs. Independent 3rd party review during the installation may be beneficial.
- The service life of sealants/caulking is highly variable depending upon the type of sealant used (silicone or polyurethane), exposure to weather elements, cleanliness of preparation and the standard of installation by the contractor. Careful selection of sealants is required to ensure compatibility and correct adhesion with the adjacent materials.

  IRC has carried an allowance to cover the costs of future sealant replacement cycles within the next 0 to 2 years.

**Observations & Recommendations**

**B2020.00 Exterior Enclosure – Exterior Windows**

- This item accounts for the exterior windows. The windows are aluminum framed with fixed configurations with double glazed panels incorporating a thermal break.
- The majority of the windows are original to the building's construction; however, IRC observed a few instances of upgraded windows at a few locations. The upgraded windows did not have a date stamp on their spacers; however, they are assumed to have been installed circa 2012 – 2013.
- The main and secondary entrance vestibule window wall systems consisted of a hollow metal frame construction with IGU glazing. The entrance vestibules are original to the building's construction.
- Drip edges were observed below the windows.
- IRC was informed by the occupants in the building that cold draughts occur frequently at the windows. The duty office located near the main entrance experiences unusually cold temperatures during the winter months, however, the windows at the office were observed to be upgraded. No fog, condensation, or other evidence of failed IGUs were observed by IRC or reported to IRC during the site review. Occupants typically use portable space heaters to accommodate the temperature differences between the offices. IRC did not complete any destructive testing at the wall assemblies and therefore cannot determine if the colder rooms are a result of insufficient insulation. Further investigation is recommended.
- It is recommended to install vinyl framed windows incorporating thermal break, gas filled IGUs with low-e glass coatings at the time of replacement.
- Replacement of individual windows may be expected prior to general replacement of the windows - this is considered to be an operating expenditure.
- Replacement of weather-stripping is considered to be operating expenditure.
- IRC has carried an allowance for the replacement of the windows in 9 years.

**B2030.00 Exterior Enclosure – Exterior Doors**

- This item accounts for the replacement of all exterior doors at exit locations. The exterior doors in the building include the main entrance doors along the west elevation, the secondary staff exit located along the south elevation, and the cell block exit door located at the attached garage.
- There is also an overhead garage door located along the east elevation.
- The doors are a combination of aluminum framed clear anodized doors, hollow metal frame doors, and an insulated overhead garage door.
- The main and secondary entrance vestibule window wall systems consisted of a hollow metal frame construction with IGU glazing. The entrance vestibules are original to the building's construction.
- Corrosion was observed along the metal door trim at the overhead garage door.
- IRC was informed that the cell block exit door cannot be opened. It is assumed that the door is no longer operable due to damages and replacement is recommended. Replacement of individual failed doors is considered operating.
- There are currently no automatic door openers located at any of the exterior doors.
- IRC was not informed of any designated fire exit doors within the building.
- Replacement of weather-stripping, replacement hardware, lubrication and adjustment of the doors are all considered to be maintenance.
- Given the age of the doors, IRC anticipates, and has carried allowance for their replacement, in year 9 of the term of analysis.

**Observations & Recommendations**

**B2080.00 Exterior Enclosure – Wall Appurtenances**

- The item accounts for the wall appurtenances including the prefinished aluminum soffits at the roof overhangs, wall flashings, and the wood trim.
- The soffits below the roof overhangs above the main and secondary entrances are perforated aluminum.
- The split faced concrete block masonry was noted to be stained with moisture at some isolated locations under the flashing connections. It appears that the flashings were not installed properly, resulting in water intrusion at the connections. Left unaddressed, deterioration of the block masonry may occur.
- Wood trim was observed on the exterior walls below the aluminum roof flashings. The wood trim has surpassed their service life and replacement with metal flashing is recommended.
- Consideration may be given to cleaning the soffits every few years to maintain the finish and for appearances.
- An allowance has been carried for the replacement of the wood trim in year 1.

**B3010.10 Roofing – Roofing Coverings – Sloped Shingled Roofing**

- This item accounts for the sloped roof coverings consisting of architectural shingle roofing.
- The components of the roof assembly (sheathing/insulation) appeared to have been secured to the metal decking with fastener nails. A number of nails were noted poking through the metal decking on the underside. These penetrations will need to be sealed during the future re-roofing cycles.
- The shingles on the main entrance roof overhang were observed to not dry out properly following rainfall. Saturated shingles with moss growth were observed by IRC during the site review.
- A copy of a roof condition report, Prepared by LaFlache Roofing, dated June 12, 2012 was provided to IRC for review. Review of the roof condition report indicates that the current roof system was installed post 2012.
- Actual age of the roof shingles is unknown, however, based on the observations, roof condition report and information provided on site, the roof shingles are estimated to be approximately 7 to 10 years old.
- Annual walk around review is recommended by a qualified consultant to ensure the integrity of the roof system and to extend the service life.
- Before undertaking any repairs to roof shingles always check the installers warranty statement so as to avoid invalidating any warranty.
- It is highly recommended that a professional consultant be retained for re-roofing projects to ensure correct detailing and quality assurance.
- Roofing components such as B-vents, vent covers, metal flashings etc. have a service life expectancy of 30+ years and may not all need to be replaced in one particular year. The costs of the roof shingle replacement have been increased to allow a contingency replacement of these items.
- The typical service life of asphalt shingles is approximately 2/3$^{rd}$ of the shingles stated standard life.
- An allowance has been carried for the replacement of all shingle roofing and sloped roofing membrane within the next 5 to 10 years.

**Observations & Recommendations**

**B3010.50 Roofing – Roofing Coverings – Low Slope Roofing**

- This item accounts for the low slope roof coverings consisting of single-ply Ethylene Propylene Diene Monomer (EPDM) membrane installed atop a rigid thermal insulation atop roofing decking.
- IRC was informed that there are ongoing roof leaks at multiple locations that occur multiple times a year during heavy rainfall. Patch repairs have been completed previously, however the issues are still ongoing. It is assumed that the leaks are occurring due to failures at the seams and at roof penetrations, however, IRC did not perform a leak investigation during the site review. A leak investigation may be required if the roof leaks continue to occur after the recommended replacement of the roof system.
- Evidence of poor installation in the form of wrinkling was observed in the EPDM roofing system under the parapet flashings and along the shingled roof edge transitions. Trapped air was observed under the EPDM membrane along the shingled roof edge.
- Minor tenting of the EPDM membrane was noted around the perimeter.
- IRC was informed that one of the ongoing leaks is located above the holding cell area. The water intrusion path leads to the video surveillance system and microphone located at the surveillance desk in the area. The water appears to travel along a conduit located at the ceiling. The location of the leak is directly below a rooftop mechanical unit system. The leak may be caused by the use of an incorrect sealant type at the repair locations surrounding the HVAC system.
- IRC observed evidence of a leakage (in the form of staining at the ceilings) above the entrance to the men's locker room. IRC was could not confirm whether the stains are from leaks that have been repaired or are from on-going leaks at present.
- IRC was Site representatives reported a leak in the server room located on the southeast portion of the office area. The leak aligns with an HVAC duct penetration at the ceiling.
- Water ponding and vegetation growth was observed on the low slope roofing at multiple locations. Severe water ponding and vegetation growth was observed at the south end of the building.
- Patch repairs have been completed in previous years at the locations of the ongoing leaks.
- The scuppers at the parapet walls on the low sloped roofs were observed to be clogged.
- The roof condition report completed by LaFLache in 2012 (mentioned in the previous section) indicates that the EPDM membrane was installed in conjunction with the roof shingles approximately 7 – 10 years ago.
- Actual age of the roof system is unknown, however, based on the observations, roof condition report and information provided on site, the roof system is estimated to be approximately 7 to 10 years old.
- Full replacement of the EPDM roof system is anticipated in conjunction with roof shingles. However, the leaking areas will need repairs in the short-term.
- It is recommended that the roofing system is replaced with an alternative roofing system with a longer expected service life, such as a modified bitumen roof system.
- Annual walk around review is recommended by a qualified consultant to ensure the integrity of the roof system and to extend the service life.
- Before undertaking any repairs to the roofing membrane always check the installers warranty statement so as to avoid invalidating any warranty.
- It is highly recommended that a professional consultant be retained for re-roofing projects to ensure correct detailing and quality assurance.
- The roofing system is nearing the end of service life and replacement is recommended in upcoming years.

## Observations & Recommendations

**B3020.00 Roofing – Roof Appurtenances**

- The item accounts for the roof appurtenances including the eavestroughs, downspouts, scuppers, and roof flashings.
- The eavestroughs and downspouts are prefinished aluminum. The downspouts discharge onto the surrounding grade.
- Heating cables were observed to be routed through the downspouts.
- A downspout was observed to be missing an extension along the south elevation.
- The downspout located along the southeast garage elevation was observed to be discharging directly onto the building's foundation. The downspouts should discharge as far away from the building foundation as is practical.
- A section of eavestrough located along the east elevation was observed to be leaking onto the split faced concrete block masonry wall.
- Staining was observed on the exterior walls below the eavestroughs and downspouts at multiple locations.
- Minor deficiencies such as moisture staining were observed at the roof parapet flashings.
- The scuppers at the parapet walls on the low sloped roofs were observed to be clogged.
- The eavestroughs and downspouts should be kept clean from debris and leaves to ensure good rainwater flow. This should be undertaken at least twice per year (before fall and after winter). This is considered to be maintenance.
- Repositioning of the splash-pads is recommended as part of regular maintenance.
- Damage to the bottom sections of the downspouts often occur as a result of impact damage. Consideration may be given to installing a more durable section (PVC pipe) at the lower level of the downspout.
- The typical service life of these components is in excess of 30+ years, and replacement may be more for aesthetic reasons rather than failure of the component.
- IRC has carried an allowance for the replacement of the roof appurtenances within the term of analysis. The recommended repairs are all considered maintenance.

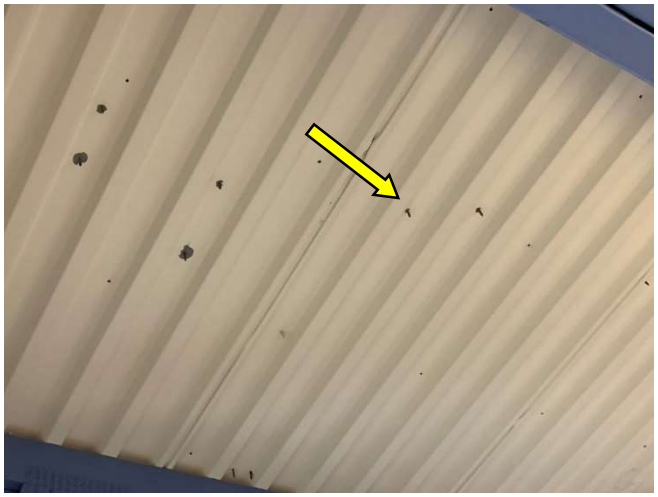
## Photographs

View of the pre-engineered wood truss roof framing at the corrugated steel decking observed in the meeting room.

View of the wood roof joists below the wood decking observed in the evidence room.

**Photographs**

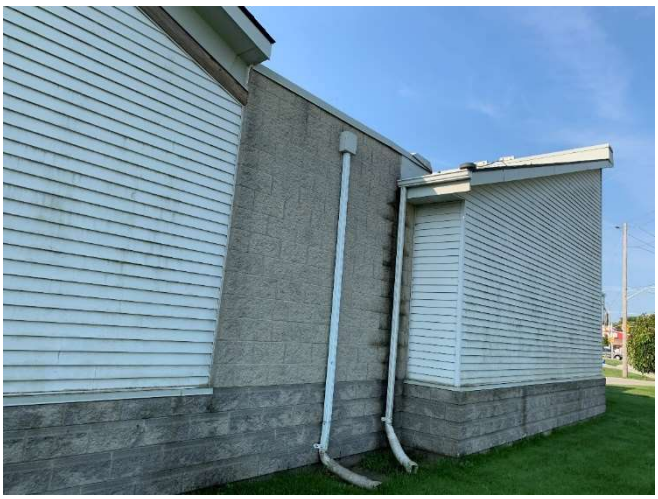
Cracking was observed at an exposed section of concrete masonry unit walls in the attached garage.



IRC observed shingle roofing nails through the exposed sections of the underside of the metal roof decking.

The split faced concrete block masonry was noted to be stained with moisture at a few locations.

Minor cracking was observed in the split faced concrete block along the north elevation.



Staining was observed on the refinished aluminum siding. Consideration should be given to cleaning the siding.


Severe staining was observed on the EIFS above the roof overhang at the main entrance.

**Photographs**

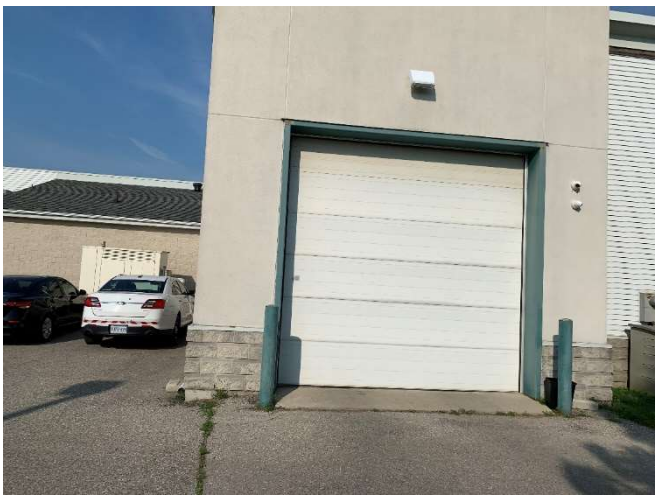
Close-up view of the perimeter sealant observed at a window head located along the west elevation.

The caulking at the EIFS transition to the split faced concrete block was observed to be in poor condition.

View of the failed sealant observed at an exterior wall transition located along the south elevation.

View of the typical aluminum framed windows with fixed configurations with double glazed panels.

View of the hollow metal window wall system located at the main entrance vestibule.



View of the insulated overhead garage door located along the east elevation of the building.

**Photographs**

A leaky joint at the wall drip-edge is causing moisture staining/damage on the exterior masonry.

The wood trim has surpassed the serviceable life and replacement with metal flashing is recommended.

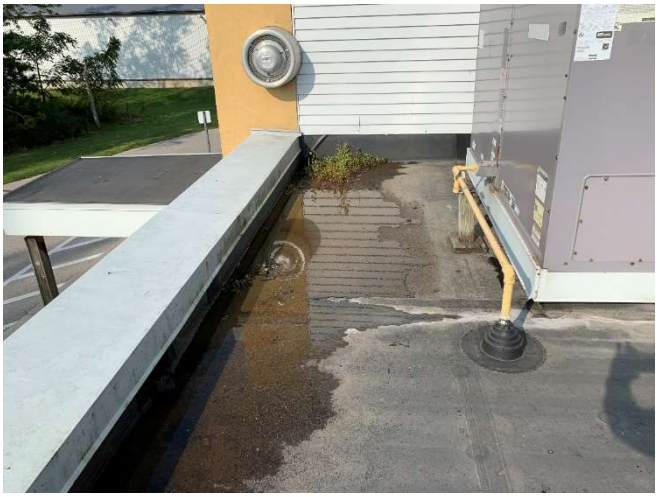
View of the asphalt shingle roofing observed at the south-west corner of the building.

Saturated shingles with moss growth were observed on the asphalt shingles on the main entrance roof overhang.

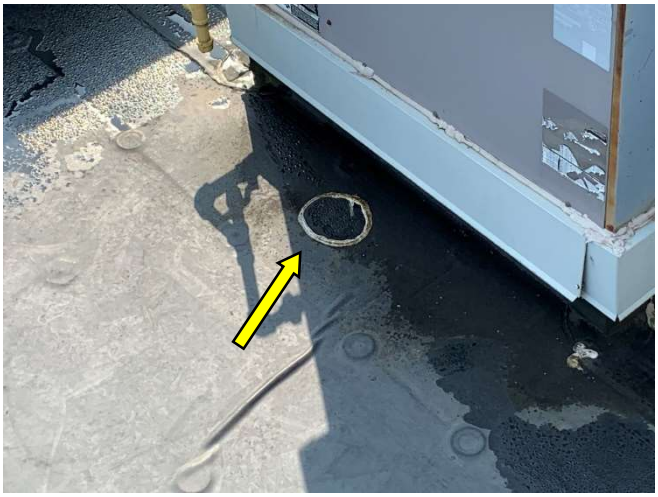
View of the single-ply EPDM membrane system observed on the low slope portions of the roof.

Evidence of poor installation in the form of wrinkling was observed in the EPDM roofing system.

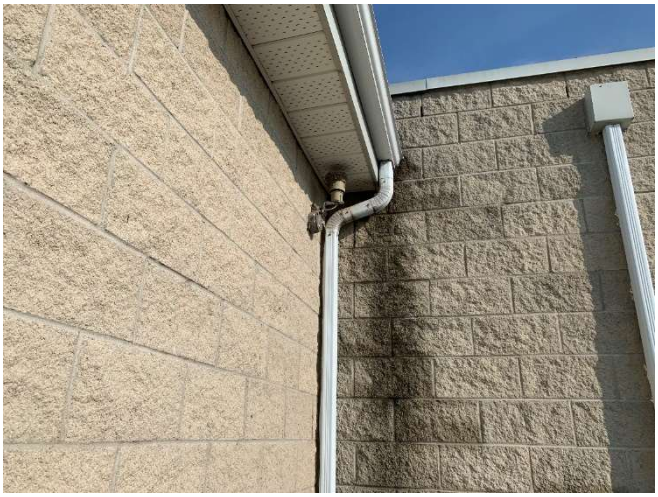
**Photographs**



Water ponding and vegetation growth was observed at the south end of the building.



Patch repairs have been completed in previous years at the location of the ongoing leak above the cell block area.



A section of eavestrough along the east elevation was observed to be discharging onto the concrete block wall.

Moisture staining/debris accumulation were observed at the roof parapet flashings.

**End of Shell Section**

## 4.3 C - Interiors

| Interiors Component Summary | | | | | |
|---|---|---|---|---|---|
| **Code** | **Component** | **Priority Rating** | **Condition Rating** | **Expenditure Recommended** | **Budgetary Cost (2022)** |
| C1010.00 | Interior Construction – Partitions | E | Fair | 2 - 5 Years | $10,000 |
| C1020.00 | Interior Construction – Interior Doors | E | Fair | 2 - 5 Years | $5,000 |
| C1030.00 | Interior Construction - Fittings | E | Various | 0 - 2 Years | $6,250 |
| C3010.00 | Interior Finishes – Wall Finishes | E | Various | 0 - 2 Years | $12,500 |
| C3020.00 | Interior Finishes – Floor Finishes | E | Various | 0 - 2 Years | $8,310 |
| C3030.00 | Interior Finishes – Ceiling Finishes | E | Various | 0 - 2 Years | $5,200 |

**Observations & Recommendations**

**C1010.00 Interior Construction – Partitions**

- This item accounts for replacement of interior partition, such as fixed partitions, demountable partitions, retractable and movable partitions.
- IRC was informed that the layout of the main entrance and front entrance desk is not practical for the building's intended use. Officers are required to bring suspects into the public front entrance area in order to access the hallway leading to the finger printing room. This poses a possible safety and security risk.
- IRC was informed that there is currently no private meeting space with adequate occupancy. The existing meeting space is located in an area without fully closed partitions.
- IRC was informed that there is an inadequate amount of storage space in the attached garage and in the evidence room.
- IRC was informed that the designated men's locker and washroom typically exceeds the maximum occupancy. Some officers have resorted to using the designated women's locker and washroom which has resulted in privacy issues.
- It is recommended that a feasibility study be conducted to determine if the required layout changes are viable. An allowance has been carried for the completion of a feasibility study. Budgetary costs do not account for renovation costs following the completion of the feasibility study.
- IRC was informed that the typical maximum occupancy in the building is 18 people.
- IRC measured the turning radii at multiple locations to determine the building's compliance with current accessibility standards. The following measurements / observations were acquired:
    - The minimum turning radius in the front entrance vestibule is 57 inches
    - The turning radius in the entrance hallway is 33 inches
    - There is insufficient turning radius in the secondary (staff) entrance vestibule
    - Turning radii were not measured at all locations
- A full AODA compliance or accessibility audit was not completed and is beyond the scope of this BCA.
- IRC has carried an allowance for repairs to the partitions within the next 2 to 5 years.

**Observations & Recommendations**

**C1020.00 Interior Construction – Interior Doors**

- This item accounts for replacement of interior standard swinging doors, glazed doors, fire doors, door frames and door hardware.
- Generally interior doors and hardware should last the life of the building with only minor replacements due to damage.
- All doors reviewed were found to be operating correctly, with no binding, sagging or damaged hardware noted.
- The height of the handle bar at the interior vestibule door at the main entrance was measured at 45½ inches.
- Key pad security locks were observed on some of the interior doors.
- IRC measured the clear distances at interior doors at multiple locations to determine the building's compliance with current accessibility standards. The minimum clear width required by OBC is 34 inches (860 mm) with a flush threshold. The following measurements / observations were acquired:
    - A 36-inch clear span width was measured at the main entrance door
    - A 34-inch clear span width was measured at the fingerprint room interior door
    - A 33½-inch clear span width was measured at the cell block entrance door
    - A 34-inch clear span width was measured at the interior door leading to the back offices
    - The height of the handle
    - Not all interior doors were measured for adequate clear span widths
- Budgetary cost expenditure has been allocated for replacements of approximately 20% of the interior doors and repair of the all the remaining ones.

**C1030.00 Interior Construction – Fittings**

- This item accounts for replacement of interior fittings such as washroom components, storage shelving, lockers, kitchen cabinetry and other specialties.
- All additional furniture and equipment are assumed to be owned by the police office and are not the responsibility of the Town of Aylmer.
- Adjustment of doors, drawers and hinges in the kitchen cabinetry should be completed after an annual review to extend the service life of the components. This is considered to be maintenance.
- Budgetary cost expenditure has been allocated for replacement of some of the fittings. The allowance is carried keeping in mind the like-with-like criteria, actual cost will depend on the type of fittings chosen, which will be determined based on the intended use of the building.

**Washroom Components**

- There is a partially accessible washroom located near the main entrance. There is signage on the door indicating that the washroom is designated as accessible, however, there is no automatic door opener.
- The washrooms in the men and women's locker rooms were not compliant with current accessibility standards. The clear width at the shower entrances were observed to be 24 inches. The shower entrances are not level with the washroom floor.
- The washroom vanities and sinks were generally in poor condition. Cabinets were observed to be broken and deteriorating. The vanities have surpassed the serviceable life and replacement is recommended.
- Slip resistant flooring was observed in the showers.
- A full AODA compliance or accessibility audit was not completed and is beyond the scope of this BCA. IRC recommends that all future renovations be conducted under supervision of a qualified accessibility consultant to ensure compliance with OBC and AODA standards.

**Observations & Recommendations**

**C3010.00 Interior Finishes – Wall Finishes**

- This item accounts for replacement of interior wall finishes, such as concrete wall finishes, wall plastering, wallboard, tiles, wall coverings, acoustic wall treatment, and other coatings and finishing.
- The interior finishes are generally original to the building's construction. Very few instances of upgraded finishes were observed by IRC.
- Screw holes and other drywall damages were observed in the fingerprint room.
- Water damage was observed at the windowsill in the fingerprint room.
- Interior wall renovations are recommended to be completed after repair of the exterior building envelope (i.e. exterior wall repairs and roof replacement) to avoid further damages.
- An allowance has been carried for repairs to the interior wall finishes.

**C3020.00 Interior Finishes – Floor Finishes**

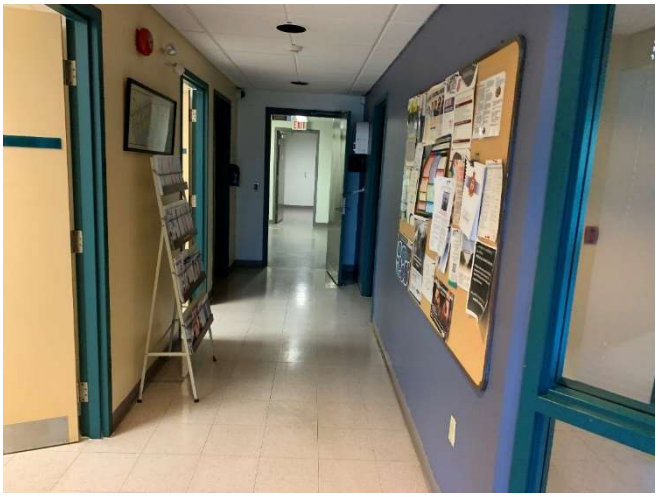
- This item accounts for replacement of the interior floor finishes, such as vinyl composite tile (VCT), ceramic tile, resilient flooring, and low-profile carpeting.
- Rips at the carpet seams and blistering in the carpeting were observed in the meeting room.
- The carpeting in the chief of police office had a dated appearance and looked faded.
- Cracked VCT tiles were observed in the women's locker room and washroom.
- Budgetary cost expenditure has been allocated for replacement of some of the flooring. The allowance is carried keeping in mind the like-with-like criteria, actual cost will depend on the type of flooring chosen, which will be determined based on the intended use of the building.

**C3030.00 Interior Finishes – Ceiling Finishes**

- This item accounts for replacement of interior ceiling finishes including plaster ceiling finishes, gypsum board ceiling finishes, acoustic ceiling tiles and panels within the building.
- The main entrance area and the meeting room have exposed structural members and no finishes ceilings. The underside of the metal roof deck is visible at these locations.
- Stained ceiling tiles and finishes were observed in the fingerprint room and breath test room.
- Damaged ceiling finishes were observed in the cell block area. The likely cause of the damage is moisture intrusion from the roof system and may have occurred prior to roof replacement.
- Missing dropped ceiling tiles were observed in the women's locker room.
- Budgetary cost expenditure has been allocated for replacement of some of the ceiling finishes.

**Photographs**

View of the current meeting room.



View of the hallway leading towards the cell block area.

View of the fingerprint room.

View of the chief of police office.

Overview of the typical washroom components.

Water damage was observed at the windowsill in the fingerprint room.

**Photographs**

Sealed flooring observed in the cell block area.

Vinyl composite tile flooring observed in the visitors washroom.

Rips and wrinkled carpet observed in the meeting room.

Missing ceiling tiles observed in the women's locker room.

Stained ceiling tile observed in the fingerprint room.

Damaged ceiling finishes observed above the holding cell area.

**End of Interiors Section**

## 4.4 D - Services

**Services Component Summary**

| Code | Component | Priority Rating | Condition Rating | Expenditure Recommended | Budgetary Cost (2022) |
|---|---|---|---|---|---|
| D2010.00 | Plumbing – Plumbing Fixtures | E | Various | 0 - 2 Years | $5,000 |
| D2020.00 | Plumbing – Domestic Water (DHW) Distribution | None | Fair | 5 - 10 Years | $7,500 |
| D3040.00 | HVAC – Distribution Systems | None | Fair | 5 - 10 Years | $15,000 |
| D3050.00 | HVAC – Packaged Units | None | Fair | 5 - 10 Years | $90,000 |
| D3060.00 | HVAC – Controls & Instrumentation | None | Fair | 5 - 10 Years | $10,000 |
| D4090.00 | Fire Protection – Other Fire Protection Systems | D | Various | 0 - 2 Years | $3,750 |
| D5010.00 | Electrical – Electrical Service & Distribution | None | Fair | 5 - 10 Years | $25,000 |
| D5020.00 | Electrical – Lighting and Branch Wiring | None | Fair | 5 - 10 Years | $20,000 |
| D5030.00 | Electrical – Communications & Security | None | Fair | 5 - 10 Years | $28,000 |
| D5090.00 | Electrical – Other Electrical Systems – Emergency Generator | None | Good / Fair | 10 - 20 Years | $180,000 |

**Observations & Recommendations**

**D2010.00 Plumbing – Plumbing Fixtures**

- This item accounts for upgrades and replacement of plumbing fixtures such as sinks, wash-basins, faucets, toilets and shower heads and controls.
- The theoretical service life expectancy of the fixtures such as faucets and shower controls is approximately 15-years, and fixtures such as sinks, wash-basins is 30-years; however, the actual service life is highly variable and dependent upon treatment by occupants, water quality and the degree of maintenance undertaken.
- Items such as replacement faucets, toilet seats, etc. are considered to be maintenance expenditure.
- Upgrades of some of the fixtures may be considered for water saving measures; these fixtures would include shower-heads, toilets and aerators.
- It is typically not expected that all plumbing fixtures would need to be replaced on a cyclical basis, rather as and when needed. Budgetary cost expenditure has been allocated for replacement of some of the plumbing fixtures.

**Observations & Recommendations**

**D2020.00 Plumbing – Domestic Water (DHW) Distribution**

- This item accounts for potential upgrades and major renovation of the plumbing piping and related components such as valves, couplings, controls, re-circulation pumps (if present), and the automatic storage water heater.
- The DHW heater is a natural gas-fired appliance with a capacity of 40 US gallons (151 litres) and an input of 40,000 British Thermal Units per hours (BTU/h). The DHW heater was manufactured by John Wood Water Heaters and is located in the storage room adjacent to the attached garage.
- The condition and rating of this component is subjective, as the physical review of the plumbing is limited to that which is exposed – generally in mechanical rooms. The condition rating is based more upon the industry norm service life for plumbing piping and information provided by the Town of Aylmer.
- Under normal operating conditions waste and vent piping (ABS & PVC) should last the life of the building.
- The service life at which upgrades to the copper piping may be expected can vary greatly depending upon the type of copper piping installed (K, L or M) and the mineral content of the potable water.
- Consideration may be given to insulating all copper piping to reduce heat loss through the piping and reduce the possibility of condensation forming on the piping. This is considered to be operating expenditure.
- Replacement of the automatic storage water heater is considered operating. IRC has carried an allowance for repairs to the plumbing systems within the next 5 to 10 years.

**D3040.00 HVAC – Distribution Systems**

- This item accounts for repairs and replacement of the HVAC distribution systems.
- The condition and rating of this component is subjective, as the physical review of the ductwork is limited to that which is exposed. The condition rating is based more upon the industry norm service life and information provided by the Town of Aylmer.
- The HVAC ductwork was observed to be insulated. Further testing is required to determine if the ductwork is also insulated from the interior. Interior insulation in the ductwork could potentially cause mould growth. Further investigation is recommended. If the ducts are insulated from the interior, then it is recommended that the ducts be cleaned and inspected regularly.
- IRC observed that newspaper has been placed in the duct openings in some of the offices. Newspaper was observed at the duct opening in the chief of police office. The newspaper pieces should be removed and is considered maintenance.
- Further investigation into the HVAC ductwork is considered operating. IRC has carried an allowance for upgrades to the HVAC distribution systems within the next 5 to 10 years.

**Observations & Recommendations**

**D3050.00 HVAC – Packaged Units**

- This item accounts for the repair and replacement of the package Heating Ventilation and Air Conditioning (HVAC) Units.
- There is a package HVAC system located on the low sloped roofing at the north end of the building. The equipment was manufactured by Carrier and appears to be original to the building's construction. The natural gas heating has an input capacity of 40,000 BTU/hr and thermal efficiency of 81%. The electric cooling has a cooling capacity of 1½ tons and the refrigerant is R-22. The equipment is rated for 208/230 volts and 60 Hz.
- There is a package HVAC system located on the low sloped roofing at the south end of the building. The equipment was manufactured by Carrier in 2014. The natural gas heating has an input capacity of 180,000 BTU/hr and a thermal efficiency of 82%. The cooling has a capacity of 99,000 BTU/hr and the refrigerant is R-410A. The equipment is rated for 208/230 volts and 60 Hz.
- There is a split-system heat pump located in the server room. The condenser is located on low sloped roofing at the south end of the building. The equipment was manufactured by Mitsubishi Electric Corporation and is rated for 15 amps, 208/230 volts, and 60 Hz. The refrigerant used is R410A. The equipment was manufactured in 2017.
- There is an additional space heater manufactured by Lennox located in the attached garage.
- IRC was informed that the mechanical and HVAC equipment is serviced and inspected four times a year by Pro-Tech Mechanical Services.
- It is recommended that the air conditioning components be kept clear of obstructions to permit good air-flow around the condensers for improved efficiency.
- The metal fins in the condenser units should be kept clear of debris, dirt, and dust so as that the heat can be expelled. The metal fins should be 'combed' out should they become dented or bent.
- Regular review and maintenance are required to maintain efficient operation and to achieve the design life.
- General maintenance such as topping up of refrigerant, replacement fan bearings etc. is considered to be operating expenditure.
- IRC has carried an allowance for upgrades to the HVAC units within the next 5 to 10 years.

**D3060.00 HVAC – Controls & Instrumentation**

- This item accounts for controls and instrumentation for heating generating systems of the building.
- Budgetary cost expenditure has been carried for replacement and functional upgrade of thermostats and sensors. The allowance is preliminary as actual costs will depend on the type of systems chosen.
- IRC has carried an allowance for upgrades to the HVAC controls and instrumentation within the next 5 to 10 years.

**Observations & Recommendations**

**D4090.00 Fire Protection – Other Fire Protection Systems**

- This item accounts for upgrades to all fire safety components including the sprinkler system, fire alarm panel, Exit signs, fire extinguishers, emergency lighting, and smoke detectors.
- IRC was informed by the site representative that there is no recorded history of fire damage occurring within the building.
- The majority of the building is not equipped with a sprinkler system. There is a sprinkler system in the holding cell area at the north-east portion of the building.
- The sprinkler standpipe and valve system are located in the utility room that is accessed from the attached garage. It was observed that additional sprinkler heads are located in the sprinkler cabinet as per the National Fire Code.
- The fire alarm panel is manufactured by Mircom. IRC was informed that the fire alarm panel is monitored. There is no inspection tag located on the fire alarm panel.
- The annunciator panel is located at the main entrance.
- Portable fire extinguisher replacement is legislated by the Ontario Fire Code. IRC was informed that the fire extinguishers are serviced and inspected annually.
- IRC did not observe any carbon monoxide sensors within the building.
- Heat sensors were observed at some locations but have surpassed the recommended serviceable life. Replacement of all aged heat sensors is required and is considered operating.
- The service life of these total components varies greatly. Smoke detectors, carbon monoxide detectors and fire extinguishers have a short 10 year service life, emergency lighting and exit signs have a 15 – 20 year life and other component may be expected to last 30+ years.
- The estimated remaining service life of the fire alarm panel has been assessed based on the current age and typical service life of this component; however, the fire alarm panel may surpass the given remaining life. Further consultation with the servicing contractor at the annual review is recommended to determine a better understanding of the condition of the component.
- There were no reports of concerns or problems with the current fire safety components. Any issues that may arise should be addressed immediately with the servicing contractor.
- The review of the fire alarm and life safety components is a visual review only for the purpose of this building condition assessment. The review did not include for any physical testing of the components to verify correct operation.
- It is mandatory that the fire alarm system components are to be reviewed and tested annually. This is considered to be operating expenditure.
- Availability of spare parts for the fire alarm control panel due to newer and better technology being available is a constant concern. Include availability check with manufacturer as part of annual testing.
- Accurate records of when the smoke alarms are tested and replaced should be kept.
- The smoke alarms should be tested on a regular basis. There is no set time period for testing; however, it is recommended that the devices should be tested at least twice per year (possibly when clocks are changed for daylights savings).
- It is typically not expected that all fire safety components would need to be replaced on a cyclical basis, rather as and when needed. IRC has carried an allowance for upgrades to the fire protection systems within the next 0 to 2 years.

**Observations & Recommendations**

**D5010.00 Electrical – Electrical Service & Distribution**

- This item accounts for electrical power and distribution servicing the building including the main distribution, panel and breakers. Wiring is assumed to last the life of the building.
- Power to the building is supplied by ERTH Power Corporation.
- The main breaker panel was manufactured by Cutler-Hammer and is rated for 400 amps, 120/208 volts, 3-phase, and 4-wire. The equipment is original to the building's construction. The original panel rating appears inadequate considering the addition of air condition systems in the building. It is recommended that a review of all electrical equipment in the building be conducted by a qualified electrician.
- The electrical circuits are identified and labelled on the electrical panel door. The circuits are not verified for accuracy of identification label.
- The labels on some of the electrical equipment were observed to be faded.
- A security system panel box located in the server room was observed to be missing a cover.
- The electrical, maintenance, and storage room is located in the women's locker and washroom. This poses a fire code and safety violation as combustible and flammable materials and chemicals are being stored in the same room as the electrical equipment. It is recommended that all maintenance materials and products be moved to a different storage room.
- It is code requirement to keep the electrical rooms clear for access and maintenance. Remove all materials stored in the electrical room to comply with the code requirements. Consider installing a sign to remind personnel of this code requirement.
- This report does not include a review of the adequacy of the original design or a review of the safety aspects of the installation as this falls under the jurisdiction of Electrical Safety Authority (ESA).
- It is considered that under normal conditions the main distribution switchgear should last the life of the building; however, replacement or a major re-build may be required due to parts becoming obsolete.
- Preventative maintenance of the electrical service and distribution is recommended. The scope of the work would include verifying the torque on the main terminal lugs and branch breakers, checking loading on circuits to identify hot spots, identifying and correcting evidence of arcing, test breaker trips. This is considered to be operating expenditure.
- IRC has carried an allowance for upgrades to the electrical service and distribution systems within the term of analysis.

**D5020.00 Electrical – Lighting and Branch Wiring**

- This item accounts for repairs and upgrades to the interior lighting fixtures and wiring in the building.
- IRC was informed that approximately 3 to 5 years ago the interior lighting fixtures in the main areas of the building were all upgraded with new LED and florescent bulbs.
- Florescent tube lighting fixtures were observed in the waiting rooms and in the cell block corridor.
- A damaged light fixture was observed in cell number two.
- Water staining and possible damages were observed at the light fixture in the breath test room.
- It was observed that additional light bulbs are stored in the utility room that is accessed from the attached garage.
- The lighting was not examined to determine adequate levels of lighting other than areas where it is inherently apparent that the lighting levels are below that what would be expected to be the norm.
- Replacement of individual failed lighting fixtures is considered to be an operating expenditure.
- Lighting fixtures may be replaced for energy efficiency reasons rather than failure of the component.
- IRC has carried an allowance for upgrades to the lighting within the next 5 to 10 years.

## Observations & Recommendations

**D5030.00 Electrical – Communications & Security**

- This item accounts for the communication and security systems.
- IRC was informed that one of the ongoing leaks is located at the cell holding area. The water intrusion path leads to the video surveillance system and microphone located at the surveillance desk in the area. IRC was not informed of any issues with the communication and security systems.
- Replacement of individual failed components is considered operating.
- IRC has carried an allowance for upgrades to the communication and systems within the next 5 to 10 years.

**D5090.00 Electrical – Other Electrical Systems – Emergency Generator**

- This item accounts for the repair and replacement of the emergency generator.
- The emergency power generator is located in a portable trailer positioned along the east elevation of the building. The generator operates using diesel fuel with a belly tank at the base of the tailer. The equipment was manufactured by Mecc Alte Spa in 1999 and is rated for 132 kilo Watts (kW).
- IRC was informed that there is currently no service contractor for the emergency power generator. The emergency power generator is typically serviced by public works services.
- The automatic transfer switch is located in the electrical room. The equipment was manufactured by Cutler-Hammer and is rated for 400 amps, 120/208 volts, 3-phase, 4-wire, and 60 Hz. The equipment appears to have been installed in 1999.
- Typical service life of this type of generators is between 30 to 35 years, provided that regular testing and maintenance is conducted.
- IRC was informed that the automatic transfer switch is not test regularly. The automatic transfer switch should be tested on a monthly basis.
- The records for the running of the generator were not viewed by IRC.
- CSA C282-15 - Emergency Electrical Power Supply for Buildings standard requires that emergency generators are tested monthly at full load for 60 minutes. Records are required to be kept of the test results for the running of the generator.
- The service life of this component is highly variable depending on the amount of run-time the generators operates in a life-time; but more importantly depending upon regular and routine review and preventative maintenance.
- IRC has carried an allowance for the replacement of the emergency generator within the next 10 to 20 years.

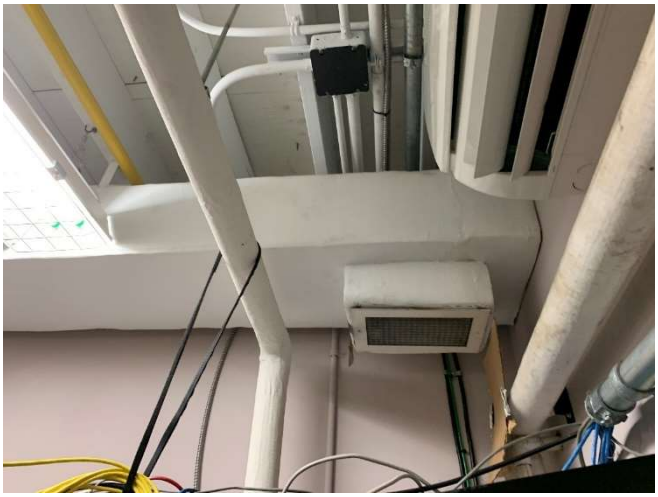
## Photographs

Typical sink fixture observed in the staff washrooms.

View of the automatic storage water heater.

**Photographs**

Exposed HVAC ductwork observed in the meeting room.



The HVAC ductwork was observed to be insulated.

IRC observed that newspaper has been placed in the duct openings in some of the offices.

View of the package HVAC system located on the low sloped roofing at the north end of the building.

View of the package HVAC system located on the low sloped roofing at the south end of the building.


View of the split-system heat pump located on the low sloped roofing above the server room.

**Photographs**

View of the fire alarm panel manufactured by Mircom.

Heat sensors were observed at some locations but have surpassed the recommended serviceable life.

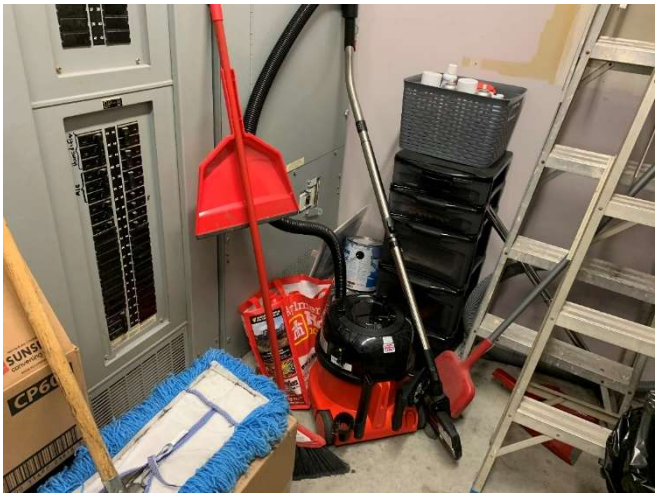

Fire extinguishers were observed at multiple locations.


Exit signs were observed at exit doors.

View of the sprinkler standpipe and valve system.


Close-up view of the main breaker panel manufactured by Cutler-Hammer.

**Photographs**



View of materials being stored in the electrical room which is against code requirements.

Water staining and possible damages were observed at the light fixture in the breath test room.

View of the emergency generator.


View of the automatic transfer switch located in the electrical room.

**End of Services Section**

## 4.5 G - Building Sitework

| Building Sitework Component Summary | | | | | |
|---|---|---|---|---|---|
| **Code** | **Component** | **Priority Rating** | **Condition Rating** | **Expenditure Recommended** | **Budgetary Cost (2022)** |
| G2020.00 | Site Improvements – Parking Lots | E | Fair / Poor | 2 - 5 Years | $94,070 |
| G2030.00 | Site Improvements – Pedestrian Paving | E | Various | 2 - 5 Years | $5,000 |
| G2050.00 | Site Improvements – Landscaping | E | Fair | 2 - 5 Years | $5,000 |
| G3010.00 | Site Mechanical Utilities – Water Supply | None | Good / Fair | 20+ Years | $3,000 |
| G3020.00 | Site Mechanical Utilities – Sanitary Sewer | None | Good / Fair | 20+ Years | $3,000 |
| G3030.00 | Site Mechanical Utilities – Storm Sewer | None | Good / Fair | 20+ Years | $7,500 |
| G4020.00 | Site Electrical Utilities – Site Lighting | E | Fair | 2 - 5 Years | $20,000 |

**Observations & Recommendations**

**G2020.00 Site Improvements – Parking Lots**

- This item accounts for the asphalt paving on the roadway and parking areas on the site.
- The majority of the asphalt pavement is original to the building's construction. Longitudinal cracking and some locations of alligator cracking were observed.
- Sections of the asphalt pavement have been replaced in recent years.
- A section of asphalt paving was replaced at the south-east parking area where the police cruiser are parked. Another section of pavement was observed to be replaced around a catch basin at the south-west corner of the site.
- Cracking was observed along the saw cut between the original and replaced paving sections.
- Rutting was observed at the wheel locations in the visitor parking area along the west elevation.
- Settlement surrounding the catch basins was typical.
- Pavement markings were observed to be recently repainted.
- Petroleum products such as gasoline and oil will increase the deterioration of asphalt paving, breaking down the bond between asphalt and aggregate. This will shorten the service life of the paving; hence cleaning of oil stains is recommended as part of the regular maintenance.
- Settlement and rutting of asphalt paving may shorten the service life of the paving as moisture can seep into the paving and base course, causing soft spots and erosion, and also spalling of the asphalt during freeze/thaw cycles. Cut and patch repairs will extend the service life of the paving as a whole.
- Thermal expansion and contraction may cause longitudinal cracks in the paving, allowing moisture to seep in causing spalling of the asphalt during freeze/thaw cycles and shortening the service life. Routing and sealing of the asphalt will extend the service life of the paving as a whole.
- The service life of asphalt paving is highly variable depending upon the quality of installation, amount of vehicle usage and weight of vehicles and correct design for such vehicles.
- A budgetary cost expenditure has been allocated for the replacement of asphalt paving. Budgetary costs include for milling and overlay of the existing asphalt paving. Increased cost may be expected for repairs to any soft spots in the base course.

**Observations & Recommendations**

**G2030.00 Site Improvements – Pedestrian Paving**

- This item accounts for repairs and replacement of the concrete components for pedestrians at the site including walkways, curbs, and entrance slabs.
- Minor cracking in the concrete walkways was noted at various locations around the site; however, overall the condition was noted to be fair.
- Repair of cracked concrete walkways should be considered for overall curb appeal of the property. Continued review of cracked and settled concrete walkways for potential trip hazards is required.
- The concrete pad located at the secondary (staff) entrance along the south elevation is not flush with the entrance door threshold. A 7½-inch step was measured at the door.
- Settlement was observed in the concrete pad surrounding the concrete pier at the main entrance roof overhang support rod. Corrosion staining was also observed on the concrete pad at this location. The exposed metal piece under the column should be covered to prevent corrosion from exposure to salts and moisture.
- The typical life of concrete components is 50+ years, and complete replacement of concrete components would not be expected in any one period.
- The degree of concrete damage is highly variable and factors such as concrete strength, correct design of concrete mix and quality of sub-base preparation will affect the potential for concrete failures.
- An allowance of 25% of the total concrete costs have been carried in 2026 and every 15 years thereafter, based upon the degree of concrete damage noted during the site review.

**G2050.00 Site Improvements – Landscaping**

- This item accounts for potential upgrades to the landscaping elements of the property including major tree and limb pruning, stump removal, re-sodding, replacement shrubs etc.
- The landscaping was minimal and generally had a tidy appearance.
- The cost accounted for are for major upkeep of the current landscaping and do not include for improvements or extension of any current landscaping.
- An allowance has been carried for regular upgrades to the landscaping every 5 years.

**G3010.00 Site Mechanical Utilities – Water Supply**

- This item accounts for existing domestic water mains fire protection water distribution running underground towards the building.
- The costs of plumbing work inside the building (e.g., domestic water pipes running within the building) are considered in section **D2020.00 Plumbing – Domestic Water Distribution.**
- The assessment for this item is based only on visual observation and study of the background documents provided by the Town of Aylmer. No exploratory or destructive method was applied in the assessment, as this was not part of the scope of the report.
- A contingency allowance is accounted for in the Table of Expenditures to account for potential upgrades and major repairs to the plumbing piping and related components. It is not expected that all piping will need to be replaced at the same time.

**Observations & Recommendations**

**G3020.00 Site Mechanical Utilities – Sanitary Sewer**

- This item accounts for the sanitary sewer system.
- IRC did not receive any report of sanitary sewers and drainage problems on this property. The budgetary cost allowances were estimated based on the overall size and age of the property.
- The assessment for this item is based only on visual observation and study of the background documents provided to IRC. No exploratory or destructive method was applied in the assessment, as this was not part of the scope of the report.
- Review of the storm and sanitary lines using video scoping may be considered every 5 – 8 years after an initial 25 year period to determine the condition of the lines and any potential problems such as collapsed piping or tree roots. Scoping of the lines is considered to be operating expenditure.
- The service life of these components is 30+ years, depending upon the materials used, methods of installation and preventative maintenance to maintain drainage piping and water supply, relating to these components. Refurbishment or replacement is not expected within the first 30-years of operation.
- An allowance has been allocated for replacement of 15% of the sanitary sewers drainage systems.
- The cost in the Table of Expenditures accounts for installation of storm and sanitary sewer piping and connections and their related and manholes.

**G3030.00 Site Mechanical Utilities – Storm Sewer**

- This item accounts for replacement of underground storm sewer system running from the municipal line starting from the property line to the building.
- IRC did not receive any report of storm sewers and drainage problems on this property. The budgetary cost allowances were estimated based on the overall size and age of the property.
- The assessment for this item is based only on visual observation and study of the background documents provided by the Town of Aylmer. No exploratory or destructive method was applied in the assessment, as this was not part of the scope of the report.
- Review of the storm and sanitary lines using video scoping may be considered every 5 – 8 years after an initial 25 year period to determine the condition of the lines and any potential problems such as collapsed piping or tree roots. Scoping of the lines is considered to be operating expenditure.
- The storm water interceptor and catch basins should be visually reviewed annually to check sediment levels – usually in the spring. Sediment should be vacuumed out periodically as needed – usually every 3-5 years, but this varies depending on the amount of oil and debris that enters the system.
- The service life of these components is 30+ years, depending upon the materials used, methods of installation and preventative maintenance to maintain drainage piping and water supply, relating to these components. Refurbishment or replacement is not expected within the first 30-years of operation.
- An allowance has been allocated for replacement of 15% of the storm sewers drainage systems.
- The cost in the Table of Expenditures accounts for installation of storm sewer piping and connections and their related catch basins, and manholes.

**G4020.00 Site Electrical Utilities – Site Lighting**

- This item accounts for site pole lighting, site wall or soffit mounted lighting, security flood lights, and includes required fixtures and transformers, wiring conduits and duct banks, controls and grounding.
- Corrosion was observed on the exterior light fixture brackets along the roof line at the west elevation entrance.
- The lighting was not examined to determine adequate levels of lighting other than areas where it is inherently apparent that the lighting levels are below that what would be expected to be the norm.
- Replacement of individual failed lighting fixtures is considered to be an operating expenditure.
- Lighting fixtures may be replaced for energy efficiency reasons rather than failure of the component.
- IRC has carried an allowance for the replacement of the exterior and site lighting within the next 2 to 5 years.

**Photographs**

View of the asphalt roadway along the south end of the site.

View of the asphalt roadway along the east end of the site.

Settlement surrounding the catch basins was typical.

Settlement observed in the concrete pad surrounding the concrete pier at the main entrance.

Cracking in the concrete walkways was noted at various locations around the site.

The concrete pad at the secondary entrance is not flush with the entrance door threshold.

**Photographs**

Upgraded catch basin cover observed.

View of a typical light standard observed on the northeast portion of the site.

Corrosion was observed on the exterior light fixture brackets along the roof line at the west elevation entrance.

Exterior wall mounted light fixture observed.

**End of Building Sitework Section**

## 4.6 Z - Planning, Design, Soft Cost & Other Allowances

| Planning, Design, Soft Cost & Other Allowances Component Summary | | | | | |
|---|---|---|---|---|---|
| **Code** | **Component** | **Priority Rating** | **Condition Rating** | **Expenditure Recommended** | **Budgetary Cost (2022)** |
| Z1010.10 | Allowances – Property Condition Assessment | None | n/a | 5 - 10 Years | $6,100 |
| Z1010.10 | Allowances – Hazardous Material Testing | None | n/a | 0 - 2 Years | $5,000 |
| Z1010.10 | Allowances – Thermography | None | n/a | 0 - 2 Years | $5,000 |
| Z1010.10 | Allowances – Leak Investigation | None | n/a | n/a | n/a |
| Z1010.10 | Allowances – Small Capital Costs | E | Various | 0 - 2 Years | $5,000 |

**Observations & Recommendations**

**Z1010.10 Allowances – Property Condition Assessment**

- No existing Property Condition Assessment report was provided to IRC.
- This Property Condition Assessment & Facility Condition Index Analysis was completed by:

***IRC Building Sciences Group***
4026 Meadowbrook Drive, Suite 131
London, Ontario, N6L 1C7
Tel: (519) 652-5985
Fax: (519) 652-9926
Email: aazeez@ircgroup.com Contact: Aimal Azeez, B.Tech

- The were completed in accordance with the Request for Proposal as issued by the Town of Aylmer.
- The Property Condition Assessment & Facility Condition Index Analysis was completed in accordance with the IRC Proposal.
- A brief scope of work for the project included
    - Review of all drawings and documentation made available to IRC for review.
    - Performance of a site review of the buildings' primary components to evaluate the physical condition and standard of components.
    - Preparation of Property Condition Assessment report noting general observations and component conditions, together with recommendations for future repair options and associated budgetary costing.
    - Develop a 30-year cash flow projection, listing each of the identified components that will require repair, retrofit or replacement.
- An allowance has been carried to cover the costs of future property condition assessments.

**Z1010.10 Allowances – Hazardous Materials Testing**

- The costs accounted for in the table are for the Designated Substances Survey (DSS) **only**. These costs do not account for any abatement work that may be required as part of the survey recommendations.
- An allowance has been carried to cover the cost of a Designated Substances Survey (DSS).

**Observations & Recommendations**

**Z1010.10 Allowances – Thermography**

- This item accounts for allowance to perform thermography assessment of the roof and wall areas of the building.
- Thermography will help to determine the condition of the insulation and detect any leaks within the walls and building envelope.
- An allowance has been carried to cover the cost of a thermography assessment.

**Z1010.10 Allowances – Leak Investigation**

- This item accounts for an allowance to perform leak investigations at all specified locations.
- IRC was informed that there are ongoing roof leaks at multiple locations that occur multiple times a year during heavy rainfall. Patch repairs have been completed previously, however the issues are still ongoing. It is assumed that the leaks are occurring due to failures at the roofing system and patch repairs, however, IRC did not perform a leak investigation during the site review. A leak investigation may be required if the roof leaks continue to occur after the recommended replacement of the roof system.
- No major expenditures are anticipated within the term of analysis.

**Z1010.10 Allowances – Small Capital Costs**

- This item accounts for smaller yet significant costs that on their own fall below the reporting threshold and may be ignored otherwise.
- Examples of these costs are:
    - Pest control
    - Replacement of individual fire and life safety components
    - Replacement of security cameras
    - Flagpole replacement and repairs
    - Exterior and site signage replacements
- IRC was informed that there are ongoing issues with pest infestation in the breath test room.
- No major expenditures are anticipated within the term of analysis.
- An allowance has been carried to cover small capital costs.

**End of Planning, Design, Soft Cost & Other Allowances Section**

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# 5 Capital Expenditures & Replacement Reserve Fund

## 5.1 Expenditures Calculations

Based on the site review, various repairs are required at the building. Building elements and site components were classified according to ASTM E1557 – 09 Standard Classification for Building Elements and Related Sitework – UNIFORMAT II. Budget costs have been prepared to a Class 3 Estimate as outlined by Association for the Advancement of Cost Engineering and ASTM E2516-11 Standard Classification for Cost Estimate Classification System. Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. As such, they typically form the initial control estimate against which all actual costs and resources will be monitored.

Typically the preparation methodology includes:

*(i) Prepared from measured and priced quantities, all obtained from the project information that is available.*

*(ii) A significant portion of the estimate may be in the form of allowances*

For an inclusive budget estimate a +30/-15% variance should be allocated to costs provided in the Table of Expenditures for the recommended replacements and upgrades. It must be noted that in preparing the budgets for individual items, it has been assumed that a group of repairs will be completed at the same time. If individual repairs are completed increases should be expected.

The cost of repairs is based upon the deterioration present at the time of the investigation and average unit prices obtained from our experience on similar projects and from estimates using RS Means CostWorks data. It is important to realize that the prices are not based on tendered specifications, but instead on general approaches and assumed quantities. The actual repair costs will depend on the prices received at the time of tendering and/or the actual quantities removed during the repair contract.

The following assumptions have been made with regard to expenditures calculations:

**Tax Rate:**

Applicable Tax Rate has been included on capital expenditures. All Tax Rates are subject to provincial tax regulations.

**Inflation Rate: 2.25% for the study period.**

The inflation rate used for the 30 Year study period is 2.25%. This number has been assumed from Bank of Canada – Consumer Price Index. The future level of inflation is unpredictable and may be highly variable. Further assessment of the level of inflation can be completed when updates to the Building Condition Assessment and Replacement Reserve Fund are completed every 5-year period as recommended.

### 5.1.1 Annual Contribution

The future cost method was used to estimate the annual contribution to the reserve fund. The building components included in the Reserve Fund Study are outlined in Table 1 of the Reserve Fund Study.

Within the study period all components requiring some form of remedial work have been accounted for by determining both the years in which repair/replacement is expected to occur and the future value of the remedial work.

Replacement costs, interest/ inflation rates, are estimated based on current data and assumed future trends. As such, these values cannot be expected to be completely accurate over the life of the study. It is recommended that this study be reviewed every year, and updated every five (5) years to ensure cost data, building deterioration and repair/replacement records are kept current and relevant.

### 5.1.2 Future Cost Value Method

The future cost value method was also used to illustrate the significance of interest rates and inflation on the *expenditures* sufficiency of funds. In this method, the future cost of each element is estimated using the future value formula and estimated interest and inflation rates. It has been assumed that an average construction cost rate of inflation will be in effect over the remaining life of the building. The value used for inflation rates has been outlined above.

### 5.1.3 Professional Fees

Professional fees for the recommended capital replacement and repairs have been accounted for in the Table on the components where engineering and/or third party review is recommended. The degree of engineering and project management that may be involved make it difficult to determine a standard rate for each component. Engineering fees typically range between 3% - 20% depending upon the project and complexity of engineering and also the professional discipline.

Professional fees for components noted with (*) (**) in the Table have been included in the total expenditures at 8% for design and specification, and 7% for review and contract administration – a total addition of 15% on the budget costs.

Professional fees for components noted **only** with (**) in the Table have been included in the total expenditures at 7% for review and contract administration only. It is considered that these components are of a less technical nature where design and specification is not essential; however third party review to ensure an adequate standard of installation/replacement is recommended.

Review and contract administration for general projects for licensed trades such as electricians and plumbers has not been included as this type of work is generally subject to review by other parties such as local authorities.

### 5.1.4 Predicted Future Costs

The replacement cost for each component identified has been estimated with respect to current day replacement prices, and inflation rates. Variances may be expected in periods of high workload by contractors.

The costs allowed in the reserve fund table can be highly variable depending upon factors such as:

- Market costs at the time of replacement
- Materials shortages
- Standard of replacement components
- 'Volume' discounts offered by contractors
- Seasonal prices on projects
- Warranties offered, and
- Contractors' workloads

### 5.1.5 Capital v Operating/Maintenance Costs

The following items are NOT considered to be capital expenditure items. Costs associated with these items are considered to be an operating expenditure.

- Minor expenditures under a specified reasonable dollar limit established from similar project undertakings (e.g., $5,000).
- Cost of replacing building components or mechanical services that are still operating and performing satisfactorily and meet all regulatory requirements, even if they are now obsolete and would not meet building regulations and codes for new construction.
- Normal cyclical repairs and maintenance such as rectifying deficiencies from annual reviews or move-outs, replacements of drapes and blinds, replacement of plumbing fittings and controls during regular routine maintenance, repairing fences and re-sod parts of the grounds and other general grounds maintenance.
- Regular preventative maintenance (for example, replacement of equipment parts, furnace filters, torqing of electrical panel connections, replacement of faucet cartridges etc.) to restore the component to an efficient operating condition.
- Costs of replacing capital items that have been damaged or destroyed as a result of deliberate abuse of vandalism. In these cases the cost of replacement from the occupant(s) or from other persons who caused the damage, or through the applicable insurance policy. Where recovery is not possible, these types of replacement expenditures may be charged to the reserve.
- Typical items not included as capital expenditure include office equipment repairs and replacements, door hardware, unit mail boxes, galvanized window wells, unit door bells, replacement floor registers, weather-stripping, screen repairs, handrail securement, blocked drains, termite control, furnace thermocouples, interior painting, carpet cleaning etc.

### 5.1.6 Description of Reserve Fund Table Columns

**Date of Installation**

The year at which the building components are known or estimated to have been installed, received substantial repair, overhaul or partial replacement, or were commissioned for use. It is assumed that the item is as new at the time of acquisition.

**Percent Total Cost**

For some items it is not expected that full replacement will be required, only a partial repair or replacement. In such situations a percentage factor has been used to estimate the value of replacement costs to be included in the reserve.

**Present Age**

The present age of the item is generally the chronological age from the date of installation.

**Basic Remaining Life**

This column provides the useful life, in years, of the building component remaining from the date of visual condition assessment and assuming a normal level of maintenance. Due to extenuating circumstances such as routine maintenance or misuse by users, the remaining life is sometimes adjusted to reflect an anticipated extended or reduced life.

## 5.2 Expenditure Table Summary

The estimates in the table, based on an engineered approach, provide a conservative plan for accumulating a reserve for future repairs and replacement. It relies on costs based on the work performed to date, the current state of knowledge of performance of building systems, present technology and on commonly used economic factors.

The 30-year Projected Expenditure Table indicates the projected and recommended expenditures for the 30-year study period. The expenditure totals show Future Cost Value.

# Aylmer Police Office

20 Beech Street East, Aylmer, Ontario

TABLE 1: Component List

| Code | Component | Date of Installation / Last major upgrade | Current Replacement Costs | Percent of Total Cost | Corrected Cost | Typical Life Span Range | Yearly Contribution | Required Reserve Fund to Date | Present Age | IRC Estimated Basic Remaining Life |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) | (J) |
| **A** | **Substructure** | | | | | | | | | |
| A1010.00 | Foundations - Standard Foundations (*) (**) | 1996 | $50,000 | 10% | $5,000 | - -20 - 10 - 40 + | $500 | $5,000 | 26 | 8 |
| **B** | **Shell** | | | | | | | | | |
| B1020.00 | Superstructure - Roof Construction (*) (**) | 1996 | $53,870 | 20% | $10,780 | - 16 - 20 - 24 + | $540 | $10,780 | 26 | 8 |
| B2010.10 | Exterior Enclosure - Exterior Walls - Concrete Block Masonr | 1996 | $214,060 | 10% | $21,410 | - 12 - 15 - 18 + | $1,430 | $21,410 | 26 | 4 |
| B2010.10 | Exterior Enclosure - Exterior Walls - Aluminum Siding (*) (* | 1996 | $18,460 | 100% | $18,460 | - 35 - 35 - 35 + | $530 | $13,780 | 26 | 9 |
| B2010.10 | Exterior Enclosure - Exterior Walls - Stucco / EIFS (*) (**) | 1996 | $91,020 | 100% | $91,020 | - 31 - 35 - 39 + | $2,610 | $67,860 | 26 | 9 |
| B2010.90 | Exterior Enclosure - Exterior Walls - Sealants (*) (**) | varies | $10,000 | 100% | $10,000 | - 8 - 8 - 8 + | $1,250 | $8,750 | varies | 1 |
| B2020.00 | Exterior Enclosure - Exterior Windows (**) | varies | $38,250 | 100% | $38,250 | - 30 - 35 - 40 + | $1,100 | $28,600 | varies | 9 |
| B2030.00 | Exterior Enclosure - Exterior Doors | 1996 | $10,000 | 100% | $10,000 | - 32 - 35 - 38 + | $290 | $7,540 | 26 | 9 |
| B2080.00 | Exterior Enclosure - Wall Appurtenances | 1996 | $2,250 | 100% | $2,250 | - 22 - 25 - 28 + | $90 | $2,250 | 26 | 1 |
| B3010.10 | Roofing - Roof Coverings - Sloped Shingled Roofing (*) (**) | unknown | $48,080 | 100% | $48,080 | - 18 - 18 - 18 + | $2,680 | $26,800 | unknown | 8 |
| B3010.50 | Roofing - Roof Coverings - Low Slope Roofing (*) (**) | unknown | $23,880 | 100% | $23,880 | - 20 - 20 - 20 + | $1,200 | $14,400 | unknown | 8 |
| B3020.00 | Roofing - Roof Appurtenances (**) | 1996 | $15,800 | 100% | $15,800 | - 37 - 40 - 43 + | $400 | $10,400 | 26 | 8 |
| **C** | **Interiors** | | | | | | | | | |
| C1010.00 | Interior Construction - Partitions | 1996 | $10,000 | 100% | $10,000 | - 25 - 30 - 35 + | $340 | $8,840 | 26 | 4 |
| C1020.00 | Interior Construction - Interior Doors | 1996 | $25,000 | 20% | $5,000 | - 5 - 10 - 15 + | $500 | $5,000 | 26 | 4 |
| C1030.00 | Interior Construction - Fittings | varies | $25,000 | 25% | $6,250 | - 1 - 5 - 9 + | $1,250 | $5,000 | varies | 1 |
| C3010.00 | Interior Finishes - Wall Finishes | varies | $50,000 | 25% | $12,500 | - 5 - 5 - 5 + | $2,500 | $10,000 | varies | 1 |
| C3020.00 | Interior Finishes - Floor Finishes | varies | $33,240 | 25% | $8,310 | - 3 - 5 - 7 + | $1,670 | $6,680 | varies | 1 |
| C3030.00 | Interior Finishes - Ceiling Finishes | 1996 | $20,780 | 25% | $5,200 | - 5 - 5 - 5 + | $1,040 | $5,200 | 26 | 1 |
| **D** | **Services** | | | | | | | | | |
| D2010.00 | Plumbing - Plumbing Fixtures (*) (**) | varies | $10,000 | 50% | $5,000 | - 2 - 5 - 8 + | $1,000 | $4,000 | varies | 1 |
| D2020.00 | Plumbing - Domestic Water (DHW) Distribution (*) (**) | 1996 | $7,500 | 100% | $7,500 | - 7 - 10 - 13 + | $750 | $7,500 | 26 | 6 |
| D3040.00 | HVAC - Distribution Systems (*) (**) | 1996 | $15,000 | 100% | $15,000 | - 25 - 50 - 45 + | $600 | $15,000 | 26 | 6 |
| D3050.00 | HVAC - Packaged Units (*) (**) | varies | $90,000 | 100% | $90,000 | - 20 - 25 - 30 + | $3,600 | $68,400 | varies | 6 |
| D3060.00 | HVAC - Controls & Instrumentation | unknown | $10,000 | 100% | $10,000 | - 25 - 25 - 25 + | $400 | $7,600 | unknown | 6 |
| D4090.00 | Fire Protection - Other Fire Protection Systems | varies | $15,000 | 25% | $3,750 | - 5 - 5 - 5 + | $750 | $3,000 | varies | 1 |
| D5010.00 | Electrical - Electrical Service & Distribution (*) | 1996 | $25,000 | 100% | $25,000 | - 30 - 35 - 40 + | $720 | $18,720 | 26 | 9 |
| D5020.00 | Electrical - Lighting and Branch Wiring | varies | $20,000 | 100% | $20,000 | - 17 - 20 - 23 + | $1,000 | $14,000 | varies | 6 |
| D5030.00 | Electrical - Communications & Security | unknown | $28,000 | 100% | $28,000 | - 25 - 25 - 25 + | $1,120 | $21,280 | unknown | 6 |
| D5090.00 | Electrical - Other Electrical Systems - Emergency Generator | 1999 | $180,000 | 100% | $180,000 | - 35 - 35 - 35 + | $5,150 | $118,450 | 23 | 12 |
| **G** | **Building Sitework** | | | | | | | | | |
| G2020.00 | Site Improvements - Parking Lots | varies | $94,070 | 100% | $94,070 | - 25 - 25 - 25 + | $3,770 | $79,170 | varies | 4 |
| G2030.00 | Site Improvements - Pedestrian Paving (*) (**) | 1996 | $20,000 | 25% | $5,000 | - 15 - 15 - 15 + | $340 | $5,000 | 26 | 4 |
| G2050.00 | Site Improvements - Landscaping (*) (**) | 1996 | $5,000 | 100% | $5,000 | - 5 - 5 - 5 + | $1,000 | $5,000 | 26 | 4 |
| G3010.00 | Site Mechanical Utilities - Water Supply | 1996 | $20,000 | 15% | $3,000 | - 50 - 50 - 50 + | $60 | $1,560 | 26 | 24 |
| G3020.00 | Site Mechanical Utilities - Sanitary Sewer | 1996 | $20,000 | 15% | $3,000 | - 50 - 50 - 50 + | $60 | $1,560 | 26 | 24 |
| G3030.00 | Site Mechancial Utilities - Storm Sewer | 1996 | $50,000 | 15% | $7,500 | - 50 - 50 - 50 + | $150 | $3,900 | 26 | 24 |
| G4020.00 | Site Electrical Utilities - Site Lighting | 1996 | $20,000 | 100% | $20,000 | - 25 - 25 - 25 + | $800 | $20,000 | 26 | 4 |
| **Z** | **Planning, Design, Soft Cost & Other Allowances** | | | | | | | | | |
| Z1010.10 | Allowances - Property Condition Assessment | 2022 | $6,100 | 100% | $6,100 | - 3 - 5 - 7 + | $1,220 | $0 | 0 | 5 |
| Z1010.10 | Allowances - Hazardous Material Testing | n/a | $5,000 | 100% | $5,000 | - 5 - 5 - 5 + | $1,000 | $4,000 | n/a | 1 |
| Z1010.10 | Allowances - Thermography | n/a | $5,000 | 100% | $5,000 | - 5 - 5 - 5 + | $1,000 | $4,000 | n/a | 1 |
| Z1010.10 | Allowances - Leak Investigation | n/a | $0 | 100% | $0 | - 5 - 5 - 5 + | $0 | $0 | n/a | 0 |
| Z1010.10 | Allowances - Small Capital Costs | n/a | $5,000 | 100% | $5,000 | - 5 - 5 - 5 + | $1,000 | $4,000 | n/a | 1 |
| | **TOTALS** | | **$1,394,860** | | **$889,610** | | **$45,860** | **$668,930** | | |

# Aylmer Police Office

20 Beech Street East, Aylmer, Ontario

Table 2: 30-Year Summary of Anticipated Expenditures

Note: 2022 refers to the Corporations' Fiscal Year starting January 1, 2022 and ending December 31, 2022

| Code | Component | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| **A** | **Substructure** | | | | | | | | | **$6,751** | | | | | | |
| A1010.00 | Foundations - Standard Foundations (*) (**) | | | | | | | | | $6,751 | | | | | | |
| **B** | **Shell** | | **$14,154** | | | **$26,445** | | | | **$133,045** | **$231,558** | | | | | |
| B1020.00 | Superstructure - Roof Construction (*) (**) | | | | | | | | | $14,555 | | | | | | |
| B2010.10 | Exterior Enclosure - Exterior Walls - Concrete Block Masonr | | | | | $26,445 | | | | | | | | | | |
| B2010.10 | Exterior Enclosure - Exterior Walls - Aluminum Siding (*) (* | | | | | | | | | | $25,485 | | | | | |
| B2010.10 | Exterior Enclosure - Exterior Walls - Stucco / EIFS (*) (**) | | | | | | | | | | $125,657 | | | | | |
| B2010.90 | Exterior Enclosure - Exterior Walls - Sealants (*) (**) | | $11,554 | | | | | | | | $13,805 | | | | | |
| B2020.00 | Exterior Enclosure - Exterior Windows (**) | | | | | | | | | | $52,806 | | | | | |
| B2030.00 | Exterior Enclosure - Exterior Doors | | | | | | | | | | $13,805 | | | | | |
| B2080.00 | Exterior Enclosure - Wall Appurtenances | | $2,600 | | | | | | | | | | | | | |
| B3010.10 | Roofing - Roof Coverings - Sloped Shingled Roofing (*) (**) | | | | | | | | | $64,916 | | | | | | |
| B3010.50 | Roofing - Roof Coverings - Low Slope Roofing (*) (**) | | | | | | | | | $32,242 | | | | | | |
| B3020.00 | Roofing - Roof Appurtenances (**) | | | | | | | | | $21,333 | | | | | | |
| **C** | **Interiors** | | **$37,274** | | | **$18,528** | | **$41,660** | | | | | **$46,563** | | | **$7,715** |
| C1010.00 | Interior Construction - Partitions | | | | | $12,352 | | | | | | | | | | |
| C1020.00 | Interior Construction - Interior Doors | | | | | $6,176 | | | | | | | | | | $7,715 |
| C1030.00 | Interior Construction - Fittings | | $7,221 | | | | | $8,071 | | | | | $9,021 | | | |
| C3010.00 | Interior Finishes - Wall Finishes | | $14,443 | | | | | $16,142 | | | | | $18,042 | | | |
| C3020.00 | Interior Finishes - Floor Finishes | | $9,602 | | | | | $10,731 | | | | | $11,994 | | | |
| C3030.00 | Interior Finishes - Ceiling Finishes | | $6,008 | | | | | $6,715 | | | | | $7,505 | | | |
| **D** | **Services** | | **$10,110** | | | **$5,558** | | **$231,482** | | | **$34,513** | | **$12,629** | **$265,651** | | **$6,943** |
| D2010.00 | Plumbing - Plumbing Fixtures (*) (**) | | $5,777 | | | | | $6,457 | | | | | $7,217 | | | |
| D2020.00 | Plumbing - Domestic Water (DHW) Distribution (*) (**) | | | | | | | $9,685 | | | | | | | | |
| D3040.00 | HVAC - Distribution Systems (*) (**) | | | | | | | $19,371 | | | | | | | | |
| D3050.00 | HVAC - Packaged Units (*) (**) | | | | | | | $116,225 | | | | | | | | |
| D3060.00 | HVAC - Controls & Instrumentation | | | | | | | $12,914 | | | | | | | | |
| D4090.00 | Fire Protection - Other Fire Protection Systems | | $4,333 | | | | | $4,843 | | | | | $5,413 | | | |
| D5010.00 | Electrical - Electrical Service & Distribution (*) | | | | | | | | | | $34,513 | | | | | |
| D5020.00 | Electrical - Lighting and Branch Wiring | | | | | | | $25,828 | | | | | | | | |
| D5030.00 | Electrical - Communications & Security | | | | | | | $36,159 | | | | | | | | |
| D5090.00 | Electrical - Other Electrical Systems - Emergency Generator | | | | | | | | | | | | | $265,651 | | |
| **G** | **Building Sitework** | | | | | **$153,249** | | | | | **$6,903** | | | | | **$7,715** |
| G2020.00 | Site Improvements - Parking Lots | | | | | $116,194 | | | | | | | | | | |
| G2030.00 | Site Improvements - Pedestrian Paving (*) (**) | | | | | $6,176 | | | | | | | | | | |
| G2050.00 | Site Improvements - Landscaping (*) (**) | | | | | $6,176 | | | | | $6,903 | | | | | $7,715 |
| G3010.00 | Site Mechanical Utilities - Water Supply | | | | | | | | | | | | | | | |
| G3020.00 | Site Mechanical Utilities - Sanitary Sewer | | | | | | | | | | | | | | | |
| G3030.00 | Site Mechancial Utilities - Storm Sewer | | | | | | | | | | | | | | | |
| G4020.00 | Site Electrical Utilities - Site Lighting | | | | | $24,704 | | | | | | | | | | |
| **Z** | **Planning, Design, Soft Cost & Other Allowances** | | **$17,331** | | | | **$7,704** | **$19,371** | | | | **$8,611** | **$21,650** | | | |
| Z1010.10 | Allowances - Property Condition Assessment | | | | | | $7,704 | | | | | $8,611 | | | | |
| Z1010.10 | Allowances - Hazardous Material Testing | | $5,777 | | | | | $6,457 | | | | | $7,217 | | | |
| Z1010.10 | Allowances - Thermography | | $5,777 | | | | | $6,457 | | | | | $7,217 | | | |
| Z1010.10 | Allowances - Leak Investigation | | | | | | | | | | | | | | | |
| Z1010.10 | Allowances - Small Capital Costs | | $5,777 | | | | | $6,457 | | | | | $7,217 | | | |

| | | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LINE A** | **EXPENDITURE - PRESENT DAY VALUE** | | $77,134 | | | $186,427 | $6,893 | $255,956 | | $117,000 | $223,435 | $6,893 | $63,291 | $203,400 | | $16,385 |
| **LINE B** | **INFLATION RATE** | 0.00% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% |
| **LINE C** | **COMPOUND INFLATION RATE** | 1.000% | 1.023% | 1.046% | 1.069% | 1.093% | 1.118% | 1.143% | 1.169% | 1.195% | 1.222% | 1.249% | 1.277% | 1.306% | 1.335% | 1.365% |
| **LINE D** | **EXPENDITURE - FUTURE COST VALUE** | | **$78,869** | | | **$203,781** | **$7,704** | **$292,513** | | **$139,795** | **$272,974** | **$8,611** | **$80,843** | **$265,651** | | **$22,373** |
| **LINE E** | **HST @ 13% (PST @ 8% + GST @ 5%)** | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. |
| **LINE F** | **PROFESSIONAL FEES incl. HST (*) & (**)** | | $2,600 | | | $5,820 | | $22,761 | | $19,263 | $32,235 | | $1,083 | | | $1,157 |
| **LINE L** | **TOTAL EXPENDITURE - FUTURE COST VALUE** | | **$81,469** | | | **$209,600** | **$7,704** | **$315,274** | | **$159,058** | **$305,209** | **$8,611** | **$81,925** | **$265,651** | | **$23,531** |

# Aylmer Police Office

20 Beech Street East, Aylmer, Ontario

Table 2: 30-Year Summary of Anticipated Expenditures

| Code | Component | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| **A** | **Substructure** | | | | **$8,433** | | | | | | | | | | **$10,535** | |
| A1010.00 | Foundations - Standard Foundations (*) (**) | | | | $8,433 | | | | | | | | | | $10,535 | |
| **B** | **Shell** | | | **$16,495** | | **$36,923** | | | | | | **$19,709** | **$101,427** | | **$73,026** | |
| B1020.00 | Superstructure - Roof Construction (*) (**) | | | | | | | | | | | | | | $22,713 | |
| B2010.10 | Exterior Enclosure - Exterior Walls - Concrete Block Masonr | | | | | $36,923 | | | | | | | | | | |
| B2010.10 | Exterior Enclosure - Exterior Walls - Aluminum Siding (*) (* | | | | | | | | | | | | | | | |
| B2010.10 | Exterior Enclosure - Exterior Walls - Stucco / EIFS (*) (**) | | | | | | | | | | | | | | | |
| B2010.90 | Exterior Enclosure - Exterior Walls - Sealants (*) (**) | | | $16,495 | | | | | | | | $19,709 | | | | |
| B2020.00 | Exterior Enclosure - Exterior Windows (**) | | | | | | | | | | | | | | | |
| B2030.00 | Exterior Enclosure - Exterior Doors | | | | | | | | | | | | | | | |
| B2080.00 | Exterior Enclosure - Wall Appurtenances | | | | | | | | | | | | $4,534 | | | |
| B3010.10 | Roofing - Roof Coverings - Sloped Shingled Roofing (*) (**) | | | | | | | | | | | | $96,892 | | | |
| B3010.50 | Roofing - Roof Coverings - Low Slope Roofing (*) (**) | | | | | | | | | | | | | | $50,314 | |
| B3020.00 | Roofing - Roof Appurtenances (**) | | | | | | | | | | | | | | | |
| **C** | **Interiors** | | **$52,042** | | | | | **$58,166** | | | **$9,638** | | **$65,011** | | | |
| C1010.00 | Interior Construction - Partitions | | | | | | | | | | | | | | | |
| C1020.00 | Interior Construction - Interior Doors | | | | | | | | | | $9,638 | | | | | |
| C1030.00 | Interior Construction - Fittings | | $10,083 | | | | | $11,269 | | | | | $12,595 | | | |
| C3010.00 | Interior Finishes - Wall Finishes | | $20,165 | | | | | $22,538 | | | | | $25,190 | | | |
| C3020.00 | Interior Finishes - Floor Finishes | | $13,406 | | | | | $14,983 | | | | | $16,747 | | | |
| C3030.00 | Interior Finishes - Ceiling Finishes | | $8,389 | | | | | $9,376 | | | | | $10,479 | | | |
| **D** | **Services** | | **$26,215** | | | | | **$15,777** | | | **$8,674** | | **$73,052** | | | |
| D2010.00 | Plumbing - Plumbing Fixtures (*) (**) | | $8,066 | | | | | $9,015 | | | | | $10,076 | | | |
| D2020.00 | Plumbing - Domestic Water (DHW) Distribution (*) (**) | | $12,099 | | | | | | | | | | $15,114 | | | |
| D3040.00 | HVAC - Distribution Systems (*) (**) | | | | | | | | | | | | | | | |
| D3050.00 | HVAC - Packaged Units (*) (**) | | | | | | | | | | | | | | | |
| D3060.00 | HVAC - Controls & Instrumentation | | | | | | | | | | | | | | | |
| D4090.00 | Fire Protection - Other Fire Protection Systems | | $6,050 | | | | | $6,761 | | | | | $7,557 | | | |
| D5010.00 | Electrical - Electrical Service & Distribution (*) | | | | | | | | | | | | | | | |
| D5020.00 | Electrical - Lighting and Branch Wiring | | | | | | | | | | | | $40,305 | | | |
| D5030.00 | Electrical - Communications & Security | | | | | | | | | | | | | | | |
| D5090.00 | Electrical - Other Electrical Systems - Emergency Generator | | | | | | | | | | | | | | | |
| **G** | **Building Sitework** | | | | | **$17,246** | | | | | **$35,659** | | | | | **$256,517** |
| G2020.00 | Site Improvements - Parking Lots | | | | | | | | | | | | | | | $202,659 |
| G2030.00 | Site Improvements - Pedestrian Paving (*) (**) | | | | | $8,623 | | | | | | | | | | |
| G2050.00 | Site Improvements - Landscaping (*) (**) | | | | | $8,623 | | | | | $9,638 | | | | | $10,772 |
| G3010.00 | Site Mechanical Utilities - Water Supply | | | | | | | | | | $5,783 | | | | | |
| G3020.00 | Site Mechanical Utilities - Sanitary Sewer | | | | | | | | | | $5,783 | | | | | |
| G3030.00 | Site Mechancial Utilities - Storm Sewer | | | | | | | | | | $14,456 | | | | | |
| G4020.00 | Site Electrical Utilities - Site Lighting | | | | | | | | | | | | | | | $43,087 |
| **Z** | **Planning, Design, Soft Cost & Other Allowances** | **$9,624** | **$24,198** | | | | **$10,757** | **$27,046** | | | | **$12,022** | **$30,228** | | | |
| Z1010.10 | Allowances - Property Condition Assessment | $9,624 | | | | | $10,757 | | | | | $12,022 | | | | |
| Z1010.10 | Allowances - Hazardous Material Testing | | $8,066 | | | | | $9,015 | | | | | $10,076 | | | |
| Z1010.10 | Allowances - Thermography | | $8,066 | | | | | $9,015 | | | | | $10,076 | | | |
| Z1010.10 | Allowances - Leak Investigation | | | | | | | | | | | | | | | |
| Z1010.10 | Allowances - Small Capital Costs | | $8,066 | | | | | $9,015 | | | | | $10,076 | | | |

| | | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LINE A** | **EXPENDITURE - PRESENT DAY VALUE** | $6,893 | $71,766 | $11,300 | $5,650 | $35,493 | $6,893 | $63,291 | | | $31,640 | $18,193 | $151,239 | | $44,816 | $134,549 |
| **LINE B** | **INFLATION RATE** | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% | 2.25% |
| **LINE C** | **COMPOUND INFLATION RATE** | 1.396% | 1.428% | 1.460% | 1.493% | 1.526% | 1.561% | 1.596% | 1.632% | 1.668% | 1.706% | 1.744% | 1.783% | 1.824% | 1.865% | 1.906% |
| **LINE D** | **EXPENDITURE - FUTURE COST VALUE** | **$9,624** | **$102,455** | **$16,495** | **$8,433** | **$54,169** | **$10,757** | **$100,989** | | | **$53,970** | **$31,731** | **$269,718** | | **$83,561** | **$256,517** |
| **LINE E** | **HST @ 13% (PST @ 8% + GST @ 5%)** | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. | incl. |
| **LINE F** | **PROFESSIONAL FEES incl. HST (*) & (**)** | | $3,025 | $2,474 | $1,265 | $8,125 | | $1,352 | | | $1,446 | $2,956 | $18,312 | | $12,534 | $1,616 |
| **LINE L** | **TOTAL EXPENDITURE - FUTURE COST VALUE** | **$9,624** | **$105,480** | **$18,969** | **$9,698** | **$62,294** | **$10,757** | **$102,341** | | | **$55,416** | **$34,688** | **$288,031** | | **$96,095** | **$258,133** |

# 6 Facility Condition Index (FCI) Analysis

## 6.1 Introduction

A facility Condition Index (FCI) is an industry standard, asset management tool to objectively measure the current condition of a building with regards to all its needs. It is a functional indicator resulting from an analysis of different but related operational indicators (such as building's capital repair/replacement needs and maintenance needs) to obtain an overview of a building's condition as a numerical value.

FCI is expressed in a ratio form which compares the sum of all the building capital repair/replacement and maintenance needs to its estimated replacement value. The general equation for an FCI is:

***FCI = (Sum of all Maintenance + Capital Repair & Replacement Costs) / (Current Replacement Value of the Facility)***

Building condition is often defined in terms of the FCI as follows:

- FCI = 0 to 5% , Building is in Good Condition:
- FCI = 5 to 10%, Building is in Fair to Good Condition:
- FCI = 10 to 15%, Building is Fair to Poor Condition
- FCI > 30%, Building is in Poor condition.

### 6.1.1 FCI Analysis for Aylmer Police Office

Based on the findings of this PCA and the information provided by the representatives of the Town of Aylmer, the parameters of the Aylmer Police Office are as follows:

- Approximated Total Replacement value of the Building = $1,400,000
- Approximate annual Capital Expenditures (Calculated based on an average value of first 5 Years) = $53,000
- Total annual Operating Budget (based on 2021; To be Confirmed by Client) = $25,000.00
- **FCI = 5.6%**

**Result = <u>Fair to Good Condition</u>**

It must be noted that the total replacement cost does not take into account the land, heritage and marketability values of the site.

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# 7 Limitations

IRC prepared this report solely for the client named. The responsibilities of IRC are as described in the Terms of Reference and The Scope of Work. The material in this report reflects the opinion of IRC at the time of preparation and within the terms of reference as agreed. Any use, which a Third Party makes of this report, or any reliance on decisions based on it, are the responsibility of such Third Parties.

IRC does warrant the accuracy of the identified information provided to IRC at the time of the report preparation. Unless provided in writing, but not limited to, mistakes, contacts, insufficient information or certification of such information is not the responsibility of IRC.

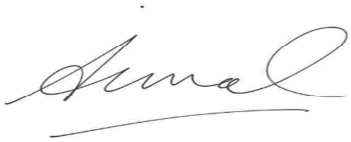
Only the specific information or locations noted in the report have been reviewed. Although every reasonable effort was taken to identify defects, latent and hidden defects may affect the accuracy of this report. No physical or destructive testing and no design calculations have been performed unless indicated elsewhere in this report.

The assessment provided is based on visually observed defects at a limited number of locations and our experience with similar types of buildings. Deficiencies may exist at other areas not referenced in this report or that are not visually apparent given the level of evaluation. No responsibility is therefore assumed concerning these matters, or for failure to carry out technical or engineering techniques which would be required to discover any inherent or hidden conditions of the property since such an investigation was not included in the scope of work.

We trust that the above is satisfactory for your purposes. If you have any questions or comments concerning the above please do not hesitate to contact our office.

Yours very truly,
**IRC Building Sciences Group**





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**Aimal Azeez, B.Tech**
*Project Manager*

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