

Echo Pool

Facility Assessment and Feasibility Study

Report created for
Alberni-Clayoquot Regional District

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Client:

ALBERNI-CLAYOQUOT REGIONAL DISTRICT

Architectural:

Mechanical:

AME Group consulting mechanical engineers

Structural:

HEROLD ENGINEERING

Code:

celerity ENGINEERING

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Project Overview

The Echo '67 Community Centre consists of the Echo Aquatic Centre, Alberni Valley Museum, Port Alberni Regional Library, and Echo '67 Multiplex

The Alberni Clayoquot Regional District (ACRD) has engaged hcma to provide an Architectural, Mechanical and Structural assessment of the Echo Aquatic Centre, located within the Echo '67 Community Centre at 4255 Wallace Ave. in Port Alberni, BC.

Facility Overview

The City of Port Alberni built the Echo Aquatic Centre in 1966 as part of BC's 1967 Centennial celebrations and managed the operations of the facility since. In 1974 the sauna, fitness and cedar room in the community centre were added to the north, and in 1999 the family change rooms were added to the south of the pool building.

The current features of the facility include; 6 lane 25m pool, shallow instructional area, wading pool, gendered change rooms, family change rooms, sauna, spectator viewing area with collapsible bleachers, fitness area, administrative offices and a reception/lobby.

The Echo Aquatic Centre is the only public pool in the City of Port Alberni, and there are no other public indoor pools in the ACRD.

Project Overview

In 2022 the ACRD issued an RFP to complete a feasibility study for a new Alberni Valley Aquatics Facility. hcma was awarded this opportunity and through 2023 completed community engagement and conceptual design for a new facility.

Although the majority of the feedback received during the feasibility study was that the existing facility was no longer meeting the needs of the community, there were subsequent requests by the public and politicians to provide additional information and investment options for the existing Echo Pool facility in order to more effectively evaluate the decisions on how to best provide aquatic services to the Alberni Valley .

This report is the result of an ACRD initiated project to assess the condition of the existing Echo Pool facility, and study the feasibility of two alternatives to new construction; life extension and modernization of the existing facility.

Scope and Objectives

hcma has engaged the services of Herold Engineering, AME Group, Celerity Engineering and Advicas Group Consultants to assess the structural condition of the pool basins and building, the mechanical condition of the pool systems and building HVAC, and code compliance with respect to fire protection and life safety requirements of Part 3 of the 2024 British Columbia Building Code.

The intent of the assessment is to provide the ACRD with a comprehensive understanding of the current condition of the aquatic centre, and to inform subsequent investigations into what may be required to maintain and modernize the facility.

Using the results of the assessment as a baseline, hcma has developed two scope of works for each renovation scenario.

Reference Documents

The following documents were referenced in compiling this report:

- British Columbia Building Code 2024
- Echo '67 Recreation Centre Condition Assessment Report - WSP, October 2024
- Pool & Community Centre Architectural drawings, Carlberg Jackson Partners Architects, Nov 1966

Regulatory Framework

The project location falls under the application of the current British Columbia Building Code (BCBC 2024). Should areas of the building be considered for renovation, the Authority Having Jurisdiction (AHJ) may require additional upgrades to meet current building code requirements, depending on the scope of renovation.

The following codes and standards are deemed relevant to this assessment:

- BCBC 2024
- BC Health Act
- BC Pool Design Guide, 2025 v3

Limitations of this Report

This facility assessment was conducted by visual means only, and is limited to visible and accessible elements only. There was no destructive testing or hazardous materials testing conducted.

The existing facility has many attributes that are exceeding or nearing end of life. While it may be noted that these systems are in fair condition, it may still be recommended to replace or significantly refurbish certain components to meet current building standards.

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Facility Assessment

Summary

hcma and the consultant team conducted a facility walkthrough on August 22nd, 2025. At this time the pool tank was filled and the facility was open to the public, and we were able to gain access to all of the rooms in the facility in order to properly assess the conditions. The team was able to observe how the public uses the facility, and to discuss the function of the building with staff.

Herold engineering visited the site again the following week, with the pool basins drained to complete the structural assessment.

The intent of our recommendations is to ensure that the facility complies with current building code and local regulations, as well as to identify any end- of -life components, systems and equipment within the facility.

For this report, the observations made have been organized into 5 categories; Site, Code Compliance, Structural, Mechanical and Architectural. The recommendations made have been limited to include the minimum work required to best possibly address code / life safety issues, and preserve the existing facility.

Site

The site was assessed for accessibility, compliance with local by-laws, possibility for future expansion of the pool facility, and overall condition.

Code Compliance

The pool facility was evaluated with respect to BCBC 2024 code requirements. Given the age of the structure there are numerous items which would not meet code by today's standards, which is reasonable to expect. The items identified as non compliant in this report are primarily related to life safety and accessibility.

Structural Systems

The building structure was reviewed with respect to its overall condition, as well as its seismic capacity. The pool facility is directly connected to the community centre, which was not structurally assessed.

It was also noted that the adjacent community centre is identified in the ACRD / City of Port Alberni Emergency response plan as a gathering space in the event of an emergency. This would require that the complex be classified as a Post-Disaster building. In the event that the building would need to be seismically upgraded, this classification greatly increases the standard which the structural design would need to meet.

Mechanical Systems

The evaluation of mechanical systems is relatively objective, and based on visible condition, documented age of equipment, and any alterations performed over time. The recommendations for replacement and alteration of mechanical system is derived from serviceable life, and operational efficiency.

Architectural

The Architectural assessment included evaluation of the building envelope, architectural finishes, and the building program.

Building Envelope

The condition of the exterior cladding, roofing, doors & windows were visually assessed. There was a fairly comprehensive building assessment completed by WSP in 2024 which also informed this assessment, and is included for reference in Appendix E.

Generally the building envelope is in fair condition, and has been maintained well. This assessment was limited to only the visual elements of the envelope, and not the thermal performance of the envelope. It is reasonable to assume that the performance of the envelope could be improved given the age of the structure. However, for the purposes of this report, only items which are visually failing or beyond serviceable life are recommended for replacement.

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Finishes

The flooring, tile, paint throughout the facility were visually assessed. It is evident that the building has been very well maintained, and despite most of the finishes being at the end of their expected life, they are generally in good condition.

The tile in the change rooms, pool deck, and sauna shows evidence of being selectively repaired throughout, and while there was no major cracking or loose tile, there are many areas in which the tile is mismatched.

Despite the finishes being in good condition, it would still be the recommendation of the assessment that they be replaced with new, to avoid increased maintenance costs

Building Program

The building program was evaluated in terms of area, adjacency and operational functionality. The program of the Echo Aquatic facility is composed of:

- Administration offices and reception lobby
- Natatorium
- Changing and Washroom Facilities
- Fitness Area
- Storage Areas
- Service Spaces

Each area was evaluated in terms of its overall condition, accessibility and safety, and its functionality as it relates to its intended use. The program of the facility has grown over time through large additions of the sauna, hot pool, fitness area, and family change rooms. Additionally, there have been smaller renovations within the natatorium to add a lifeguard office, viewing area and storage room.

No user interviews were conducted, however there were various programmatic issues identified throughout the site visit. Many of these issues are around accessibility, and are similar to the issues identified in the code compliance assessment.

Summary

In summary this assessment provides a baseline of recommendations to upgrade the existing Echo Pool. Implementing the recommendations is considered to be a reasonable attempt to meet building code standards around life safety and accessibility, adequately protect the building and pool structural systems, and refresh the building and pool mechanical systems.

Given the age of the facility, it is not possible or reasonable to suggest recommendations to meet all modern requirements as defined by current codes, standards and industry best practices. The recommendations in this assessment are therefore considered the minimum reasonable attempt to extend the life of the facility.

This assessment is intended to provide a practical guideline to extend the life of the building and pool systems. It has not considered how the spatial program of the building is suited to serve the regions population.

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Echo Centre aerial photo - 2022 (from ACRD iMAP)

Architectural Assessment - Site

The Echo Aquatic Centre is part of the Echo '67 Community Centre located at the intersection of 10th Avenue and Wallace St. The building is on the south boundary of the 47.5 acre parcel. The south property line appears to be in line with the south edge of the sidewalk between the building and parking lot. The parking lot appears to be located within an easement for a large power transmission line. Information on this easement was not available from ParcelMap BC and would need further investigation by a qualified land surveyor, but it appears that expansion of the building to the south would not be possible.

There is a secondary gravel access off of 10th Ave, which leads to a gravel parking lot. This area appears to be used primarily as for deliveries and staff parking. There is a chemical storage sea-can and other small outbuildings on the north side of the aquatic centre. The gravel road continues around the Community Centre and Museum to connect to the Wallace St. parking lot. This is also the only access to a lawn bowling field on the north side of the site.

The property is zoned P2 - Parks and Recreation, and fronts onto Wallace St. It is likely that the existing building conforms to all by-law requirements except for the front yard setback.

Image Legend

01 Echo Aquatic Centre
02 Community Centre
03 VI Regional Library - Port Alberni
04 Alberni Valley Museum
05 Pool Parking Lot - 55 spaces

The parking lot which serves the pool has 55 spaces, 4 of which are marked accessible. The parking lots to the east which serve the remainder of the community centre add another 111 parking spaces to the complex. This exceeds the minimum required by the municipal by-law of 1 space per every 40m2 of building area. Given the size of the site, there is opportunity to create additional parking spaces on the north side of the building, if needed to accommodate a future expansion of the building. It is unclear if the fact that parking lots are not on the building lot would be an issue.

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Approach to Entrance



Echo Pool parking lot

Condition Summary - Site

Item	Condition	Recommendation
Parking lot	Parking surfaces are in generally good condition, with minimal cracking or potholes. Some conditions do not meet current accessibility requirements.	Provide designated path from accessible parking spaces to exterior walk - see “Appendix D - Building Code Assessment”
Sidewalks	Sidewalks are in good condition, however there are a number of conditions which do not meet code requirements.	Provide curb cuts & new sidewalk for accessible parking. Re-grade sections of ramped sidewalk to max. 8%
Handrails	There are various conditions where exterior handrails are non compliant, where either no handrail has been provided, or where a single handrail has been provided where a double handrail is required.	Replace or add handrails as required.
Landscaping	Existing landscape is well maintained.	There are areas where mulch and soil have accumulated against the building. There areas should be re-graded to protect the building envelope.

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Exterior painted CMU, Stucco and Stained Cedar cladding

Architectural Assessment - Building

The Architectural assessment of the facility comprised of a limited review of the Building Envelope, Architectural Finishes, and Building Program.

The building envelope of the facility consists of stucco cladding on CMU walls, painted exposed CMU walls, stained wood cladding, SBS roofing, and a mixture of steel and aluminium doors and windows.

Building Envelope - Walls

The stucco cladding on the building appears in fair condition. The lower sections of stucco have been painted and show no signs of major damage or concern. The stucco on the upper wall sections is original with no paint applied. The upper sections of stucco appear in good condition.

According to comments by the building owner, the CMU walls are known to contain vermiculite. Given the age of the building the vermiculite should be assumed to contain asbestos.

Building Envelope - Roofing

The roof of the facility is comprised of four levels: the lowest level over the entrance, lobby, change rooms, and mechanical rooms, the slightly higher level over the family change room addition, the upper level over the natatorium, and the highest level on the raised natatorium section over the deep end. The levels of roofing over the original building are unventilated, built up roof systems. The original drawings show 1" of rigid insulation over the wood roof deck. The section of roof membrane over the lobby and change rooms has been partially covered with a concrete topped insulation panel. The panels are not continuous, not properly finished around drains and are showing significant signs of organic growth.

The section of roof over the family change rooms is a 2-ply SBS membrane over an insulated structure with vented soffits. The membrane appears to be original and is nearing its end of life.

Building Envelope - Doors and Windows

The exterior doors of the facility are comprised of a mix of aluminium framed glazed doors, pressed steel swing doors and aluminium sliding doors, in varying conditions. Some of the pressed steel doors have recently been replaced. The aluminium sliding entry door is in fair condition, although it was identified that there is a code violation at this opening, refer to Code Compliance Report for details. The aluminium exit door from the wading pool area was not functioning and in need of repair at the time of this assessment.

The windows in the facility are also in fair condition. Various code violations were observed where glazing appeared not to meet safety standards.

There are 4 skylights above the admin area, two of which have been covered for shading. The skylights don't appear to be damaged or leaking, however the ones which are covered should be properly filled in if they are not being used as intended.

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Above left:

Wood trim is showing signs of weathering and deterioration and should be selectively replaced / repaired and re-stained.

Above right:

Exterior stucco and paint finishes in relatively good condition.

Bottom Left:

Covered skylights over offices.

Bottom Centre:

Main entrance door.

Bottom Right:

Broken exit door from wading pool.







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Above left:
Roof mounted cables not installed on proper sleepers; roof is showing signs of vegetation growth.

Above right:
Vegetation growth on lower roof level.

Bottom Left:
Family change room roof is showing signs of weathering and vegetation growth. tie in to older lower roof is collecting moss.



Bottom Centre:
Upper natatorium roof section.

Bottom Right:
Vegetation growth on lower roof section; missing roof tiles exposing drainage membrane.







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Enrance Lobby & Reception

Building Program - Administration

The lobby at the entrance to the facility consists of a small waiting area and reception desk with two stations. The entrance lobby is characterized by painted cinder block walls, carpeted flooring and exposed wood ceiling. From the lobby there is public access to two gendered wash rooms as well as direct access to the natatorium. The access to the change rooms is monitored visually by the reception.

The reception area consists of two open workstations and an adjacent small private office. The reception desk functions as the primary contact point for the public. On the original plans the small office is shown as connected to the natatorium, but at some point was partitioned off to create an office specifically for the reception staff.

Beyond the reception desk are the entrances to the gendered change rooms. Although there is signage indicating the male and female sides, it is not immediately apparent where the change rooms are or that the family change rooms are also an option located in the natatorium. Additionally the path of travel to access the change rooms does not meet accessibility requirements.

The reception and lobby area could also be improved with a simplified strategy to communicate facility and community information. There is no designated space for community information which has resulted in various wall surfaces being used for information postings. A dedicated area for community information would be more effective communication, as well as simplify wayfinding throughout the facility.

There are two offices and a small staff room to the south of the entrance lobby. These offices appear to serve multiple functions and contain safety equipment, IT equipment, a storage area, as well as a staff fridge, sink and microwave. It is clear that this space has been altered as necessary, and would benefit from clearer delineation of spaces and proper provision of amenities for staff.

The interior finishes throughout the administration spaces have been very well maintained but are nearing their end of life. The carpet floor finish is clean but beginning to show signs of moderate wear. Paint finishes throughout the administration spaces are in generally good shape, showing no significant signs of peeling or damage.

The furniture and millwork throughout is in generally good condition however not designed with accessibility in mind, or with current functional needs. Most millwork has been installed in various stages to meet a specific need. Similarly, the lobby area furniture lacks continuity in its function, and does not fully address the diverse needs of users.

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Above:
Safety Equipment, Storage and Staff microwave in office space.
Below:
IT Equipment and Staff kitchen in office space.



Above:
Maintenance workshop / staff breakroom.
Below:
Private office behind reception.





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Natatorium looking west

Building Program - Natatorium

The aquatic facility consists of a 37 x 13m pool basin, separated by a stationary bulkhead to create a ~25m lap pool and a ~12m leisure/training pool. Additionally there is a separate wading/ tot pool, a hot tub, and sauna.

Main Pool

The 25m lap pool has 6 lanes, 4 of which have start blocks at the deep end. The lanes are spaced at 7 feet. Access to this pool is provided by cast in place ladders and a stainless steel staircase. The depth at the bulkhead is 1.1m, and slopes to 3.4m at the deep end.

Although it was not ever indicated as a priority, It is worth noting that the dimensions of the lanes in the 25m pool do not meet FINA guidelines and would not qualify to hold official swim competitions.

The portion of the main pool basin used as a leisure / training pool has a depth of 1m and is accessed by a corner stair, cast in place ladders, as stainless steel ramp and a mechanical lift.

The pool basin has a fully recessed perimeter skimming gutter which can be accessed by deck grates spaced evenly around the pool. This system keeps the water level approximately 8" below the pool deck. During the site visit one of the grates was opened to expose the concrete structure on the inside of the gutter trough. The concrete showed significant spalling and exposed re-bar. This condition will need to be addressed to ensure pool operation. There is more commentary on this issue in "Appendix C - Structural Facility Assessment"

Bulkhead

The bulkhead separating the lap pool and leisure pool is a steel structure which appears to be part of the original construction. The original design of the bulkhead was to be moveable on rollers along the inside of the pool gutter. Due to the deteriorating condition of the pool gutter, it is assumed that the bulkhead is not able to be moved.

Lift

There is a ceiling mounted accessible lift located at the north west corner of the leisure pool. The lift is located alongside a narrow portion of the pool deck. It was noted that this location offers no privacy and that users of this lift often feel exposed and vulnerable when being transferred to the pool.

Play features

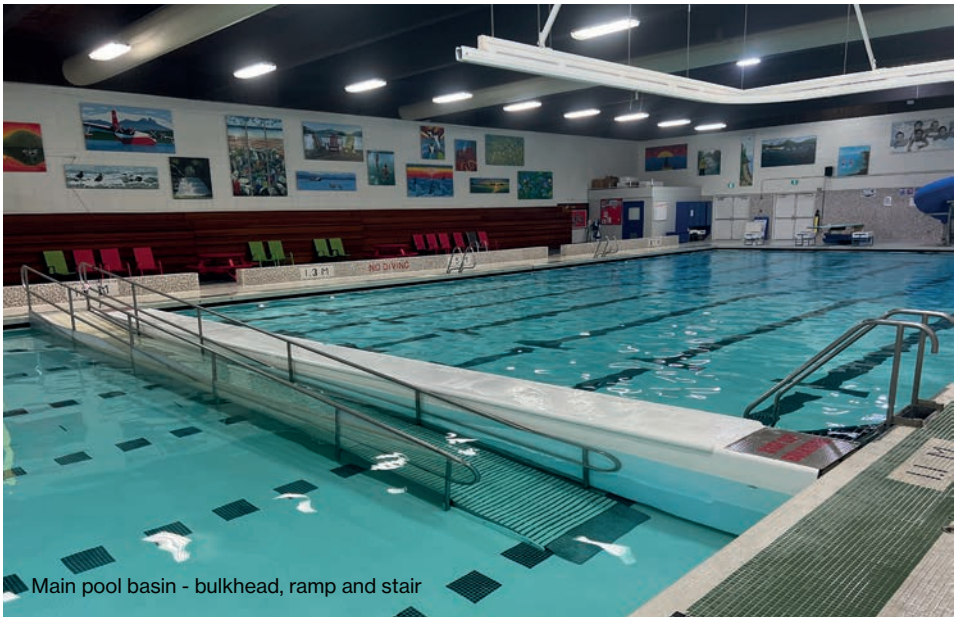
In the lap pool, there is a diving board and an area where 2 start blocks have been removed from the deep end to add a small curved slide. In the leisure pool, there is a deck mounted basketball hoop and a small plastic slide. Not evident at the time of the assessment is a Wibit that can be temporarily installed in the deep end of the lap pool.

Tot / Wading Pool

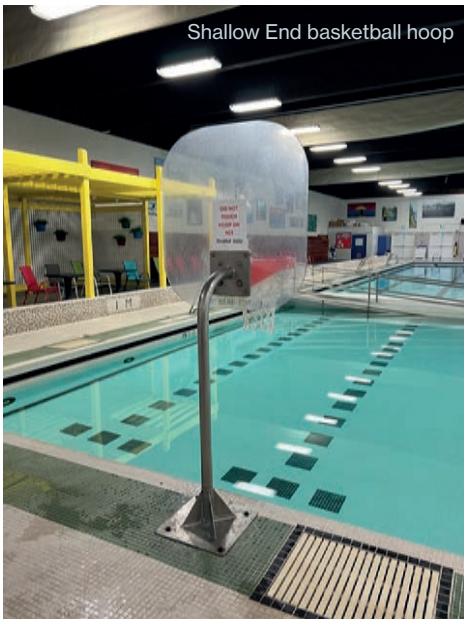
To the north of the leisure pool is a 6m x 3m tot / wading pool. The pool varies in depth from 700mm to 900m. The pool has been recently separated from the main pool basin with its own filtration system.

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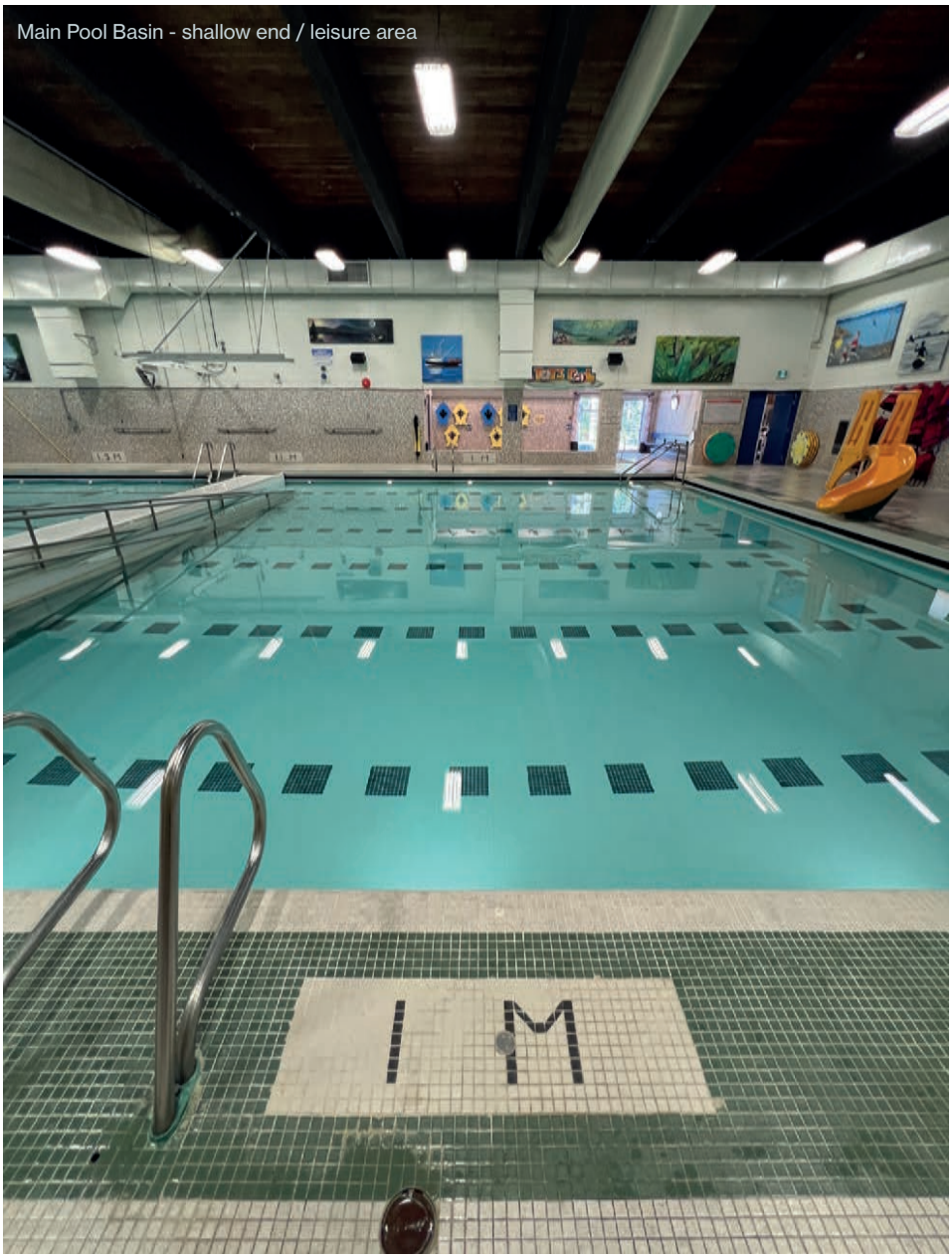
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Main pool basin - bulkhead, ramp and stair


Deep End Slide

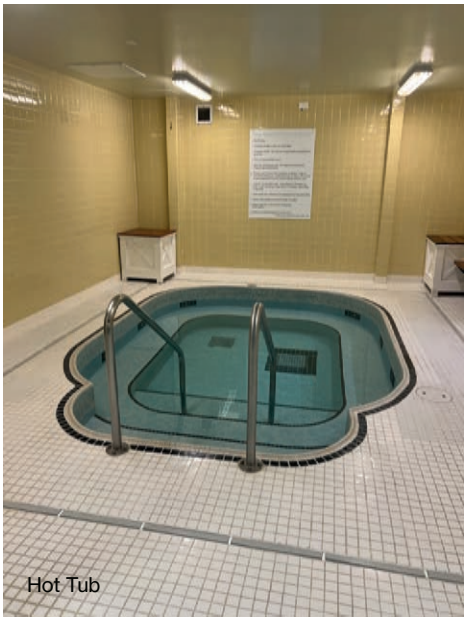

Shallow End basketball hoop


Shallow End Slide


Main Pool Basin - shallow end / leisure area

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Hot Tub


Tot / Wading Pool

Hot Pool & Sauna

Mid way up the main pool tank is access to a hot tub and sauna area. The hot tub has a 12 bather capacity. The tub is a rectangular shape with a narrow deck (~2'6") around two sides and a wider deck (-4') on the other two sides. The deck widths are quite narrow but just fit within the recommendations in the BC guidelines for pool design.

The hot tub functions well and is in normal condition. Any recommended renovation to the hot tub would be to expand capacity or accessibility.

The sauna is accessed from the whirlpool area. Originally the sauna area was constructed to be two separated saunas, with small shower/change areas at the entrances. At some point the two saunas were converted into one, but the showers & entrances were left unaltered. The result is an inefficient use of changing / entrance space, an oversized sauna, and no provisions for accessibility.

The interior finish of the sauna has been maintained well, and was last replaced during the renovation combining the separate saunas into one.

The sauna still has the two original door openings from the layout of the separate saunas. Both of these doors are not wide enough to be considered accessible.

To ensure the efficient, safe and accessible use of the sauna and hot tub area, a renovation is required to reconfigure the inefficient changing spaces, and provide a right sized sauna with proper access.

Lifeguard stations

There are two spaces dedicated to lifeguarding off of the natatorium. A small pool control office is located directly adjacent to the public pool entry, and a lifeguard station has been added as a standalone structure in the southeast corner of the natatorium.

These stations are well maintained, and appear to meet the immediate need of the staff. There is not a significant distance between the lifeguarding and staff spaces, but there is a general sense of disconnection between the all staff spaces. This is a result of various renovations to the admin and lifeguarding spaces which have not been undertaken as a cohesive project.

A renovation to reconfigure and integrate the lifeguard and admin spaces is recommended.

Viewing / Seating areas

Along the south wall of the natatorium there is a partially covered seating area, banks of telescopic wooden bleachers and . At the time of the assessment, the bleachers were not extended but it appeared that they were in working order. The flooring at the bleacher seating area is carpet, which is not suitable for a natatorium environment and should be replaced.

Pool Storage

The at the south west corner of the natatorium is a small pool storage structure. This structure was added to create additional needed storage space.

Interior Finishes

The pool deck, and lower ~7' of wall surface is a tiled with original tiles. There are many areas where tiles have been replaced due to maintenance reasons or alterations. In these areas the tile is often a mismatched colour. All tile finishes appear to be in fair condition, with minimal cracking.

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Above:
Lifeguard station - added on. Door to staff area to the left, door to family changerooms to the right.
Below:
Sauna. Originally this space was two saunas, separated where the beam runs along the ceiling.

Above:
Lifeguard office - this office was created by a partitioning off a portion of the reception office
Below:
Bleacher seating area, with patio seating beyond.





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Building Program - Changerooms & Washrooms

The Echo Pool includes a range of changeroom and washroom facilities intended to serve different user groups and levels of privacy. Overall, these areas were observed to be functional and generally well maintained; however, their layout and configuration reflect the standards in place at the time of original construction and don't fully align with contemporary expectations for accessibility, inclusivity, and user comfort.

The lobby and reception area is served by separate men's and women's public washrooms. These washrooms provide convenient access for patrons entering the facility or accompanying users without entering the pool deck. While the fixtures and finishes are serviceable, the spaces are utilitarian in nature and do not meet current accessibility codes. (See code compliance report for more detail.) In order to meet code these washrooms will need to be renovated.

The pool users are served by dedicated men's and women's changerooms, each equipped with group shower fixtures with 6 heads. These changerooms are arranged to support high-volume use associated with public swim times, lessons, and aquatic programs.

The women's changeroom includes a washroom with three toilet stalls and a single basin sink. The toilet stalls do not appear to be sized to meet accessibility codes. At least one stall is required to be accessible, and more sinks will need to be provided. The women's changing area is mostly open with benches, lockers and 5 dry change stalls.

The men's changeroom has a similarly open changing area with benches and lockers. There are no dry changing stalls provided in the men's change. The washroom in the men's changeroom is equipped with two toilets and three urinals.

Although the changerooms are functional, the group shower format and overall layout reflect older design standards and offer limited privacy compared to more modern aquatic facilities. Accessibility is a concern throughout the gendered changreooms, with ineffective wayfinding strategies, inconsistent materiality, and no provision of an accessible shower or water closet.

In addition to the gendered changerooms, the facility includes four family changerooms, each containing a private toilet, shower, and sink. These spaces provide an important alternative for families, caregivers, and users who require additional privacy or assistance. The family changerooms are generally well used and help address some limitations of the gendered changeroom configurations; however, the limited number of these rooms may constrain availability during peak operating periods.

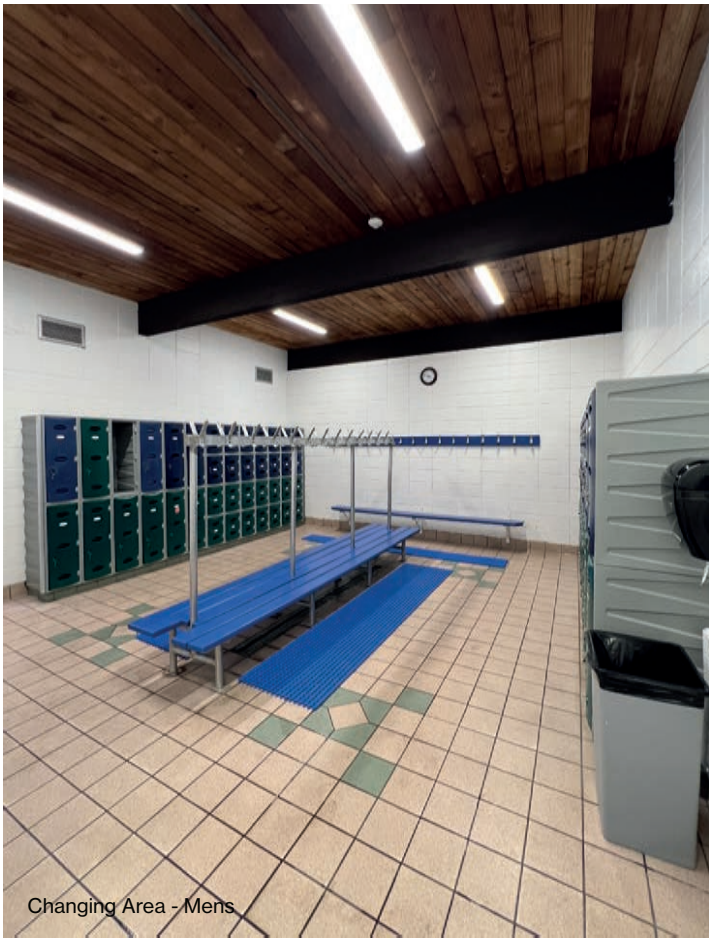
Additionally, the family changerooms, while spacious, are not designed to meet today's universal changeroom standards. In order to update them to meet code, the family changerooms would require renovation. Refer to the Code Compliance report for more detail.

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Group Shower



Changing Area - Mens



Changeroom Washroom - Mens



Corridor to womens change

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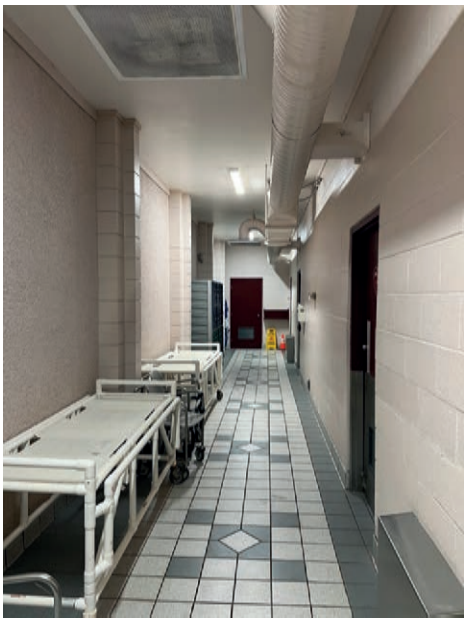
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Above:
Womens changeroom washroom.
Below Left:
Corridor to family change.
Below Centre:
Family changeroom showing sink and shower.

Above:
Womens changeroom showing open area changing and dry change stalls
Below Right:
Family changeroom - toilet stall behind curtain







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Fitness Area

Building Program - Fitness Area

The fitness area was built as part of the mid-70s sauna addition. The space was observed to be functional but relatively nondescript in character, with a layout and finish quality that reflect a primarily utilitarian purpose. The room provides adequate space for its current program but lacks defining architectural features or visual connections that would help integrate it more fully into the overall facility experience. As a result, the fitness area feels somewhat isolated from the facility.

Storage within the fitness area is limited, resulting in equipment and accessories being kept within the active workout space. This reduces flexibility in room layout and can contribute to a cluttered appearance, particularly during group fitness programs or peak use periods. The absence of dedicated, well-organized storage constrains the ability to adapt the room for multiple uses and limits opportunities to refresh or expand programming. Generally the space feels like it is capacity has been maximized by the amount of equipment, leaving seemingly little opportunity for group activity.

Access to the fitness area is currently provided through a single door, with minimal visibility from the main public areas of the facility. This limits passive supervision and reduces wayfinding clarity for first-time users. A more open connection to the natatorium or adjacent circulation spaces could improve visibility, enhance user safety, and strengthen the relationship between the fitness area and the broader aquatic environment.

Overall, while the fitness area remains serviceable, its condition and configuration suggest opportunities for improvement through modest reconfiguration, enhanced storage, and increased visual openness. Opportunity for expansion of this space should be explored through modernization, to allow for increased group activity.



Entrance to Fitness Area

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Loading and Chemical Storage Seacan


Chemical Room

Building Program - Service & Storage Areas

Electrical / Storage Room

The mechanical room was observed to be generally well maintained and functional, with no signs of deterioration or active failures. However, the space is crowded with mechanical and electrical equipment, leaving limited clearances for safe access, maintenance, and future upgrades. Much of the installed equipment appears to be at or near the end of its expected service life, which increases the risk of unplanned outages and higher maintenance demands. While systems are currently operational, the density of equipment and aging components limit operational flexibility and present challenges for long-term reliability.

Chemical Room

The chemical room houses the gas chorline injection system, and is in generally good condition. The system appears to mostly conform to all Technical Safety BC regulations, as noted in the mechanical assessment report, with the exception of the ventilation from this room. The exhaust ventilation needs to be routed above the roof to a minimum of 15', and a windsock added.

Chemical Storage Sea Can

The chemical storage sea can provides a dedicated and secure location for bulk chemical storage and was found to be in generally good physical condition. Its use helps to separate chemical storage from primary building areas; however, the sea can is located at ground level and detached from the building, which provides some operational challenges. Additionally, the sea can does not comply with spatial separation requirements, and needs to be properly protected from the main building with a fire resistance rating.

Pool Storage

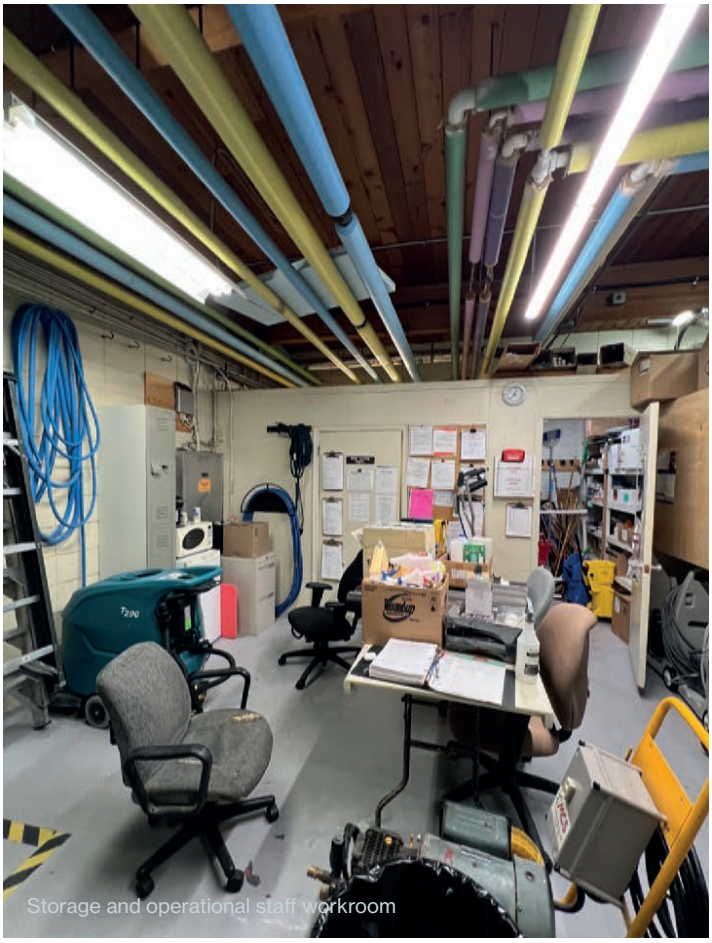
Pool storage areas were observed to be serviceable and in overall good condition, with no major deficiencies noted in the building fabric. Despite this, the spaces are densely packed with equipment, furnishings, and operational supplies, limiting functionality and ease of access. The lack of adequate storage capacity makes it difficult to organize materials effectively and may impact day-to-day operations and housekeeping.

Exterior Loading Area

The exterior loading area is a gravel lot accessed off of 10th Ave. The lot is large and generally well maintained, supporting deliveries, staff parking, waste removal, and service access to the facility. While the space appears to meet current needs, however improved access into the facility should be considered.

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Storage and operational staff workroom



Electrical Panels in Storage / Workroom



Boilers



Hot water Storage Tanks

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Condition Summary - Architectural

The condition of the Echo Pool demonstrates a clear sense of pride and care through the way it has been maintained, reflecting the community's commitment to the facility. However, over its life, the facility has undergone a series of improvements, implemented incrementally and in response to immediate needs rather than as part of a cohesive plan. While each upgrade has addressed specific functional or operational issues, and appear to have been undertaken properly, the cumulative effect has resulted in inconsistencies in materials, detailing, and spatial organization, reducing architectural cohesion. This approach, while practical, gives the facility a fragmented appearance and limits the sense of permanence and intentionality that a purposefully planned renovation or renewal could provide.

In addition to the fragmented nature of past improvements, the Echo Pool now faces several challenges that affect both safety and long-term functionality. The facility has numerous code compliance deficiencies, including areas that no longer meet current building accessibility standards. Many of the mechanical and operational systems are approaching the end of their service life, increasing the risk of failures and escalating maintenance costs. Of particular concern is a significant structural issue with the pool gutters, which threatens the integrity of the pool basin and requires immediate attention to prevent further deterioration. These combined conditions underscore the need for a comprehensive assessment to guide repair, replacement, or renewal strategies.

The effect of piecemeal improvements can undermine the overall sense of permanence in a public space by creating an environment that feels incremental, temporary, and reactive rather than intentional and enduring. When upgrades are carried out in isolation over time, differences in materials, detailing, spatial organization, and construction quality often become visually apparent. These inconsistencies can disrupt architectural cohesion and make the building feel like a collection of short-term fixes rather than a unified, long-term civic investment.

In public buildings, permanence is closely tied to clarity, durability, and legibility. Ad hoc renovations can erode this perception by introducing mismatched finishes and irregular circulation patterns that complicate wayfinding and diminish the sense of order. Users may perceive the space as outdated or compromised, even if individual renovations were well executed, because the overall environment lacks a clear architectural narrative or hierarchy.

From a community perspective, the absence of a cohesive, long-term vision can affect how a public space is valued. Facilities that appear continually altered or incrementally modified may be perceived as transitional or provisional, rather than stable and dependable. This can be particularly impactful in civic facilities, where a sense of permanence contributes to public confidence, identity and trust.

Over time, piecemeal improvements can also signal deferred investment, reinforcing the impression that the building is being maintained just enough to function, rather than intentionally designed to serve future generations. This perception contrasts with purpose-built or comprehensively renewed facilities, which more clearly communicate durability, civic pride, and a lasting commitment to the community.

Architectural Condition - Summary Table

Item	Condition	Recommendation
Reception Desk	The reception desk does not provide access for wheelchairs.	Reception desk should be modified, or replaced to allow for forward facing interactions for users in wheelchairs.
Wayfinding / Signage	The signage for reception, pool and washrooms is not graphically consistent, and does not provide clear direction throughout	Consider a graphic scheme to clearly indicate programmatic functions.
Washrooms	There is no accessible / universal washroom provided in the lobby area.	At least 1 washroom in the lobby should be upgraded to be accessible.
Staff Room	The staff area is used for multiple conflicting functions .	The administration offices should be renovated to provide separated areas for safety equipment / first aid, IT equipment, storage, administration and staff breaks.

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Item	Condition	Recommendation
Roof membrane	Concrete topped insulation panels are deteriorating, not installed properly, and growing organic material. “Tarp” membrane under concrete panels is exposed and deteriorating.	Roof section over lobby and changerooms should be replaced. (See recommendations in Structural Assessment report) Consider adding insulation to replace concrete panels and improve building performance. Existing plumbing vents should be replaced with modern two piece vent caps.
Roof membrane: Family changerooms	Roof membrane over family changerooms is at the end of its life, showing cracking and has portions showing granule loss.	Roof membrane over family changerooms should be replaced.
Roof Curbs / Sleepers	There are various styles of roof curb and sleepers under rooftop mechanical equipment and pipes or cabling running along the roof.	Replace exposed wood roof curbs, install proper sleepers for services running along roof membrane.
Wood Fascia / Beam end caps	There are portions of wood fascia that are deteriorating and should be replaced.	Wood fascia should be patched as necessary, all exterior wood should be re-stained.
Stucco	All stucco is in generally fair condition, minor cosmetic cracking observed.	Stucco should be re-painted as preventative maintenance.
Exposed CMU walls	Exposed CMU walls are in generally fair condition, with minor areas showing paint peeling or cosmetic cracking.	Exterior CMU walls should be re-painted as preventative maintenance.
Pressed Steel Doors	There are various steel doors showing deterioration at the sill.	Doors showing deterioration should be replaced. Thermally broken frames and sills should be installed.
Aluminum Doors	The aluminum exit door from the wading pool is broken.	Replace or repair wading pool door, ensuring new door meets code requirements for safety glass. (See comments in Code Compliance Report)
Aluminum entry door	The aluminum entry door is located with 3m of openings in the adjacent Community Centre Fire compartment.	Either relocate entry door, enclose openings in Community Centre, or adequately protect openings in Community Centre. (See comments in Code Compliance Report)
Skylights	Two skylights have been covered for shading.	Covered skylights should be properly filled in and re-roofed.
Pool Gutters	Pool gutters are deteriorating. There is significant spalling and exposed rebar in multiple locations.	The gutters will need to be rebuilt to ensure consistent pool operation. Rebuilding the gutter provides an opportunity to change the pool depth, and should be carefully considered along side the different renovation options. For example, if the pit tanks are removed and new pool filters installed, the gutter would likely need to be designed as a surge gutter. Additionally, flush gutters could be installed to raise the pool water level and create different opportunities for pool use.
Pool Bulkhead	The pool bulkhead appears to be in fair condition, but showing signs of corrosion.	Given its age, the pool bulkhead should be replaced. Similar to the pool gutter issue, replacing the bulkhead could provide many options to reconfigure the pool.

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Item	Condition	Recommendation
Access Ramps	The stainless steel access ramps which have been added to the pool are showing initial signs of corrosion.	Stainless steel ramps should be replaced.
Lift	The accessible lift which provides access to the training / leisure pool is significantly exposed, and restricts access to the pool deck and bulkhead when in use.	Replace existing lift with a deck mounted or mobile lift.
Sauna	Access to the Sauna does not meet code. The shower areas before the sauna are spatiality inefficient and redundant after the 2 saunas were renovated to become a single sauna.	Doors to Sauna should be widened. Shower areas should be reconfigures to create a more efficient space
Hot Pool	The use of the hot pool can potentially restrict access to the saunas.	Consider improvements as part of Sauna renovation.

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Feasibility Study

Introduction



The Echo Pool has served as a vital community asset for almost 60 years, providing residents with a place for recreation, wellness, training, and social connection. As the building and its core systems age, the facility now faces increasing operational, structural, and mechanical challenges that limit its efficiency, reliability, and ability to meet current standards for accessibility, safety, and user experience. Recognizing the significant role that aquatic services play in community health and quality of life, the City has initiated this feasibility study to evaluate practical, cost-effective options for extending the service life of the existing pool by an additional 20 years.

The Echo Pool Feasibility Study represents the second phase of a comprehensive assessment of the existing aquatic facility. Building on the assessment in phase 1, which focused on code, mechanical and structural reviews, this study evaluates the potential for renovating the facility to extend its operational life and enhance functionality for the community. The study draws on prior assessments and current technical analyses to identify renovation options, provide cost estimates, and evaluate the technical, financial, and community viability of each alternative.

This feasibility study explores two distinct renovation strategies for the Echo Pool. The first scenario, a life-extension approach, focuses on implementing the minimum necessary interventions to maintain the facility's operational integrity and extend its lifespan by approximately 20–25 years. This strategy prioritizes addressing critical structural, mechanical, and code compliance deficiencies, replacing equipment nearing the end of its service life, and ensuring continued safety and functionality, while minimizing capital investment.

The second scenario, a full modernization approach, considers a comprehensive renovation of the facility within its existing footprint to meet contemporary standards for accessibility, energy efficiency, sustainability, and user experience. This strategy addresses both functional and aesthetic improvements, updates mechanical and electrical systems, enhances safety and accessibility, and implements design improvements that support long-term operational efficiency and community engagement.

By evaluating both the targeted life-extension strategy and the comprehensive modernization alternative, this study provides the ACRD with a clear comparison of feasible paths forward. The resulting recommendations will guide the District in selecting the most viable renovation option, supported by a high-level implementation roadmap aligned with a potential spring 2027 project start.

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Scenario 1 - Life Extension

Goals and Ambition

The Life Extension scenario focuses on implementing the essential improvements required to prolong the operational lifespan of the Echo Pool facility by approximately 20 years.

Building on the findings of Phase 1, this approach prioritizes interventions that address critical deficiencies in structural, mechanical, electrical, and plumbing systems, while minimizing capital investment and operational disruption. Key upgrades will ensure compliance with the 2024 BC Building Code, relevant provincial and municipal regulations, accessibility standards (CSA B651), and aquatic safety guidelines, with particular attention to areas that pose the greatest risk to safety and operational reliability.

Scope of Work

The scope of work focusing on life extension includes the refurbishment or replacement of building systems nearing the end of their service life, re mediation of significant structural issues such as the pool gutters, and essential envelope repairs to prevent further deterioration. The list of recommendations from the assessment reports was addressed in a pragmatic, cost-conscious manner. This approach ensures the Echo Pool remains a safe, functional, and serviceable community facility for the extended period while deferring more comprehensive modernization to a future date.

Cost Summary

The largest cost drivers identified in the Life Extension scenario relate to renewal of major building systems and components that are at or near the end of their service life. These include significant investments in the building envelope, such as roof replacement, exterior cladding repairs, and repainting, as well as extensive work within the natatorium to address pool-related infrastructure. Pool system upgrades—particularly replacement of perimeter pool gutters, bulkhead components, deck and wall tile repairs, and selective structural repairs—account for a substantial portion of the overall cost and reflect the aging condition of these specialized elements.

A further major component of the Life Extension cost is associated with life safety and code compliance upgrades. These include fire suppression system installation, fire alarm improvements with visual signaling devices, exit signage and tactile signage upgrades, replacement of non-compliant glazing with safety glass, and modifications to exit stairs, guards, and handrails. Accessibility improvements also represent a meaningful portion of the budget, including upgrades to accessible paths of travel, ramps, washrooms, changerooms, pool access equipment, and wayfinding signage. These interventions are largely corrective in nature and are intended to bring the facility closer to current code and accessibility standards where feasible within the existing building constraints.

Mechanical and electrical allowances within the Life Extension scenario focus on targeted replacements and upgrades rather than full system renewal. These include replacement of aging domestic hot water equipment, water meters and controls, limited building management system integration, and other selective interventions necessary to support continued operation. Interior finishes, such as painting, flooring replacement, and ceiling refinishing, are included where required to support durability, safety, or to address deterioration caused by the humid pool environment, rather than for aesthetic renewal.

The Class D estimate for the Life Extension scenario excludes escalation, GST, and several soft costs, and includes design contingencies appropriate to this level of conceptual development. As such, the costs should be understood as indicative and subject to refinement as the project is developed. Overall, the Life Extension investment represents a substantial but focused capital commitment that would allow the Echo Pool to remain in service for a limited additional period, while acknowledging that many functional, spatial, and experiential limitations of the existing facility would remain unaddressed.

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Scope of Work - Life Extension

	Item	Scope - Capital Cost	Operational Imapct
1.	**Code Compliance**		
1.1.	Fire suppression		
1.1.1.		Provide fire suppression system for building.	Add'l annual testing & maintenance
1.2.	Address Spatial Separation of Storage Seacan		
1.2.1.		Clad seacan with fire rated assembly (interior or exterior)	-
1.3.	Exposure hazard of front exit		
1.3.1.		Infill or protect windows on community centre to create 3m horizontal distance from pool entrance.	
1.4.	Fire Alarm - Visual Signal Devices		
1.4.1.		Upgrade fire alarm to include visual signal devices as required (may require electrical input?)	
1.5.	Tactile Indicators on Walking Surfaces		
1.5.1.		Install tactile indication strips at stairs throughout facility.	
1.6.	Bleachers		
1.6.1.		Install guards at ends of bleachers	
1.6.2.		Modify existing bleachers to incorporate access aisle.	
1.6.3.		Modify existing bleachers to ensure that travel distance to exits does not exceed the permitted 30m	
1.7.	Safety Glass		
1.7.1.		Replace glass in entry door, exterior exit doors, wading pool doors, and separation walls with safety glass	
1.8.	Exit Stairs		
1.8.1.		Replace / modify exterior stairs serving the rear of the pool with closed riser stair.	
1.9.	Exit Signage		
1.9.1.		Replace exit signage throughout with modernized exit signs	
1.9.2.		Provide tactile exit signage at the approach side of exit doors	
1.9.3.		Exit door from wading pool cannot have a fabric curtain covering. Look at reducing glazing in this area if required.	
1.10.	Exterior walks / stairs / ramps / handrails		
1.10.1.		Rebuild exterior walks which form an accessible path of travel to have regular surface.	
1.10.2.		Rebuild exterior ramps to have max 8% slope	
1.10.3.		Install handrails at exterior stairs / ramps as required.	
1.10.4.		Replace exterior handrails at building entrance with compliant handrails.	
1.11.	Universal Washroom / Plumbing facilities / Showers		
1.11.1.		Provide universal washroom in lobby.	
1.11.2.		Provide accessible washroom in changerooms.	
1.11.3.		Retrofit family changerooms to meet universal accessibility requirements. (refer to code compliance report)	
1.12.	Assisted listening system		
1.12.1.		Install assisted listening system at reception	

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	Item	Scope - Capital Cost	Operational Imapct
1.13.	Doors / Hardware		
1.13.1.		All doors on accessible path of travel should have clear width of min. 850mm	
1.13.2.		Some office room doors are too narrow	
1.13.3.		Washroom doors in lobby do not provide clear width – to be widened with acc. washroom renovation	
1.13.4.		Replace door hardware throughout to comply with acc. req's	
1.14.	Controls		
1.14.1.		Relocate manual stations to be within height requirements	
1.15.	Guards		
1.15.1.		Replace exterior guards at rear exits from weight room, wading pool exterior landing, with compliant guardrails.	
1.16.	Signs and Indicators		
1.16.1.		Update signage throughout to identify accessible / universal washrooms.	
1.16.2.		Ensure updated signage encompasses adding tactile information to current building signage	
2.	**Mechanical**		
2.1.	Water Meter		
2.1.1.		Replace water meter, backflow preventor, pressure release valve	
2.1.2.		Connect pool water meter to BMS system to monitor for pool leakage	
2.2.	Domestic Hot Water		
2.2.1.		Opt 1 - Replace domestic hot water tanks	Opt 2 - consider additional maintenance and plan for replacement in future
2.3.	Deck bottle filler		
2.3.1.		Replace piping servicing the deck bottle filler with lead free piping	
2.3.2.		Replace drinking fountains	
2.4.	Plumbing fixtures		
2.4.1.		Replace plumbing fixtures throughout	
2.5.	Fire Suppression		
2.5.1.		See Code Compliance Scope	
2.6.	Boilers		
2.6.1.			Continue to service, plan for replacement in 10 years.
2.7.	Natatorium HVAC		
2.7.1.		Replace Natatorium Air handling unit (like for like)	
2.7.2.		Provide pressure controls for natatorium that operate exhaust fans. Add VFDs on exhaust fans and series of pressure sensors throughout the building.	
2.8.	Building HVAC		
2.8.1.		Replace packaged rooftop air handlers (like for like)	

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	Item	Scope - Capital Cost	Operational Imapct
2.9	Pool Systems		
2.9.1	Lap Pool	Opt 1 - Replace open pit tanks with sand filters or pressure regenerative media filters	Opt 2- Replace as part of regular maintenance program (assume in 10 years)
2.9.2	Lap Pool	Provide new main drain valves with fail close valves.	
2.9.3	Lap Pool	Provide new balance tank level controls, modulating valves to automatically control pool levels	
2.9.4	Lap Pool UV filter	Replace Lap Pool UV filter	
	Hot Pool	Replace hot pool filter, filter pump and jet pump	
2.9.5	Hot Pool UV		Plan to replace hot pool UV in 10 years
2.9.6	Chemical Room	Replace Soda Ash agitator & injection pumps	
2.9.7	Chemical Room	Replace chlorine solenoids & sensors	
2.9.8	Chemical Room	Upgrade chlorine room exhaust fan and ductwork	
3.	**Structural**		
3.1.		Option 1 from Structural Assessment (no seismic upgrade)	
3.1.1.		Replace low roof envelope	
3.1.2.		Replace upper roof envelope.	
3.1.3.		Upgrades to OFC restraint throughout.	
4.	**Architectural**		
4.1.	Exterior cladding		
4.1.1.		Replace / repair / stain wood cladding throughout (fascias and beam casings)	
4.1.2.		Exterior Painting - entire facade, all CMU, stucco, wood fascia, wood soffit	
4.2.	Roofing		
4.2.1.		Replace low roof membrane, including over family changerooms. Ensure proper tie in between lower roof and family changeroom.	
4.2.2.		Replace upper roof membranes.	
4.2.3.		Install proper roof sleepers under rooftop pipe and conduit.	
4.2.4.		Install proper splash pads at all downspouts.	
4.3.	Doors and Windows		
4.3.1.		Replace Steel doors with sill deterioration. Ensure exterior doors have thermally broken frames	
4.3.2.		Remove and infill covered skylights (2)	
4.3.3.		Replace aluminum exit door from wading pool.	
4.4.	Pool Basins		
4.4.1.		Replace pool gutters - cut out exisiting concrete gutters - form and place new gutter system - retile deck around new gutter and 3' down pool wall - approximately 330 linear feet to be replaced	
4.4.2.		Replace pool Bulkhead	

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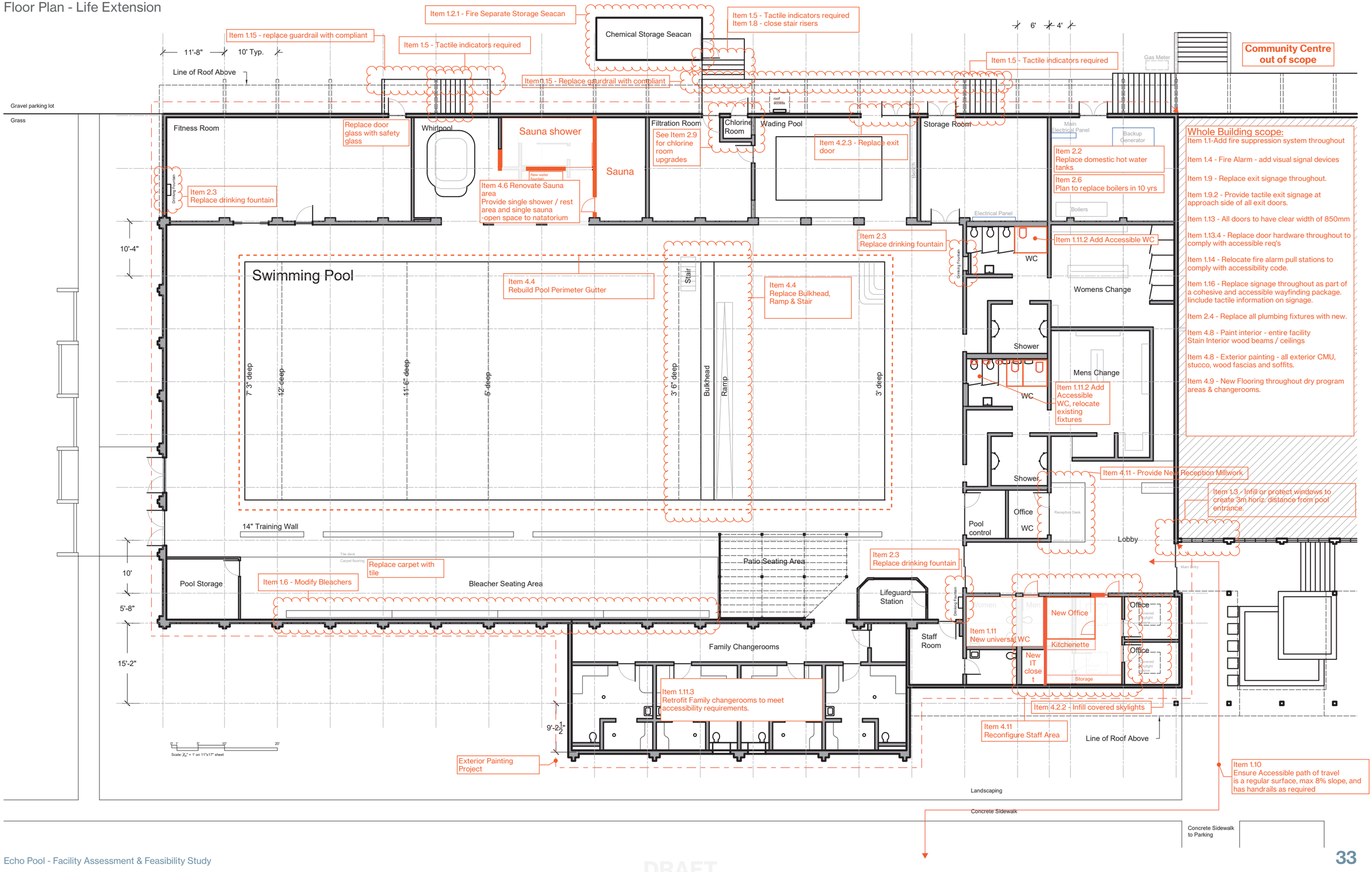
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	Item	Scope - Capital Cost	Operational Imapct
4.5.	Pool ramps & lift		
4.5.1.		Replace deteriorating pool ramps.	
4.5.2.		Remove existing lift and provide new mobile accessible lift	
4.6.	Sauna		
4.6.1.		Renovate Sauna and hot pool area - remove dividing walls between existing sauna shower / change areas - Build new wall to enclose new sauna, provide new interior finishes, benches and sauna equipment. - provide new open plan sauna shower area - selectively demolish existing CMU wall to open sauna and hot pool area to natatorium.	
4.7.	Tile finishes		
4.7.1.		Selectively replace deck tile around lap pool and up pool wall.	
4.8.	Paint		
4.8.1.		Interior painting	
4.8.2.		Stain interior wood ceilings	
4.8.3.		Exterior painting	
4.9.	Flooring		
4.9.1.		Update flooring throughout reception, admin, washrooms and changerooms	
4.10.	Changerooms / Washroom		
4.10.1.		See Item 1.11 - update to code minimum	
4.11.	Reception / Lobby / Admin		
4.11.1.		Re-configure staff room - provide IT closet	

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Floor Plan - Life Extension



Whole Building scope:

Item 1.1-Add fire suppression system throughout

Item 1.4 - Fire Alarm - add visual signal devices

Item 1.9 - Replace exit signage throughout.

Item 1.9.2 - Provide tactile exit signage at approach side of all exit doors.

Item 1.13 - All doors to have clear width of 850mm

Item 1.13.4 - Replace door hardware throughout to comply with accessible req's

Item 1.14 - Relocate fire alarm pull stations to comply with accessibility code.

Item 1.16 - Replace signage throughout as part of a cohesive and accessible wayfinding package. Iinclude tactile information on signage.

Item 2.4 - Replace all plumbing fixtures with new.

Item 4.8 - Paint interior - entire facility
Stain Interior wood beams / ceilings

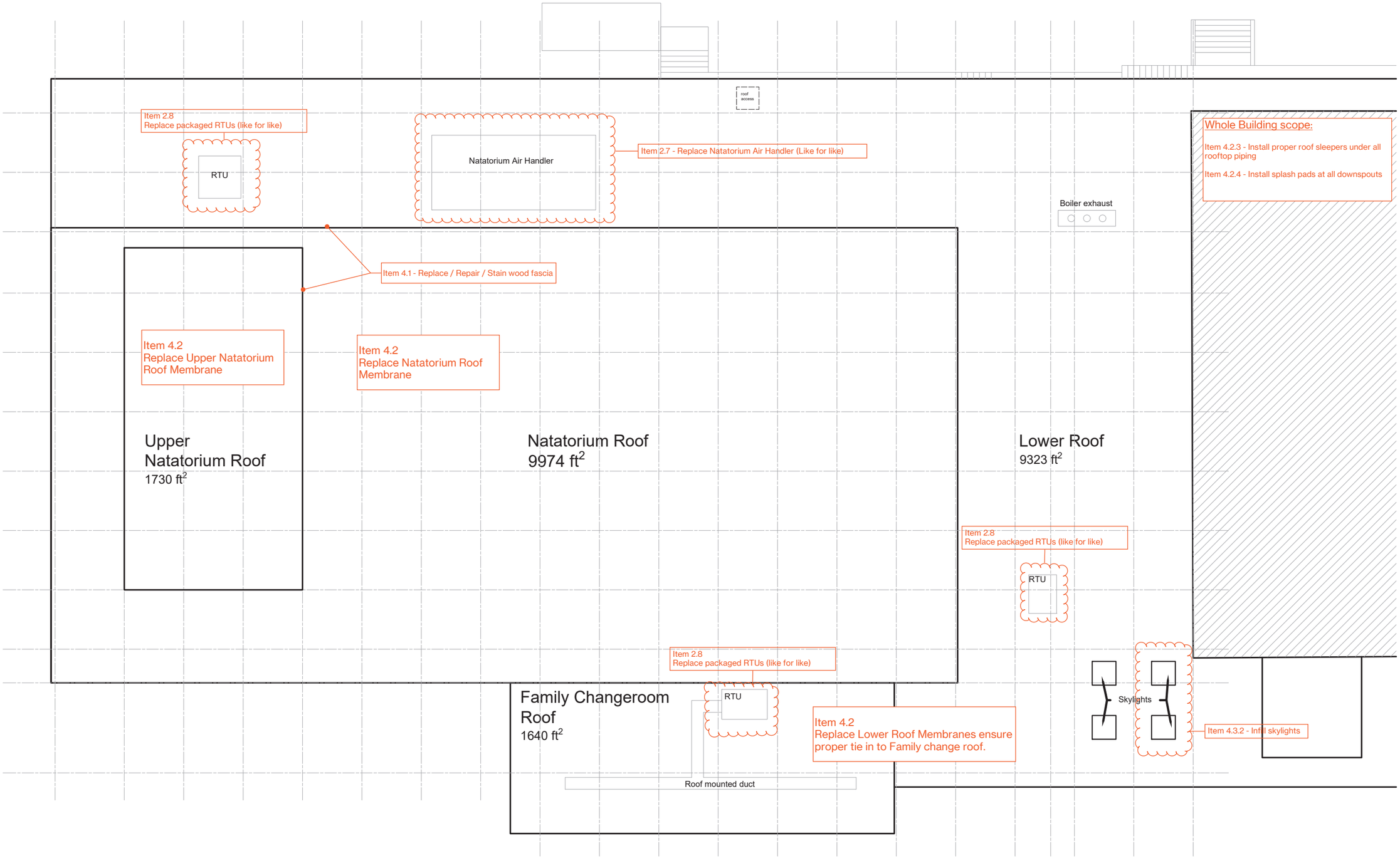
Item 4.8 - Exterior painting - all exterior CMU, stucco, wood fascias and soffits.

Item 4.9 - New Flooring throughout dry program areas & changerooms.

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Roof Plan - Life Extension



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Scenario 2 - Modernization

Goals and Ambition

The goal of this scenario is to outline a renovation strategy which provides an upgraded, energy efficient facility which will be more resilient to meeting the changing needs of the community.

The modernization scenario envisions a comprehensive renovation of the Echo Pool facility within its existing footprint, bringing the building up to contemporary standards for functionality, energy efficiency, sustainability, and accessibility.

This approach attempts to address both the existing condition of the facility and the long-term expectations of the community, providing a modern, resilient aquatic environment designed to meet current and future needs. In addition to the measures outlined in the Life Extension scenario, proposed work includes improvements to the building envelope, interior finishes, and circulation to enhance durability and user experience. The modernization will ensure full compliance with the 2024 BC Building Code, provincial and municipal regulations, CSA B651 accessibility standards, and aquatic safety guidelines. Class D construction cost estimates and lifecycle analyses will be prepared to evaluate both capital and operational impacts, supporting informed decision-making regarding investment priorities. Implementation planning will consider sequencing and phasing to optimize construction efficiency and minimize operational disruption, with a high-level schedule aligned with potential funding and staffing resources. By addressing both functional deficiencies and long-term performance, the modernization scenario outlines a strategic, forward-looking solution that creates a safe, accessible, and vibrant community facility.

Cost Summary

In addition to incorporating many of the base scope items identified in the Life Extension scenario, the Modernization scenario expands the scope to include more extensive upgrades. Major cost drivers include enhanced roof and envelope interventions, increased structural reinforcement,seismic separation from the community centre, and more comprehensive upgrades within the natatorium to support user experience.

The Modernization scenario places greater emphasis on improving functionality and spatial relationships within the facility. This includes reconfiguration and upgrading of changerooms, washrooms, sauna and hot pool areas, and selected public spaces to better align with contemporary standards for accessibility, privacy, and user comfort. Pool deck elements, finishes, and access systems are upgraded more holistically, reducing the need for future piecemeal repairs and improving overall safety and usability. Interior finishes are renewed more broadly, addressing both deterioration and the dated appearance of key spaces.

Mechanical and electrical work focuses on providing more robust system upgrades that support long-term reliability and energy performance. This approach reduces operational risk, improves system integration, and better supports ongoing maintenance and monitoring. While still conceptual at the Class D level, these investments are intended to reduce lifecycle costs compared to like for like replacements.

As with the Life Extension option, the Class D Modernization estimate excludes escalation, GST, and certain soft costs, and includes appropriate design contingencies reflecting the preliminary nature of the scope definition. The resulting capital cost represents a substantial investment; however, it delivers a materially different outcome. Rather than restoring the existing facility, the Modernization scenario provides a reasonable attempt to improve functionality, safety, and accessibility.

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Scope of Work - Modernization

	Item	Scope - Capital Cost	Operational Impact
1.	**Code Compliance**		
1.1.	Fire suppression		
1.1.1.		Provide fire suppression system for building.	Add'l annual testing & maintenance
1.2.	Address Spatial Separation of Storage Seacan		
1.2.2.		Renovate existing building to accomodate new storage area. Potentially as part of Sauna renovation.	
1.3.	Exposure hazard of front exit		
1.3.1.		Infill or protect windows on community centre to create 3m horizontal distance from pool entrance.	
1.4.	Fire Alarm - Visual Signal Devices		
1.4.1.		Upgrade fire alarm to include visual signal devices as required (may require electrical input?)	
1.5.	Tactile Indicators on Walking Surfaces		
1.5.1.		Install tactile indication strips at stairs throughout facility.	
1.6.	Bleachers		
1.6.4.		Replace beachers with new, code compliant solution	
1.7.	Safety Glass		
1.7.1.		Replace glass in entry door, exterior exit doors, wading pool doors, and separation walls with safety glass	
1.8.	Exit Stairs		
1.8.1.		Ensure that the exit stair portion of the Chemical Room renovation (Item 1.2.2) addresses this issue.	
1.9.	Exit Signage		
1.9.1.		Replace exit signage throughout with modernized exit signs..	
1.9.2.		Provide tactile exit signage at the approach side of exit doors.	
1.9.3.		Exit door from wading pool cannot have a fabric curtain covering. Look at reducing glazing in this area if required.	
1.10.	Exterior walks / stairs / ramps / handrails		
1.10.1.		Rebuild exterior walks which form an accessible path of travel to have regular surface.	
1.10.2.		Rebuild exterior ramps to have max 8% slope	
1.10.3.		Install handrails at exterior stairs / ramps as required.	
1.10.4.		Replace exterior handrails at building entrance with compliant handrails.	
1.11.	Universal Washroom / Plumbing facilities / Showers		
1.11.1.		Provide universal washroom in lobby.	
		Accessible washrooms and showers to be provided as part of larger changeroom renovation (Item 4.9.2)	
1.11.3		Retrofit family changerooms to meet accessibility requirements.	
1.12.	Assisted listening system		
1.12.1.		Install assisted listening system at reception	
1.13.	Doors / Hardware		
1.13.4		Replace all door hardware throughout to comply with accessibility requirements.	

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	Item	Scope - Capital Cost	Operational Impact
		All doors part of the renovations to have a clear width of 850mm	
1.14.	Controls		
1.14.1.		Relocate manual stations to be within height requirements	
1.15.	Guards		
1.15.1.		Replace exterior guards at rear exits from weight room, wading pool exterior landing, with compliant guardrails.	
1.16.	Signs and Indicators		
1.16.1.		Update signage throughout to identify accessible / universal washrooms.	
1.16.2.		Ensure updated signage encompasses adding tactile information to current building signage	
2.	**Mechanical**		
2.1.	Water Meter		
2.1.1.		Replace water meter, backflow preventor, pressure release valve	
2.1.2.		Connect pool water meter to BMS system to monitor for pool leakage	
2.2.	Domestic Hot Water		
2.2.1.		Replace domestic hot water tanks	
2.3.	Deck bottle filler		
2.3.1.		Replace piping servicing the deck bottle filler with lead free piping	
2.3.2.		Replace drinking fountains	
2.4.	Plumbing fixtures		
2.4.1.		Replace plumbing fixtures throughout	
2.5.	Fire Suppression		
2.5.1.		See Code Compliance Scope	
2.6.	Boilers		
2.6.1.			Continue to service, plan for replacement in 10 years.
2.7.	Natatorium HVAC		
2.7.1.		Replace Natatorium Air handling unit (like for like)	
2.7.2.		Provide pressure controls for natatorium that operate exhaust fans. Add VFDs on exhaust fans and series of pressure sensors throughout the building.	
2.8.	Building HVAC		
2.8.1.		Replace packaged rooftop air handlers (like for like)	
2.9	Pool Systems		
2.9.1	Lap Pool	Replace open pit tanks with sand filters or pressure regenerative media filters	
2.9.2	Lap Pool	Provide new main drain valves with fail close valves.	
2.9.3	Lap Pool	Provide new balance tank level controls, modulating valves to automatically control pool levels	
2.9.4	Lap Pool UV filter	Replace Lap Pool UV filter	
	Hot Pool	Replace hot pool filter, filter pump and jet pump	

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	Item	Scope - Capital Cost	Operational Impact
2.9.5	Hot Pool UV	Replace Hot Pool UV filters	
2.9.6	Chemical Room	Replace Soda Ash agitator & injection pumps	
2.9.7	Chemical Room	Replace chlorine solenoids & sensors	
2.9.8	Chemical Room	Upgrade chlorine room exhaust fan and ductwork	
3.	**Structural**		
3.2		Option 3 from Structural Assessment	
		Replace entire roof system.	
		Upgrade masonry block walls	
		Seismically separate pool facility from Community Centre.	
4.	**Architectural**		
4.1.	Exterior cladding		
		Replace / repair / stain wood cladding throughout (fascias and beam casings)	
		Exterior Painting throughout	
4.2.	Roofing		
4.2.1.		All roofing membranes replaced as part of strucutrla roof upgrade (Item 3.2)	
4.3.	Doors and Windows		
4.3.1.		Replace Steel doors with sill deterioration. Ensure exterior doors have thermally broken frames	
4.3.2.		Remove and infill covered skylights (2)	
4.3.3.		Replace aluminum exit door from wading pool.	
4.4.	Pool Basins		
4.4.1.		Replace pool gutters - cut out exisitng concrete gutters - form and place new gutter system - retile deck around new gutter and 3' down pool wall - approximately 330 linear feet to be replaced	
4.4.2.		Replace pool Bulkhead	
4.5.	Pool ramps & lift		
4.5.1.		Replace deteriorating pool ramps.	
4.5.2.		Remove existing lift and provide new mobile accessible lift	
4.6.	Sauna		
4.6.1.		Renovate Sauna and hot pool area. Add cold plunge pool.	
4.7.	Tile finishes		
4.7.1.		Replace all pool deck and wall tile.	
4.8.	Paint		
4.8.1.		Interior painting	
4.8.2.		Stain interior wood ceilings	
4.8.3.		Exterior painting	
4.9.	Flooring		

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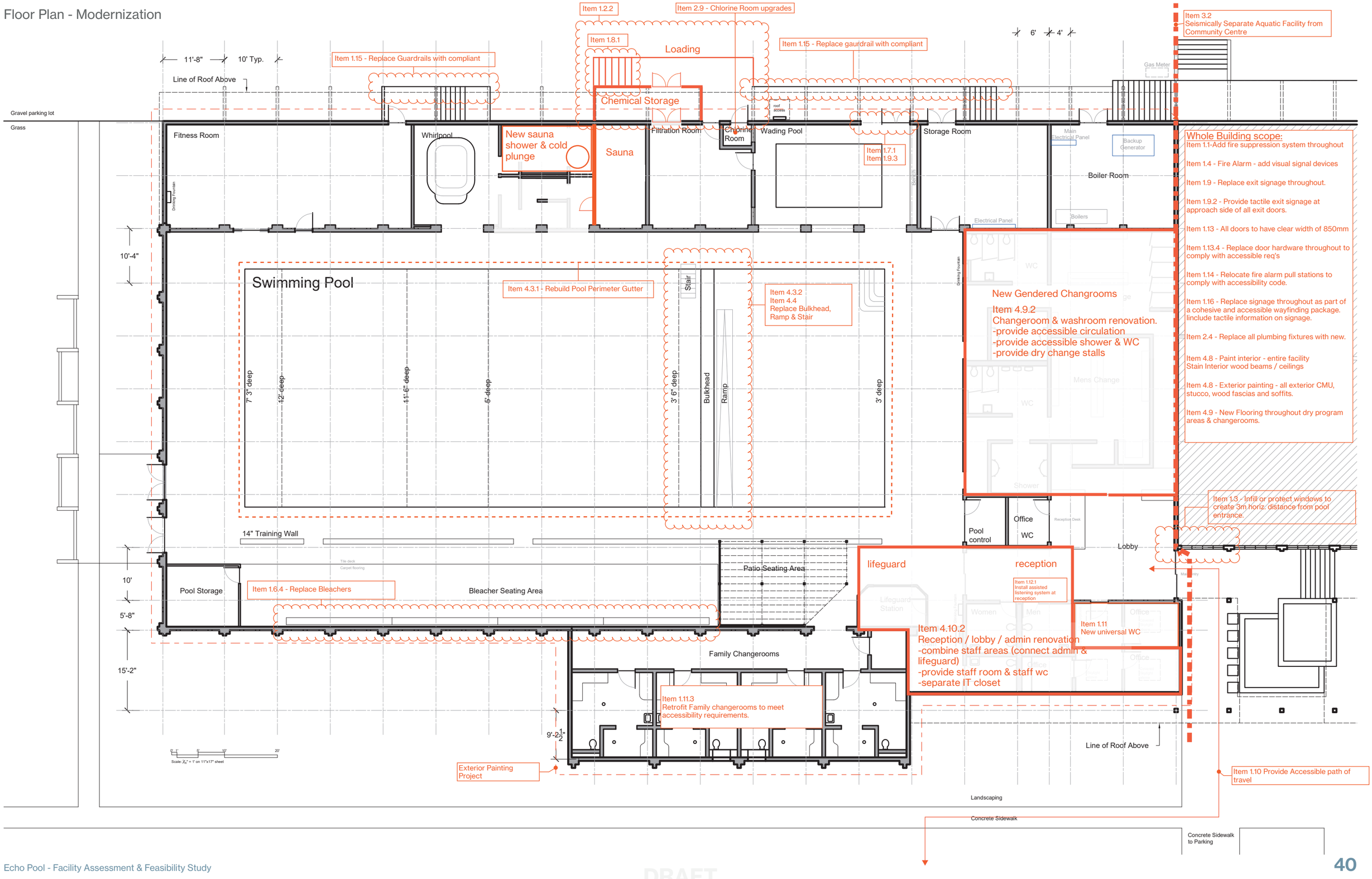
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	Item	Scope - Capital Cost	Operational Impact
4.9.1.		Update flooring throughout reception, admin, washrooms and changerooms	
4.10.	Changerooms / Washroom		
4.10.1.		See Item 1.11 - update to code minimum	
4.11.	Reception / Lobby / Admin		
4.11.1.		Re-configure staff room - provide IT closet	

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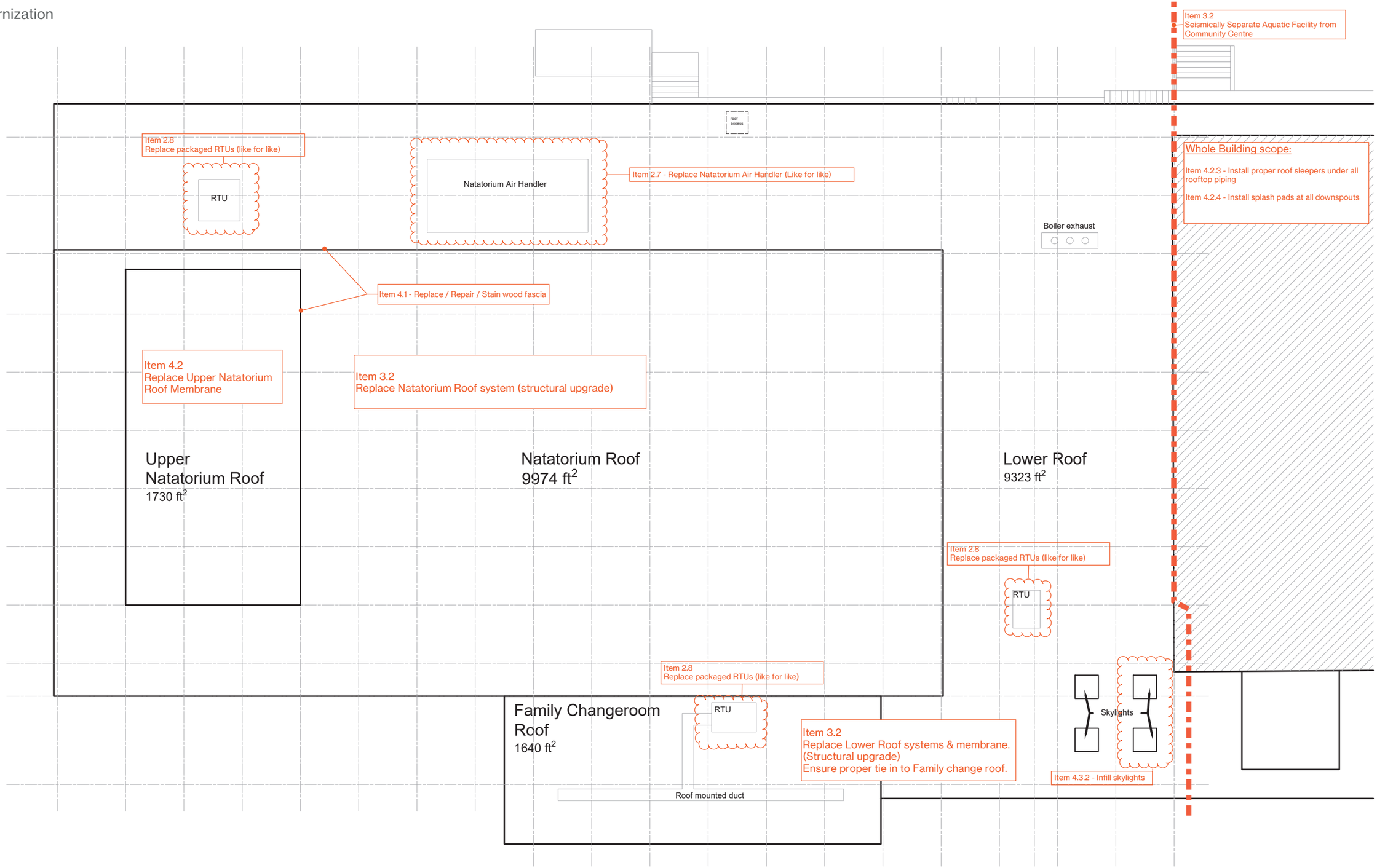
Floor Plan - Modernization



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Roof Plan - Modernization



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Cost Analysis

This section provides a high-level evaluation of the capital and operational costs associated with the two renovation scenarios for the facility. Class D construction cost estimates are provided to support planning-level decision-making, recognizing that detailed design and market conditions may affect final costs.

Methodology

The Class D estimates for the renovation scenarios are prepared to support high-level planning and decision-making. At this stage of project development, the estimates are intended to establish an order-of-magnitude understanding of potential capital investment associated with the Life Extension and Modernization scenarios, rather than to define a fixed or tender-ready budget. The Class D level of accuracy reflects the preliminary nature of the design information available and the inherent uncertainties associated with renovation of an existing facility.

The estimates have been developed using a combination of unit rates, benchmark data from comparable aquatic and recreation facility projects, and allowances for major building systems and components. Costs have been organized by discipline and system, including architectural, structural, mechanical, electrical, pool systems, life safety, and accessibility upgrades. Detailed design information has not been provided, reasonable assumptions have been made based on observed conditions, consultant assessments, and typical construction practices for similar facilities.

Total Cost Summary

The estimated capital construction cost for the Life Extension scenario is approximately $9.66 million, while the Modernization scenario is estimated at approximately $12.06 million, expressed in current dollars at the time of the estimate. The Life Extension scenario represents the lower initial capital investment but delivers a more limited improvement in overall functionality and long-term performance.

Both estimates include allowances for general requirements, contractor fees, and design contingency appropriate to the Class D level of development. The estimates exclude escalation beyond the date of preparation, GST, and several soft costs and project-related allowances, including construction and project contingency. As such, the total figures should be viewed as indicative planning values rather than complete project budgets.

Major Cost Drivers - Life Extension

Pool Systems and Natatorium Infrastructure

One of the most significant cost drivers in the Life Extension scenario is the renewal of critical pool systems and natatorium infrastructure. This includes replacement of the pool gutters, bulkhead components, filtration and treatment systems, and selective replacement of deck and wall tile. These elements require specialized design and construction to complete. Although the Life Extension approach limits upgrades to what is functionally necessary, the age and condition of these systems require substantial investment simply to maintain safe and reliable operation.

Roofing

The replacement and repair of roof membranes represent a major cost driver in the Life Extension scenario. The proposed work includes replacement of both the low and upper roof membranes, repairs to portions of the roof structure, and associated metalwork and detailing. Over the life of the facility, roofing repairs and replacements have been undertaken on an as-needed basis and in conjunction with various additions, resulting in a patchwork of roof systems of differing ages and conditions. The Life Extension scenario therefore proposes replacement of all roofing as a single, coordinated effort, reducing the risk of failures at transitions between roof areas and addressing issues associated with adjoining and overlapping work.

Code Compliance - Life Safety and Accessibility

Life safety and accessibility upgrades are key cost drivers in the Life Extension scenario, as many existing systems and building elements no longer meet current code and regulatory requirements. These upgrades include installation of a fire suppression system, fire alarm improvements, replacement of non-compliant glazing with safety glass, updated exit and wayfinding signage, tactile indicators, new and upgraded guardrails, and modifications to stairs, ramps, and egress components. Accessibility-related interventions also include improvements to paths of travel and selected washroom and changeroom elements. While these measures do not significantly alter the overall function or character of the facility, they are largely mandatory in nature and represent a substantial portion of the capital investment required to maintain safe, compliant operation.

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Major Cost Drivers – Modernization Scenario

Comprehensive Pool and Natatorium Renewal

As with the Life Extension scenario, pool systems and natatorium components are a major cost driver; however, the Modernization scenario expands this scope. Rather than selective replacement and repair, the modernization approach includes more comprehensive renewal of pool deck finishes, wall tile, pool access systems, sauna and hot pool areas, and supporting infrastructure. This broader intervention increases upfront cost but is intended to reduce ongoing maintenance demands and extend the service life.

Structural and Building Envelope Upgrades

Structural interventions and enhanced building envelope upgrades are a key cost driver in the Modernization scenario. This scope includes more extensive roof replacement, targeted structural reinforcement, and improvements intended to enhance long-term durability and seismic performance. Also, the Modernization scenario proposes seismic separation of the aquatic facility from the adjacent community centre, allowing required upgrades to be limited to the pool building itself rather than triggering upgrades to the entire complex.

Changeroom, Washroom, and Interior Space Modernization

The proposed upgrades to changerooms, washrooms, and administration spaces represent higher costs than proposed in the Life Extension scenario. These improvements address outdated layouts, limited privacy, accessibility shortcomings, and operational inefficiencies. Reconfiguration of these spaces is meant to not only address code compliance but provide noticeable improvements in user experience and functionality.

Exclusions and Contingencies

The cost estimate prepared for the feasibility study scenarios is intended to provide an order of magnitude of potential capital investment and, as such, includes a number of important exclusions. These exclusions are typical for a conceptual estimate and reflect the preliminary level of design development and the limited ability to fully quantify all project risks at this stage. Items excluded from the estimate include, but are not limited to, escalation, GST, financing costs, legal and insurance costs, development and permit fees, surveying and testing, client-side project management, commissioning, and certain consultant fees. In addition, allowances for construction phasing, off-hours work, temporary facilities, and costs associated with environmental contaminants have not been fully captured.

The estimate also excludes several site-related and operational considerations that may become relevant as the project is further defined. These include soft landscaping, site furniture and signage beyond limited scope items, traffic studies, and broader public realm improvements. Costs associated with maintaining pool operations during construction, including temporary closures, partial shutdowns, or the provision of alternative facilities, are not fully reflected. For an active aquatic facility, these factors can materially affect construction sequencing, duration, and cost.

Given the age of the Echo Pool and the invasive nature of many of the proposed interventions, there is a heightened risk of encountering unforeseen conditions during construction. These may include concealed deterioration of structural elements, undocumented modifications, hidden water damage, corrosion related to the humid natatorium environment, and the presence of hazardous materials not identified during initial reviews. In aquatic facilities in particular, exposure to moisture and chemicals can accelerate degradation in ways that are not visible without extensive demolition, increasing the likelihood of scope growth once construction begins.

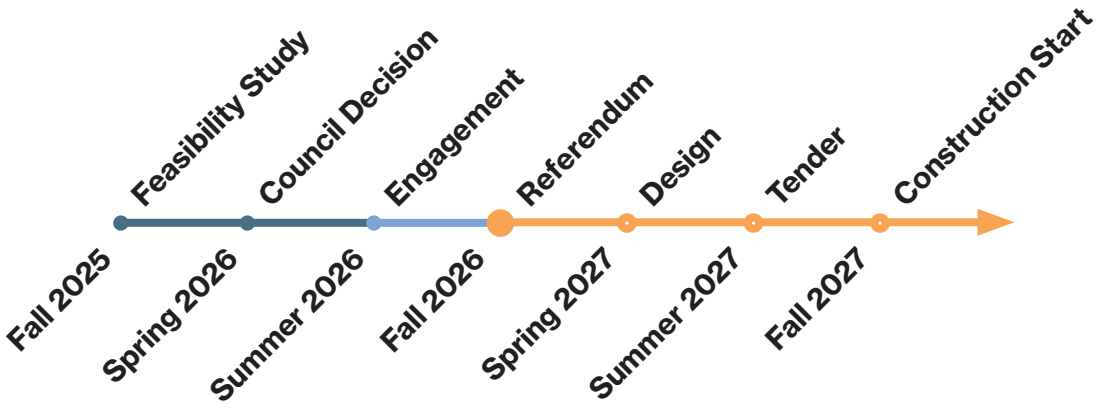
For these reasons, it is recommended that a significant project and construction contingency be applied when planning for either the Life Extension or Modernization scenario. While the estimate includes design contingencies appropriate to conceptual costing, additional contingency at the project level is necessary to account for unknown conditions, market volatility, contractor pricing risk, and operational constraints associated with working within an existing, aging facility. Without adequate contingency, there is a high risk that actual project costs could exceed initial budget allocations as the design is refined and construction proceeds.

In summary, the excluded items and inherent uncertainties associated with renovating an aging aquatic facility underscore the importance of conservative financial planning. Incorporating a robust project and construction contingency at this stage will better position the owner to manage risk, make informed decisions as scope is refined, and avoid unplanned funding pressures during later phases of the project.

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Proposed Timeline



Current & Future Milestones

Summary and Recommendations

The following table provides a high-level comparison of the renovation scenarios, highlighting key differences in capital cost, scope, and long-term outcomes. It illustrates how the Life Extension scenario focuses on targeted, code-driven interventions to extend the facility's service life in the short to medium term, while the Modernization scenario involves a higher upfront investment to deliver more comprehensive renewal and reduced long-term risk. The table is intended to support informed decision-making by clearly linking differences in cost to differences in performance, longevity, and future capital requirements.

Comparative Summary – Cost and Scope

Category	Life Extension Scenario	Modernization Scenario
Estimated Capital Cost (Class D)	~$9.66 million	~$12.06 million
Primary Objective	Address critical deficiencies and extend remaining service life.	Same as Life Extension, with more comprehensive renewal to enhance operations. Aims to stay within the same footprint as existing building.
Scope Approach	Targeted repairs and replacements focused on safety, code compliance, and asset condition.	Broader upgrades addressing functionality, durability, and user experience
Pool & Natatorium Systems	Selective replacement of aging systems and components necessary for continued operation.	More comprehensive renewal of pool systems, deck finishes, and natatorium components.
Building Envelope	Replacement of roof membranes and localized envelope repairs	More extensive roof and envelope upgrades for long-term durability and cohesion.
Structural Scope	Limited to necessary repairs and code-related upgrades.	Includes targeted structural reinforcement and seismic separation from community centre.
Life Safety & Accessibility	Code-minimum upgrades to fire protection, egress, and accessibility	Expanded and more integrated life safety and accessibility improvements.
Changerooms & Interior Spaces	Minimal reconfiguration; upgrades limited to code compliance, modification of existing.	Upgraded layouts, finishes, and fixtures to improve functionality and comfort.
Mechanical & Electrical Systems	Targeted system replacements and allowances	More robust system upgrades supporting long-term reliability
Estimated Service Life Extension	20 years	20 years
Operational Risk	Moderate ongoing risk due to some retained aging systems	Reduced long-term risk through comprehensive renewal
Future Capital Needs	Higher likelihood of additional major reinvestment	Lower likelihood of near-term major capital intervention
Overall Risk Profile	Lower initial cost, higher long-term uncertainty	Higher initial cost, lower long-term uncertainty

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Major Cost Drivers vs Value to the Community

The major cost drivers for both the renovation scenarios are largely associated with addressing existing deficiencies in the facility rather than introducing new amenities or significantly enhancing the user experience. A substantial portion of the capital investment is directed toward replacing aging building systems, renewing pool and natatorium infrastructure, upgrading the building envelope, and bringing the facility into closer alignment with current life safety, accessibility, and building code requirements. These interventions are essential to ensure the facility remains safe, functional, and operational, but they are largely corrective in nature and often invisible to users.

Although these investments provide critical improvements, they would not substantially change how the facility is used or perceived by the community on a day-to-day basis. Similarly, life safety and accessibility improvements—while vitally important from a regulatory and equity standpoint—tend to improve baseline functionality rather than deliver noticeable experiential enhancements for most users.

As a result, the value generated by these investments is best understood in terms of preserving community access to an essential recreational service rather than expanding or enriching the program offering. The renovations proposed would reduce operational risks and extend the useful life of a well-used community asset, but do not necessarily address the evolving needs of the city and region. The modernization scenario was limited to opportunities within the footprint of the existing building. In order to properly modernize and provide a facility for future generations, addition to the building would need to be considered.

This dynamic highlights an important consideration for decision-makers: significant capital investment in aging infrastructure does not necessarily equate to tangible improvement in user experience. Instead, much of the value delivered by the proposed renovations lies in stabilization, risk mitigation, and stewardship of a community asset.

Operational implications during construction

The scale and complexity of work contemplated under both the renovation scenarios would have significant operational implications for the Echo Pool. Given the extent of the renovations, it is assumed that the aquatic facility would need to be fully closed for the duration of construction. The proposed interventions are invasive, and affect critical pool and building systems, making phased construction or partial operation impractical.

A full facility closure of up to approximately one year would have notable impacts on programs, staff, and the broader community. Regular aquatic programming, including public swim, lessons, fitness activities, and therapeutic uses, would be temporarily displaced. Staffing implications would also need to be managed, including redeployment, temporary layoffs, or modified roles. From an operational standpoint, a complete closure may provide construction efficiencies and reduce overall project risk, but it would require careful advance planning, clear communication with users, and coordination with regional partners to mitigate service gaps during the construction period.

Summary of Findings

Given that both scenarios focus primarily on addressing deficiencies, the perception is that the required investment is corrective in nature, responding to regulatory requirements rather than enhancing or expanding the services offered to the community.

Based on these findings, the study points to limited strategic value in proceeding with a comprehensive renovation of the Echo Pool in its current form. The required investment is substantial, the risks inherent to renovating an aging aquatic facility are high, and the resulting outcome would largely preserve the status quo rather than deliver an improved or expanded facility. These factors suggest that alternative approaches—such as a more extensive reconfiguration and addition, or long-term planning for replacement—may offer a more effective and sustainable path forward for meeting community needs.

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Estimate Summary Table - Life Extension & Modernization

	Life Extension Scenario	Modernization Scenario
Estimated Capital Cost (Class D)	$ 9,659,900	$12,058,900
2026 Escalation (5%)	$ 10,142,895	$ 12,661,845
2027 Escalation (4.5%)	$ 10,599,325.28	$ 13,231,628.03
Project and Construction Contingency (25%) *	$ 13,249,156.59	$ 16,539,535.03
Estimated annual borrowing costs on principal, 3.73% over 30 years	$ 494,193.54	$ 616,924.66
Operating Budget Estimate **	$ 2,200,000	$ 2,200,000
Estimated Revenue **	$ 200,000	$ 200,000
Taxable portion of operations **	$ 2,000,000	$ 2,000,000
Total Estimated Annual Aquatic Centre Costs	$ 2,494,193.54	$ 2,616,924.66

*Project and Constuction Continency percentage is taken from the 2024 Aquatic Centre Feasibility Study, for comparison purposes only. The nature of a renovation project would likely require a higher contingency.

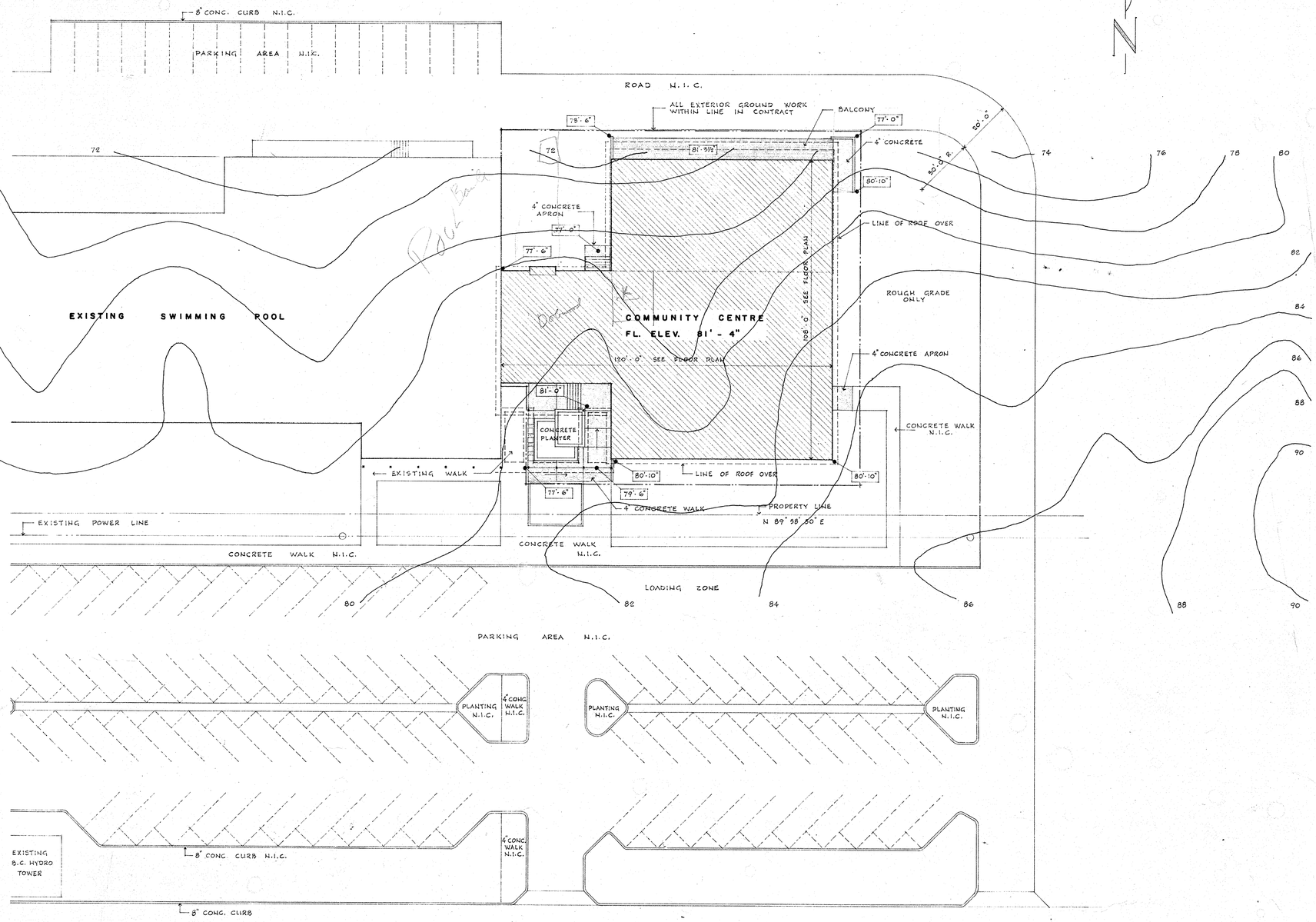
** Estimated operating cost and revenue amounts are taken from the 2024 Aquatic Centre Feasibility Study, prepared by hcma Architecture + Design & GDH Solutions.

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Appendix A - Reference Drawings

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INDEX OF DRAWINGS

ARCHITECTURAL DRAWINGS

1. - SITE PLAN
2. - MAIN FLOOR PLAN
3. - ELEVATIONS
4. - SECTIONS
5. - SECTIONS AND DETAILS
6. - WALL SECTIONS
7. - MISCELLANEOUS DETAILS
8. - ELEVATIONS AND DETAILS
9. - MILLWORK DETAILS
10. - MISCELLANEOUS DETAILS AND FINISH SCHEDULES

STRUCTURAL DRAWINGS

S-1 - FOUNDATION PLAN
S-2 - FLOOR PLAN
S-3 - ROOF FRAMING PLAN
S-4 - SECTIONS AND DETAILS
S-5 - SECTIONS AND DETAILS

ELECTRICAL DRAWINGS

E-1 - SITE PLAN AND SCHEDULES
E-2 - FLOOR PLAN AND DETAILS

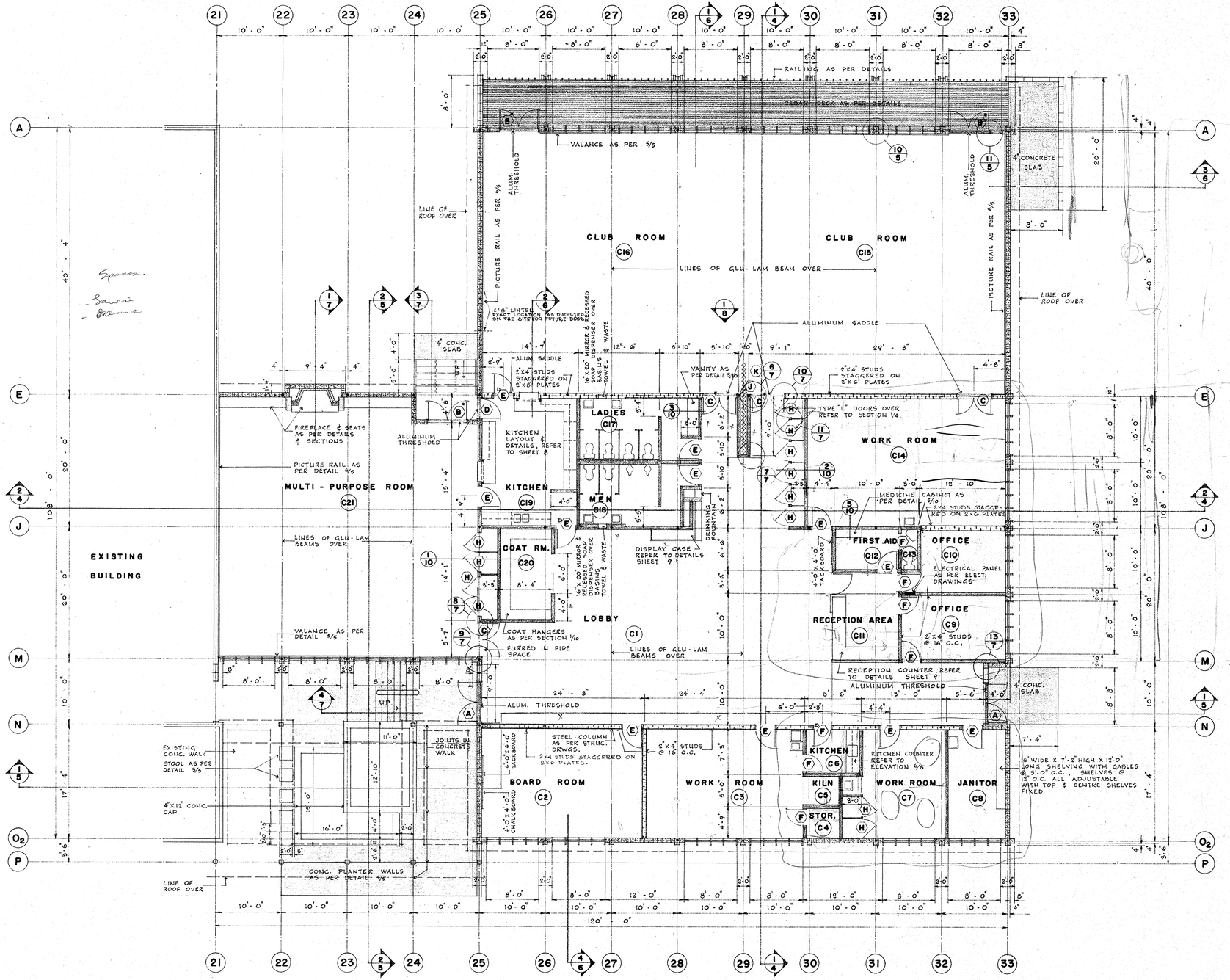
MECHANICAL DRAWINGS

M-1 - SITE PLAN, DETAILS AND SCHEDULES
M-2 - PLUMBING AND DRAINAGE, DETAILS AND SCHEDULE
M-3 - HEATING, VENTILATING AND DETAILS

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ARCHITECTS
3 – 321 Sixth Street New Westminster, B.C.

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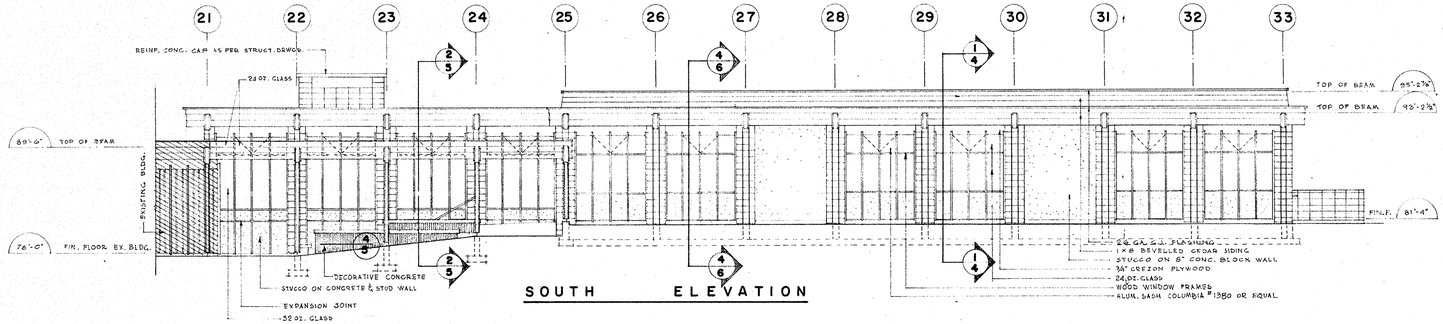
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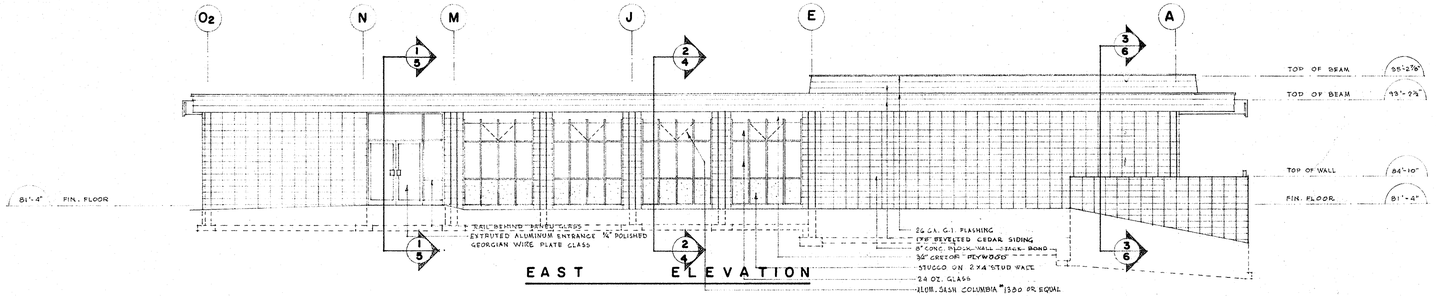
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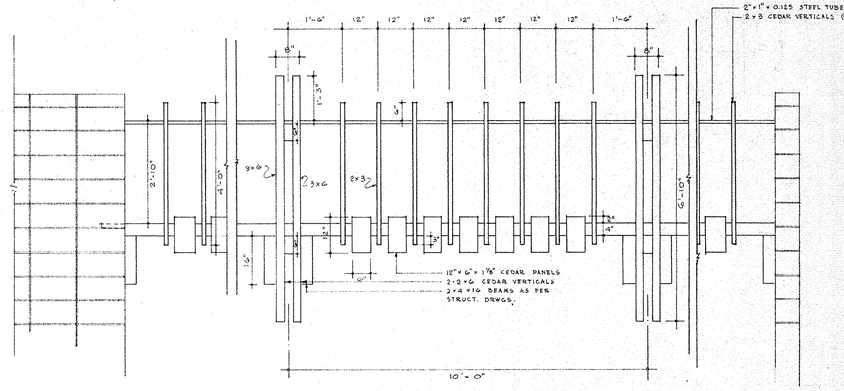
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SOUTH ELEVATION

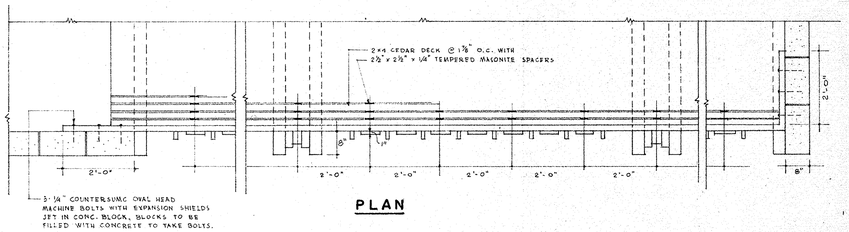


EAST ELEVATION



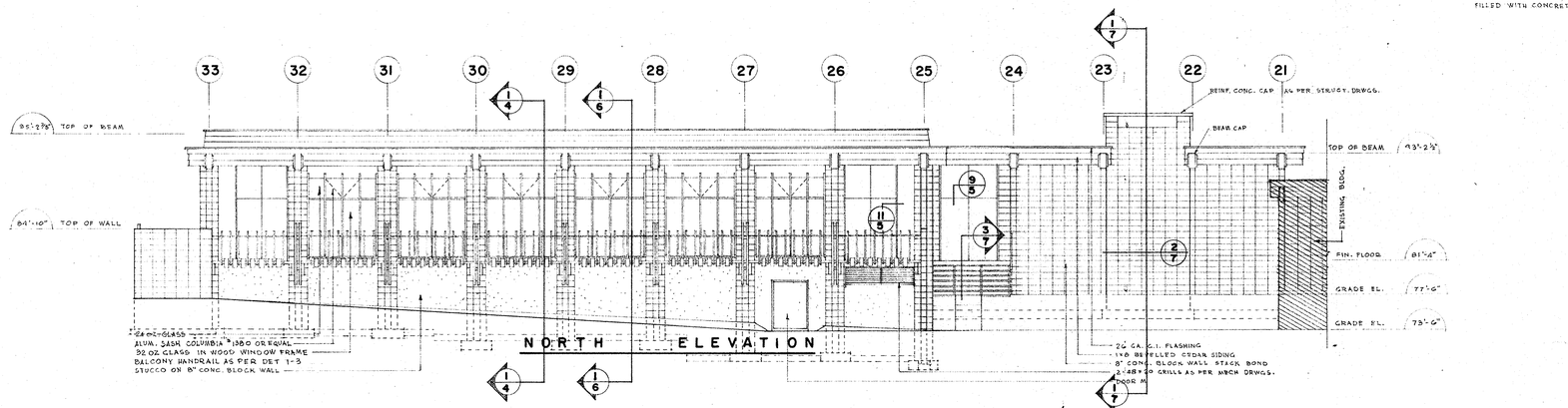
BALCONY HANDRAIL ELEVATION - DETAIL 1/3

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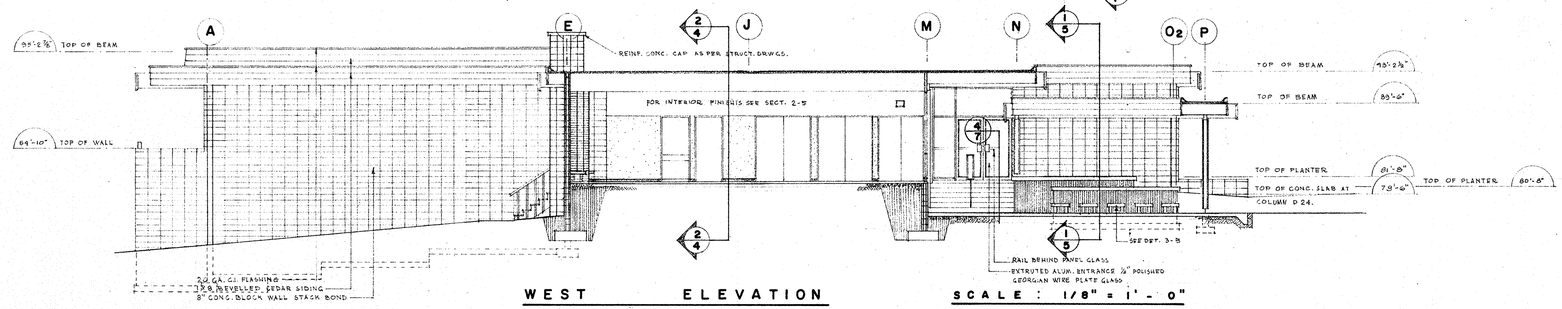


PLAN

3-¼" COUNTERSUNG OVAL HEAD MACHINE BOLTS WITH EXPANSION SHIELDS SET IN CONC. BLOCK, BLOCKS TO BE FILLED WITH CONCRETE TO TAKE BOLTS.



NORTH ELEVATION



WEST ELEVATION

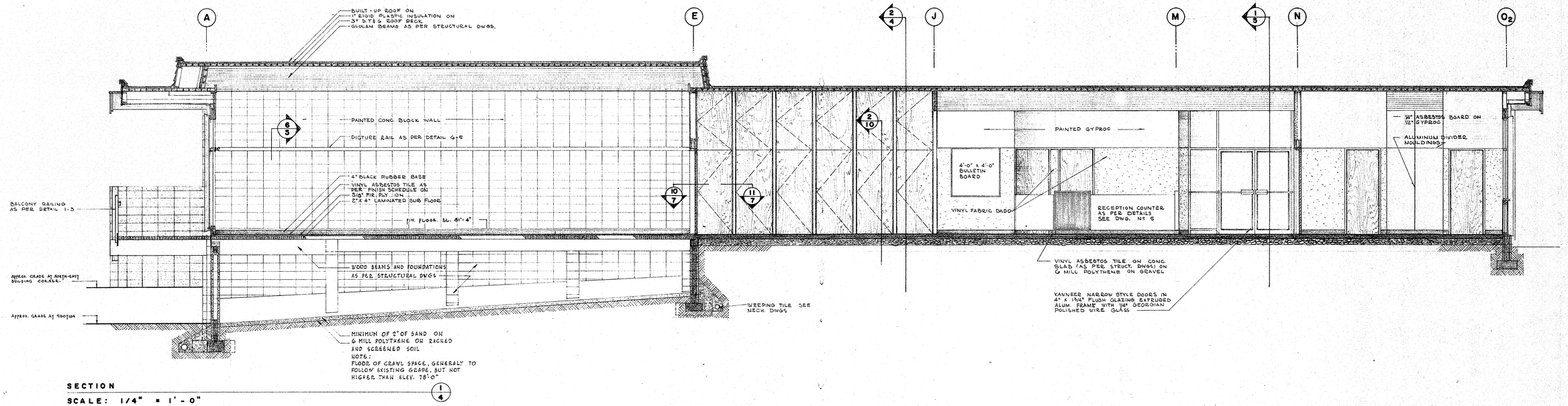
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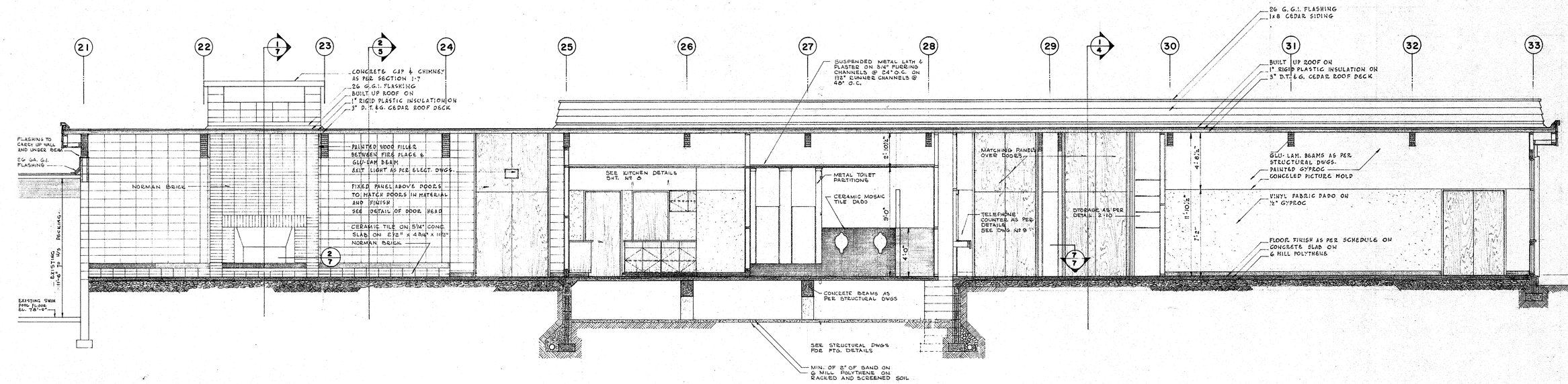
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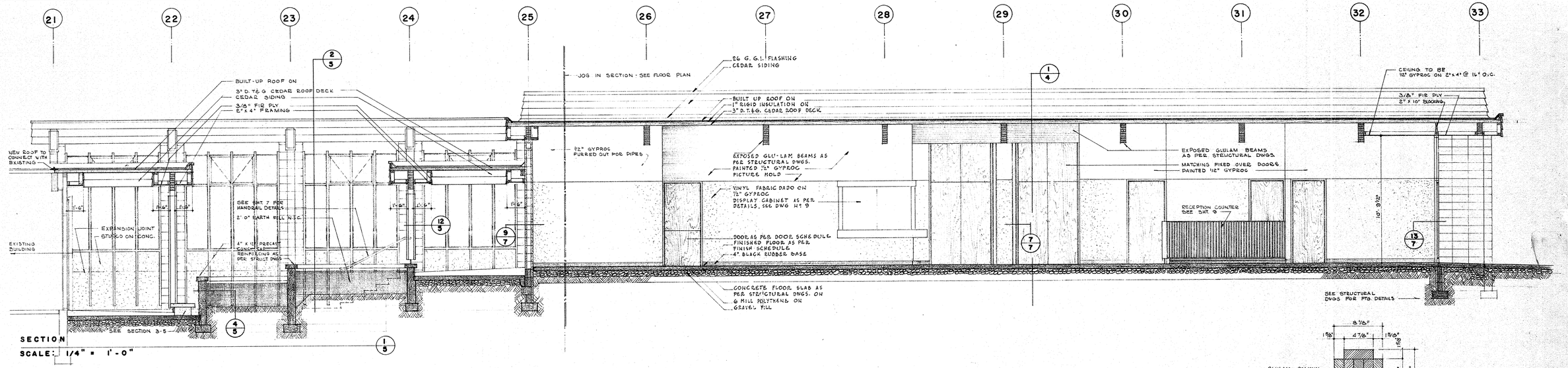


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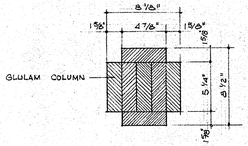
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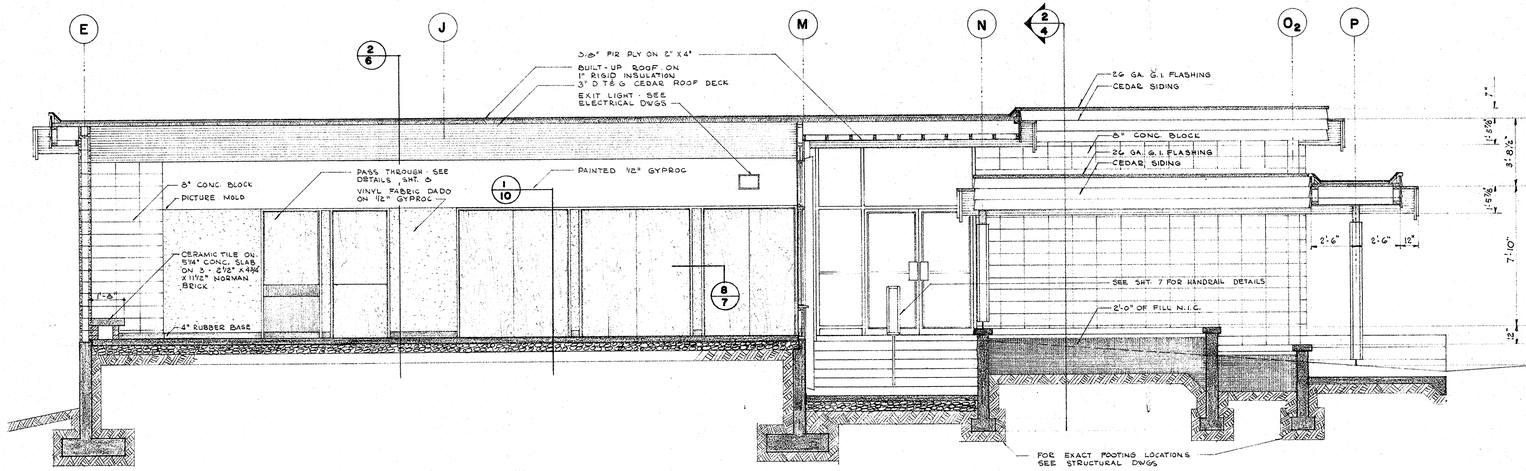
SECTION

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SECTION 12/5

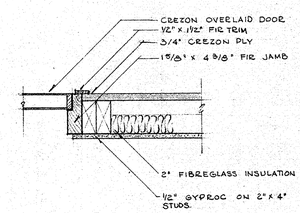
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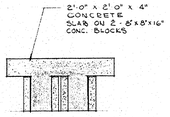
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JAMB DETAIL 11/5

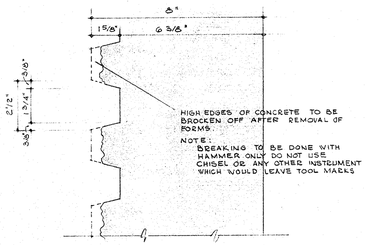
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TYPICAL SECTION OF CONCRETE STOOL AT MAIN ENTRANCE

3/5

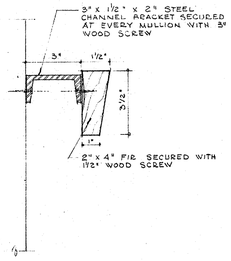
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TYPICAL SECTION OF DECORATIVE CONCRETE PLANTER WALL

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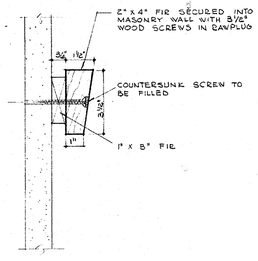
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CURTAIN VALANCE FOR CLUB ROOM AND MULTI - PURPOSE ROOM

5/5

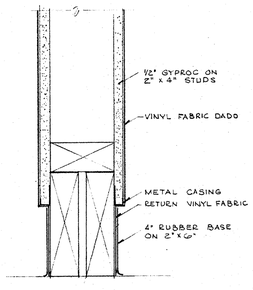
SCALE: 3" = 1'-0"



PICTURE RAIL FOR CONCRETE BLOCK WALLS IN CLUB ROOMS AND MULTI - PURPOSE RM.

6/5

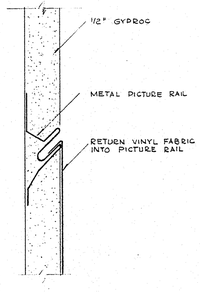
SCALE: 3" = 1'-0"



TYPICAL RUBBER BASE DETAIL FOR ALL STUD PARTITIONS

7/5

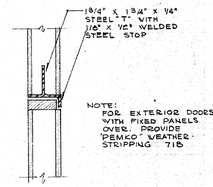
SCALE: 3" = 1'-0"



TYPICAL CONCEALED PICTURE RAIL FOR VINYL FABRIC DADOS

8/5

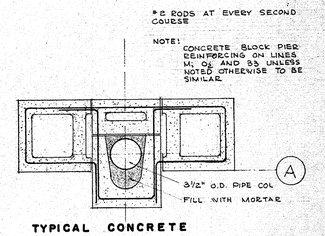
SCALE: 1" = 1'-0"



TYPICAL DOOR HEAD FOR ALL DOUBLE DOORS WITH FIXED PANELS

9/5

SCALE: 3" = 1'-0"



TYPICAL CONCRETE BLOCK PILASTER

10/5

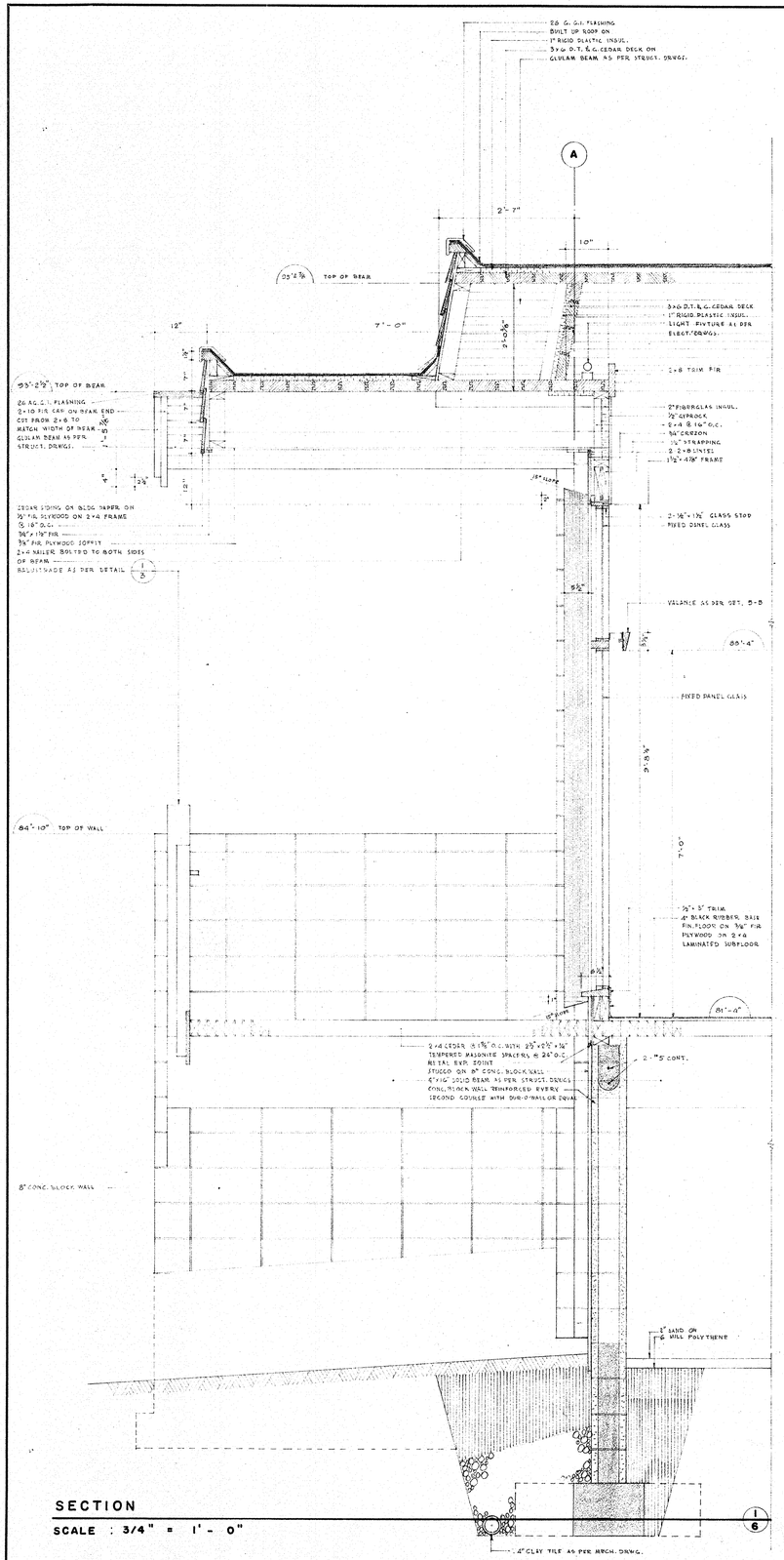
SCALE: 1 1/2" = 1'-0"

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NUCHES DWG'S FORM 0041

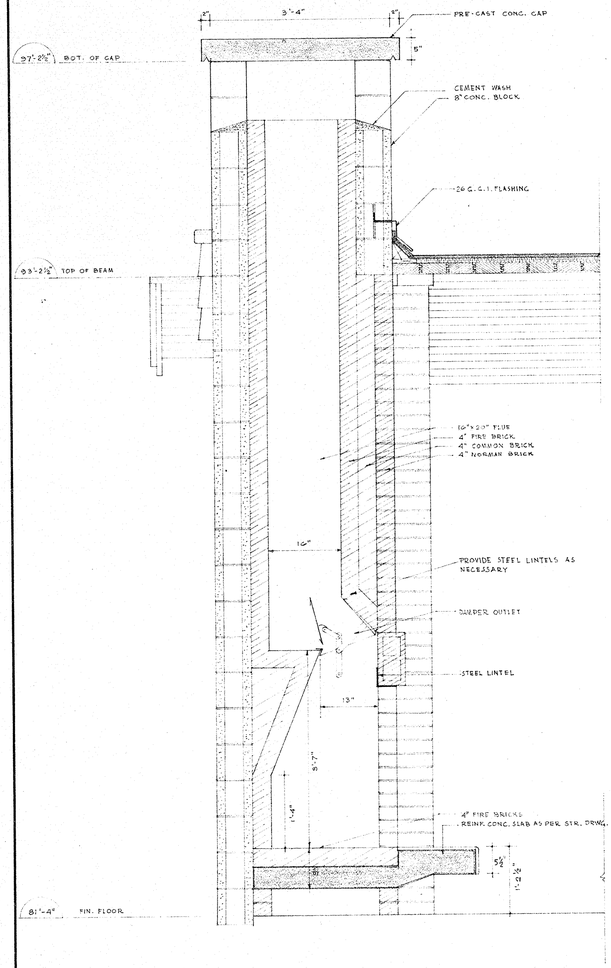


COMMUNITY CENTRE FOR PORT ALBERNI B.C.

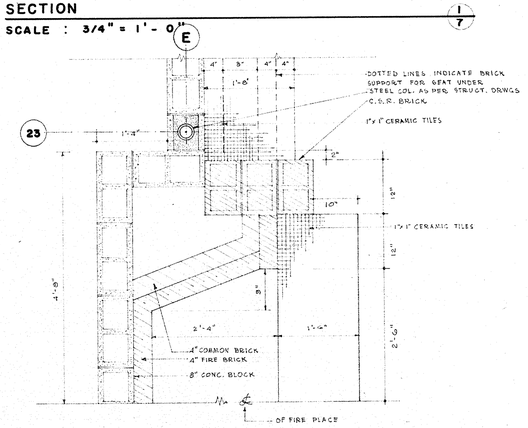
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6616A	DEC.66	V.C.	U.P.H.	6	10

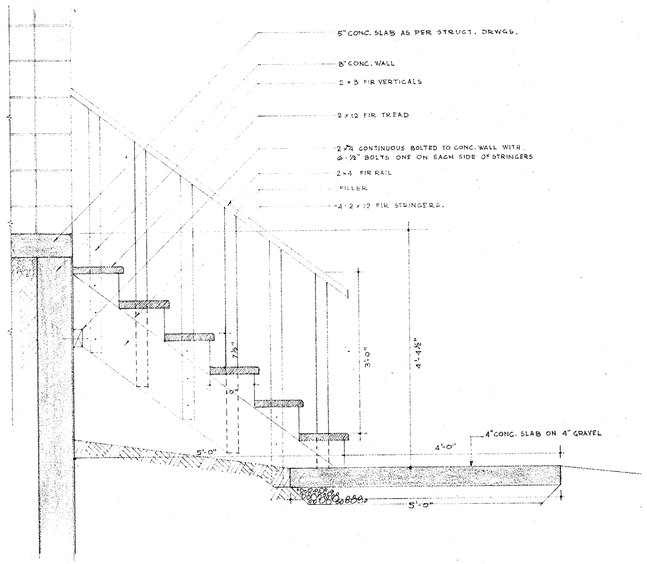
HUGHES DWENG FORM 6041



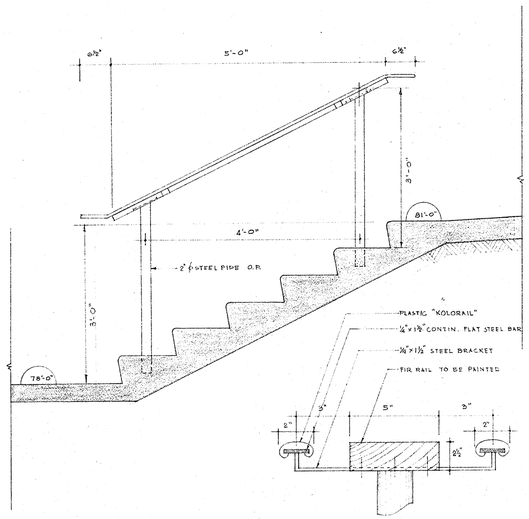
SECTION
SCALE : 3/4" = 1'-0" (1/7)



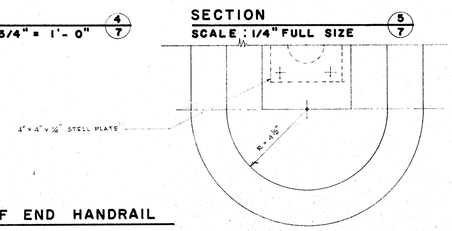
PLAN SECTION (2/7)



SECTION
SCALE : 3/4" = 1'-0" (3/7)

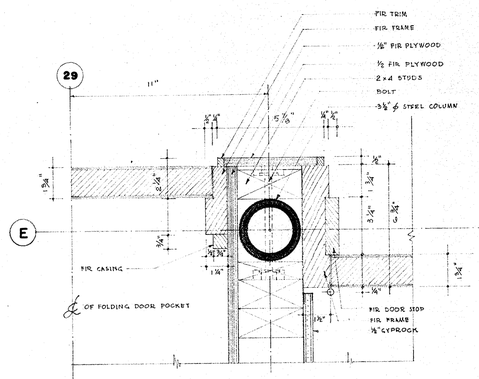


SECTION
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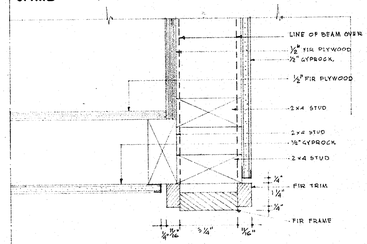


SECTION
SCALE : 1/4" FULL SIZE (5/7)

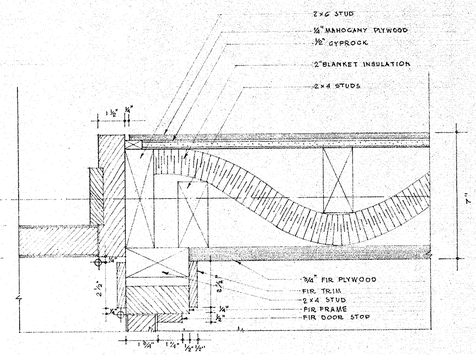
PLAN OF END HANDRAIL



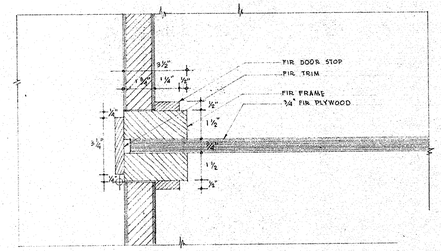
SECTION SCALE : 1/4" FULL SIZE (6/7)
TYPICAL FOLDING DOOR POCKET DOOR JAMB



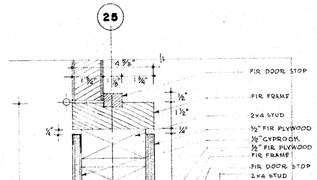
SECTION SCALE : 1/4" FULL SIZE (7/7)
CORNER OF END OF POCKET



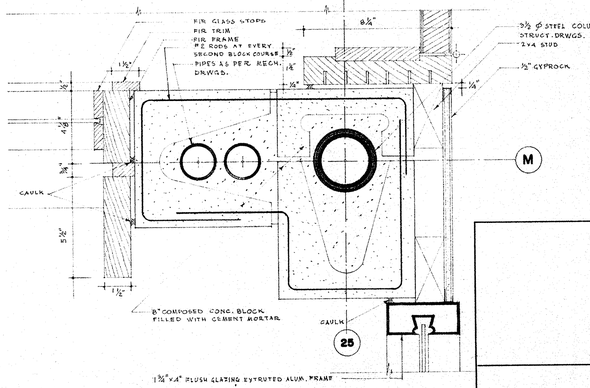
SECTION SCALE : 1/4" FULL SIZE (10/7)
TYPICAL DOOR JAMB LOBBY C-1 TO CLUB R.



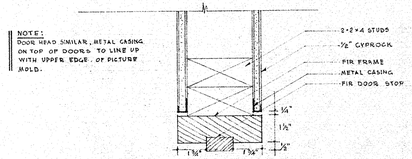
SECTION SCALE : 1/4" FULL SIZE (11/7)
TYPICAL DOOR JAMB TO STORAGE



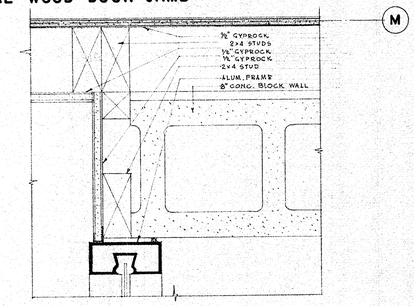
SECTION SCALE : 1/4" FULL SIZE (8/7)
DOOR JAMB MULTI PURPOSE R. C-21 TO LOBBY C-1



SECTION SCALE : 1/4" FULL SIZE (9/7)



SECTION SCALE : 1/4" FULL SIZE (12/7)
TYPICAL WOOD DOOR JAMB



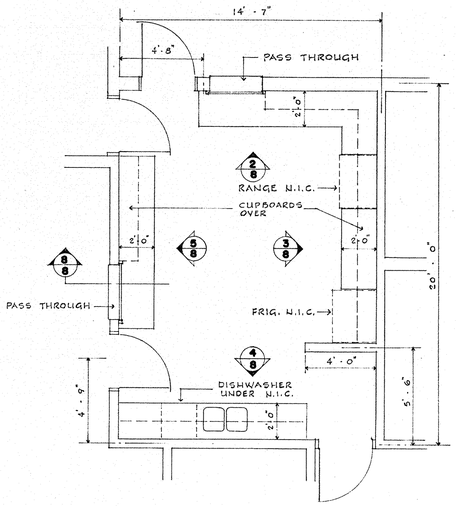
SECTION SCALE : 1/4" FULL SIZE (13/7)
DOOR JAMB FROM LOBBY C-1 TO OUTSIDE

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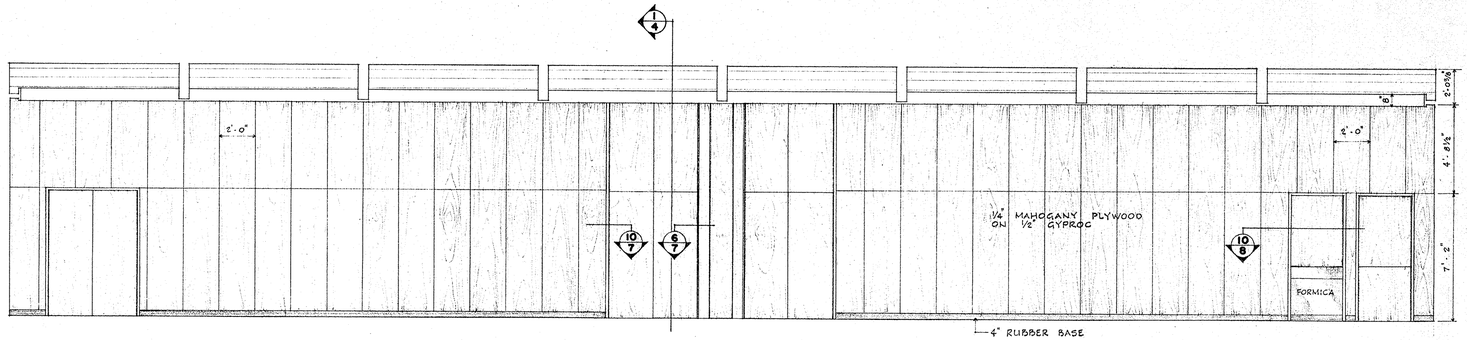
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HUGHES GWENO FORM 2041



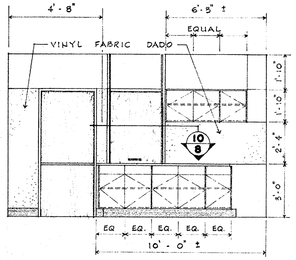
KITCHEN C19 PLAN

SCALE 1/4" = 1' - 0"



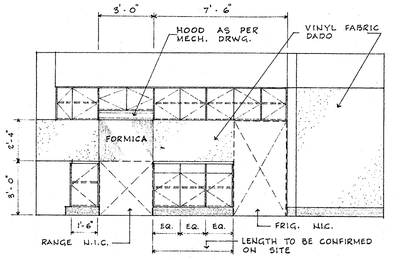
ELEVATION CLUB ROOMS C15, C16 SOUTH WALL 1/8

SCALE 1/4" = 1' - 0"



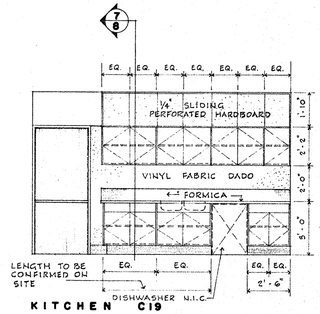
KITCHEN C19 ELEVATION 2/8

SCALE 1/4" = 1' - 0"



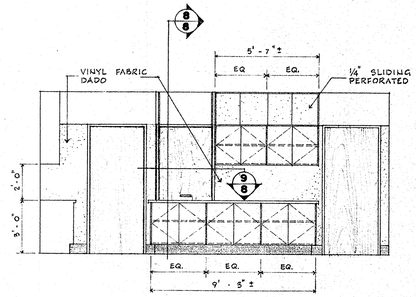
KITCHEN C19 ELEVATION 3/8

SCALE 1/4" = 1' - 0"



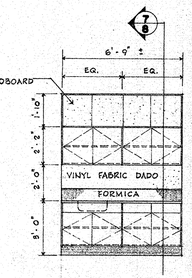
KITCHEN C19 ELEVATION 4/8

SCALE 1/4" = 1' - 0"



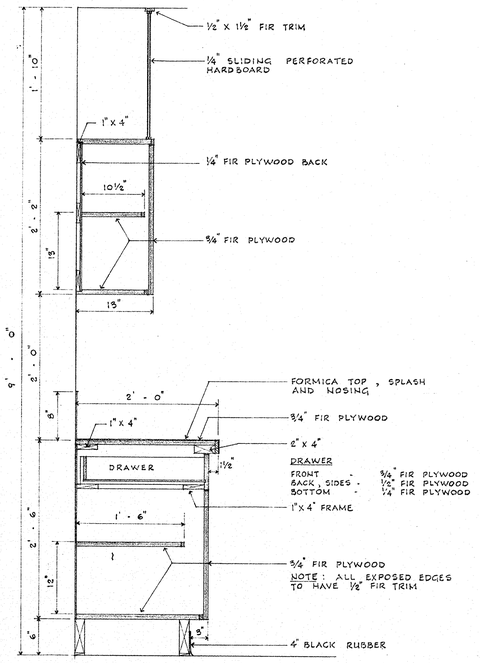
KITCHEN C19 ELEVATION 5/8

SCALE 1/4" = 1' - 0"



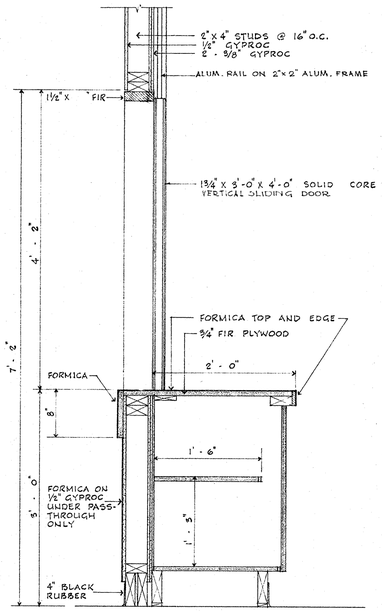
KITCHEN C6 ELEVATION 6/8

SCALE 1/4" = 1' - 0"



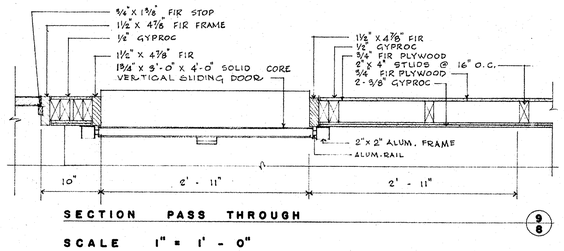
TYPICAL SECTION 7/8

SCALE 1" = 1' - 0"



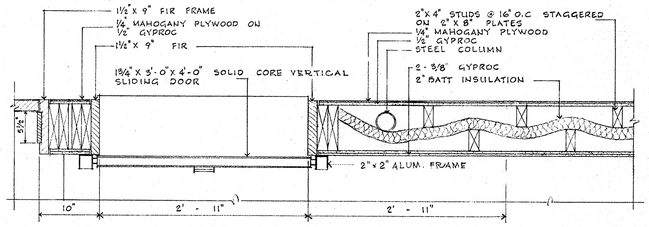
SECTION PASS THROUGH 8/8

SCALE 1" = 1' - 0"



SECTION PASS THROUGH 9/8

SCALE 1" = 1' - 0"



SECTION PASS THROUGH 10/8

SCALE 1" = 1' - 0"

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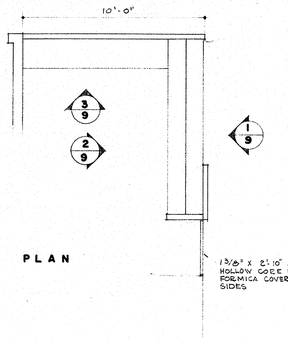
ARCHITECTS

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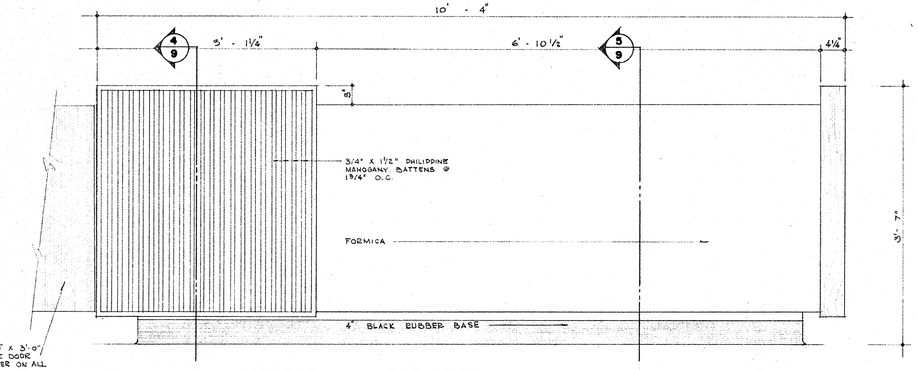
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COMMUNITY CENTRE FOR PORT ALBERNI B.C.

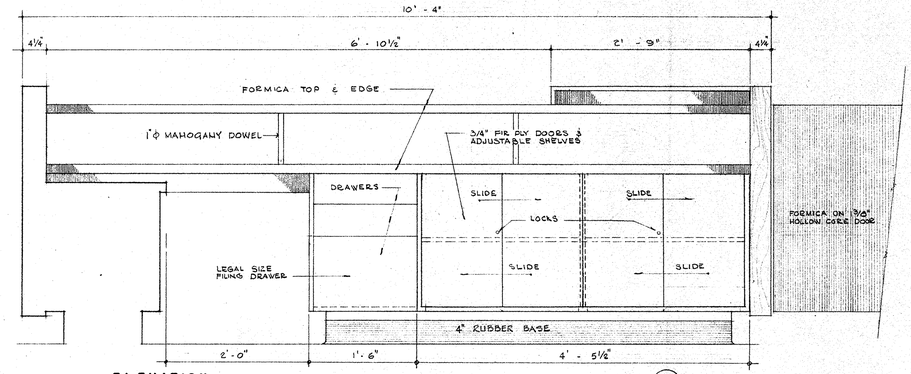
HUGHES DYKENS FORM 2041



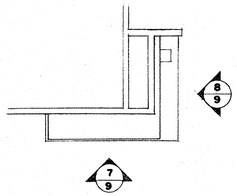
PLAN



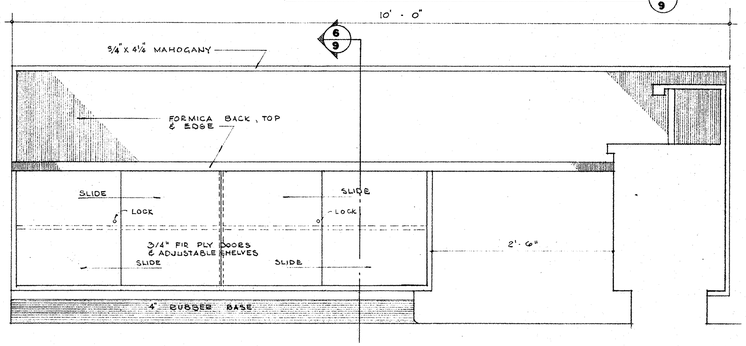
RECEPTION COUNTER ELEVATION 1/9



ELEVATION 2/9

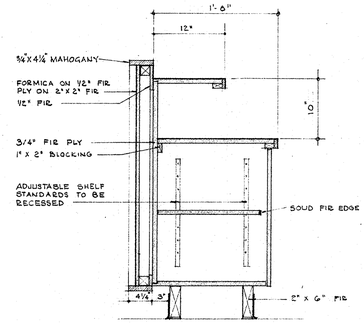


PLAN

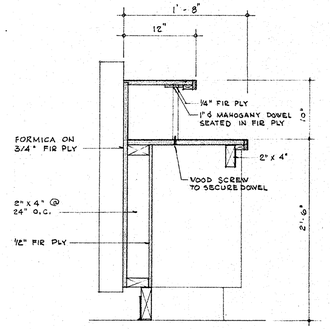


ELEVATION 3/9

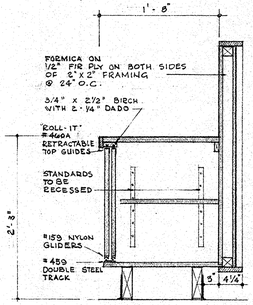
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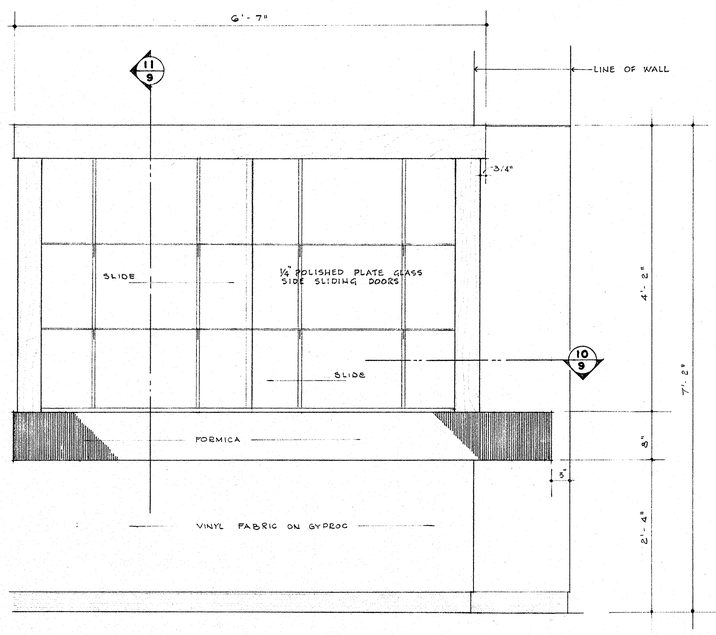
SECTION 4/9



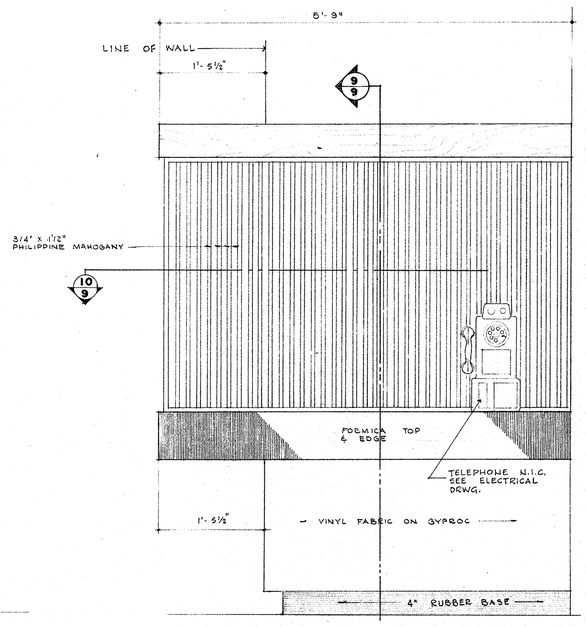
SECTION 5/9



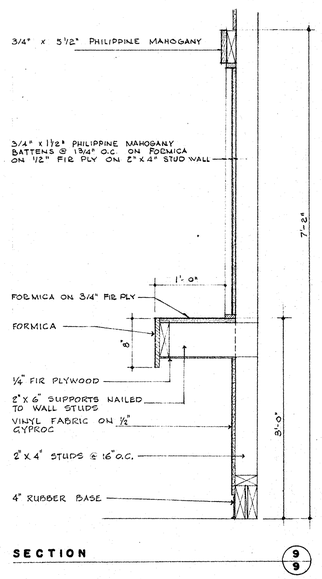
SECTION 6/9



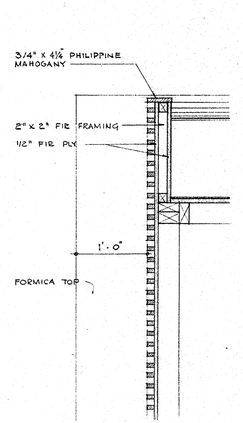
DISPLAY CASE ELEVATION 7/9



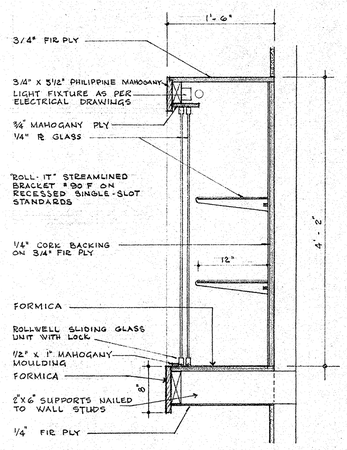
ELEVATION 8/9



SECTION 9/9



SECTION 10/9

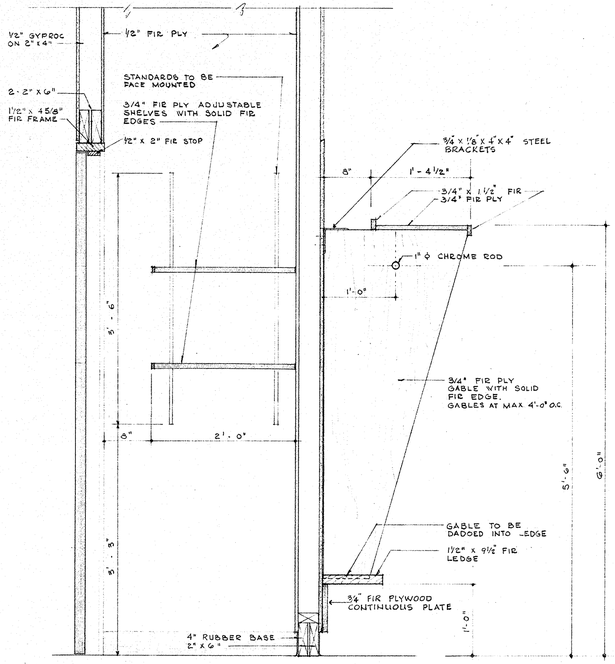


SECTION 11/9

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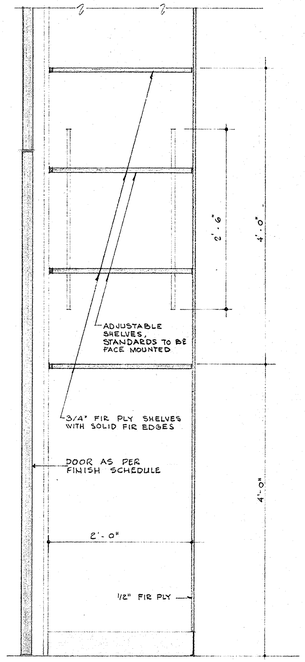
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SECTION (1/10)

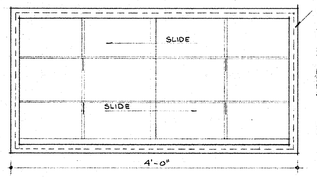
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MULTI - PURPOSE ROOM STORAGE AND TYPICAL COAT HANGER



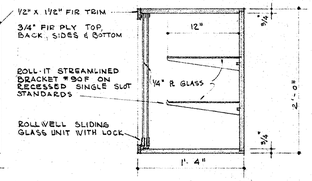
SECTION (2/10)

LOBBY C1 - STORAGE

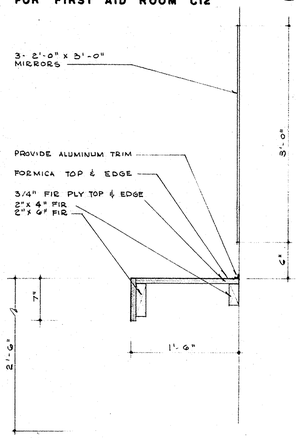


MEDICINE CABINET (4/10)

FOR FIRST AID ROOM C12



SECTION (5/10)



SECTION (3/10)

VANITY FOR LADIES WASHROOM C17

FINISH SCHEDULE

ROOM	NO.	FLOOR		BASE	WALLS		CEILING		REMARKS
		MATERIAL	FINISH		MATERIAL	FINISH	MATERIAL	FINISH	
LOBBY	C1	.080 VINYL ASBESTOS TILE	WAX & POLISH	4" BLACK RUBBER	1/2" GYPROC	2 COATS LATEX	EXPOSED CEDAR DECK	2 COATS STAIN	7'-2" HIGH VINYL FABRIC DADO. SEE SECTIONS AND DETAILS FOR MISCELLANEOUS FINISHES
BOARD ROOM	C2	DO.	DO.	DO.	1/2" GYPROC EXPOSED CONC. BLOCK	2 COATS LATEX ON GYPROC 2 COATS EXT. LATEX ON BLOCK	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALLS ONLY
WORK ROOM	C3	DO.	DO.	DO.	DO.	DO.	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALLS ONLY
STORAGE ROOM	C4	DO.	DO.	DO.	DO.	DO.	DO.	DO.	
KILN	C5	DO.	DO.	DO.	1/4" ASBESTOS BOARD ON 1/2" GYPROC	———	DO.	DO.	ASBESTOS BOARD TO HAVE ALUMINUM MOULDINGS FOR ALL JOINTS AND EDGES
KITCHEN	C6	DO.	DO.	DO.	1/2" GYPROC	1 UNDERCOAT 2 COATS SEMI-GLOSS ENAMEL	SUSPENDED METAL LATH & PLASTER	1 UNDERCOAT 2 COATS SEMI-GLOSS ENAMEL	CEILING HEIGHT 9'-0" 7'-2" HIGH VINYL FABRIC DADO
WORK ROOM	C7	DO.	DO.	DO.	1/2" GYPROC EXPOSED CONC. BLOCK	2 COATS LATEX ON GYPROC 2 COATS EXT. LATEX ON BLOCK	EXPOSED CEDAR DECK	2 COATS STAIN	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALL ONLY
JANITOR	C8	DO.	DO.	DO.	DO.	DO.	DO.	DO.	
OFFICE	C9	DO.	DO.	DO.	DO.	DO.	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALL ONLY
OFFICE	C10	DO.	DO.	DO.	DO.	DO.	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALL ONLY
RECEPTION AREA	C11	DO.	DO.	DO.	1/2" GYPROC	2 COATS LATEX	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO
FIRST AID	C12	DO.	DO.	DO.	DO.	DO.	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO
WASHROOM	C13	DO.	DO.	DO.	DO.	1 UNDERCOAT 2 COATS SEMI-GLOSS ENAMEL	SUSPENDED METAL LATH & PLASTER	1 UNDERCOAT 2 COATS SEMI-GLOSS ENAMEL	7'-2" HIGH VINYL FABRIC DADO CEILING 9'-0" HIGH
WORK ROOM	C14	DO.	DO.	DO.	1/2" GYPROC EXPOSED CONC. BLOCK	2 COATS LATEX ON GYPROC 2 COATS EXT. LATEX ON BLOCK	EXPOSED CEDAR DECK	2 COATS STAIN	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALL ONLY
CLUB ROOM	C15	DO.	DO.	DO.	1/2" GYPROC, EXPOSED BLOCK & MAHOGANY PLYWOOD	DO.	DO.	DO.	MAHOGANY TO BE FINISHED WITH 3 COATS OF URITANE VARNISH, SEE DETAILS FOR MISCELLANEOUS FINISHES
CLUB ROOM	C16	DO.	DO.	DO.	DO.	DO.	DO.	DO.	MAHOGANY TO BE FINISHED WITH 3 COATS OF URITANE VARNISH, SEE DETAILS FOR MISCELLANEOUS FINISHES
LADIES WASHROOM	C17	CERAMIC MOSAIC TILE	———	SEE REMARKS	1/2" GYPROC	1 UNDERCOAT 2 COATS SEMI-GLOSS ENAMEL	SUSPENDED METAL LATH & PLASTER	1 UNDERCOAT 2 COATS SEMI-GLOSS ENAMEL	CEILING HEIGHT 9'-0", 4'-0" HIGH CERAMIC MOSAIC DADO. COVE BASE COMMON WITH DADO
MENS WASHROOM	C18	DO.	———	SEE REMARKS	DO.	DO.	DO.	DO.	CEILING HEIGHT 9'-0", 4'-0" HIGH CERAMIC MOSAIC DADO. COVE BASE COMMON WITH DADO.
KITCHEN	C19	.080 VINYL ASBESTOS TILE	WAX & POLISH	4" BLACK RUBBER	2 LAYERS 3/8" GYPROC	DO.	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO
COAT ROOM	C20	DO.	DO.	DO.	1/2" GYPROC	2 COATS LATEX	EXPOSED CEDAR DECK	2 COATS STAIN	SEE DETAILS FOR COAT RACK
MULTI-PURPOSE ROOM	C21	DO.	DO.	DO.	1/2" GYPROC EXPOSED CONC. BLOCK	2 COATS LATEX ON GYPROC 2 COATS EXT. LATEX ON BLOCK	DO.	DO.	7'-2" HIGH VINYL FABRIC DADO ON WOOD WALL ONLY SEE DETAILS FOR MISCELLANEOUS FINISHES

DOOR SCHEDULE

	DOOR SIZE	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	REMARKS
A	2 - 3'-0" X 7'-0" X 1 3/4"	"KAWNEER" NARROW STYLE	EXTRUDED ALUMINUM	ANODIZED	ALUMINUM	ANODIZED	GLAZED WITH 1/4" GEORGIAN WIRE POLISHED PLATE GLASS
B	2 - 3'-0" X 7'-0" X 1 3/4"	SOLID CORE	CREZON OVERLAID	1 UNDERCOAT 2 SEMI-GLOSS ENAMEL	FIR	1 UNDERCOAT 2 SEMI-GLOSS ENAMEL	MATCHING PANEL ABOVE
C	2 - 2'-6" X 7'-0" X 1 3/4"	DO.	PAINT GRADE FIR OR BIRCH	DO.	DO.	DO.	
D	3'-0" X 7'-0" X 1 3/4"	DO.	CREZON OVERLAID	DO.	DO.	DO.	
E	3'-0" X 7'-0" X 1 3/4"	DO.	PAINT GRADE FIR OR BIRCH	DO.	DO.	DO.	
F	2'-8" X 7'-0" X 1 3/4"	HOLLOW CORE	DO.	DO.	DO.	DO.	
H	3'-0" X 7'-0" X 1 3/4"	DO.	DO.	DO.	DO.	DO.	
J	1'-4" X 11'-10 1/8" X 1 3/4"	SOLID CORE	DO.	DO.	DO.	DO.	
K	11'-10 1/8" X 99'-5"	SOUNDMASTER 240	VINYL FABRIC	———	———	———	3 - SECTIONS EACH WITH ROLLING POSTS
L	5'-0" X 4'-0 1/8" X 1 3/4"	HOLLOW CORE	PAINT GRADE FIR OR BIRCH	1 UNDERCOAT 2 SEMI-GLOSS ENAMEL	FIR	1 UNDERCOAT 2 SEMI-GLOSS ENAMEL	
M	5'-8" X 5'-0" X 1 3/4"	SOLID CORE	CREZON OVERLAID	DO.	DO.	DO.	DOOR FROM OUTSIDE TO CRAWL SPACE

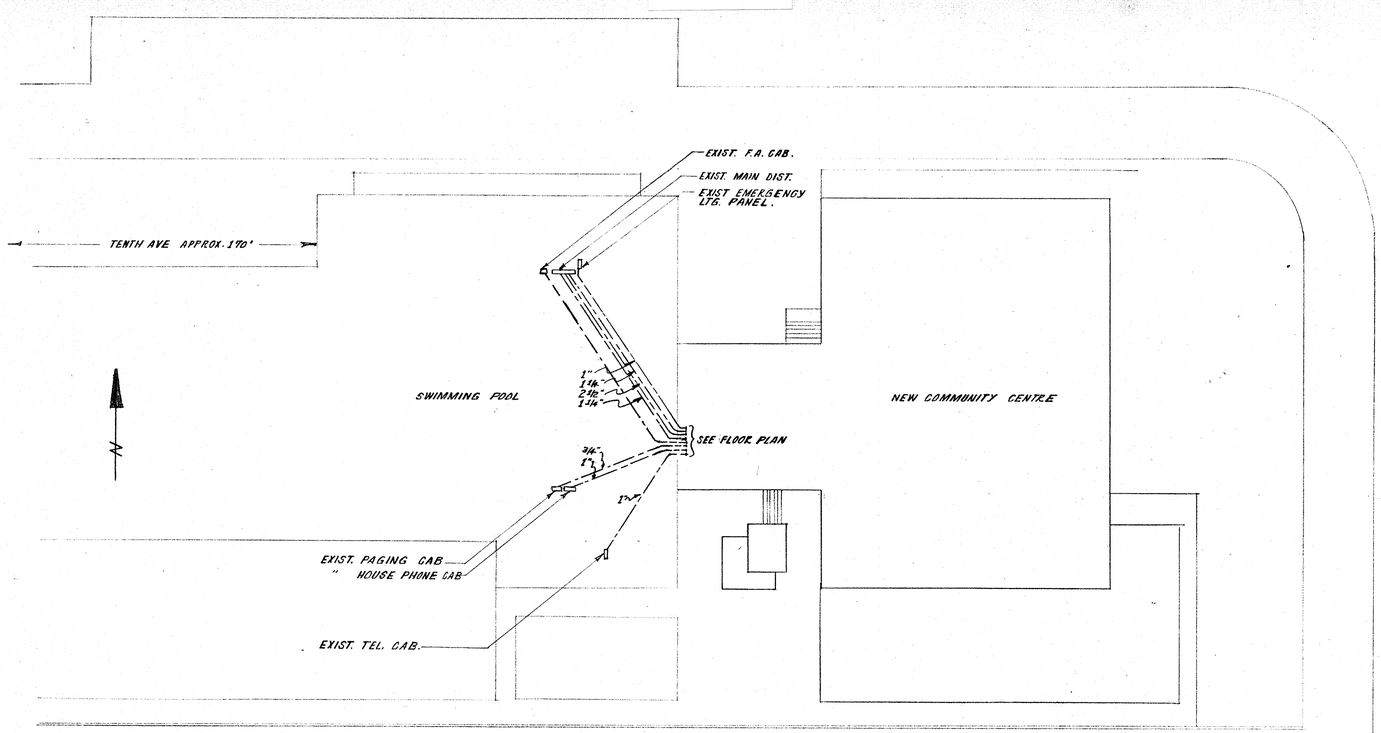
GENERAL NOTE:
1. ALL VINYL FABRIC DADO TO BE TERMINATED ON TOP IN METAL CONCEALED PICTURE MOLD
2. * INDICATES DOORS WITH FIXED MATCHING PANELS OVER DOORS
3. D INDICATES DUTCH DOOR. WITH 8" WIDE SHELF.

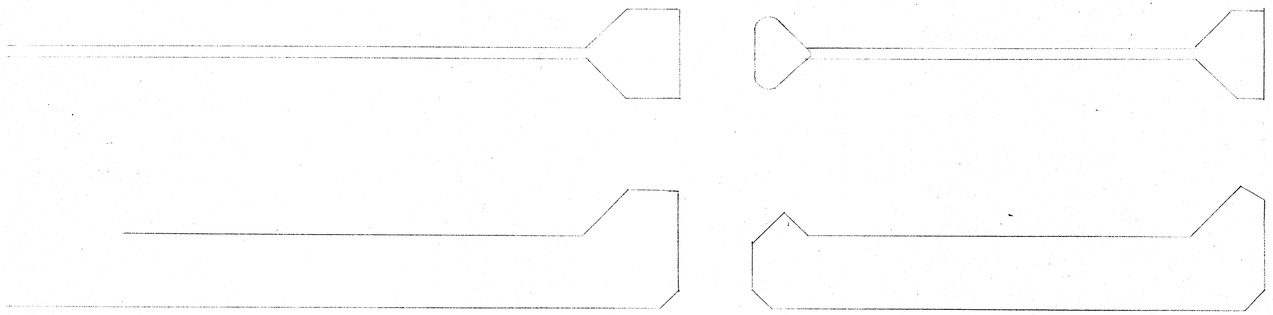
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HUGHES OWENS FORM 0011





SITE PLAN
SCALE 1"=20'-0"

FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	LAMPS	MOUNTING
1A	FLUORESCENT - ELECTROLIER	4-20W GW RS	
2A	" "		
1B	" "		
2B	" "		
1C	" "		
2C	" "		
D	" " K12APF-62-24B	2-40W GW RS	ABOVE MIRROR
G	INCANDESCENT PRESCOLITE C305 GRWXFX, 5-72" CORDS, 5-G301 HANGERS & 5 "J" GLASS - CRACKED CRYSTAL PER FIATURE	6-100W. I.F.	SURFACE
H	INCANDESCENT ELECTROLIER P-135	1-75W R30 FL	RECESSED
J	" McPHILBEN 84-1001-NS	1-150W. I.F.	SURFACE
K	PRESCOLITE # 7033 BLACK	1-100W. I.F.	"
L	" SWIVELIER # 6482	2-100W I.F.	"
M	" PRESCOLITE # 7810	2-60W. I.F.	"
N	" HOLOPHANE #415	1-150W. I.F.	UP 7'-6"
P	" PORCELAIN RECEPTACLE	1-150W. I.F	SURFACE
Q	" PRESCOLITE 7818	1-60W. I.F.	"
R	" W816	1-60W. I.F.	"
S	McPHILBEN 4-8018-HS	1-150W I.F.	RECESSED
EXIT	EXIT SIGN - McPHILBEN 1100W-GX1 WITH	2-25W T6½ DC I.F.	SURFACE

FITTING SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING
O	OUTLET BOX OR CONDULET	— — —
S	SINGLE POLE SWITCH MUTAC S-3701	UP 4'-6"
S_3	THREE WAY SWITCH MUTAC S-3703	"
S_M	MANUAL MOTOR STARTER WITH PILOT LIGHT	"
WP	SINGLE RECEPTACLE IN WP BOX	IN PLANTER
	FLUSH DUPLEX RECEPTACLE HUBBELL 5252	UP 1'-0"
	SINGLE RECEPTACLE IN T&B 1765 FLOOR BOX	FLUSH IN FLOOR
	AUTOMATIC FIRE DETECTOR EDWARDS #241A.	CEILING
F	FIRE GONG EDWARDS 561-10" 24 D.C.	UP 7'-6"
F	" BREAKGLASS STATION EDWARDS #270 SPO	UP 5'-0"
	TELEPHONE OUTLET 1110 BOX WITH BUSHED COVER PLATE	UP 1'-0"
	LOUDSPEAKER OUTLET SINGLE GANG BOX WITH BUSHED COVER PLATE.	15" FROM CEILING
	MOTOR	— —
	DISCONNECT SWITCH	ADJACENT TO MOTOR
	CLOCK - SIMPLEX No. 83-12" SQUARE	15" FRM CEILING.
	HOUSE PHONE OUTLET 4" SQ. BOX WITH "RAYCO" COVER. INSTRUMENTS BY OTHERS.	UP 5'-0" - SEMI-FLUSH.
	LOUDSPEAKER CEILING MOUNTED	SURFACE
	LOUDSPEAKER WALL MOUNTED BARWIC ENG. L-BOX	15" FROM CEILING.
	SOUND SWITCHING STATION - SEE SPECIFICATION SH. E2.	UP 30"

SEE SPECIFICATION & SHEET E2 →

STATION G & T →

SOUND →

WIRING SCHEDULE

— — — — — —	CONDUIT IN OR NEAR FLOOR
———	" " " " CEILING
———	1/2" CONDUIT - 2#12 TW
———///	1/2" " 3#12 TW
———/// ———///	3/4" " 4 & 5 #12 TW
———/// ———/// ———/// ———///	1" " 6 TO 9 #12 TW
——— 2 ———	# OF PAIRS OF 18/2 PVC.

SCOPE OF WORK

1. 120/208V 3Φ 4 WIRE POWER & LIGHTING
2. TELEPHONE SYSTEM CONDUIT ONLY - ADDITION
3. SOUND SYSTEM ADDITION
4. EMERGENCY LTG. SYSTEM ADDITION
5. P.C. SUM - SEE BELOW
6. HOUSE PHONE SYSTEM - ADDITION
7. PAGING SYSTEM ADDITION
8. FIRE ALARM SYSTEM - ADDITION
9. SEE SHEET E2 FOR ADDITIONS TO SPECS.
10. CONNECTION OF HEAT & VENT. MOTORS & CONTROLS.

ALLOW A P.C. SUM OF SEVEN HUNDRED & FIFTY DOLLARS. FOR EXTER WORK & GARDEN LIGHTING AS DIRECTED BY THE ARCHITECT.

PANEL SCHEDULE

PANEL	CCTS	TYPE	BREAKERS	FEEDER	CONNECT. LD.	SPARE	TOTAL
A	42	NLAB	40-15A SP. 1-30A 2P	1½"-4#3 TWH	20.4 KW	8 KW	28.4 KW
B	42	"	30-15A. SP, 2-15A 3P, 6 SPACES	1½"-4#3 TWH.	21 KW	7 KW	28. KW
C	24	"	12-15A. SP. 1-15A 2P 1-40A 2P, 1-30A 2P 6 SPACES	1½"-4#3 TW.	12.2 KW	6 KW.	18.2 KW

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LEE HANDY P. ENG.

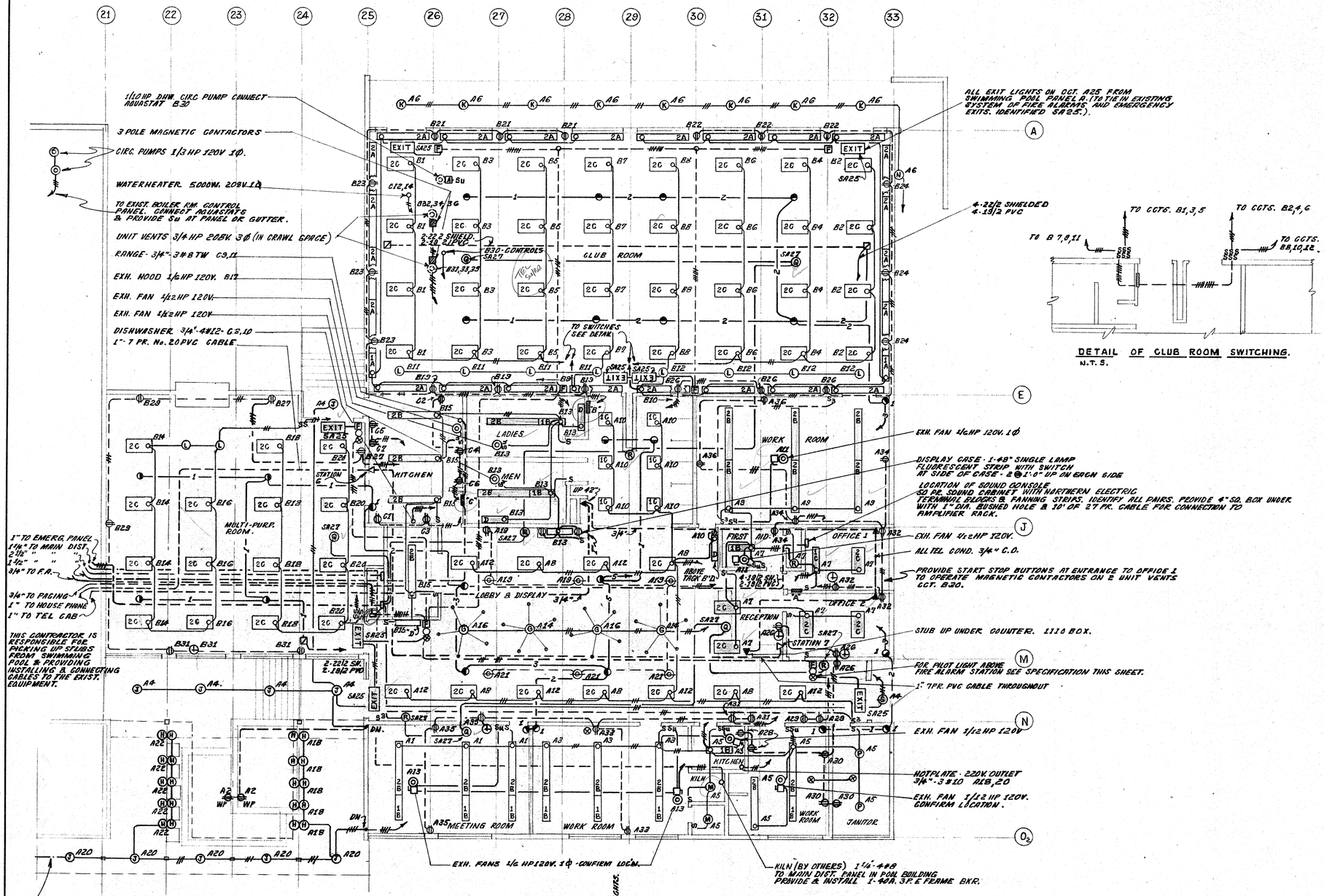
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ADDITIONAL SPECIFICATIONS

Paging System

Supply and install a complete music paging system as indicated on the drawings and as described below.
The system shall basically be as manufactured by Rauland Borg Corporation.
The equipment rack shall be suitable for table top mounting and shall be Rauland No. T 1401 complete with the following panels in order from top to bottom.
1 only PA 1400A solid state input pre-amplifier panel.
1 only RP 1175 panel complete with 9 speaker on-off telephone type switches.
1 only TA 60 all silicon 60 watt solid state amplifier.
1 only power supply for the PA 1400A panel and amplifier.
Sufficient blank panel fronts to complete the space in the panel front.

Loud speakers shall be as called for in the fittings schedule.
Provide two microphones as follows:
1 only Rauland 1265 complete with 20 feet of shielded cable lead and male plug entry to match female sockets.
1 only desk stand for the above.
1 only Rauland 1276 complete with A 45 quick disconnect adapter and 30 feet of 2 conductor shielded cable.
1 only floor stand for the above.
Microphone male plugs shall be RCA 94-0501 or equal and female wall outlets shall be RCA 94-0503 complete with matching receptacle.
The female wall outlets are designated on the drawings symbol which shall be a switching station allowing local music or paging announcements to be made from a local amplifier in the room. General paging from the main amplifier shall over-ride the local programme.

Fire Alarm

Over each fire alarm station provide an indicating light at approx. 6' 6" above the floor. The unit shall consist of a four inch square box with extension ring, a Hubbell 432 lampholder with 145 volt pilot lamp, and stainless steel plate with No. 736 red jewel. All pilot lights to be connected to circuit A 25 with the exit lights from the Panel A in the Swimming Pool building.

Sound Wiring

All wiring for the sound system shall be in EMT and shall follow telephone practice. Each pair of conductors shall be tagged with the room name and at least 24" tails shall be left at the telephone cabinet and at each loudspeaker outlet.

Specification

Omit the following clauses:

2b, 2c and 2d
4, 14a, 14b, 14c and 16

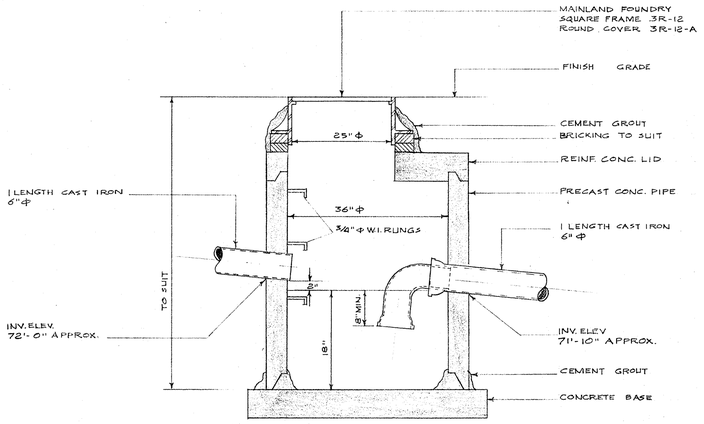
Add to clause 18. Loudspeakers and sound system equipment shall be provided as called for on the drawings.

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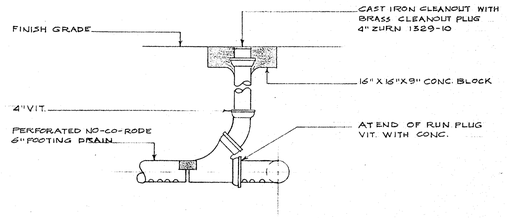
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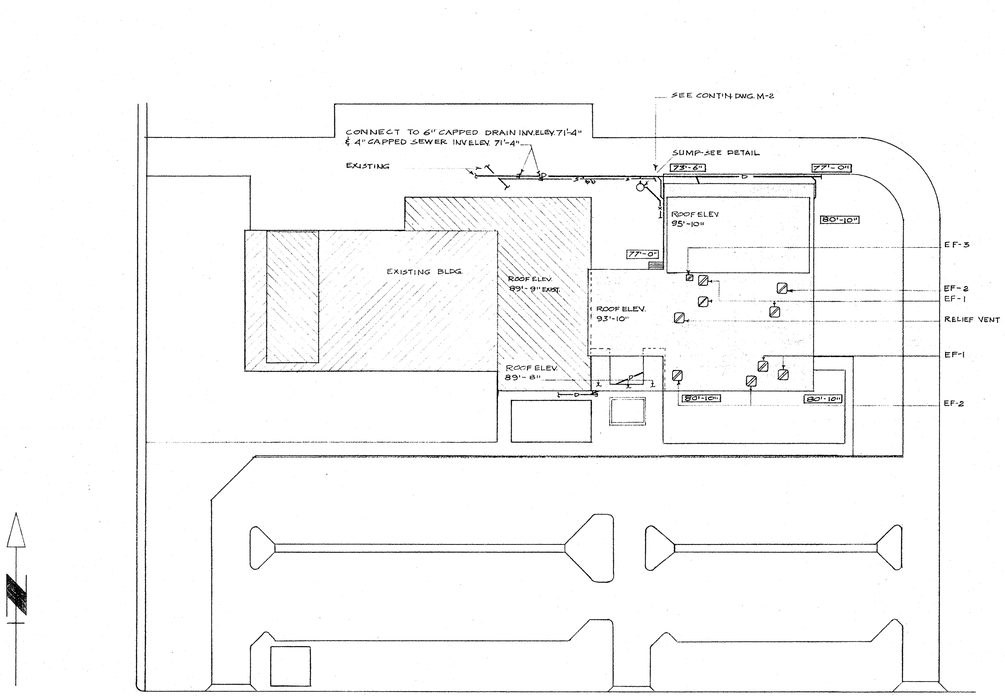
SUMP DETAIL

N.T.S.



FOOTING DRAIN CLEANOUT DETAIL

N.T.S.



SITE PLAN

1" = 40'-0"

EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	C.F.M.	STATIC.P.	H.P.	TIP SPEED	R.P.M.
E F-1	JENN AIR	101 UCD	235	0.25	1/12	2560	1140
E F-2	JENN AIR	123 UCD	700	0.25	1/6	2930	710
E F-3	AIR KING	GTS 36	300				

RADIATION SCHEDULE

MARK	MAKE	ELEMENT	ENCLOSURE	B.T.U.-FT. 65° ENT. AIR 190° E. AV. WATER
F-1	TRANE	40 ALUMINUM	18-5	1580
F-2	TRANE	40-ALUMINUM	11-E	1260

GRILLE SCHEDULE

MARK	MAKE	USE	TYPE	DAMPER	FRAME	FINISH	SIZE
SR-1	TITUS	SUPPLY	C-1500	YES	TYPE 5	ALUMINUM	SHOWN
SR-2	TITUS	SUPPLY	S-277	YES	316	ALUMINUM	SHOWN
RG-1	TITUS	RETURN	G-1	NO	316	ALUM. LAC.	SHOWN
RG-2	TITUS	RETURN	C-1500	NO	TYPE 5	ALUMINUM	SHOWN
EG	TITUS	EXHAUST	RL-251	NO	316	ALUMINUM	SHOWN
(A)	TITUS	DOOR	T-900-A	—	115	ALUMINUM	12" X 8"
(B)	TITUS	DOOR	T-900-A	—	115	ALUMINUM	18" X 16"

VALVE SCHEDULE

MARK	TYPE	U.S. G.P.M.	PRESS-DROP	SHUT-OF HEAD	SERVICE & REMARKS
(V)	MOD. VALVE	4.0	2.0'	2.5'	
(V)	MOD. VALVE	1.5	2.0'	2.5'	
(V)	MOD. VALVE	1.3	2.0'	2.5'	
(V)	MOD. VALVE	3.2	2.0'	2.5'	
(V)	MOD. VALVE	1.3	2.0'	2.5'	
(V)	MIX. VALVE	3.0	3.0'	2.5'	
(V)	MIX. VALVE	5.0	8.0'	2.5'	

PUMP SCHEDULE

MARK	MODEL	U.S. G.P.M.	HEAD FT.	SEAL-TYPE	R.P.M.	H.P.	SERVICE & REMARKS
(P)	ARMSTRONG 2½	21	14+6'	MECH.	1750	1/4	
(P)	ARMSTRONG #75	3	7'	MECH.	1750	1/10	BRONZE BODY

VENTILATING UNIT SCHEDULE

AREA	CLUB ROOM	LOBBY
UNIT SIZE	T-6	T-6
C.F.M.	2200	2200
STATIC PRESSURE INCHES W.G.	0.75	0.8
FAN R.P.M.	723	743
FAN B.H.P.	.52	.57
FAN MOTOR H.P	.75	.75
HEATING COIL LOAD M.B.H.	119	86
ENTERING WATER TEMPERATURE	200	200
ENTERING AIR TEMPERATURE	55	40
AIR FRICTION INCHES W.G.	0.2	0.13
LEAVING AIR TEMPERATURE	109	76
G.P.M.	5	3
COIL TYPE	18 W 2 ROW	15 W 2 ROW
WATER FRICTION FEET	0.1 FT.	0.1 FT.
FILTERS	FOUR @ 16"X25"X2"	FOUR @ 16" X 25" X 2"

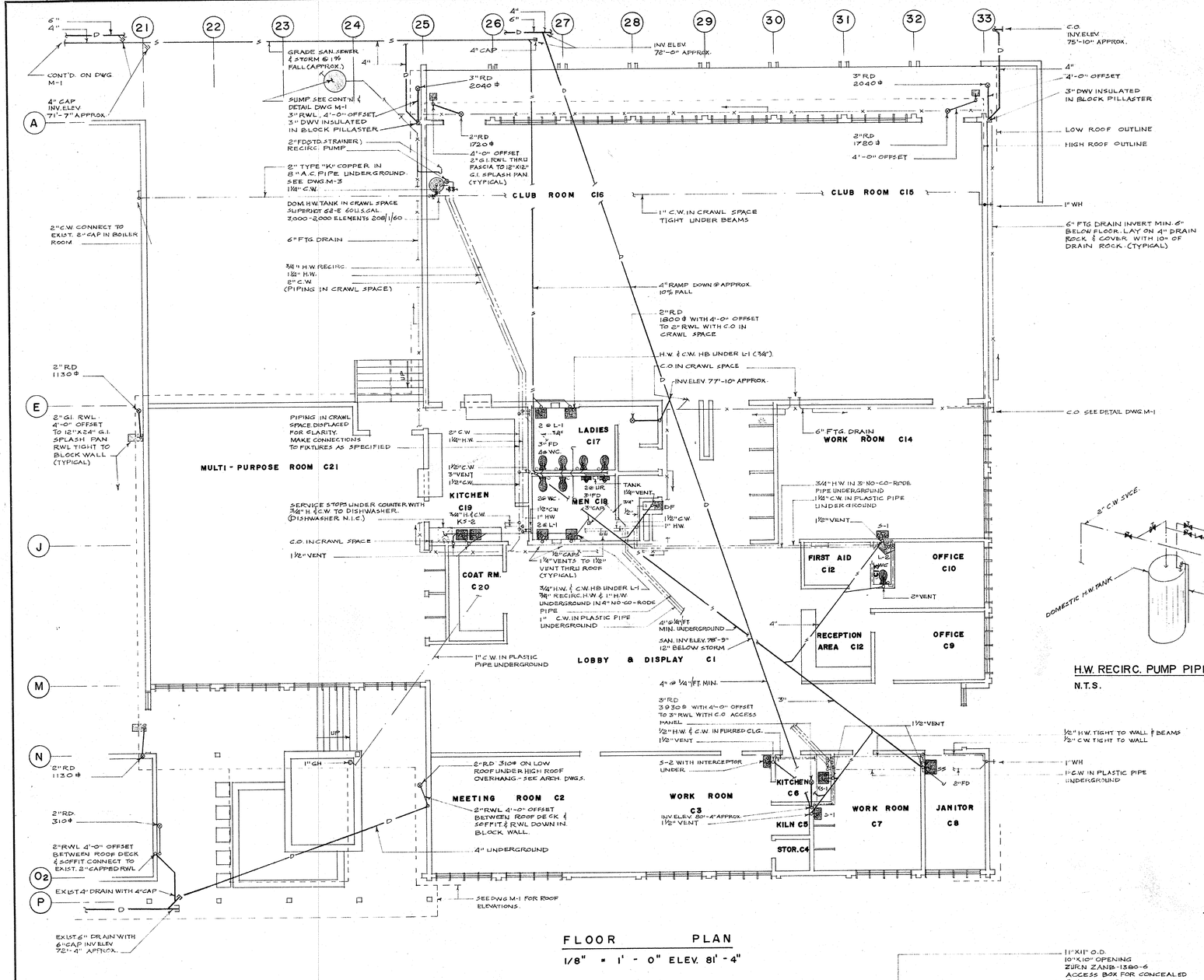
J. M. BEAN & CO. LTD.
CONSULTING ENGINEERS
VANCOUVER & NEW WESTMINSTER, B.C.
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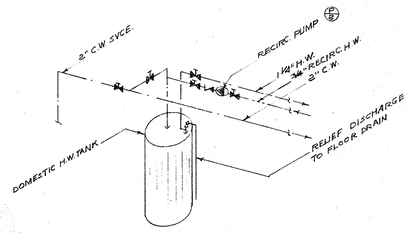
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NUCHES DWG'S FORM 2041



FLOOR PLAN

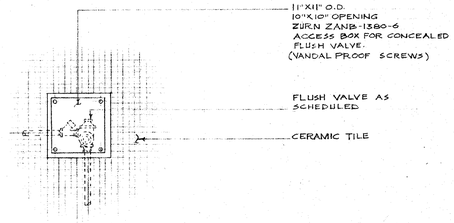
1/8" = 1' - 0" ELEV. 81' - 4"



H.W. RECIRC. PUMP PIPING DETAIL

N.T.S.

PIPE LEGEND				
SYMBOL		INSIDE BLDG.	UNDER BLDG.	OUTSIDE BLDG. UNDERGROUND
—— S ——	SANITARY SEWER	CAST IRON	CAST IRON	RING TIGHT BLDG. SEWER
—— D ——	STORM DRAINAGE	CAST IRON	CAST IRON	RING TIGHT BLDG. SEWER
	C.W. COLD WATER	TYPE "L" COPPER	TYPE "K" COPPER	TYPE "K" COPPER
	H.W. HOT WATER	TYPE "L" COPPER	TYPE "K" COPPER	TYPE "K" COPPER
	H.W. RECIRCULATION	TYPE "L" COPPER	TYPE "K" COPPER	
	HEATING RETURN	AS SPECIFIED		
	HEATING SUPPLY	AS SPECIFIED		
—— X ——	FTG. DRAIN.		PERF. NO-CO-RODE	PERFORATED NO-CO-RODE
—— RWL ——	RAIN WATER LEADER	DWV COPPER OR AS SHOWN	CAST IRON	



CONCEALED FLUSH VALVE DETAIL

N.T.S.

PLUMBING SCHEDULE — FIXTURES AND FITTINGS

Provide Plumbing Fixtures as follows:

SYMBOL	CATALOGUE NO.	TRIM	ACCESSORIES & NOTES
W.C.	Crane 3-458 Placidus Zurn ZANB - 1380-6	Vit. china, siphon jet, wall closet bowl, elongated rim, 1½" back spud. 10" x 10" Opening, Access box for servicing, concealed flush valve.	543-CVBQ Presto Flush Valve, Carrier to suit. Vandal Proof screws.
UR	Crane Cromwell 7-74-T	Vit. china washout wall hung urinal with flushing rim.	Back inlet 3/4" spud. 7-171½ Belmont tank overrim supply with compression stop C-4001 Alert Auto. siphon valve, C-4020-2 concealed flushpipe.
SS	Crane Rideau 7-562½	22 x 18 Porcelain-enameled cast iron service sink.	12" high integral back. 8H-104 supply, 7-620½ C.I. "P" trap, C-5129 rim guard, C-5135 strainer.
L-1	Crane Neu-cliffside 1 - 29	20 x 18 Porcelain-enameled C.I. wall hung lavatory, 4" centers concealed hanger.	Self-closing comb. supply & indirect liftwaste, lever handle C-1007, Speedway flexible supplies SSTCR-191.5-A, ¼ angle copper compr. valve 15 x 3/8 O.D. Riser, lock-shield-screwdriver) 1¼" Adj. swivel "P" trap C-1170, Escutcheon.
L-2	Crane Chevron 1-372	16 x 16 O.D. Porcelain enamsled C.I. corner lavatory w/integral back 3½" high, concealed cast iron hangers.	C-1075 comb. supply & indirect liftwaste, lever handles C-1151 3/8" Angle supplies with stops, escutcheon. 8-5102 Flexible supply connections. C-1170 1¼" Adj. "P" trap w/escutcheon.
S-1	Crane Iroquois 5-157	24 x 18 Reg. enamel, C.I. roll rim sink with 8" integral back, concealed hanger.	C-5030 Supply, straight Partition stops, ½" copper inlets, stem-slotted for screwdriver, C-1174 C.P. non-adj. 1½" "P" trap with cleanout.
S-2	Crane Iroquois 5-157	24 x 18 Regular enamel, cast iron, roll rim sink with 8" integral back concealed hanger.	C-5030 Supply. 8H-374 Cast brass waste fitting with perforated open strainer. 1½"x2" O.D. C.P. Waste connections between strainer & interceptor with cleanout & 2" O.D. C.P. waste to wall & escutcheon, straight rough brass compression stop with comp.disc, handwheel. Zurn Z-1375-2 8"x8" Access box in kitchen
	Wade W-5740	Enameled C.I. sediment interceptor with removable brass sediment bucket, perforated baffle, white enamled C.I. cover with neoprene gasket.	Install under S-2 clearance above cover for bucket removal is 16".
KS-1	KIL EL-168/316	16x18x7 I.D. Acid resisting stainless steel self-rimming backledge counter-top sink.	Crane C-5061 supply, angle compr. stops, wheel handles & escutcheons. C-5103 Cast brass adj. "P" trap & escutcheon. 3½" C.P. Basket strainer
KS-2	KIL DLR 1416	29x16x7 I.D. Stainless steel, self-rimming, recessed ledge, two compartment counter-top sink.	C-5073 with spray & rubber hose C-5103 cast brass adj. "P" trap w/ cleanout & escutcheon, angle wheel handle service stop with compr. disc. supply pipes to have escutcheon 3½" C.P. Basket strainers.
DF	Wade WC-9112	Fully recessed vit. china white drinking fountain.	Auto. stream control with self-closing control valve c/w shut-off service valve, C.P. brass strainer Cast brass "P" trap w/cleanout through wall.
FD	Wade W-1100J	Cast iron floor drain.	Square adj. strainer with square holed flat grate, nickel bronze, "P" trap standard, Vandal Proof screws.
R.D.	Wade W-3280	C.I. Roof Drain with goldenized secured dome & flashing clamp.	
HB	Wallaceburg W 3263	Rough nickel plated with loosekey, 3/4" hose thread on spout.	Install HW & CW Hosebibbs under L-1 one pair in ladies & mens washroom.
W.H.	Wade W8606	1" Non-freeze Wall Hydrant.	C.P. Box & removable operating key.
G.H.	Wade W-8609	Ground Hydrant 1" Non-freeze type.	Nickel brass box & removable operating key.

NOTES: 1. Refer to Architectural drawings for exact location of fixtures.
2. Manufacturer as noted or approved equal.

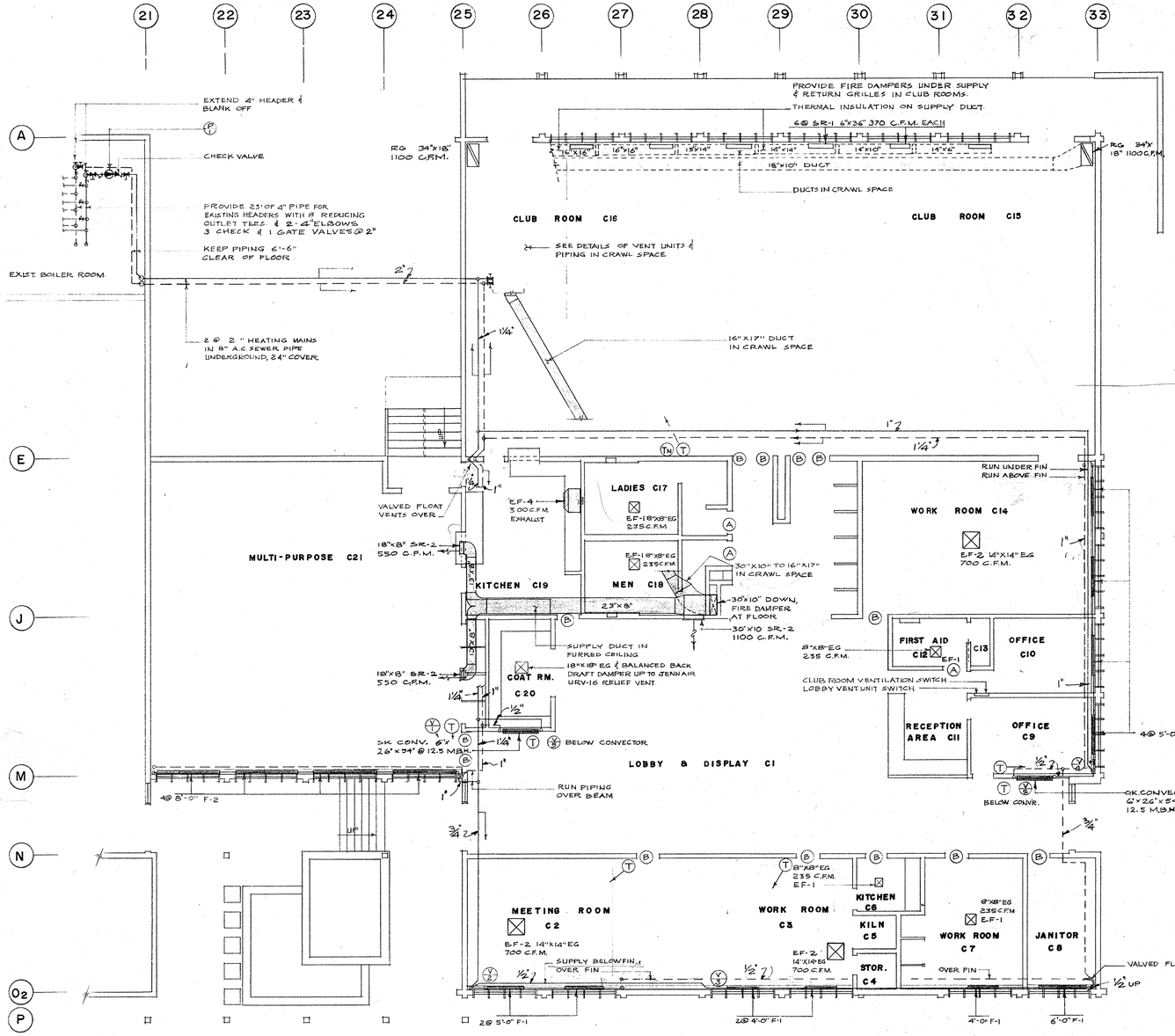
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CONSULTING ENGINEERS
VANCOUVER & NEW WESTMINSTER, B.C.
FILE: 6651-W DATE: DEC. 1966

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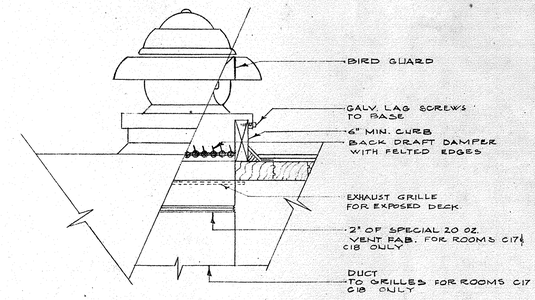
COMMUNITY CENTRE FOR PORT ALBERNI B.C.

MUCHES CHECHE FORM 1041



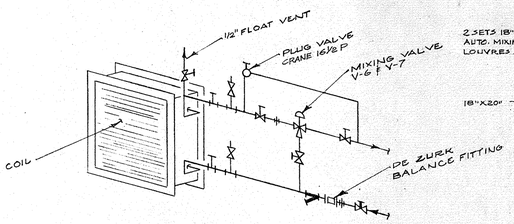
FLOOR PLAN

1/8" = 1' - 0" ELEV. 81'-4"



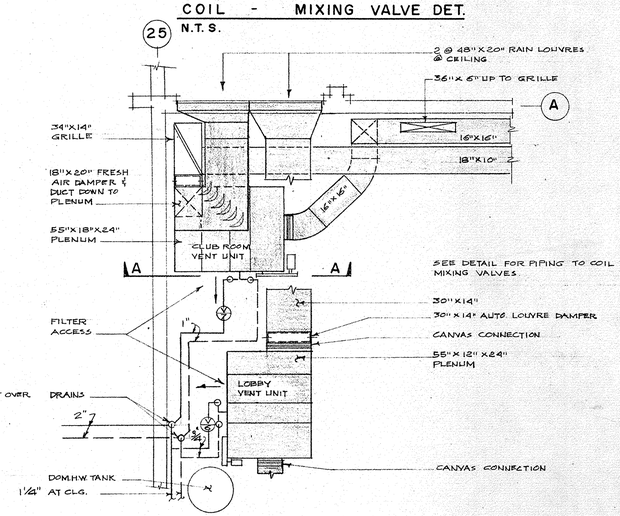
ROOF EXHAUST FAN DETAIL

N.T.S.



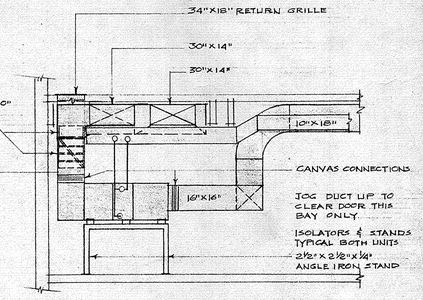
COIL - MIXING VALVE DET.

N.T.S.



FAN ROOM PLAN

1/4" = 1' - 0"



SECTION A A

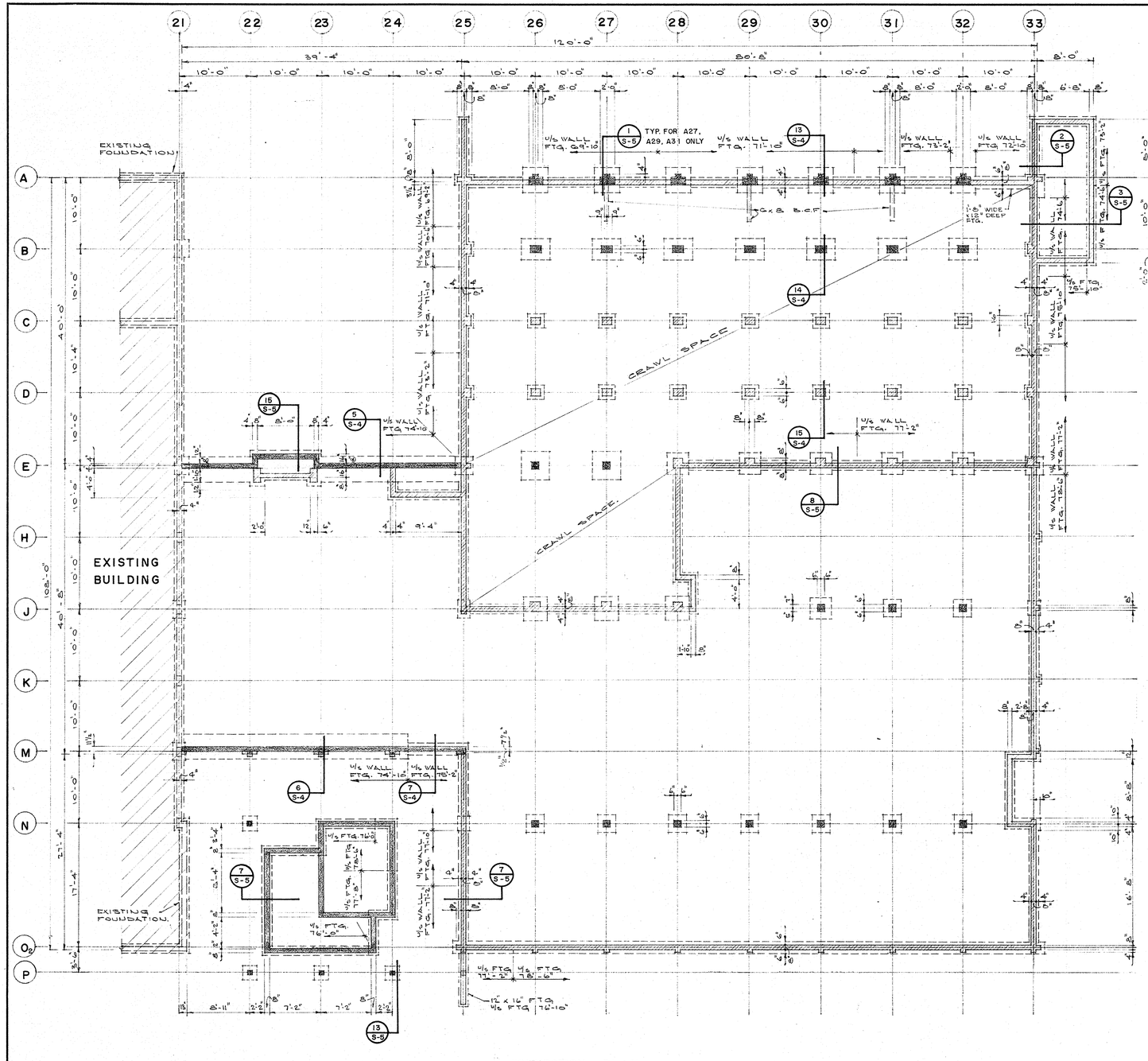
1/4" = 1' - 0"

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FILE: 6651-W | DATE: DEC. 1966

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COMMUNITY CENTRE FOR PORT ALBERNI B.C.



FOUNDATION PLAN
SCALE 1/8" = 1'-0"

FOOTING AND CAP SCHEDULE

NO	FOOTING SIZE	U/S ELEV.	REINFORCING	CAP SIZE	TOP OF CAP ELEV	REINFORCING
A-26, A-27	3'-6" x 3'-6" x 1'-0"	69'-6"	10-#5 x 3'-0" E.W. 6-#5 DWLS.	SEE PLAN	80'-10½"	6-#5 VERT. #3 @ 12 TIES
A-28, A-29 A-30	3'-6" x 3'-6" x 1'-0"	71'-6"	10-#5 x 3'-0" E.W. 6-#5 DWLS.	SEE PLAN	80'-10½"	6-#5 VERT. #3@12 TIES
A-31, A-32	3'-6" x 3'-6" x 1'-0"	72'-10"	10-#5 x 3'-0" E.W. 6-#5 DWLS.	SEE PLAN	80'-10½"	6-#5 VERT. #3 @ 12 TIES
B-28, B-29 B-30, B-31	4'-0" x 3'-0" x 1'-0"	70'-0"	4-#5 DWLS	12" x 18"	79'-8" + 3/8" GROUT	6-#5 VERT. #2 @ 12 TIES
B-32	4'-0" x 3'-0" x 1'-0"	73'-0"	4-#5 DWLS	12" x 18"	79'-8" + 3/8" GROUT	6-#5 VERT. #2 @ 12 TIES
C-26, C-27 C-28 C-29, C-30	2'-4" x 2'-0" x 1'-0"	72'-10"	4-#4 DWLS	12" x 16" BLOCK	73'-10"	4-#4 VERT.
C-31, C-32	2'-4" x 2'-0" x 1'-0"	74'-10"	4-#4 DWLS	12" x 16" BLOCK	73'-10"	4-#4 VERT.
D-26, D-27 D-28	2'-4" x 2'-0" x 1'-0"	72'-10"	4-#4 DWLS	12" x 16" BLOCK	73'-10"	4-#4 VERT.
D-29, D-30 D-31, D-32	2'-4" x 2'-0" x 1'-0"	74'-10"	4-#4 DWLS	12" x 16" BLOCK	73'-10"	4-#4 VERT.
E-25	2'-6" x 2'-6" x 1'-0"	72'-10"	4-#4 DWLS	SEE PLAN	81'-2"	2-#4 VERT.
E-26, E-27	4'-0" x 4'-0" x 1'-0"	72'-10"	7-#4 x 3'-6" E.W. 4-#5 DWLS.	12" x 12"	79'-10"	4-#6 VERT. #2@12 TIES.
E-28	3'-0" x 3'-0" x 1'-0"	74'-10"	4-#5 x 2'-10" E.W. 4-#4 DWLS.	SEE PLAN	79'-10"	4-#4 VERT.
E-29, E-30	3'-0" x 3'-0" x 1'-0"	74'-10"	4-#5 x 2'-6" E.W. 4-#4 DWLS.	SEE PLAN	79'-10"	4-#4 VERT.
E-31, E-32	3'-0" x 3'-0" x 1'-0"	76'-10"	4-#5 x 2'-6" E.W. 4-#4 DWLS.	SEE PLAN	79'-10"	4-#4 VERT.
E-33	2'-6" x 2'-6" x 1'-0"	76'-10"	2-#4 DWLS.	SEE PLAN	81'-2"	2-#4 VERT.
J-25	2'-6" x 1'-8" x 1'-0"	74'-10"	NONE	SEE PLAN.	80'-9"	4-#4 VERT.
J-26, J-27 J-28	3'-4" x 3'-4" x 1'-0"	74'-10"	7-#3 x 2'-10" E.W. 4-#4 DWLS.	SEE PLAN.	80'-9"	4-#4 VERT.
J-30	3'-0" x 3'-0" x 1'-0"	77'-0"	4-#5 x 2'-6" E.W. 4-#4 DWLS.	12" x 12"	80'-9"	4-#4 VERT.
J-31, J-32	2'-6" x 2'-6" x 1'-0"	77'-0"	4-#5 x 2'-7" E.W. 4-#4 DWLS.	12" x 12"	80'-9"	4-#4 VERT.
J-33	1'-8" x 2'-0" x 8"	78'-4"	NONE	SEE PLAN	81'-2"	NONE
U-22	2'-0" x 2'-0" x 8"	75'-6"	4-#5 DWLS	8" x 8"	77'-8"	4-#3 VERT.
N-24	CONC. WALL	CONC. WALL	CONC. WALL	SEE PLAN	81'-4"	
U-25	2'-0" x 1'-8" x 8"	75'-2"	NONE	SEE PLAN	80'-6"	NONE
U-26, to U-32 INCL.	2'-6" x 2'-6" x 1'-0"	77'-0"	4-#4 DWLS.	12" x 12"	80'-9"	4-#4 VERT.
U-33	1'-8" x 1'-8" x 8"	78'-4"	NONE	SEE PLAN	80'-6"	NONE
P-22	2'-0" x 2'-0" x 8"	75'-6"	4-#3 DWLS	8" x 8"	77'-2"	4-#3 VERT.
P-23	2'-0" x 2'-0" x 8"	76'-0"	4-#3 DWLS	8" x 8"	78'-2"	4-#3 VERT.
P-24	2'-0" x 2'-0" x 8"	77'-0"	4-#3 DWLS	8" x 8"	79'-2"	4-#3 VERT.
P-25	WALL FTG.	76'-10"	WALL FTG.	BLOCK WALL	81'-1½"	BLOCK WALL
B-26, B-27	4'-0" x 3'-0" x 1'-0"	68'-0"	4-#6 DWLS.	12" x 18"	79'-8" + 3/8" GROUT	4-#6 VERT. #2 @ 12 TIES

GENERAL NOTES

1. ALL DIMENSIONS GIVEN ON STRUCTURAL DRAWINGS MUST BE CHECKED AGAINST THE ARCHITECTURAL DRAWINGS, AND ANY INCONSISTANCIES REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
2. ALL STRUCTURAL STEEL TO BE A-36 WITH AN ALLOWABLE WORKING STRESS OF 22,000 P.S.I.
3. CONCRETE SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGTH OF 3000 P.S.I. IN 28 DAYS, EXCEPT AS OTHERWISE NOTED.
4. BOTTOM OF FOOTINGS ARE AT ELEVATIONS AS SHOWN ON PLANS, EXCEPT THAT ALL FOOTINGS MUST BE TAKEN DOWN TO UNDISTURBED SOIL CAPABLE OF SUSTAINING 2 TONS / SQ. FT.
5. THE LINE OF SLOPE BETWEEN ADJACENT EXCAVATING FOR FOOTINGS MUST NOT EXCEED A RISE OF 1 IN A RUN OF 10. MAXIMUM STEP IS 2'-0".
6. DESIGN LOADS AND ALLOWBLE STRESSES : ROOF LL. 42 P.S.F. INCREASED AS PER NBC-65 4.1.3.9c. EARTHQUAKE FACTOR 4. WIND 25 P.S.F. GLULAM BEAMS 24 F.
7. CONCRETE BLOCK FOUNDATION WALLS SHALL HAVE CELLS FILLED WITH 2000 P.S.I. CONCRETE, EXCEPT THAT 3000 P.S.I. CONCRETE SHALL BE USED AT PIERS UNDER COLUMNS.
8. ALL WALL FOOTINGS TO HAVE 2-#4 BARS UNLESS OTHERWISE NOTED.

COMMUNITY CENTRE FOR PORT ALBERNI , B. C.

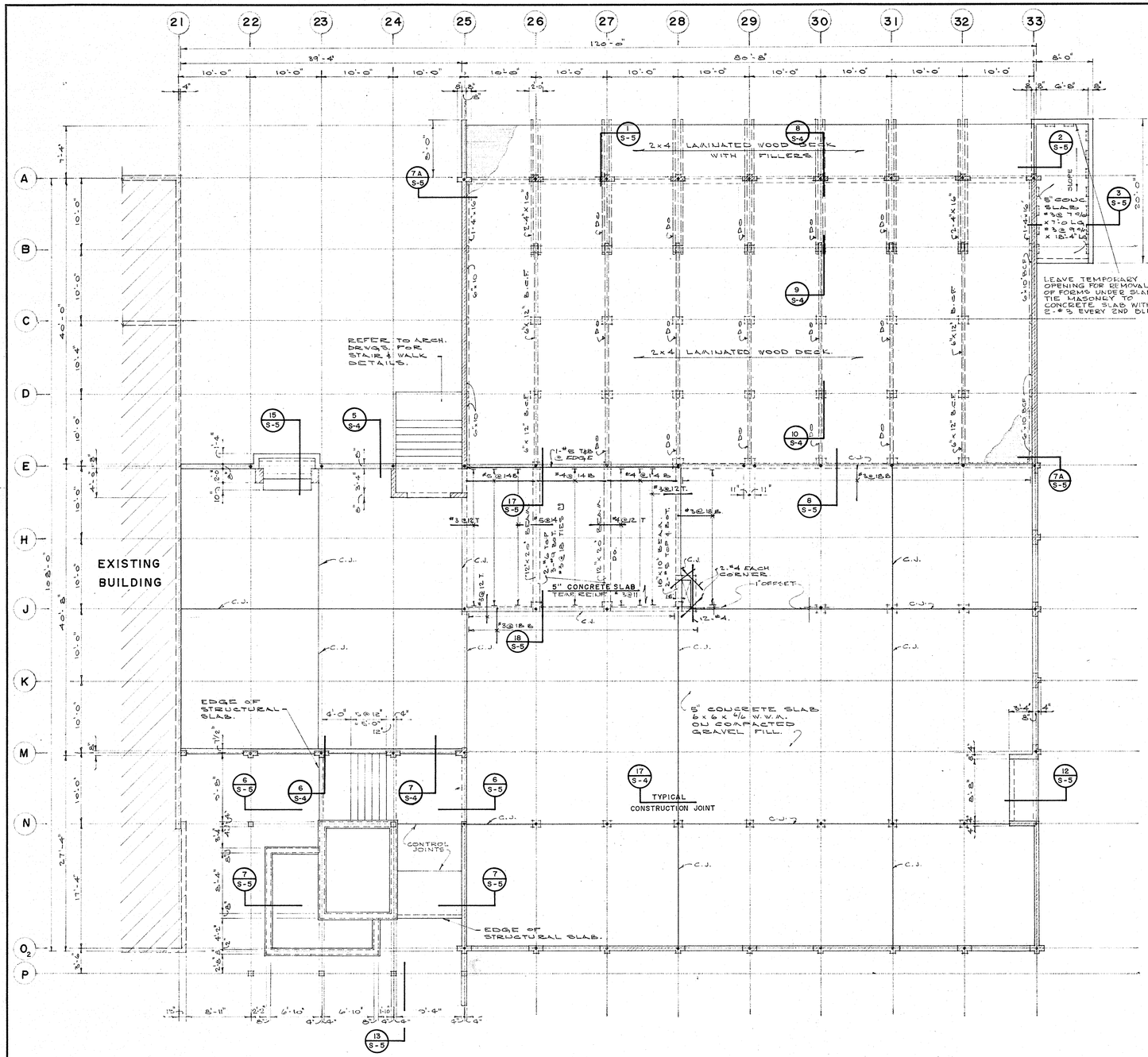
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CONSULTING PROFESSIONAL ENGINEERS
BRITISH COLUMBIA ALBERTA SASKATCHEWAN MANITOBA

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA O. E. GURIBY

HUGHES ENGINE FORM 0041



FLOOR PLAN
SCALE 1/8"=1'-0"

COLUMN SCHEDULE

HIGH ROOF

COL. NO.	A25, A35	A26 TO A34	E22, E23, E24, M22, M23, M24	E25	E26, E27, E28, E30, E31, E32, J21, J27, J28	J25,	E33, J33, M33, O,25 TO O,33	J30, J31, J32 N26 TO N32	N25	N33	M25	E29
TOP OF BEAM EL 88'-2⅞"												
TOP CAP PL	1'-0⅞"	1'-0⅞"	2'-0⅞"	0"	0"	1'-1"	11⅜"	1'-7"	11⅜"	11⅜"	1'-1"	0"
SIZE COL. TOP FIN FLR EL 81'-4"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"	8"ø @ 7.58"
⅛ PT. EL	3½"	3½"	½"	3"	1'-4¼"	8½"	½"	½"	8½"	8½"	½"	1'-4¾"
SIZE PT.	4"x4"x¼"	4"x4"x¼"	4 x 1/2 x 9	7"x3¾"x12"	10"x¾"x12"	7 x ½ x 9	7 x ½ x 9	4 x ½ x 9	4 x ½ x 9	4 x ½ x 9	4 x ½ x 9	10"x¾"x15"

LOW ROOF

COL. NO.	N22	N24	P22	P23	P24	P25
TOP OF BEAM EL. 89'-6"						
TOP PL. EL. 81'-4"	1'-5⅛"	1'-5⅛"	1'-5⅛"	1'-5⅛"	1'-5⅛"	1'-5⅛"
SIZE COL.	8L(ULA)x 8½"x 8⅛" BUILT-UP	8L(ULA)x 8½"x 8⅛" BUILT-UP	8L(ULA)x 8½"x 8⅛" BUILT-UP	8L(ULA)x 8½"x 8⅛" BUILT-UP	8L(ULA)x 8½"x 8⅛" BUILT-UP	8L(ULA)x 8½"x 8⅛" BUILT-UP
½ PT. EL.	2'-6½"	2'-1"	4'-0½"	3'-0½"	2'-0½"	0'-2½"
SIZE PT.	6 x 1½ x 6 SEE DET.	6 x ⅞ x 6 SEE DET.	6 x 1½ x 6 SEE DET.	6 x 1½ x 6 SEE DET.	6 x 1½ x 6 SEE DET.	6 x 1½ x 4 SEE DET.

GENERAL NOTES

1. ANCHOR ALL 8"ø @ 7.58" PIPE COLUMNS WITH 2 - ¾"ø ANCHOR BOLTS 9/14".
2. DRYPACK GROUT BETWEEN BR^S AND FOUNDATIONS AS REQ'D.
3. MINIMUM ¼" WELDS FOR BR^S AND C&P R^S.
4. CONC. FLOOR SLAB TO SLOPE TO FLOOR DRAINS AS PER MECH. DWGS AND AS DIRECTED BY ENGINEER.

COMMUNITY CENTRE FOR PORT ALBERNI, B.C.

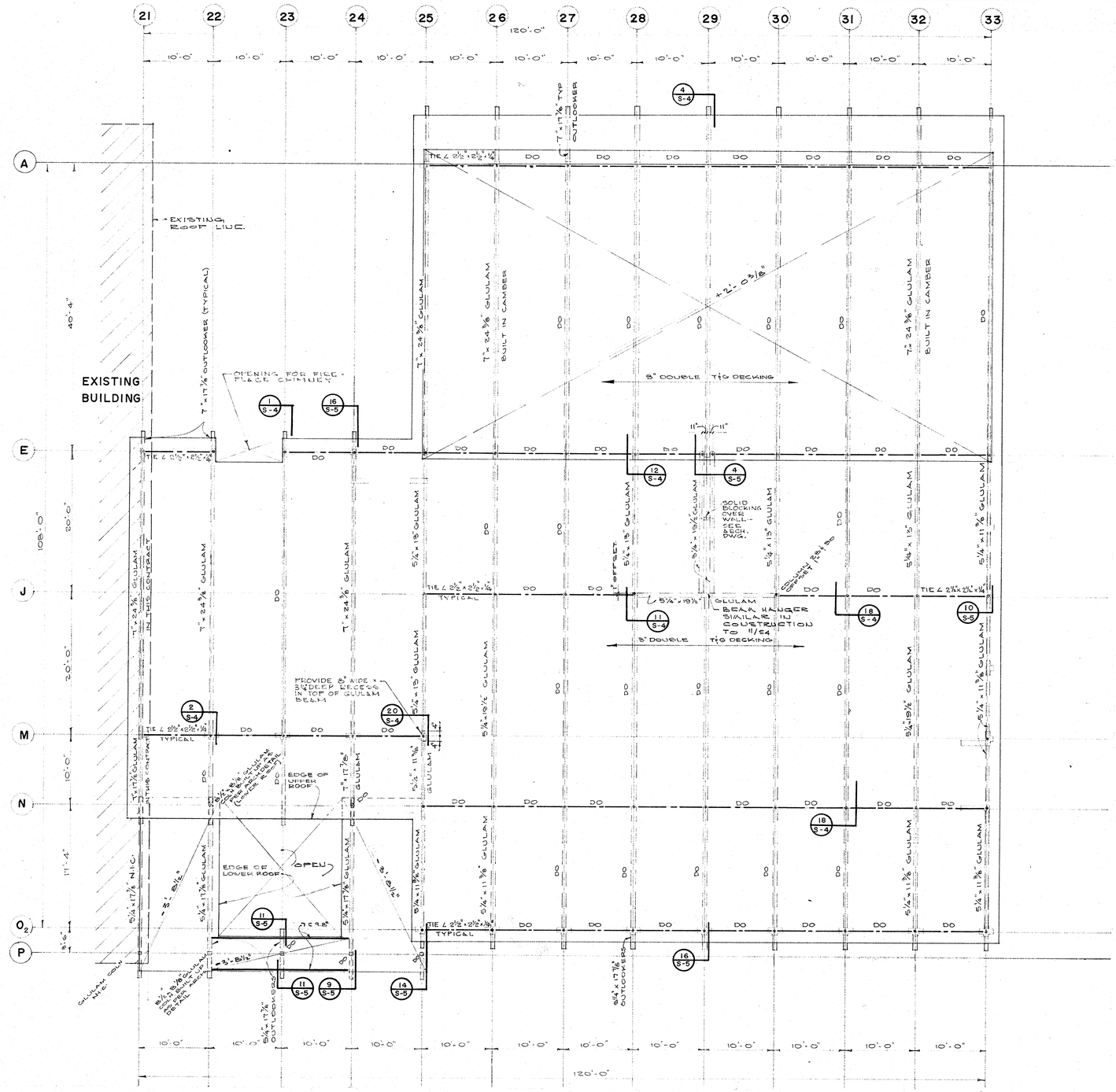
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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA O. E. GURIBY

MUSMCO GWENS FORM 6041



ROOF FRAMING PLAN

SCALE 1/8" = 1'-0"

NOTE -
1. TOP OF ROOF BEAMS ARE AT ELEVATION 93'-2 1/2", EXCEPT AS CROSSED AND NOTED.

COMMUNITY CENTRE FOR PORT ALBERNI, B.C.

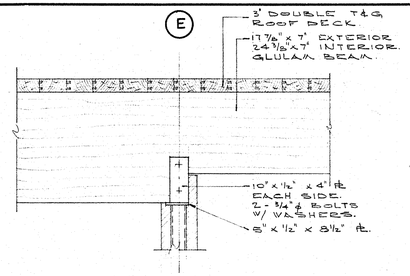
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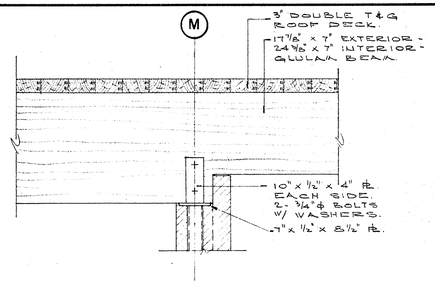
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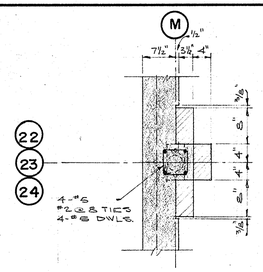
HUGHES OWENS FORM 2041



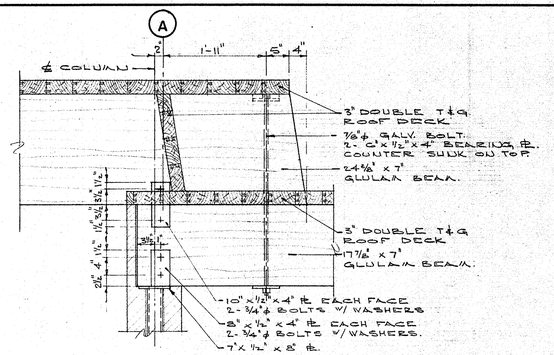
1 S-3 **SECTION**
SCALE - 3/4"= 1'-0"



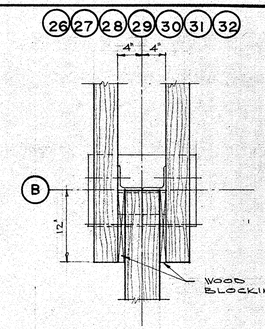
2 S-3 **SECTION**
SCALE - 3/4"= 1'-0"



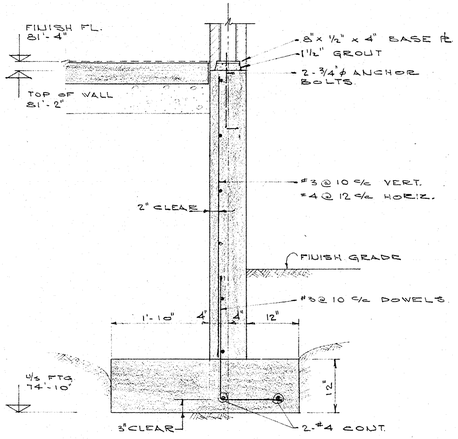
3 S-4 **SECTION**
SCALE - 3/4"= 1'-0"



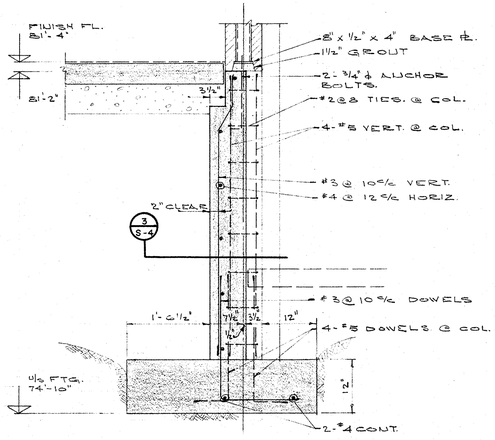
4 S-3 **SECTION**
SCALE - 3/4"= 1'-0"



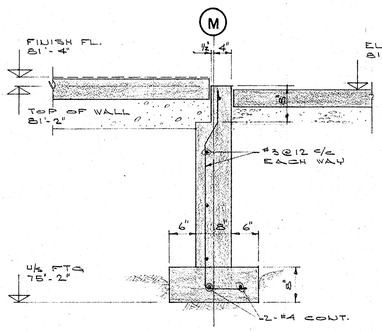
PLAN VIEW OF 9 S-4
SCALE - 1"= 1'-0"



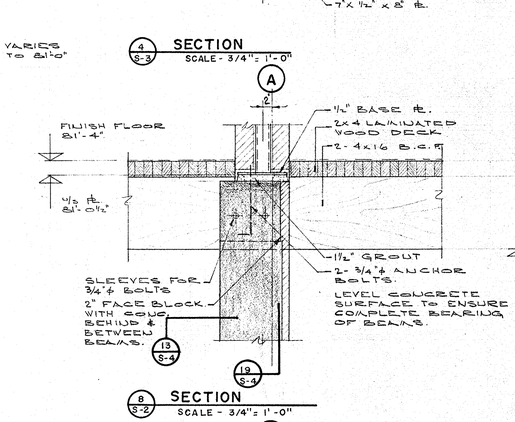
5 S-1 **SECTION**
SCALE - 3/4"= 1'-0"



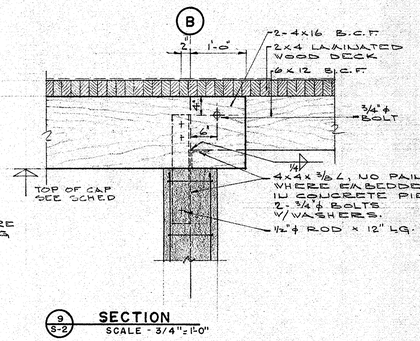
6 S-1 **SECTION**
SCALE - 3/4"= 1'-0"



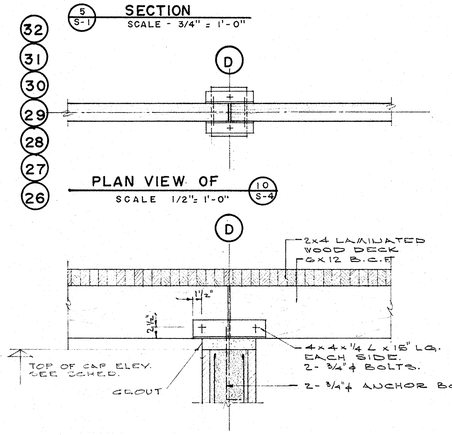
7 S-1 **SECTION**
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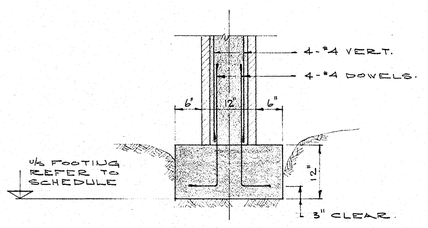
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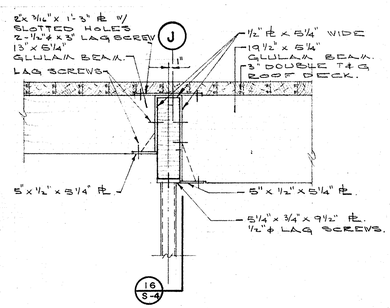
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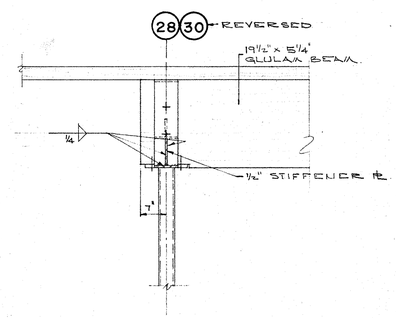
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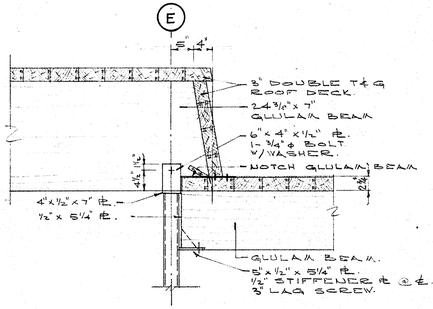
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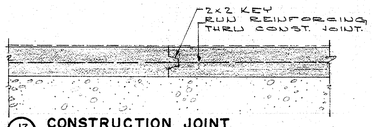
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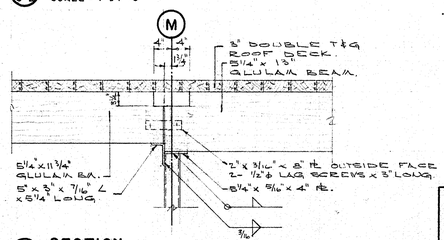
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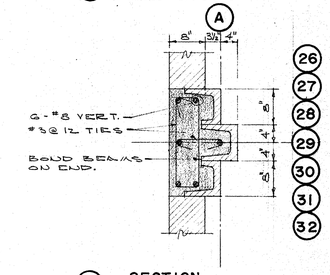
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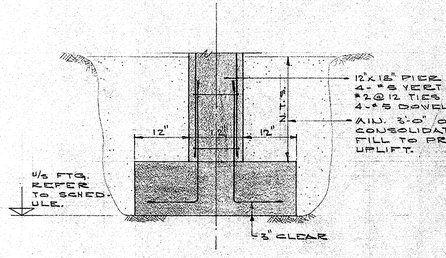
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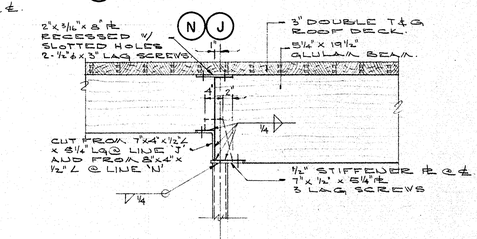
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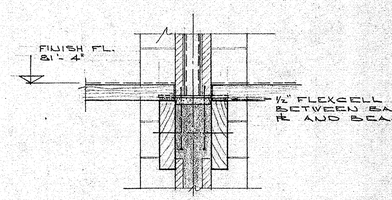
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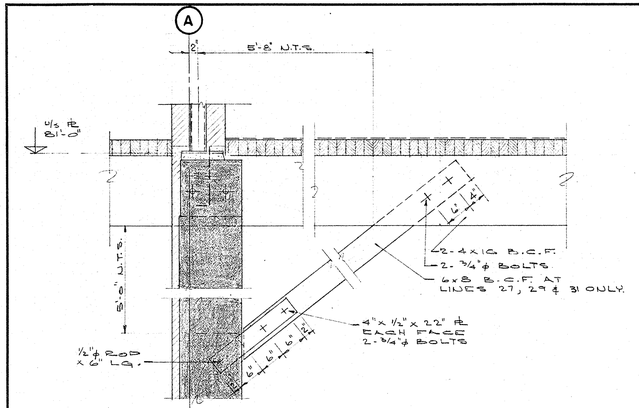
CARLBERG JACKSON PARTNERS
ARCHITECTS
Suite 303 — 321 Sixth Street New Westminster, B.C.

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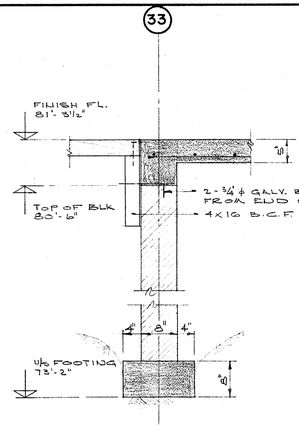
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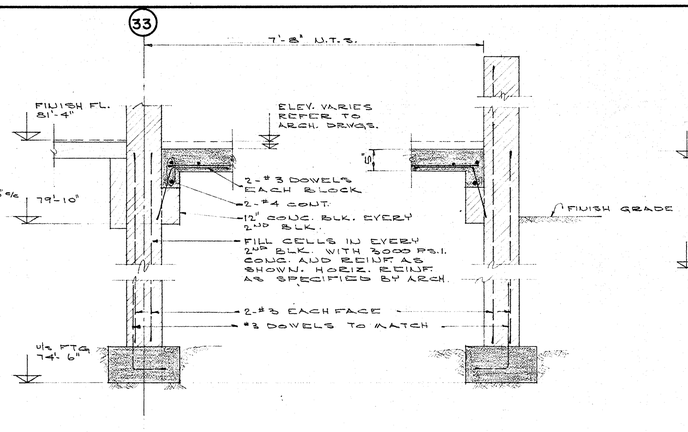
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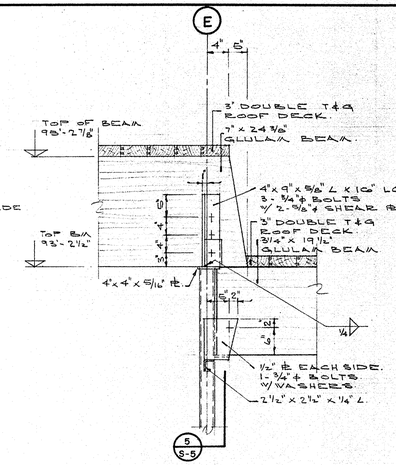
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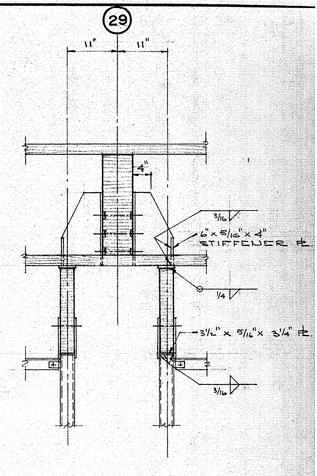
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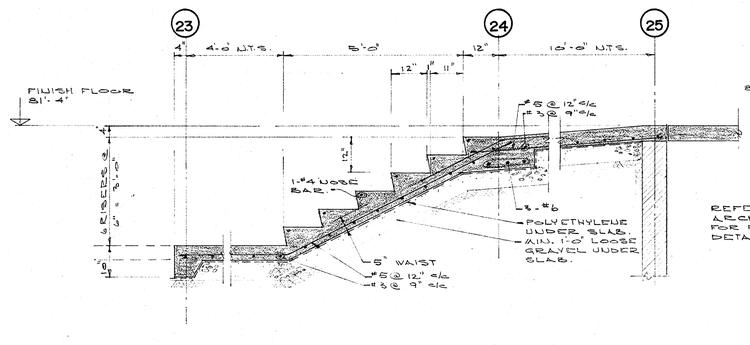
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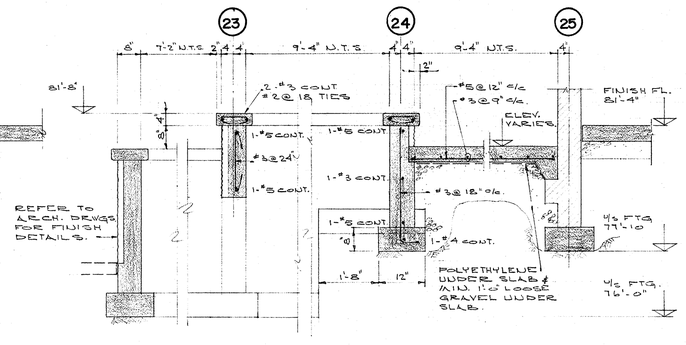
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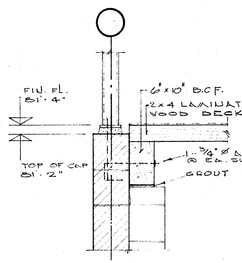
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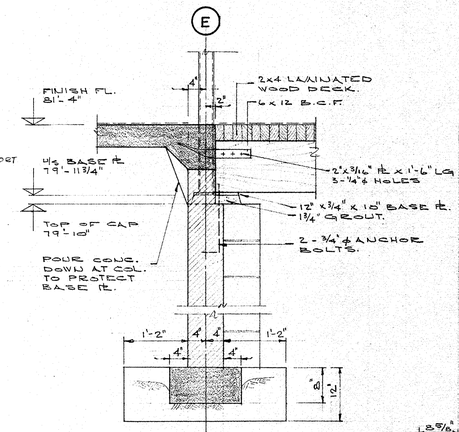
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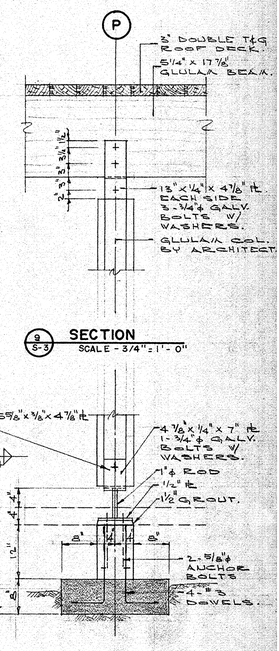
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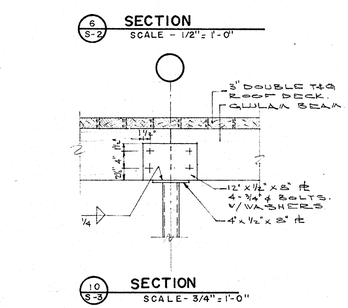
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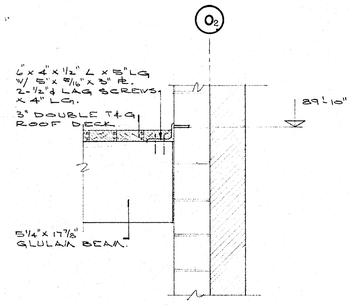
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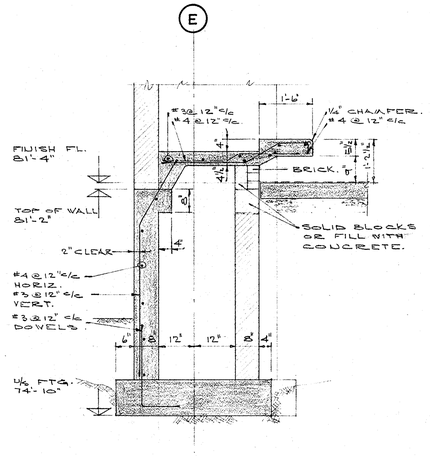
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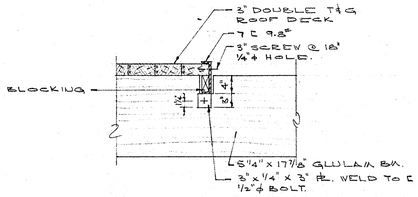
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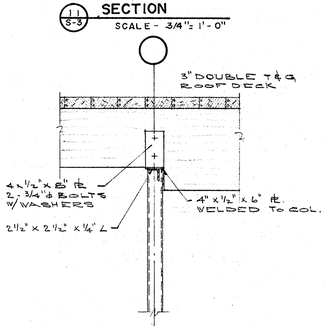
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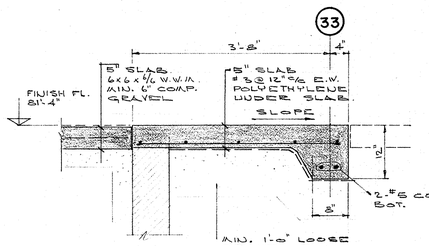
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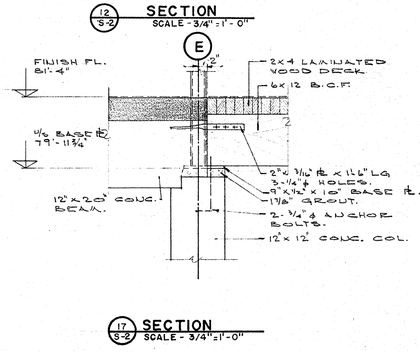
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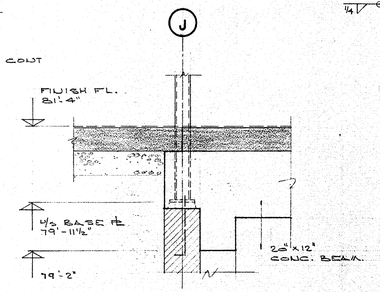
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13 S-1 **SECTION** SCALE - 3/4" = 1'-0"

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ARCHITECTS
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Appendix B - Mechanical Facility Assessment

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ECHO AQUATIC AND FITNESS CENTRE

Project No.: 009a-138-25
375 Hartman Rd, Kelowna, BC
V1X 2M9

Building Condition Assessment – Mechanical

September 12, 2025



PREPARED FOR:
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1. INTRODUCTION

This report provides a condition assessment of the mechanical systems at the Echo Aquatic and Fitness Centre in Port Alberni BC. A site review was conducted by Taio Waldhaus of the AME Group on February 20, 2025, at which time all mechanical equipment located within and on the building was reviewed. The site review was led by HCMA and accompanied by facility operations staff.

AME has reviewed all available as built documentation available

This condition assessment reviews mechanical equipment and systems and provides commentary on system design, equipment service life, and recommended replacement schedules. Any observed code compliance and/or safety deficiencies are identified. A detailed equipment list is also provided in order to support the City's asset management planning.

2. FACILITY DESCRIPTION

The Facility consists of an aquatic centre, fitness centre, and change facilities. It was originally constructed in 1966 as part of BC's 1967 Centennial and has undergone several expansions and renovations since. They are summarized as follows:

1966 Original Construction: Aquatic centre, lobby, changerooms, and fitness. Lap pool only.

1970's Sauna and Hot Pool: Saun and hot pool added. Hot pool deck and piping refurbished in 2010.

1999 Family Change Addition: Expansion of natatorium to include family change rooms. This included an ERV and duct distribution.

2012/13 Natatorium Dehumidification and UV: Revision to ventilation strategy and addition of mechanical dehumidification with heat recovery. UV added to all pools.

2015 Boilers: Main boiler plant replaced.

1. APPLICABLE CODES AND STANDARDS

The following codes and standards have been referenced for this report.

.1 BC Building Code – Current Version
.2 ASHRAE 62.1 – Current Version as referenced in the BC Building Code
.3 ANSI Z358-2014 – Emergency eyewash and shower standards
.4 BC Health Act.
.5 BC Pool Design Guide, current version.
.1 Technical Safety BC Guidelines for chemical storage and chlorine rooms.

3. EQUIPMENT SERVICE LIFE

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) provides guidance on typical service life expectations for various types of equipment. These values represent median estimates under normal operating conditions and may vary based on usage, maintenance, and environmental factors. The service life of equipment interacting with pool water and natatorium air have been adjusted based on AME experience observing the increased degradation due to corrosive elements. Figure 1 summarizes equipment lifespan for the mechanical equipment found in aquatic facilities.

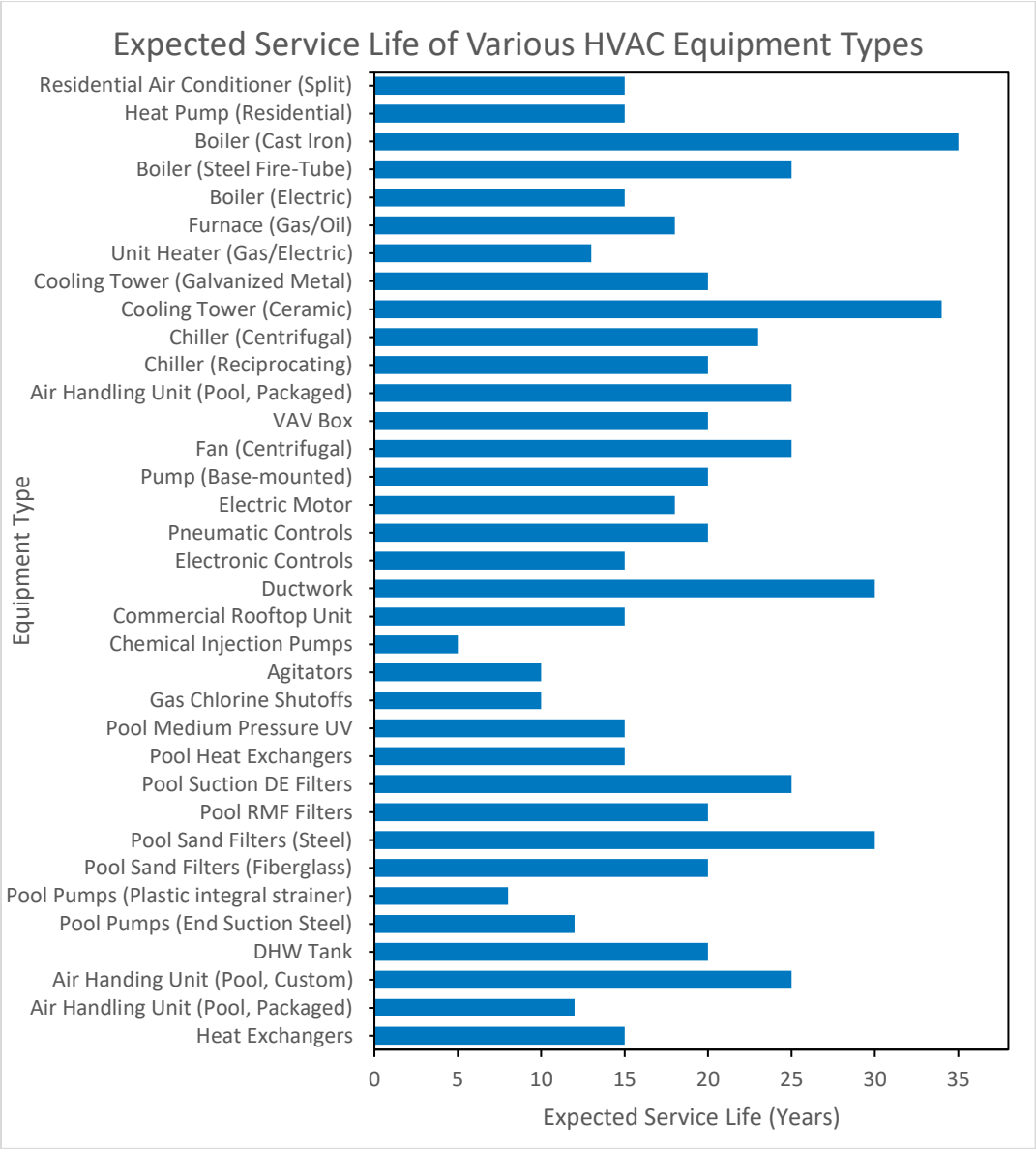


Figure 1: Typical Equipment Service Life (Source: ASHRAE Applications)

4. PLUMBING SYSTEMS

Facility plumbing systems consist of a water entry station, hot and cold piping distribution, domestic hot water tanks, heat exchangers, plumbing fixtures, and distribution piping.

4.1 Water Entry Station

The water entry station consists of an incoming water service, premise backflow preventor, facility water meter, and PRV station. Its function is to connect the site civil water service to the building, prevent backflow into the municipal main, and manage building water pressure.



Figure 2: Water Entry and Pool Makeup Water Meter

The water entry station is original to the facility. The pool water meter is showing signs of corrosion.

Recommendations:

.1 Replace water meter, premise backflow preventor, and PRV within the next five years.

.2 Connect pool water meter to BMS system in order to trend water use. Should water use increase substantially, this is a sign of pool leaking.

4.2 Domestic Hot Water Heating

The Domestic hot water heating system consists of 2 Viessman indirect domestic hot water tanks fed from the boiler plant along with circulation pumps, and a manual adjust thermostatic mixing valve. Heat is generated by the building gas fired boilers (described in the HVAC section). The domestic hot water system was renewed along with the boilers in 2015.



Figure 3: Domestic Hot Water System

Recommendations:

.1 Monitor for signs of leaks and replace within 6 to 10 years.

4.3 Drinking Fountains

The drinking fountain/bottle filler on the pool deck appears to be in good working condition and has not yet shown signs of rust, which is common in natatoriums. Operations noted that piping to all facility drinking fountains have been replaced with lead free piping, except for the deck bottle filler showing in Figure 4 below.

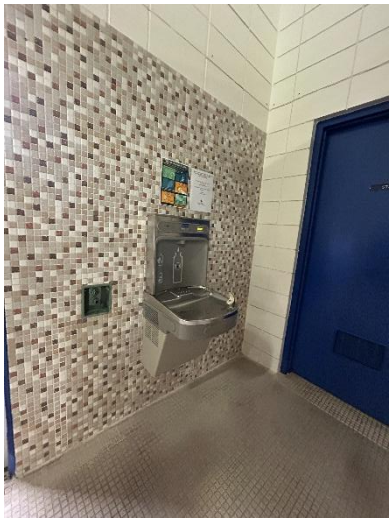


Figure 4: Domestic Water Drinking Fountain

Recommendations:

.1 Treat deck bottle filler with corrosion resisting treatment to extend its life.

.2 Replace piping serving the deck bottle filler within the next 5 years.

.3 Monitor refrigeration system for corrosion and replace within the next 6-10 years.

4.4 Plumbing Fixtures

Plumbing fixtures, including water closets, lavatories, showers, and sinks are a combination of original and renewed with the renewed fixtures located in the family changerooms. The original fixtures are at end of life and should be planned for replacement. The fixtures in the new family changerooms, shown in Figure 5, are in good working order and will likely last for another 5 to 10 years with the same level of maintenance.



Figure 5: Plumbing Fixtures

Recommendations:

.1 Replace original plumbing fixtures within the next 5 years.

.2 Continue to service the family change fixtures and plan for replacement in 5 to 10 years.

5. FIRE SUPPRESSION

The building is not currently sprinklered. Refer to architectural comments on any need to add an automatic fire suppression system to the facility.

6. HEATING, VENTILATION, AND AIR CONDITIONING

The HVAC system consists of a boiler system, natatorium dehumidifier, and some packaged rooftop air handlers. The boiler system provides heat for terminal radiators, unit heaters, a radiant floor heating system in the family change, pool heat, and domestic hot water generation.

6.1 Boilers

The boiler plant consists of three Viessman Vitodens 200's, a low loss header, and circulation pumps. These boilers were installed in 2015 and are in good working order due to proactive service and maintenance. They are hi efficiency gas fired condensing boilers, which deliver efficient heating of hot water. The boiler system has 10-15 years of service life remaining, so long as the same level of service and maintenance is implemented.



Figure 6: Boiler Plant

Recommendations:

.1 Continue to service the boilers, pumps, and low loss header. Plan for replacement in 10 – 15 years.

6.2 Natatorium Air Handler

The natatorium air handling unit consists of a Dessert Air, DX cooled and gas fired heat dehumidifier with external condensing unit. It provides mechanical dehumidification and fresh air for the natatorium, while recovering heat from this process and transferring it to the pools. It was installed in 2013 and is at the end of its service life.



Figure 7: Natatorium Dehumidifier.

This air handler works in conjunction with roof pop up exhaust fan pair and a doghouse intake louver. This is provided as a supplementary ventilation system, such that the natatorium can remain conditioned if the air handler is down for service. It is understood that the exhaust fans operate to contribute to the pressure balance of the natatorium.



Figure 8: Natatorium intake doghouse and exhaust fans.

Recommendations:

.1 Replace natatorium air handler within the next 5 years. There are many options for this type of equipment, which can be evaluated. However, a like for like replacement should be sufficient to extend the life of the building for the next 10 years.

.2 Provide updated pressure controls for the natatorium that operate the exhaust fans to consistently maintain a negative pressure. This will require VFD's on the exhaust fans and a series of pressure sensors throughout the building. This operation is critical to ensuring the corrosive natatorium air does not migrate into the envelope or the remainder of the building.

1.2 Packaged Rooftop Air Handlers

A series of packaged rooftop heat pumps are provided, which serve the lobby and fitness spaces. These air handlers are at end of life.



Figure 9: Packaged rooftop air handlers.

Recommendations:

.3 Replace within the next 5 years.

7. POOL EQUIPMENT

There are 2 pools in the facility: a lap pool and hot pool. The lap pool is original to the 1966 facility. The hot pool was added in 1999 and its deck and piping was refurbished in 2010.

The lap tank utilizes an open pit suction DE filtration system, and the hot pool utilizes hi rate sand filtration. All filtration systems rely on end suction pumps with basket strainers and combinations of schedule 40 and 80 PVC piping.

Disinfectant is provided for all pools through gas chlorine injection and soda ash for pH balance. In 2013, medium pressure UV was added for secondary disinfectant and oxidation for the pools. The hot pool UV was replaced within the last 5 years and the lap pol UV is slated for replacement in the next year.

7.1 Lap Pool

The lap tank has an open pit suction DE filter that is original to the facility. The DE tank is concrete and in good working order with no observed leaks. The filter elements are made up of perforated porous plates covered with filter fabric and then coated in perlite. They also appear to be in good working order.

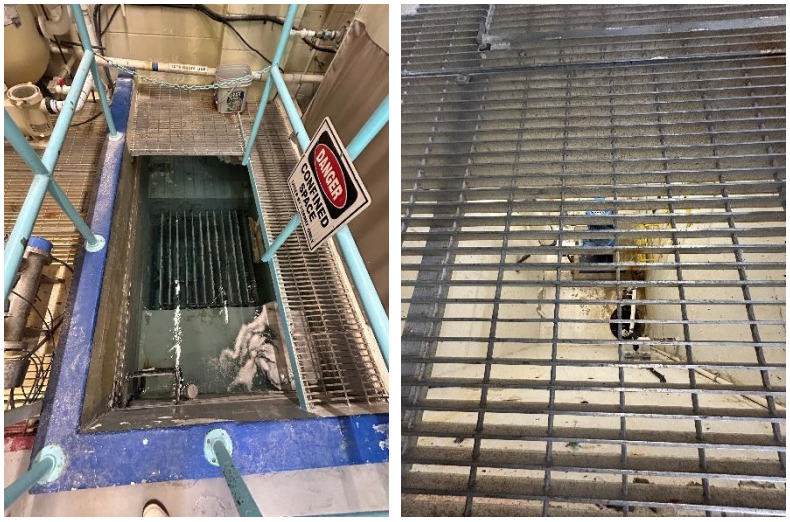


Figure 10: Lap Tank Open Pit DE Filters.

These filters provide exceptional water clarity. However, they are at the end of life, and it is getting more difficult to source replacement components. In addition, handling of perlite is a hazard to operations staff and the open pit design results in pool air corroding metallic components in the basement mechanical room. An additional complication for this facility is that the platforms that provide convenience for operations, create a confined space. Accessing confined spaces require special training, fans, and supervision, substantially increasing the maintenance associated with this filter.

End suction pumps with basket strainers circulate pool water from the filters back to the pool tanks. These pumps are at various stages of replacement. All are in good working order.

Recommendations:

.1 Consider replacing open pit DE tanks with either vertical deep bed sand filters or pressure regenerative media filters.

.2 Continue to service filter pumps, replace motors and components as required, and provide full replacement when filters are replaced.

.3 Provide new main drain valves with fail close valves as well as new balance tank level controls, complete with modulating valves that provide full modulation and automatic pool level control.

7.2 Hot Pool

The hot pool was built in the 1970's and its deck and piping was refurbished in 2010. It is fit with a hi rate sand filter installed in 2013. The Triton hi rate sand filter is adequate at filtering pool water, however the shallow sand bed results in the lowest level of water clarity provided by a filter. Further, the filter appears to be undersized for the application.

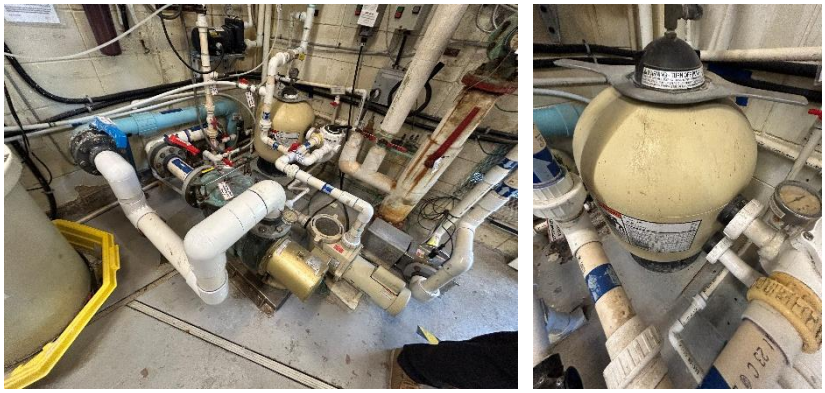


Figure 11: Hot Pool Filter.

Hot pool pumps consist of an end suction filter pump and a jet pump, all installed in 2013. They have had various components replaced throughout their life, but have no service life remaining.

Recommendations:

.1 Replace the filter, filter pump, and jet pump in the next 5 years. A review should be undertaken at this time, to determine an optimum filter size for the pool. And, consideration should be made to a deeper bed filter with activated glass media, operating at lower velocity. This will significantly improve the water quality of the hot pool and reduce the trichloramine levels experienced in the hot pool alcove.

7.3 Medium Pressure UV

Medium pressure UV reactors have been installed on each pool with the hot pool installed within the last 5 years. The lap pool UV is at end of life, and understood that it is planned for replacement within the next year. The reactors effectively neutralize bacteria such as Coli strains and Crypto. Also, the oxidation removes combined chlorine, which is the precursor to airborne disinfection by-products. As such, they improve indoor air quality in the natatorium.



Figure 12: Pool UV

Recommendations:

.1 Maintain hot pool UV regularly and incorporate into new filter system when replaced. Plan for replacement in 10-15 years.

.2 Replace lap pool filter within the next 5 years.

7.4 Chemical Treatment

Primary disinfectant for the pools is provided with gas chlorine and soda ash for pH balance. Gas chlorine is exceptional at delivering chlorine to the pools as it is pure and does not introduce dissolved solids that increase turbidity. However, it does require several safety measures to ensure that extremely toxic chlorine gas does not leak from the storage bottles. This consists of gas detection, solenoid shut off valves, and ventilation that conforms with Technical Safety BC regulations. All these measures are present, except for the routing of the exhaust from the room. This duct should be routed up above the roof such that it terminates a minimum of 15’ above the highest roof element. A windsock is also required.



Figure 13: Gas Chlorine System

Pool water pH balance is maintained with soda ash injection. Soda ash raises the pool pH after gas chlorine lowers it. Granular soda is mixed with an agitator in a large tank and injected into the pool through chemical injection pumps. It is understood that the agitator has reached its end of life and failed. Injection pumps need substantial maintenance and often fail within 5 years.



Figure 14: Soda Ash Injection System

Recommendations:

.1 Service gas chlorine solenoids and sensors regularly and replace components as required. Conform to all TSBC regulations related to gas chlorine storage and use.

.2 Replace the soda ash agitator and provide a secure mounting bracket to the wall.

.3 Continue to maintain pumps and replace upon failure. Recommend keeping several spares at the facility.

.4 Route chlorine room exhaust ductwork up above the highest roof element, provide wind soc, and update fan to accommodate the extended duct routing.

8. CONCLUSIONS AND RECOMMENDATIONS

For recommended replacement schedules, reference Appendix A: Major Equipment List and Service Life below.

8.1 Plumbing Systems

.1 Replace water meter, premise backflow preventor, and PRV within the next five years.
.2 Connect pool water meter to BMS system in order to trend water use. Should water use increase substantially, this is a sign of pool leaking.
.3 Monitor domestic hot water tanks for signs of leaks and replace within 6 to 10 years.
.4 Treat deck bottle filler with corrosion resisting treatment to extend its life.
.5 Replace piping serving the deck bottle filler within the next 5 years.
.6 Monitor bottle filler refrigeration system for corrosion and replace within the next 6-10 years.
.7 Replace original plumbing fixtures within the next 5 years.
.8 Continue to service the family change fixtures and plan for replacement in 5 to 10 years.

8.2 Fire Suppression

Review opportunities to add automatic fire suppression system with architectural.

8.3 HVAC

.1 Continue to service the boilers, pumps, and low loss header. Plan for replacement in 10 – 15 years.
.2 Replace natatorium air handler within the next 5 years. There are many options for this type of equipment, which can be evaluated. However, a like for like replacement should be sufficient to extend the life of the building for the next 10 years.
.3 Provide updated pressure controls for the natatorium that operate the exhaust fans to consistently maintain a negative pressure. This will require VFD's on the exhaust fans and a series of pressure sensors throughout the building. This operation is critical to ensuring the corrosive natatorium air does not migrate into the envelope or the remainder of the building.
.4 Replace packaged rooftop air handlers within the next 5 years.

8.4 Pool Equipment

.1 Consider replacing open pit DE tanks with either vertical deep bed sand filters or pressure regenerative media filters.
.2 Continue to service filter pumps, replace motors and components as required, and provide full replacement when filters are replaced.

.3 Provide new main drain valves with fail close valves as well as new balance tank level controls, complete with modulating valves that provide full modulation and automatic pool level control.

.4 Replace hot pool filter, filter pump, and jet pump in the next 5 years. A review should be undertaken at this time, to determine an optimum filter size for the pool. And, consideration should be made to a deeper bed filter with activated glass media, operating at lower velocity. This will significantly improve the water quality of the hot pool and reduce the trichloramine levels experienced in the hot pool alcove.

.5 Maintain hot pool UV regularly and incorporate into new filter system when replaced. Plan for replacement in 10-15 years.

.6 Replace lap pool filter within the next 5 years.

.7 Service gas chlorine solenoids and sensors regularly and replace components as required. Conform to all TSBC regulations related to gas chlorine storage and use.

.8 Replace the soda ash agitator and provide a secure mounting bracket to the wall.

.9 Continue to maintain pumps and replace upon failure. Recommend keeping several spares at the facility.

.10 Route chlorine room exhaust ductwork up above the highest roof element, provide wind soc, and update fan to accommodate the extended duct routing.

APPENDIX A: MAJOR EQUIPMENT LIST AND SERVICE LIFE

Table 1: Equipment List

Tag	Equipment Type	Manufacturer	Model Number	Estimated Equipment Lifespan (yrs)	Installed Date	Service Life Remaining (yrs)	Recommendations	Estimated Equipment Cost
Domestic Hot Water System								
DHW-###	DHW Indirect Tank	Viessman	Vitocell B300	20	2015	6-10	Monitor	$12,000
DHW-###	DHW Indirect Tank	Viessman	Vitocell B300	20	2015	6-10	Monitor	$12,000
Building Heating System								
B-1	Boiler	Viessman	Vitodens 200	25	2015	10-15	Monitor	$35,000
B-2	Boiler	Viessman	Vitodens 200	25	2015	10-15	Monitor	$35,000
B-3	Boiler	Viessman	Vitodens 200	25	2015	10-15	Monitor	$35,000
Air Handling Systems								
AHU-1 Natatorium	Air Handler (packaged dehumidifier)	Dessert Air	Unknown	12	2013	EOL	Replace	$140,000
RTU-1	RTU-WSHP	Trane	Unknown	20	Uknown	EOL	Replace	$18,000
RTU-3	RTU WSHP	Trane	Unknown	20	Uknown	EOL	Replace	$18,000
Pool Systems								
PF-1	Suction DE Filter	Unknown	Unknown	25	1966	EOL	Replace	$125,000
PF-2	Hi Rate Sand Filter	Triton II	Unknown	20	2013	EOL (Undersized)	Replace	$85,000
UV-1	Pool UV Reactor – Hot	ETS	Wafer	15	2023	13	Monitor	$40,000
UV-2	Pool UV Reactor – Lap	Uknown	Uknown	15	2013	EOL	Replace	$40,000
Gas Chlorine Safety Shutoffs	Solenoid Valves			10	2018	3	Monitor	$120,000
Agitator	Rotary Mixer			10	2015	0	Replace	$5,000
Chemical Injection Pumps	Paristaltic Pumps			10	2020	5	Monitor	$16,000
Gas Chlorine Exhaust System	Ductwork						Revise as indicated	$25,000

END OF REPORT

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Appendix C - Structural Facility Assessment

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HEROLD ENGINEERING

November 4, 2025 2298-028

Via email: M.vonTiesenhausen@hcma.ca

HCMA Architecture + Design
400 - 675 W Hastings St.
Vancouver, BC
V6B 1N2

Attn: Mike von Tiesenhausen, Intern Architect

Re: Aquatic Facility Review and Feasibility - DRAFT

Mike:

Per your request, Herold Engineering has reviewed the structural systems in place at the Echo Aquatic and Fitness Studio, located at 4255 Wallace Place in Port Alberni, British Columbia.

Herold Engineering attended site on August 22nd and 28th, 2025, to complete visual assessment of the building structural components as well as the walls of the three pool basins located in the building. The assessment included visual and (if possible) tactile review of the structural systems comprising the Aquatic Center building. Generally, these systems are comprised of load bearing concrete block walls, timber framing, and some steel and timber support columns which support timber framed roof assemblies.

The extent of the structural element review was limited due to accessibility and/or the presence of architectural finishes.

The following letter summarizes the results of the structural assessment, as well as any relevant information provided in the reference documents. The letter also provides commentary on current BCBC code compliance of the existing structure and explores the feasibility of upgrading the existing structural systems relative to the British Columbia Building Code (BCBC) 2024. These upgrades are understood to either extend the life of the existing facility 15-25 years or fully modernize the structures.

Photographs from the site visit(s) are appended to this report for reference.

Background

The Echo Aquatic Center was constructed between 1967 and 1981 in a phases approach. The primary aquatic center building was constructed in 1967, with a family changeroom added in 1999. The community center and library, which are located immediately east of the aquatic center were built in 1967 and 1972, respectively. The museum structure was constructed in 1981 and is located east of the library.

The aquatic center is a mixed material construction. The main roof system is a timber framed assembly supported on painted glulam beams. The glulam beams span the full width of the pool building and are supported on stacked masonry block walls. Some of the roof areas are supported by steel or timber columns. It appears that the block wall rests on a cast-in-place

concrete foundation walls and piers. It is likely that the building structure is supported on cast-in-place concrete strip and pad footings. This would be consistent with the 1966 reference drawings.

The lateral system is comprised of a timber roof diaphragm and concrete block shearwalls. The block walls appear to be in a stack bond configuration and are likely nominally reinforced based on the date of construction.

The aquatic center structure is a stand-alone building with its own entrance lobby. There is no direct access from the building to the adjacent community center, museum, or library. The community center structural drawings, issued by Carlberg Jackson Partners Architects in November 1966, show the east wall of the aquatic center and west wall of the community center as a single wall supporting both structures.

It is understood that the community center is a local muster point/emergency shelter and would be categorized as “Post Disaster” importance based on use. A Post Disaster structure is defined by the BCBC 2024 as: “a building essential for providing public services during an emergency, such as hospitals, power stations, water treatment facilities, and emergency response centers.” Post Disaster structures are intended to remain open and accessible after a significant seismic event and have stringent requirements for structural design in BCBC 2024.

The aquatic center structure is not currently used as a Post Disaster structure and is of “Normal” importance at the time of the assessment review.

The aquatic center is nearing the end of its service life. It is understood that stakeholders have previously explored the option of constructing a brand-new building and are now interested in alternatives to new construction in the form of life extension or full modernization of the existing structure.

It is understood that there is no change in use anticipated for the community center and the aquatic center structures as part of this upgrading work, or in the future service life of the structure(s). A change in use would trigger a mandatory seismic upgrade per NBCC 2020 Commentary L.

Methodology

The structures were visually reviewed by Herold Engineering Limited (Herold Engineering).

The assessment involved visual and tactile review of the structural elements where possible. The assessment was limited by accessibility as well as the presence of architectural finishes.

The feasibility study was completed based on the requirements of BCBC 2024, the structural commentaries for the NBCC 2020 which contains best practices for seismic upgrading of existing structures, as well as our previous experience with projects of this nature.

Reference Documents

- British Columbia Building Code 2024
- WSP Condition Assessment Report. October 2024

- Aquatic Center Inspection Logs
- 1966 Community Center Structural Drawings
- National Building Code of Canada 2020

Document Review

Herold Engineering has completed a review of the reference documents noted above. The review was completed to determine the configuration of the existing structural systems, as well as any noted structural deficiencies in the historical maintenance and condition assessment reporting.

The structural drawing set for the community center, issued in 1966, shows the aquatic center structure and the community center sharing the same exterior wall. The wall is a gravity load bearing wall for the aquatic center roof but is not a load-bearing wall for the community center roof system. The wall would be considered a part of the seismic resisting system (lateral system) for both structures.

The 2024 condition assessment findings, provided in the WSP report, identified the following structural issues:

- Portions of the flat roof will require replacement within the next “few” years,
- The remainder of the roof structure will require replacement within the next 10-15 years,
- Local concrete cracks and spalling to visible walls around the pool,
- Minor amounts of cracking the concrete block walls,
- No signs of settlement or differential movement to the foundation.

Pool Status logs, in-house assessment 2018, identify the following structural issues:

- Asbestos is noted in the wrapping of some pipe systems,
- Asbestos is noted in the coatings on the masonry block walls,
- Pool gutter walls are cracked and spalling, with large chunks being dislodged,
- Seismic upgrades are required.

Structural Review and Assessment Findings

The gravity resisting system is in overall good to fair condition. The structure is currently 50+ years into its service life and is showing moderate signs of deterioration expected for a structure of this age. The following items were noted during the site visit:

- The lower roof envelope is in poor condition and requires replacement to mitigate affecting the structures below,
- The upper roof(s) envelopes are in good condition with no noted deterioration,
- The underside of the tongue and groove timber roof deck is in overall fair condition; there are localized areas showing signs of moisture damage/staining.
- The glulam beams appear to be in good condition with no noted signs of deterioration,
- Moderate amounts of localized cracking on cast-in-place concrete pier support and architectural features,

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Our visual review indicated that the pool basins are in overall good condition, with no critical damage noted. The basins were covered by tiling and concrete coatings, so the review was somewhat limited. The exterior face of the basin walls was not visible for assessment.

The following items were noted:

- Main pool and shallow pool gutters have significant cracks and spalling, with large chunks of concrete reported as being dislodged,
- The gutter concrete reinforcing is exposed in localized areas with visible corrosion of the reinforcing,

The lateral structural system is comprised of masonry block shearwalls supporting a timber diaphragm. As previously reported in the in-house assessment report, 2018, the seismic resisting system is insufficient. The wall is stacked masonry block, which is structurally inferior to a staggered arrangement. It is likely that the internal steel reinforcing is nominal, and the wall would perform poorly in a seismic event. The governing mode of failure would likely be out of plane failure of the masonry walls.

Code Compliance Review

The lateral structural system is currently not in compliance with BCBC 2024. The roof system is likely not robust enough to distribute the current code specified seismic accelerations, and the masonry block is not configured, nor reinforced, to ensure ductile behavior and sufficient resistance in the event of an earthquake. It is likely that the existing system would fail in a significant seismic event which could result in failures of the structure(s) and risks to life safety.

The structure is directly adjacent to the community center, with no seismic separation. The wall at the east end of the pool is being utilized as a structural wall for both the community center and aquatic center structures. The seismic response of one structure will directly affect the response of the adjacent structure. The community center is understood to be a Post Disaster structure; however, the wall configuration and anticipated performance will not meet Post Disaster performance criteria as specified by BCBC 2024.

Conclusions and Recommendations

The following structural repairs are recommended for the gravity system:

- Replace low roof envelope to mitigate affecting the wood structure below,
- Provide concrete patch repairs to the pool gutter systems,
- Provide concrete path repairs to cracked concrete features throughout the building.

The lateral system is not in conformance with current BCBC standards and would need major upgrades to perform adequately in a significant seismic event.

Life extension/ modernization requirements are dependent on the level of importance of the building. For all the following options it is assumed that the community center and aquatic center are not a community muster/ emergency shelter point in the event of an earthquake. Downgrading the structural importance to “Normal” allows for life extension options per Commentary L of the NBCC 2020, and full modernization to normal requirements of BCBC 2024.

If a life extension is selected with no seismic upgrade (Option 1 below), at a minimum, we strongly recommend that restraint of operation and functional components (OFC) be brought up to current code standards

The following options are possible to extend the life of the existing facility:

Option 1: Life Extension with no Seismic Upgrading (NBCC 2020 Commentary L)

This option would involve the following upgrades:

- Replacement of the low roof envelope,
- Future replacement of the upper roof envelope in 10-15 years,
- Ongoing minor to moderate concrete repairs to the pool basin and cast-in-place concrete piers and foundation systems,
- Upgrades to OFC restraint throughout facility,

This option would extend the life of the facility by 15-20 years with increased maintenance requirements and condition assessment intervals. This option does not improve the existing seismic system, and poor seismic performance is anticipated with potential for structural collapse.

Option 2: Life Extension with Voluntary Seismic Upgrade (NBCC 2020 Commentary L)

This option would involve the following upgrades:

- Replacement of the low roof envelope,
- Future replacement of the upper roof envelope in 10-15 years,
- Ongoing minor to moderate concrete repairs to the pool basin and cast-in-place concrete piers and foundation systems,
- Upgrades to the timber roof assemblies and masonry block walls in accordance with NBCC 2020 Commentary L,
- Upgrades to OFC restraint throughout facility,
- Confirmation of the geotechnical conditions.

This option would extend the life of the facility by 20-25 years with increased maintenance requirements and condition assessment intervals.

Option 3: Modernization (BCBC 2024)

This option would involve the following upgrades:

- Replacement of the entire roof system,
- Ongoing minor to moderate concrete repairs to the pool basin and cast-in-place concrete piers and foundation systems,
- Upgrades/ seismic retrofit to the masonry block walls which may require the use of steel braced frames or reinforced concrete shearwalls.
- Potential seismic separation and/or upgrades to the Community Center structure,
- Confirmation of the geotechnical conditions and potential foundation improvements if required.

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This option would be considered a modernization of the existing structural systems. The pool basins would likely still require increased maintenance and assessment intervals.

If the Community Center remains a Post Disaster facility, it is recommended that the two buildings be separated by a seismic gap that allows independent upgrading solutions. This would involve erection of a new wall to support one of the structures. This option is likely cost prohibitive and would require upgrades to the Community Center to achieve Post Disaster importance per BCBC 2024, as well as upgrades to the Aquatic Center to Normal importance using one of the options detailed above.

We trust this meets your immediate needs. Please contact the undersigned should you have any comments, questions or require guidance with repair implementation.

Yours truly,

HEROLD ENGINEERING LIMITED

Shannon Summersides, P.Eng
Associate

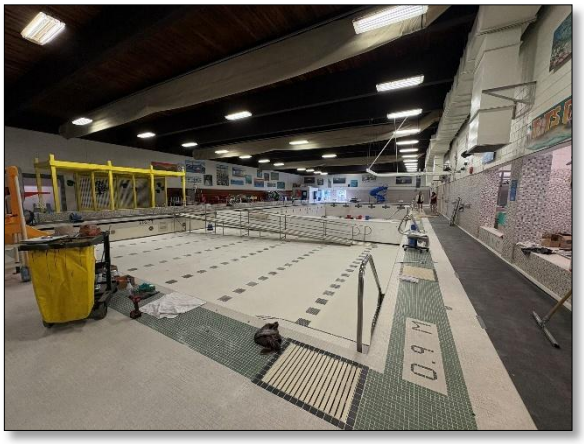
Lee Rowley, FEC, P.Eng, M.I.Struct.E.
Review/Secondary Signatory

Enclosure

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SITE PHOTOGRAPHS



Photograph 1: Aquatic Center Interior, note: general arrangement



Photograph 2: Aquatic Center Lower Roof, note: visible biological growth



Photograph 3: Aquatic Center Low Roof



Photograph 4: Concrete Features, note: cracking



Photograph 5: Pool Gutter, note: concrete spalling



Photograph 6: Pool Gutter, note: concrete cracks

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Appendix D - Building Code Assessment

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CELERITY ENGINEERING LIMITED
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Victoria, BC V8Y 2K6

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Memorandum

From: **Corie Lubben, B.Eng.**
Telephone: (250) 410-2021 x 205
Email: corielubben@celerity.ca

Project: ACRD Echo Pool Facility, 4255 Wallace Street, Port Alberni
Subject: Existing Building Review-*DRAFT*
Project #: 25246
Date: September 10, 2025

	Attention:	Company:	Via:
To:	Carl-Jan Rupp	hcma architecture + design	Email
	Mike von Tiesenhausen	hcma architecture + design	Email

hcma architecture + design has retained Celerity Engineering Limited to review the existing Echo Pool Facility on the property at 4255 Wallace Street, located in Port Alberni, British Columbia. It is our understanding that the pool portion of the building is being reviewed for either a renovation or replacement project. This review is intended to support the evaluation of the existing building and is a code compliance review of the existing pool facility.

The scope of this review is limited to the Echo Pool Facility. It is our understanding that the adjacent community Centre and Museum Library are not within the scope of this project. Refer to Figure 1 below.



Figure 1: Aerial View of Property, from google maps

This review identifies compliance gaps with respect to the fire protection and life safety requirements of Part 3 of the 2024 British Columbia Building Code[1].

Our review has been based on existing building drawings and documentation provided to us by hcma as well as a site visit conducted on August 22, 2025.

This is not a 'For Construction' document, but a performance document that is intended to be used by other consultants in implementing their detailed designs and preparing their working drawings and specifications. The consultants whose documentation is required to incorporate these fire safety requirements are expected to have read this report, understood the implications as it affects their scope of work, and incorporated the relevant fire requirements into their drawings, specifications, and other construction documents.

Building Analysis

For this review, only the existing Echo Swimming Pool was reviewed. It is noted that the project site also contains an existing Community Centre and an existing Museum and Public Library, all located adjacent one and other. It is our understanding that the entire facility is considered as a single building for the purpose of applying the Building Code.

The project was reviewed with respect to Part 3, as it is within the scope of Article 1.3.3.3. of Division A of the Building Code. Table 1**Error! Reference source not found.** provides a summary of the applicable fire protection requirements from Part 3 that apply to the buildings on the property.

Table 1: Part 3 fire protection requirements summary.

Building Code Standard:	2024 British Columbia Building Code
<u>Building Information</u>	
Existing Building Area:	Approx. 3 700 m^2
Pool	Approx. 1 850 m^2 (including sauna and family changeroom additions)
Community Centre	Approx. 1 080 m^2 (including Cedar West addition)
Museum and Public Library	Approx 750 m^2
Building Height:	1 Storey
Use:	Public Swimming Pool, Community Centre, Library and Museum
Major Occupancies:	Group A, Division 3 – assembly Group A, Division 2 – assembly
Construction:	Cinder block/wood timber – Mixed construction includes both noncombustible and combustible
Sprinklers:	Not provided

[1] References to Building Code and its Sections, Subsections, etc. are to the 2024 British Columbia Building Code and Division B unless noted otherwise.

Fire alarm:	Provided – Mircom FA-300, supervised system

Applicable Construction Requirements

Construction Articles:	3.2.2.32, Group A, Division 3, One Storey,Sprinklered 3.2.2.26, Group A, Division 2, Up to 2 Storey, Increased Area, Sprinklered
Allowable Construction:	Combustible or Noncombustible
Allowable Building Area:	4 800 m^2, based on 1 storey in building height
Allowable Building Height:	1 storey
Floor Assembly FRR[2]:	if of combustible construction, 45 min fire-resistance rating required
Mezzanine FRR	N/A
Roof Assembly FRR:	N/A
Load Bearing Assembly FRR:	Not less than supported assembly; if of combustible construction 45 min fire-resistance rating required
Sprinklers:	Required
Fire Alarm:	Required

Approach to Compliance for Existing Buildings

In determining Building Code compliance for existing buildings, Sentences 1.1.1.1.(1) and 1.1.1.2.(1) of Division A are considered, which state the following:

1.1.1.1.(1) This Code applies to any one or more of the following: …
a) the design and construction of a new building,
b) the occupancy of any building, …
d) an alteration of any building,
e) an addition to any building, …
h) the correction of an unsafe condition in or about any building.

1.1.1.2.(1) Where a building is altered, rehabilitated, renovated or repaired, or there is a change in occupancy, the level of life safety and building performance shall not be decreased below a level that already exists.

The note to Sentence 1.1.1.2.(1) provides further explanatory material and states that it is "not intended that the British Columbia Building Code be used to enforce the retrospective application of new requirements to existing buildings." Furthermore, it states that "the increased cost of implementing in an existing building a design solution that would normally be intended for a new building may be prohibitive. The successful application of Code requirements to existing construction becomes a matter of balancing the cost of implementing a requirement with the relative importance of that requirement to the overall Code objectives. The degree to which any particular requirement can be relaxed without affecting the intended level of safety of the Code requires considerable judgment on the part of both the designer and

[2] Fire-resistance rating.

the authority having jurisdiction."

As such, the Building Code generally does not outline upgrade requirements, and upgrades are only required where deemed appropriate by the designers and authority having jurisdiction based on a specific proposed scope of works or to correct unsafe conditions that have been identified.

For accessibility, Subsection 3.8.4 of the Building Code addresses Alterations and Additions to Existing Buildings; these requirements are imposed when the existing building has a change of major occupancy or is altered or renovated. As outlined in Article 3.8.4.5, *access*[3] shall be provided within the existing building in conformance with Subsection 3.8.2. and 3.8.3. where providing such *access* would be practical. Acknowledging "practical" is not a defined term in the Building Code, this is determined on a project-by-project basis and is typically up to the designer to demonstrate to the authority having jurisdiction why it is impractical to provide *access*. Reasons associated with impractical to provide *access* include but are not limited to reasons of space constraints, costs, etc.

Note that all new works are required to comply with the requirements of the current Building Code.

The Building Code requires access to be provided to all normally occupied areas of a building. Noting there are limited exception in Article 3.8.2.3. of the Building Code which are primarily associated with service rooms and spaces. This is understood to include public facilities including those classified as Group A, Division 3, indoor swimming pool. Although the Building Code itself does not provide specific design requirements for swimming pools any renovations should considered the BC Guidelines for Pool Design[4] which includes insight on accessible design.

This report provides a list of deficiencies and non-compliant conditions.

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[3] *Italicized* word indicates means as defined in the BCBC. Stating *access* defined in the Building Code as an area and its facilities, or both, as required by the Code, which is easy to approach, enter, exit, operate, participate in, pass to and from, and use safely and independently by person with disabilities.
[4] B.C. Guidelines for Pool Design, Version 3, April 2025, Health protection Branch, Ministry of Health

Evaluation

Table 2 provides a summary of the deficiencies to applicable fire protection, life safety, and accessibility requirements (Building Code, Part 3) noted on site. Site photos are provided in the attachment to this memorandum to support these comments.

The deficiencies noted are with respect to the 2024 British Columbia Building Code, to compare the level of performance provided by the existing building relative to a modern facility. As noted above, there is no requirement to upgrade the facility to meet the current Building Code. Upgrades may be warranted if alterations are made to the building, but they would be dependent on the scope of work and judgment of the professionals involved and authority having jurisdiction.

Table 2: Summary of Building Code life safety deficiencies and assessment of hazard.

Code Reference	Applicable Requirement	Existing Condition
Base Building Construction [Article 3.2.2.26.]	Based on building area and major occupancies in the building, the applicable construction articles for the building requires the building to be sprinklered. This requires the entire building, pool, community centre, library and museum to be sprinklered. The roof assembly is required to be constructed having fire resistance rating of 45 minutes, based on the applicable construction article for the building.	The existing building is not protected by a sprinkler system.
Spatial Separation [Article 3.2.3.1]	Buildings located on the same property are required to be designed to prevent exposure, this is achieved through separation distance and exposing face construction, per the requirements in Section 3.2.3.	A storage Sea-Can is located approximately 8 ft (2.4 m) from the north exterior face of the pool. A spray was applied to the interior of the Sea-Can; however, it is not known this spray provides a fire-resistance rating. There are no unprotected openings in the exterior wall of the building, so any spatial separation issues are likely only associated with the Sea-Can itself.
Exit Exposure [Article 3.2.3.13.]	An exposure hazard is present where an exterior door in one fire compartment is within 3 m horizontally of an opening in another fire compartment and the exterior walls of these fire compartments intersect at an angle of less than 135°.	The pool entrance door is a sliding glass door which is located within 3 m horizontally of openings in the exterior wall of the community centre fire compartment. These openings were not observed to be protected by wired glass, glass block nor a closure.

Code Reference	Applicable Requirement	Existing Condition
Visual Signals [Article 3.2.4.19]	Where a fire alarm system is installed, visual signal devices shall be provided in addition to alarm signal devices, based on assembly occupancies and the potential for other sounds exceeding 100 dBA, and any floor area in which the ambient noise level is ore than 87 dBA.	Audible devices in the form of fire bells were observed through the building. No visual signal devices were observed.
Tactile Walking Surface Indicators [Article 3.3.1.19]	Tactile attention indictors complying with Clause 4.3.5.3.1, 4.3.5.3.3. and 4.3.5.3.4 of CSA B651, "Accessible design for the built environment" shall be installed at the top of all flights of stairs that are unenclosed and at drop-off edges with a change in elevation greater than 300 mm that are not protected by a guard.	Tactile Walking Surface Indicators were not observed at stairs within the facility.
Bleachers [Articles 3.3.2.9, 3.3.2.10, .and 3.3.2.12]	The backs and ends of the bleacher seats are more than 1200 mm above the ground or floor that are not adjacent to a wall shall be protected with a guard - Not less than 1070 mm high above an adjacent aisle surface - Not less than 920 mm high above the centre of an adjacent seat board. Handrails shall be provided in aisles with steps. For aisle less than 1100 mm wide: - Where the aisle serves seating on one side only, a continuous handrail on side of aisle opposite seats - Where aisle serves seating on both side a handrail located on one side at the end of each row of seats Steps in telescopic type bleachers to have a riser not more than 250 mm and treads with a run no less than 280 mm	The existing wooden bleachers were not extended at the time of our site visit, as such a full review was unable to be conducted. Steps in existing bleachers appear to meet the rise and run requirements, and were measured as having the following dimensions: Rise –215 mm Seat run –230 mm Distance between front edge of seat and back of next seat -355 mm Noting we were unable to review the steps between seating platforms The existing bleachers did not appear to incorporate an access aisle or associated handrails. Guards are not provided for on the ends of the bleachers. Noting that the backs of the bleachers were located adjacent the wall.
Safety Glass [Article 3.3.2.17.]	Glazing in all fixed and operable panels of doors shall conform to Class A of CAN/CGSB-12.1, "Safety Glazing",	The main entrance and pool entry doors are fully glazed.

Code Reference	Applicable Requirement	Existing Condition
	except where the bottom exposed edge of glazing is located more than 1 525 mm above the walking surface, or the glazed opening does not permit the passage of a sphere whose diameter is more than 75 mm. Glazing in all operable or fixed panels of windows shall conform to Class A of CAN/CGSB-12.1, "Safety Glazing", except where the bottom exposed edge of glazing is located more than 1525 mm above the walking surface, or the glazed opening is located more than 915 mm away from the walking surface on each side of the window measure perpendicular to the plane of glazing.	Exterior exit doors and side panels from wading pool were fully glazed. Noting one of the exterior doors was broken at the time of the site visit. Windows were incorporated in the separation wall between the pool and the weight room. The presence of safety glass was not reviewed.
Exit Stairs [Article 3.4.6.8]	Except for fire escapes stirs, stairs that are principally used for maintenance and service, and stairs that serve industrial occupancies other than storage garages, steps for stair shall have no open risers	Exterior stairs serving the rear of the pool facility are constructed with open risers.
Exit signs [Article 3.4.5.1 and 3.4.5.2]	Exit signs are to be clearly visible on approach to the exit. An exit sign displaying the word EXIT in tactile form that complies with subsection 3.8.3. shall be mounted on the approach side of exit doors, in the direction of exit travel.	The exterior exit doors located at the wading pool had a curtain rod with fabric curtain above. An exit sign and written information sign was posted above the curtain indicating exit located behind curtain. It is noted this is not best practice and exit door should be clearly visitable to the occupants. Tactile exit signs were not observed within the building
Location of Exits [Article 3.4.2.5]	Exits are to be located so that the travel distance to at least one exit shall be not more than 30 m.	The telescopic bleachers were included in the initial design but not installed at the time of the initial build. Based on drawings provided to us, the bleacher, when extended impact travel distance such that the travel distance from areas on the bleachers appear to exceed the permitted 30 m.
Exterior Walks [Article 3.8.3.3 and CSA B651]	Exterior walks forming part of the accessible path of travel shall have a slip resistance, continuous and even	CSA B651 notes that irregular surfaces, such as cobblestones or exposed aggregate paving can be difficult to traverse. The existing

Code Reference	Applicable Requirement	Existing Condition
	surface and be designed in accordance with CSA B651, Accessible design for the built environment, Clause 8.2.1.	exterior path incorporates some interlocking brick with irregular surfaces.
Plumbing facilities [Article 3.8.2.8]	At each location where washrooms are provided in a storey to which an accessible path of travel is required, at least one universal washroom shall be provided, designed per Article 3.8.3.13. Where two or more water closets are provided in a storey to which an accessible path of travel is required at least one water closet stall shall be designed accessible in conformance with Article 3.8.3.12 Where water closets are provided in an accessible washroom, at least one stall for persons with limited mobility shall be provided for every 10 stalls, designed per Article 3.8.3.15.	The pool is served by a male and female washroom bank in the reception/lobby area and well as washrooms within the change rooms and additional separate family change rooms. No universal washroom is provided in the lobby area. Family change rooms are provided which function similar to a universal washroom in that a care attendant can enter, regardless of gender, but not all the accessible requirements (insulated water pipes, location of soap dispensers, fixture location relative wall, etc.) are met. These change rooms incorporate a shower as well. The washrooms located within the lobby include two water closet stalls, neither of which are designed accessible or designed to support limited mobility. Similarly, washrooms within men's and women's dressing rooms do not incorporate accessible or limited mobility stalls.
Assistive Listening systems [Article 3.8.2.9]	In each location where information, goods or services are provided to the public at service counters in buildings of assembly occupancy, at least one of the service counters shall be equipped with: - An assistive listening system or adaptive technology conforming to Articles 3.8.3.19-21., and - An amplification system, where there is a barrier to communication, such as a glass screen.	The reception counter appears to include an amplification system; however, no assistive listening system or adaptive technology was observed.
Ramps [Article 3.8.3.5.]	A ramp located in an accessible path of travel is required to: - have a clear width not less than 1 000 mm - have a uniform slope not more than 1 in 12 (8%) - be equipped with handrails both sides, conforming to Article 3.4.6.5 except that they shall be not less than 865 mm and not more than 965 mm high.	The pool and community centre are served by an exterior path of travel connecting them. This path includes stairs and a ramp. The ramp within the exterior path between the community centre and the pool has a slope of approximately 20% and is not equipped with handrails.

Code Reference	Applicable Requirement	Existing Condition
		The posts supporting the covered entry are located within the ramp, but do not to reduce the width to less than 1 000 mm.
Doorways and doors [Article 3.8.3.6]	Every door that is located in an accessible path of travel shall have a clear width of not less than 850 mm. Door-operating devices shall be: - operable with one hand in the closed fist position, without requiring tight grasping, pinching with fingers, or twisting of the wrist, and unless other wise noted, with a force not more than 22 N - operable at a height between 900 mm and 1 100 mm above the floor	The doors providing access into the sauna are narrow, approximately 650 mm in width, and do not provide the required 850 mm clear width. Some office room doors do not provide full 850 mm clear width; similarly, the washroom doors in the lobby do not provide the full clear widths. Some of the existing door hardware includes knobs and thumb latches, which require twisting of the wrist.
Controls [Article 3.8.3.8]	Controls located in an accessible path of travel are required to be mounted 400 mm - 1 200 mm above the floor, and be adjacent to and centred on a clear floor space of 1 350 mm x 800 mm.	Manual stations within the facility are allocated above the maximum permitted height of 1 200 mm, measured from the floor. Noting required height within CAN/ULC 524 is 1 050 mm - 1 150 mm to the centre of the manual station.
Handrails [Article 3.4.6.5]	Handrails are required to be provided on both sides of a ramp. Handrails are required to be provided on one side of a stair that is less than 1 100 mm and on each side of a stair that is 1 100 mm or more. At least one handrail is required to extend horizontally 300 mm beyond the top and bottom of the stair or ramp. Handrails are required to have either a circular cross-section with an outside diameter between 30 mm - 50 mm, or a non-circular cross-section with a perimeter not less than 100 mm and not more than 160 mm and whose largest cross-section dimension is not more than 57 mm	The exterior stair providing access between the pool and the adjacent community centre includes wooden handrails constructed of 2x6s on each side. The existing handrail is not circular and is not considered graspable, exceeding the permitted cross section dimensions. Exterior exit stair outside the wading pool is greater than 1 100 mm in width and is equipped with a single handrail. Based on stair width, handrails on both sides are required. Wooden stairs on the east end of the exterior landing outside the wading pool exit are equipped with handrails constructed of 2x4's, which do not provide gropability nor meet the required maximum cross-sectional dimension. No handrails provided for the exterior ramps at building entrance.

Code Reference	Applicable Requirement	Existing Condition
		No horizontal extensions are provided for any of the existing handrails.
Guards [Article 3.4.6.6.]	Where there is a difference of elevation of more than 600 mm between the walking surface and the adjacent surface a guard is required. Height of guards to be a not less than 1 070 mm. Guards in exits shall not have any opening that permits the passage of a spherical object whose diameter is more than 100 mm.	Guards provided on rear exits – specifically weight room exit, and wading pool exterior landing – do not provide the required height and exceed the maximum allowable opening size.
Universal Washroom [Article 3.8.2.6. and 3.8.3.13.]	At least one universal washroom is required to be provided, complying with Article 3.8.3.13.	A stand-alone universal washroom is not provided for the pool. The family change rooms appear to function similar to a universal washroom in that a care attendant can enter, regardless of gender, but not all the accessible requirements (insulated water pipes, location of soap dispensers, fixture location relative wall, etc.) are met.
Counters [Article 3.8.2.11 and 3.8.3.20]	Where service counters is provided, at least one section of it shall comply with Article 3.8.3.20.	The existing counter in the lobby as noted to be used for the public. The existing counter height appears to be within the allowable 865 mm above the floor. No knee clearance is provided; however forward-facing interaction are not expected. Note that if forward facing interactions are expected, knee clearance conforming to Clause 3.8.3.20(1)(c) is required.
Signs and Indictors [Article 3.8.2.10.]	Where a washroom is not designed to accommodate persons with physical disabilities, signs shall be provided to indicate the location of accessible washrooms.	Non accessible washrooms are currently provided in the lobby area. No signed associated with location of an accessible washroom is provided.
Accessible signs [Article 3.8.3.9]	Tactile information signs shall have braille and tactile characters in accordance with CSA B651, be installed on the wall closest to the latch side of the door or on the	No tactile signs were observed in the building.

Code Reference	Applicable Requirement	Existing Condition
	nearest wall on the right side of the door where there is no wall at the latch side, and be centred 1 500 mm above the finished floor with the edge of the sign located no more than 300 mm form the door. Signs to incorporate the international symbol of access and appropriate graphic or textural information that clearly indicates the type of facilities available.	
Showers [Article 3.8.2.8]	Where showers are provided in a building, at least one shower stall in each group is required to be accessible.	Showers in dressing rooms and family change rooms are not considered accessible, per Article 3.8.3.16. Family change rooms are provided and serve a similar purpose. Noncompliant features in the shower within the family change rooms include: - Do not meet the required clear space adjacent the shower - Do not incorporate a vertical grab bar - Hinged seat is provided, however, not located on the same wall as the vertical grab required above - Does not incorporate a hand-held shower head - Soap holder is not recessed
Parking (Accessibility- Articles 3.8.2.5 and 3.8.2.10)	Designated accessible parking stalls and path of travel are to be provided. Accessible pathways from stall to main entrance to be provided. Accessible parking signage to be provided.	Designated path from the accessible parking stall to an exterior walk is not currently provide and required users to traverse the drive area.

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Conclusion

The building has been reviewed under the current Building Code and as outlined in Division A, it is not the intent that the requirements be applied retrospective unless specifically required by the AHJ. The Building Code does not contain any specific requirements for upgrades unless an unsafe condition is identified. Where a specific scope of work is proposed, upgrades are reviewed in the context of the project.

Accessibility throughout the pool is the most significant area of noncompliance, which is to be expected as the Building Code requirements for accessibility have evolved significantly since the construction of the pool.

Regards;

CELERITY ENGINEERING LIMITED

Prepared by:

Corie Lubben, EIT
Intermediate Code Consultant

Reviewed by:

Marc Showers, P. Eng., C.P.
Code Consultant

ATTACHMENTS
Reference Photos
Site Plan Markup

ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Ramp in exterior accessible path between community centre and pool handrail needed



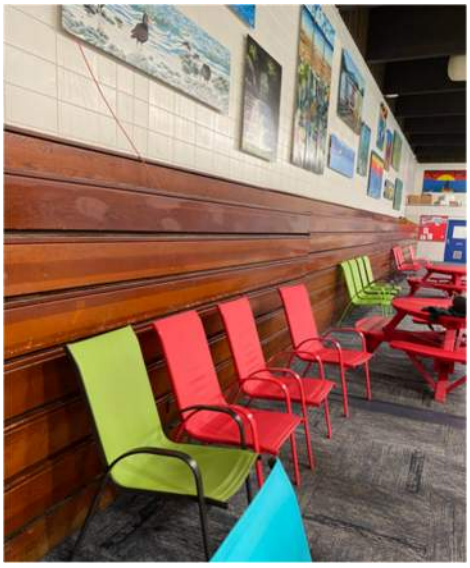
Openings that present an exit exposure condition.



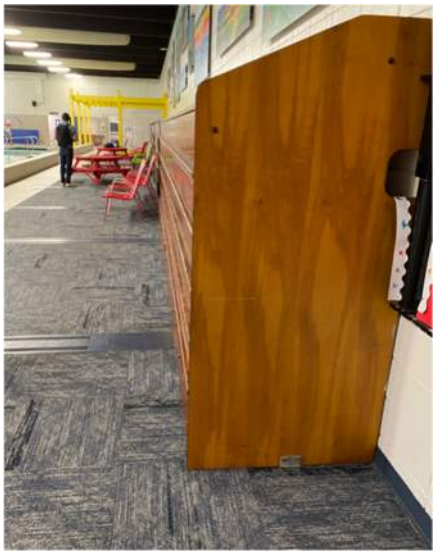
Thumb turns do not support accessibility



Thumb latches do not support accessibility



Bleachers within pool area



Side view of bleachers

ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Glazing between workout room and pool



Glazing between workout room and pool



Narrow Sauna door, adequate clear width not provided



Sauna showers and water closet not accessible

ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Sauna shelf, height not accessible



Bells provided through out, no strobes observed to be included in design



Glazed exterior exit doors at wading pool with curtian

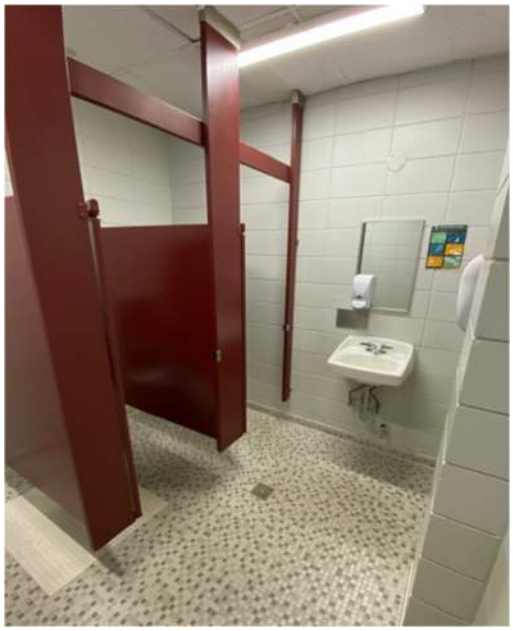
ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Exterior stairs, handrail only one side missing horizontally extension

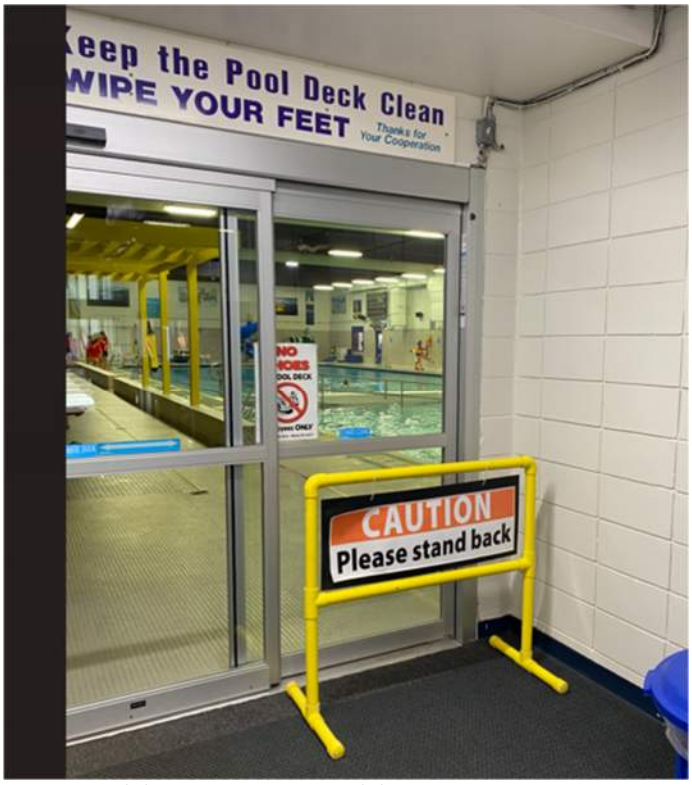


Open risers on back exterior stairs, with noncompliance handrail

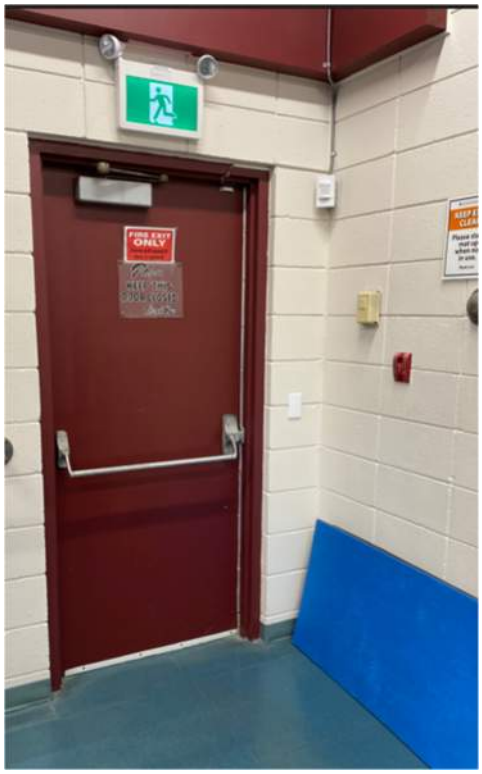


Washroom off lobby, no accessible stall

ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Sliding egress doors providing access to pool,



Manual stations throughout not to be located above 1200 mm



Ramp providing access between community centre and pool missing handrails



Exit from workout room. exterior handrail and guard nonconforming

ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Ramps providing access between community centre and pool no handrail



Curb ramp in parking lot



Exterior stair at rear exit, open risers.

ACRD Aquatics Facility – Project 25246 -Photos from Site Visit August 22, 2025



Inside family change room



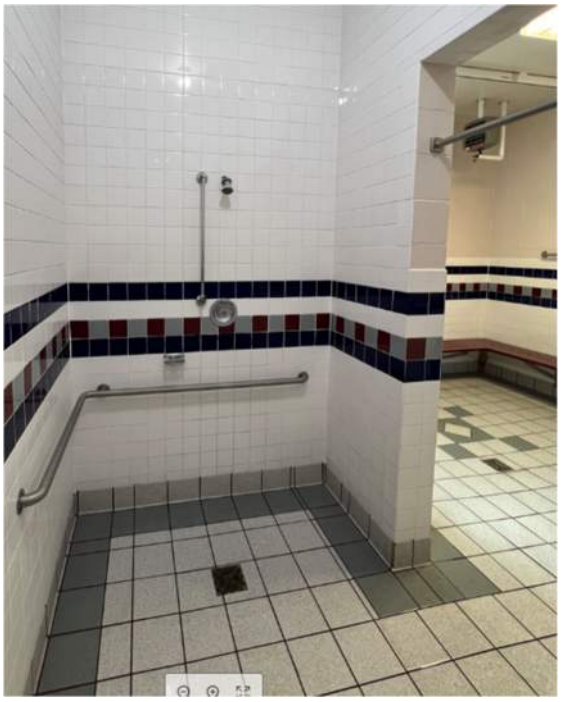
Inside family change room



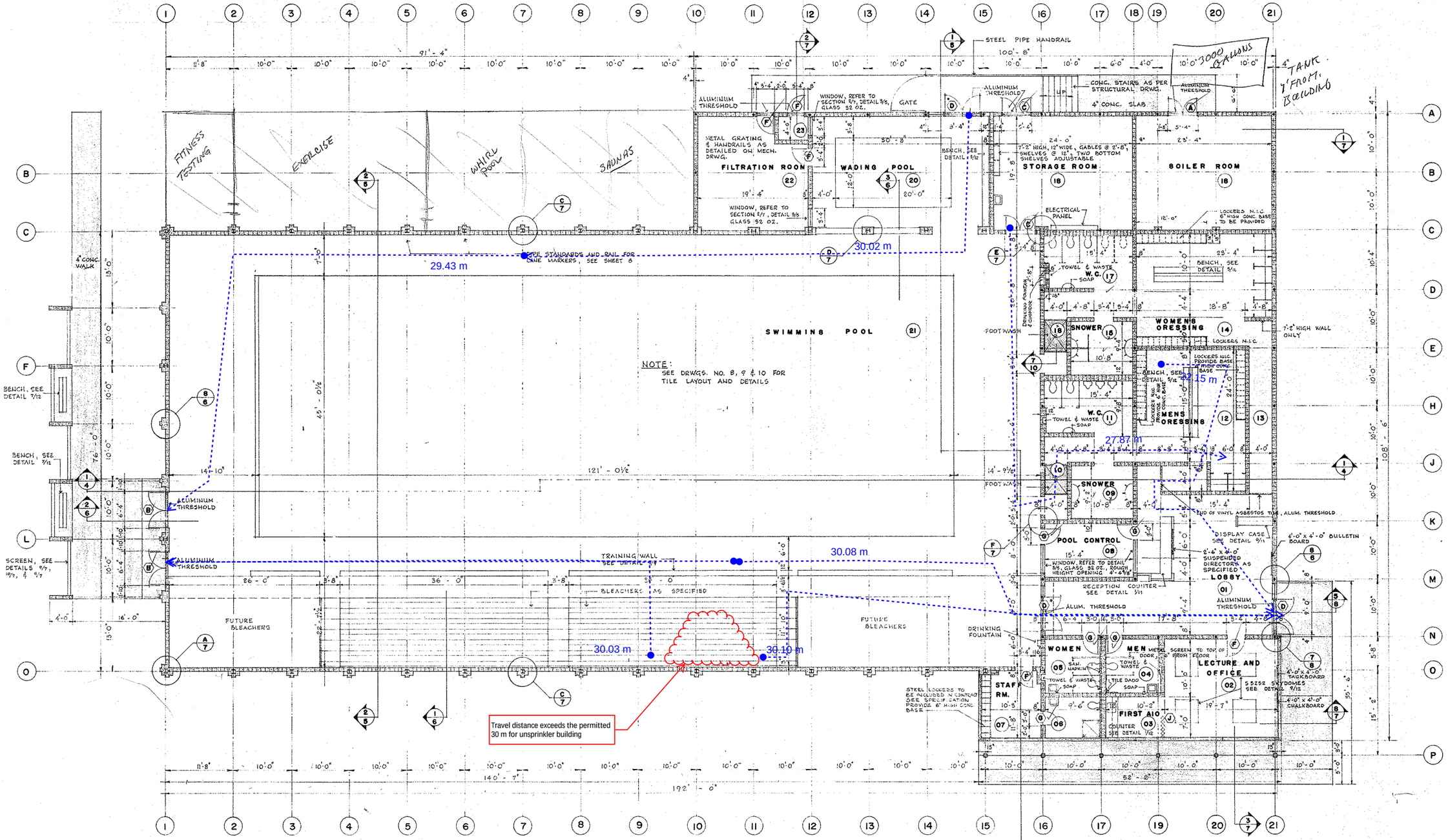
Inside family change room



Inside family change room



Inside family change room



3.3.2.8. Fixed Bench-Type Seats without Arms

1) If fixed bench-type seats without arms are provided, the seat width per person shall be assumed to be 450 mm.

2) The centre-to-centre spacing between rows of bench-type seats shall be not less than 760 mm if back rests are provided, and not less than 550 mm if back rests are not provided.

3) A clear space of not less than 300 mm shall be provided between the back of each seat and the front of the seat immediately behind it.

CONTRACT SET

This document forms part of the construction contract

Owner: CORPORATION OF THE CITY OF PORT ALBERNI

Witness

Contractor

CARLBERG JACKSON PARTNERS
ARCHITECTS
Suite 303 — 321 Sixth Street New Westminster, B.C.

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CENTENNIAL SWIMMING POOL FOR PORT ALBERNI, B. C.

DRAFT

Appendix E - Echo ‘67 Rec Centre Building Assessment - WSP, 2024

DRAFT



Building Condition Assessment

Echo '67 Recreation Centre
4255 Wallace Street, Port Alberni, British Columbia
October 29, 2024

Prepared For:

City of Port Alberni
City Hall, 4850 Argyle Street
Port Alberni, BC V9Y 1V8
Contact: Dave Arsenault, P.Eng., Project Manager

Prepared By:

WSP Canada Inc.
1935 Bollinger Road
Nanaimo, BC V9S 5W9
Contact: Bobbi Nicol-Cote C.Tech (Arch), Project Manager

Project Number **CA0030624.7449**

General Description

Facility Name: Echo '67 Recreation Centre (including Aquatic Centre, Library and Museum)

Municipal Address: 4255 Wallace Street, Port Alberni, BC

No. of Floors: 1, plus partial basements below Aquatic Centre service room, Recreation Centre and Museum.

Year of Construction: between 1967 and 1981 for the 4 initial building sections, with various additions in the 1990s and 2000s, according to facilities summary provided by City of Port Alberni.

The Echo '67 Recreation Centre was constructed in phases, with construction progressing from West to East, with each facility space either constructed adjacent to the previous building, or connected via interior walkways. The basic layout includes:
- The original structure at the west end of the building, constructed in 1967, contains the Aquatic Centre with separate entrance. In 1999 an accessible family change room was added to the front of the Aquatic Centre.
- The Recreation Centre was also constructed circa 1967 and is situated to the east of the Aquatic Centre with separate entrance.
- The Library was constructed circa 1972 and is situated to the east of the Recreation Centre, partially separated by a small courtyard. An enclosed walkway provides access between the Library entrance vestibule and the Recreation Centre. An addition to the back of the library was added in 2006 on conjunction with a general interior renovation.
- The Museum was constructed in 1981 and is situated to the east of the Library. The Library entrance vestibule also provides access to the Museum.

Building Systems Included in this Building Condition Assessment:

- Structural
- Exterior Cladding
- Roofing
- Emergency Power
- HVAC
- Interior Finishes

Descriptive Summary of Building Systems Reviewed:

- Structural Frame: Combination of load bearing concrete block and wood-framed, supporting wood framed roof structures.

- Exterior Cladding: Combination of painted concrete block, face-sealed stucco with a rock-dash finish that has been painted, and painted wood siding and trim.

- Roofing: Two-ply modified bitumen membranes, with some portions of the membrane at the Aquatic Centre covered with light weight insulation-concrete panels.

- Emergency Power: Diesel generator providing power via a transfer switch to three distribution panels which serve various lighting and receptacles.

- HVAC System: Packaged heat pump units, energy recovery ventilators, central and local air handling units, a hydronic heating system supplied by a central plant, supplemental duct heaters, various supply and exhaust fans, and a central DDC building automation system.

- Interior Finishes: Aquatic Centre finishes are typically tiled floors and portions of the walls, with upper wall areas painted. Recreation Centre floor finishes are a combination of carpet in common areas and meeting rooms, and resilient sheet flooring and tile in service areas and larger meeting spaces. Library and Museum are primarily carpet in common areas, and resilient sheet flooring and tile in service areas.

Executive Summary

We acknowledge that the building is on the traditional Indigenous territory of the Hupačasath and Tseshaht people.

MANDATE

This report was prepared at the request of The City of Port Alberni as a facility condition assessment and capital plan of the property. Our review considers a 20-year capital renewal timeframe (with a primary focus on the 10-year timeframe), and includes anticipated repair/renewal projects expected to exceed the $20,000 capital threshold for the first five years or the reporting term, and a capital threshold of $50,000 per building system for the balance of the reporting term (years six to twenty).

In conjunction with the City of Port Alberni's Strategic Asset Management Plan (Section 5-5), the following asset condition rating will be utilized for the noted asset as well as individual components:

Condition Grade \ % of Remaining Service Life \ Canadian Infrastructure Report Card

1. Very Good \ >80% \ The asset is fit for the future. It is well maintained, in good condition, new or recently rehabilitated.

2. Good \ 60%-80% \ The asset is adequate. It is acceptable and generally within the mid-stage of its expected service life.

3. Fair \ 40%-60% \ The asset requires attention. The asset shows signs of deterioration and some elements of deficiencies.

4. Poor \ 20%-40% \ There is an increasing potential for its condition to affect the service it provides. The asset is approaching the end of its service life, the condition is below the standard and a large portion of the system exhibits significant deterioration.

5. Very Poor \ <20% \ The asset is unfit for sustained service. It is near or beyond its expected service life and shows widespread signs of advanced deterioration. Some assets may be unusable.

0. Unknown \ - \ Not enough data exists to respond.

GENERAL CONDITION

The building systems included in this review (Structural, Exterior Cladding, Roofing, Emergency Power, Interior Finishes, and HVAC) have a Good (2) to Poor (4) overall condition; however, one section of cedar siding was classified as 5 (Very Poor) and is in need of replacement.

CAPITAL RENEWAL HISTORY

The following major renewal has been completed over the past 10 years:

- 2021: Replaced packaged rooftop heat pump unit (RHP-9) serving the Recreation Centre after burn-out;
- 2010-2015 (estimate): Replaced various portions of the roofs, including the upper roof area over the Aquatic Centre, and main roof areas over the Recreation Centre, Library and Museum, based on visual review;
- Dates Unconfirmed: Various interior renovations such as carpet and resilient sheet flooring replacement, and repainting.

KEY FINDINGS / LIFE CYCLE RENEWAL

Cladding is generally in serviceable condition, with the exception of deteriorated cedar siding above the Recreation Centre entrance that should be replaced within the next year. A general exterior painting and local wood trim replacement project has been included in the next three years. Doors were functional and most entrance doors can generally remain in service for many more years.

Older portions of the flat roof areas above portions of the Aquatic Centre (area above the family change rooms) are expected to require replacement in the next few years. The remaining roof areas throughout the complex are expected to remain in service for 10-15 more years; however, patch repairs will be required to address existing blisters/deterioration and to help achieve a full service life. The plan allows for local repairs and eventual roof replacements.

The emergency generator is original and installed in 1990, according to the data plate. With age, performance typically degrades to the point where the generator cannot meet the full load requirements, and replacement is required. Based on age, replacement of the generator is anticipated early in the report term.

The Museum air handling unit (AHU) is now 22 years old and is suspected of using R-22 refrigerant for cooling, which is being phased out under the Montreal Protocol due to its ozone-depleting properties. The unit casings are corroding. Based on a typical service life of about 20 to 25 years, replacement of the AHU is anticipated early in the report term.

The hydronic system's components vary in age, with most being over 20 years old. While the motors and impellers of the hydronic pumps have been replaced periodically, the pump bodies themselves have exceeded their service life and should be replaced to prevent catastrophic failure. The pool's perimeter pump was recently replaced due to observed corrosion. Maintenance staff have noted rust sediment during pool draining, indicating that the pumps may be failing prematurely because of rust-related overheating and damage within the pump body and impeller. The system components have varying expected service lives ranging from 20 to over 50 years. Based on age and current condition, we have included a replacement budget for the larger distribution pumps, heat exchangers, and three-way valves early in the report term.

Interior finishes are generally well maintained, with portions of the facility locally renovated (carpet/flooring replacement and painting) on an as-needed basis. Given the size of the facility, with varying ages/conditions of finishes, we anticipate ongoing partial refurbishment/renovations will continue on a room-by-room type basis. Renovation/renewal budgets are discretionary, therefore the budgets provided should be considered preliminary placeholders pending further input by facility staff.

We have recommended a detailed structural review of the pool basin/deck and surrounding drainage trough as well as the crawl space around the whirlpool. Local concrete spalling was noted as well as some rusting exposed reinforcing steel. We understand the piping buried in the pool deck is corroding as debris is collecting in the pool filtration system. A detailed assessment of the piping systems is recommend in addition to the structural review. These assessment should occur prior to implementing any major spending on the pool basin or pool deck surfaces.

The Expenditure Table which follows includes budgets for those systems that are likely to require renewal or capital repair.

SALIENT MAINTENANCE/OPERATIONAL RECOMMENDATIONS

The following maintenance / operational recommendation items were noted that would fall under the threshold of the report:
- Replacing local areas of deteriorated wood siding and trim along with some touch-up painting to mitigate deterioration;
- Clean the windows regularly to remove graffiti to maintain sightlines;
- Paint wood window and door frames every five years; review the stops and frames for deterioration and replace as required;
- Replacement of door hardware is anticipated to occur more frequently than the doors themselves. We recommend planning for door hardware replacement every 15 years; timing will depend on the usage and quality of the hardware installed;
- Have a local roofing contractor perform annual roof inspections and local patch repairs to address blisters or leaks as needed;
- Maintenance of interior finishes is required on a regular daily/weekly basis by janitorial staff, and periodic touch-up painting or local repairs to worn carpets or floor finishes should continue to be expected.
- Regular inspections, cleaning, local repairs, and individual replacements of HVAC, associated ducting, and DDC equipment as needed.

General maintenance appears adequate; however, given the age of the facility, there will be progressive deterioration of both exposed building envelope components, HVAC equipment, and various interior finishes.

EXCLUDED FROM REVIEW

All building systems that have not specifically been identified in the General Condition section above are specifically excluded from our review.

CLOSURE

No part of this report should be read in isolation. It is intended to be relied upon only in its entirety including the Scope of Work and Limitations.

Capital Expenditures

The table on the following page summarizes our opinion of reasonable budgets for the capital expenditures identified over the term of this report.

The budgets assume a prudent level of ongoing maintenance. Dollars shown are inflated, and include contingencies (typically 5 to 15%) and allowances for design/project management (typically 5 to 15%), where relevant. Taxes are excluded.

Capital projects are classified as follows:

1 = Life Safety or Urgent
2 = Deferred Maintenance
3 = Normal and Life Cycle Renewal
4 = Statutory Compliance

The budgets provided are intended as order-of-magnitude advice only and should be considered Class D level or lower. For most projects, detailed engineering studies followed by a specification and tender process will be required to confirm budget allocations.

INFLATION RATE

This report uses an inflation rate of 3.8%. For many materials and components, the rate of inflation over the past few years was anomalously high due to global factors but based on 2023 data, inflation rates appear to be returning to more normal levels. Since this does not apply across all sectors, and since we cannot reasonably predict the evolution of the rate over the coming 10-year report term, we have used the current published 10-year average construction price inflation rate, which includes the years 2014-2023.

Expenditure Table

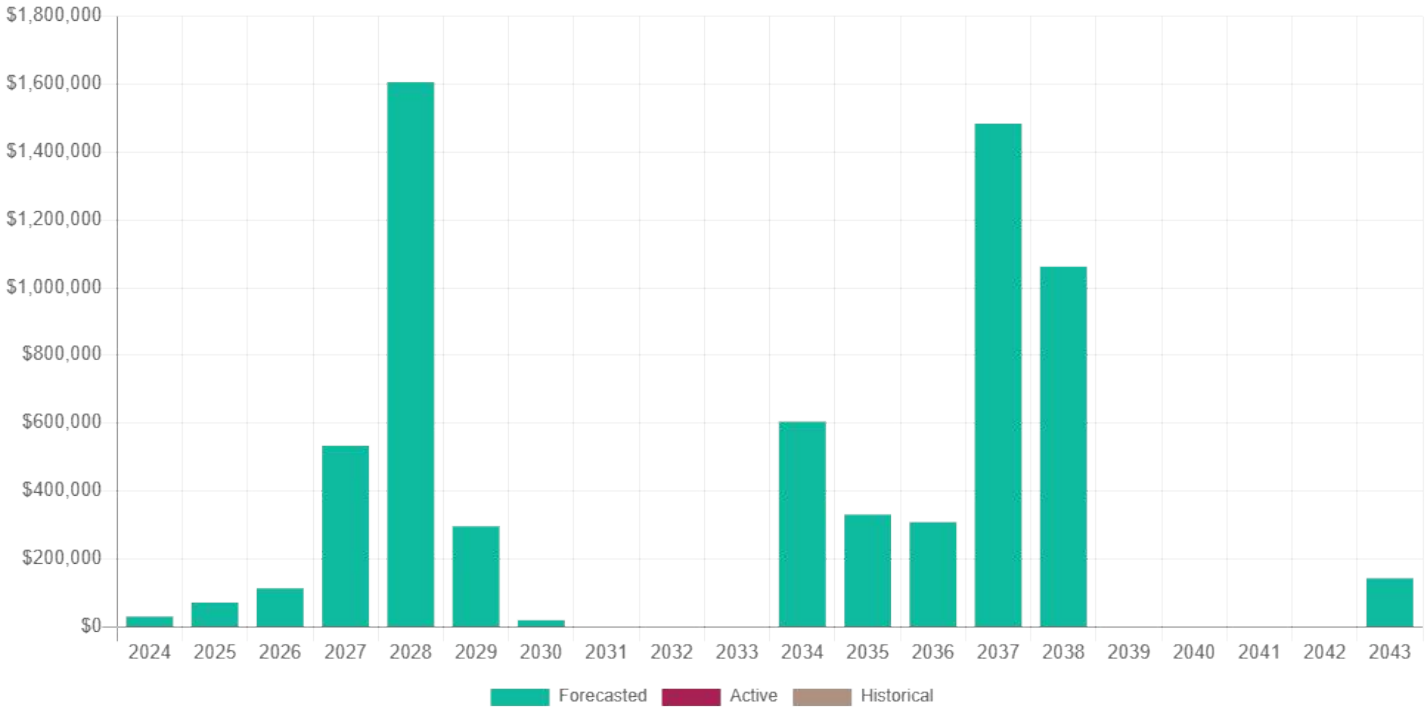
Annual Budgets

Item	Description	Class	Status	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
1	**Structure**													
1.1.1	Repair Parapet Block Firewall and Local Rear Walkway Repairs - Recreation Centre	3	Forecasted	$0	$34,318	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	**Building Envelope**													
2.1.1	Replace Cedar Siding - Aquatic Centre / Recreation Centre Entrance	2	Forecasted	$29,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.1.2	Painting Exterior Cladding and Replacing Wood Trim - All Buildings	3	Forecasted	$0	$0	$0	$78,533	$0	$0	$0	$0	$0	$0	$0
2.2.1	Replace Single-Glazed Windows - Library Courtyard	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.3.1	Replace Single-Glazed Entrance Door - Aquatic Centre	3	Forecasted	$0	$15,570	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.3.2	Replace Single-Glazed Entrance Door - Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$18,762	$0	$0	$0	$0
2.4.1	Replace Flat Roof - Aquatic Centre South Roof Area	3	Forecasted	$0	$0	$80,808	$0	$0	$0	$0	$0	$0	$0	$0
2.4.2	Replace Flat Roof - Aquatic Centre Main and Upper Areas	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.4.3	Replace Roof - Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.4.4	Replace Roof - Library	3	Forecasted	$0	$0	$0	$0	$557,225	$0	$0	$0	$0	$0	$0
2.4.5	Replace Roof - Museum	3	Forecasted	$0	$0	$0	$0	$0	$295,996	$0	$0	$0	$0	$0
3	**Fire Safety**													
3.1.1	Replace Emergency Generator - Recreation Centre / Museum	3	Forecasted	$0	$0	$0	$0	$103,061	$0	$0	$0	$0	$0	$0
4	**HVAC**													
4.2.1	Replace Boilers - Aquatic Centre / Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.3.1	Replace Rooftop Heat Pumps and ERV Unit - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.3.2	Replace Heat Pumps and ERV Units - Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.3.3	Replace Rooftop Heat Pump Units - Library	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.4.1	Replace AHU - Museum	3	Forecasted	$0	$0	$0	$252,476	$0	$0	$0	$0	$0	$0	$0
4.4.2	Replace Dehumidifier Unit - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604,768
4.4.3	Replace AHUs - Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.8.1	Replace Hydronic System Equipment - Aquatic / Recreation Centre	3	Forecasted	$0	$0	$0	$22,605	$0	$0	$0	$0	$0	$0	$0
5	**Finishes, Furniture and Equipment**													
5.1.1	Structural Review of Pool Deck/Basin/Crawl Spaces - Aquatic Centre	3	Forecasted	$0	$20,760	$0	$0	$0	$0	$0	$0	$0	$0	$0
5.1.2	Retile Shower Rooms at Saunas - Aquatic Centre	3	Forecasted	$0	$0	$32,323	$0	$0	$0	$0	$0	$0	$0	$0
5.1.3	Retile Pool and Deck Areas - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$946,586	$0	$0	$0	$0	$0	$0
5.2.1	Replace Vinyl Tile - Dogwood Room in Recreation Centre	3	Forecasted	$0	$0	$0	$22,919	$0	$0	$0	$0	$0	$0	$0
5.4.1	Replace Carpet - Museum	3	Forecasted	$0	$0	$0	$156,854	$0	$0	$0	$0	$0	$0	$0
Total				**$29,800**	**$70,648**	**$113,131**	**$533,387**	**$1,606,872**	**$295,996**	**$18,762**	**$0**	**$0**	**$0**	**$604,768**
$ / ft²				$0.53	$1.26	$2.02	$9.53	$28.71	$5.29	$0.34	$0.00	$0.00	$0.00	$10.80

Item	Description	Class	Status	2035	2036	2037	2038	2039	2040	2041	2042	2043
1	**Structure**											
1.1.1	Repair Parapet Block Firewall and Local Rear Walkway Repairs - Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	**Building Envelope**											
2.1.1	Replace Cedar Siding - Aquatic Centre / Recreation Centre Entrance	2	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.1.2	Painting Exterior Cladding and Replacing Wood Trim - All Buildings	3	Forecasted	$105,836	$0	$0	$0	$0	$0	$0	$0	$142,630
2.2.1	Replace Single-Glazed Windows - Library Courtyard	3	Forecasted	$49,738	$0	$0	$0	$0	$0	$0	$0	$0
2.3.1	Replace Single-Glazed Entrance Door - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.3.2	Replace Single-Glazed Entrance Door - Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.4.1	Replace Flat Roof - Aquatic Centre South Roof Area	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.4.2	Replace Flat Roof - Aquatic Centre Main and Upper Areas	3	Forecasted	$0	$0	$1,382,511	$0	$0	$0	$0	$0	$0
2.4.3	Replace Roof - Recreation Centre	3	Forecasted	$0	$0	$0	$955,653	$0	$0	$0	$0	$0
2.4.4	Replace Roof - Library	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
2.4.5	Replace Roof - Museum	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0

Item	Description	Class	Status	2035	2036	2037	2038	2039	2040	2041	2042	2043
3	**Fire Safety**											
3.1.1	Replace Emergency Generator - Recreation Centre / Museum	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	**HVAC**											
4.2.1	Replace Boilers - Aquatic Centre / Recreation Centre	3	Forecasted	$0	$126,488	$0	$0	$0	$0	$0	$0	$0
4.3.1	Replace Rooftop Heat Pumps and ERV Unit - Aquatic Centre	3	Forecasted	$24,209	$25,129	$0	$0	$0	$0	$0	$0	$0
4.3.2	Replace Heat Pumps and ERV Units - Recreation Centre	3	Forecasted	$94,912	$98,519	$102,263	$106,149	$0	$0	$0	$0	$0
4.3.3	Replace Rooftop Heat Pump Units - Library	3	Forecasted	$44,462	$46,152	$0	$0	$0	$0	$0	$0	$0
4.4.1	Replace AHU - Museum	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.4.2	Replace Dehumidifier Unit - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
4.4.3	Replace AHUs - Recreation Centre	3	Forecasted	$11,485	$11,921	$0	$0	$0	$0	$0	$0	$0
4.8.1	Replace Hydronic System Equipment - Aquatic / Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	**Finishes, Furniture and Equipment**											
5.1.1	Structural Review of Pool Deck/Basin/Crawl Spaces - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
5.1.2	Retile Shower Rooms at Saunas - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
5.1.3	Retile Pool and Deck Areas - Aquatic Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
5.2.1	Replace Vinyl Tile - Dogwood Room in Recreation Centre	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
5.4.1	Replace Carpet - Museum	3	Forecasted	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total				**$330,642**	**$308,209**	**$1,484,774**	**$1,061,802**	**$0**	**$0**	**$0**	**$0**	**$142,630**
$ / ft²				$5.91	$5.51	$26.53	$18.97	$0.00	$0.00	$0.00	$0.00	$2.55

Graph-Total Expenditures



Expenditure Summary Table

Expenditures Summary Table

	Uninflated	Inflated
Total For 20-Year Reporting Period	$4,771,927	$6,601,421
Forecasted Projects Total	$4,771,927	$6,601,421
Active Projects Total	$0	$0
Historical Projects Total	$0	$0
Total Per Unit	$4,771,927	$6,601,421
Total Per ft²	$85	$118
Average Annual Budget	$238,596	$330,071
Average Annual Budget Per Unit	$238,596	$330,071
Average Annual Budget Per ft²	$4.26	$5.90

Total Number of Units: 1

Total Area: 55,972 ft²

Average Area Per Unit: 55,972 ft²

Inflation Rate: 3.8%

1. Structure

1.1 Structural Frame

Description:
A complete set of drawings was not available for our review. Based on site observations we describe the structural components as follows:

The above-ground structure is a combination of load-bearing concrete block walls, timber framing, and some steel and timber support columns supporting timber framed roof assemblies.

The below-grade foundation walls were cast-in-place concrete, where exposed for review. Basement areas included a portion of the Aquatic Centre within the main mechanical room, a portion of the Recreation Centre, and a portion of the Museum. No basement area was noted in the Library. Foundations are believed to be reinforced concrete strip and spread footings.

The lowest level is a concrete slab-on-grade. Refer to the "Finishes, Furniture and Equipment" section for discussion related to the Aquatic Centre pool deck.

Condition / Recommendation:
Condition Index Ratings:

Below Grade Foundations: 3 (Fair)
Interior Slabs: 3 (Fair)
Above Grade Structure: 3 (Fair)

We note no significant evidence of unusual settlement, displacement, or structural cracking in the areas reviewed.

No water leakage-related concerns in the basement areas were noted or reported by maintenance staff. We expect that if foundation wall leaks develop, they will be handled as needed through injection sealing from the interior or local exterior excavation and waterproofing. Given the lack of leakage problems reported to date, annual costs are not expected to exceed the capital threshold.

The interior structural elements are generally protected from weather and are not expected to require major repair within the report term. Timber framing within pool areas can often deteriorate due to the increased exposure to moisture; however, where visible, the exposed timber beams and roof framing were generally free of staining and no deterioration of exposed elements was noted.

The concrete block firewall between the Recreation Centre and Library extends above the roof level. We noted about 12 of the concrete blocks have split/cracked; we have included a budget to locally repair/replace these damaged blocks.

At the rear of the Recreation Centre, there is a raised walkway supported by timber beams. The ends of these beams are exposed, resulting in weathering and some cracking from moisture exposure. We recommend capping the ends of these beams. The wood decking is weathered and requires repainting. A budget to install cap flashing at the beams and repaint the deck boards is included in the parapet block firewall repair project.

Along the exterior walkway outside the Aquatic Centre, there are timber posts supporting a roof overhang. These posts are supported by steel pin connections embedded in the concrete walkways. While the exposed portion of the steel pins was generally free of rust, the condition of the portions embedded in the concrete is unknown, and commonly these embedded elements corrode. In addition, this simple pin connection can be susceptible to lateral loads during seismic events. A detailed review of the embedded steel pins is recommended if you observe corrosion staining or spalling at the surrounding concrete walkway.

A seismic analysis was beyond the mandate of this report. This building is in an area with a relatively high risk of strong seismic activity. The current Building Code requirements for earthquake resistance are generally more stringent than the code to which this building was designed; however, upgrading to the current code is normally only required if major structural renovations are undertaken (eg. expansions, removing load-bearing walls, change of use, etc.). In the absence of any planned major structural renovations, we have not included a budget for seismic retrofits.

Maintenance Items:
- Periodic foundation wall injection or local excavation and waterproofing repairs if leakage problems develop.
- Detailed review of embedded steel pins supporting exterior walkway columns outside the pool area if corrosion staining or spalling develops.

1.1.1 Repair Parapet Block Firewall and Local Rear Walkway Repairs - Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$33,062	$34,318	2025	N/A	One time	3	Forecasted

2. Building Envelope

2.1 Walls

Description:
The majority of the exterior walls of the complex are clad with stucco and painted exposed concrete blocks. The stucco generally has an exposed rock-dash finish, with the surface painted along the front (south) elevations. Stucco is believed to be installed directly over the concrete block walls at the pool and recreation centre, while the newer library and museum are believed to have the stucco installed over building paper, plywood sheathing and wood stud framing.

According to the Asbestos Inventory report dated October 24, 2014 prepared by Mid Island Safety Consulting Inc., the exterior concrete block walls are known to contain vermiculite and the vermiculite is assumed to contain asbestos.

Upper parapets/roof overhangs are clad with some of the original stained cedar siding, more recently installed painted fibre cement siding, and painted wood trim. At the Aquatic Centre, the raised roof area is clad with prefinished metal siding.

The exterior walls are designed as a face-sealed system, meaning that the walls do not include drainage cavities or other means of expelling water which penetrates the outer surface. With this type of system, the outer surface is intended to be watertight.

Sealants are only installed between some of the more exposed cladding types at the roof level and at some of the window and door perimeters. According to the Asbestos Inventory report dated October 24, 2014 prepared by Mid Island Safety Consulting Inc., all caulking on "old" wood window frames contains asbestos or should be assumed to contain asbestos.

History of Repairs:
Dates Unconfirmed:
- Locally replaced parapet/roof overhang cedar siding with painted fibre cement cladding.
- Periodic painting of select cladding components

Condition / Recommendation:
Condition Index Ratings:

Exposed Concrete Blocks: 3 (Fair)
Stucco Cladding: 2 (Good, at back of Library) to 3 (Fair)
Fibre Cement Siding: 2 (Good)
Cedar Siding: 5 (Very Poor)
Prefinished Metal Siding: 2 (Good)

The Maintenance Staff reports there have been no ongoing problems with water leakage. The majority of the cladding is intact and free of widespread deterioration.

In British Columbia, face-sealed systems are considered by some to be completely unacceptable; rain-screen walls are the industry standard. We disagree with this position and believe that many face-sealed walls can be maintained to provide many years of service. A large portion of the exterior cladding is believed to be original. Large roof overhangs have sheltered the stucco and concrete block walls, helping to extend their service life.

Given the wet weather conditions in British Columbia, even when face-sealed exterior walls look to be in reasonable condition, we do recommend periodic wall openings to evaluate the condition of a sample of the concealed components of the wall system. We recommend conducting a detailed evaluation with exploratory openings before completing any major cladding repair/replacement work.

Stucco Cladding:

The stucco was generally free of widespread cracking or staining. Some local rust staining was noted at perimeter stucco stops (metal trim); however, the extent of deterioration is not significant or expected to impact the overall performance of the wall assembly. Paint on the front elevations appears to have been an aesthetic decision. A budget for general repainting has been included. A portion of stucco cladding at the Aquatic Centre adjacent to the roof is concealed by HVAC ductwork so the condition is unknown; however, as it is sheltered by a roof overhang, we assume it is in a similar condition to the other stucco areas. Given that the majority of the stucco is sheltered by roof overhangs, we anticipate it can remain in service for the term of this report.

Concrete Block:
No significant cracking/spalling was noted. At the rear of the Aquatic Centre and Recreation Centre, the exterior paint is generally peeling and delaminating from the surface. A budget for general repainting has been included. No major repairs to the block walls are anticipated within the report term.

Fibre Cement Siding:
The paint finish is locally faded but otherwise, the siding is intact. With periodic painting, general replacement of the fibre cement siding is not anticipated within the report term.

Cedar Siding:
Most of the original cedar siding has been replaced with fibre cement; however, the original cedar remains at the exterior walkway outside the Aquatic Centre and Recreation Centre entrances. The cedar is weathered and the boards are rotten. A budget is included to replace the cedar siding with fibre cement, and the facility manager advised this work is scheduled to occur in 2024.

Wood Trim:
Roof overhangs are supported by extensions of timber beams that form the roof structure. The ends of these beams are typically protected with painted wood trim and a metal cap flashing. Additional wood trim is provided at stucco cladding details and as cladding to protect exposed columns. Throughout the complex, we noted the wood trim is weathered and deteriorating. Where visible, the underlying timber framing appeared intact and free of deterioration. The painting project allows for repainting all the exposed trim and locally replacing deteriorated trim components. Some additional touch-up painting and trim replacement should also be allocated as part of ongoing maintenance activities in between cycles of general repainting.

Prefinished Metal Siding:
The metal siding at the Aquatic Centre raised roof area is in good condition. General repainting or major repairs are not anticipated within the report term.

Sealants:
The extent of sealants is limited as many of the sheltered wall areas do not have sealant at cladding joints/transitions. At the roof level, we noted sealant between the base of stucco wall panels and metal roof flashing was weathered and deteriorated. These sealants are expected to be replaced in conjunction with roof membrane replacement. An allowance for local sealant installation/replacement is included in the exterior painting project to help mitigate water ingress in some of the exposed wall areas. Based on previous hazardous material testing the caulking on "old" wood windows frames contains asbestos or is assumed to contain asbestos.

Maintenance Items:
- Conduct a detailed wall evaluation with exploratory openings before undertaking any major cladding repair/replacement work.
- Touch-up painting, local replacement of deteriorated wood trim and sealants between cycles of general repainting.

2.1.1 Replace Cedar Siding - Aquatic Centre / Recreation Centre Entrance

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$29,800	$29,800	2024	N/A	One time	2	Forecasted

2.1.2 Painting Exterior Cladding and Replacing Wood Trim - All Buildings

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$70,220	$78,533	2027	8	Recurring	3	Forecasted

2.2 Windows

Description:
Aquatic Centre has a few smaller size vinyl-framed double-glazed windows at the office spaces and two older aluminum-framed windows with double glazing in the gym area. Four newer aluminum-framed double-glazed skylights are located over the pool area.

The Recreation Centre generally has older painted wood-framed windows with double glazing installed.

The corridor that connects the Recreation Centre to the Library has an aluminum-framed window assembly with full-height single glazing.

The Library has large single-glazed aluminum-framed windows facing the courtyard that separates the Library from the Recreation Centre. At the north end of the library, there are newer aluminum-framed windows complete with double glazing.

The Museum does not have windows. There are two skylights located over the office spaces complete with double-glazed acrylic domes and aluminum frames.

Condition / Recommendation:
Condition Index Ratings:

Aluminum Framed Windows with Single Glazing: 3 (Fair) to 4 (Poor)
Vinyl Framed Windows with Double Glazing: 2 (Good)
Painted Wood Framed with Double Glazing: 3 (Fair, sheltered) to 4 (Poor, exposed)

There were no reports of water or excessive air leakage through the windows, and we note no evidence of water leakage or cracked/failed glazing in the areas reviewed. Windows are generally sheltered by roof overhangs.

The majority of the wood-framed windows at the Recreation Centre are sheltered and expected to be maintained through the report term with periodic painting and local repairs. The window assemblies on the east elevation that face the library are weathered from exposure with peeling paint and should be restored within the next year, with the cost assumed to be a maintenance activity.

For the more modern windows complete with double-glazing, replacement of these windows is not anticipated within the report term based on the current age and reported performance. Some IGU replacements should be expected as seals fail as the units age but, based on the limited extent of glazing at this complex, we assume IGU replacements will be managed from operating funds rather than capital so no budget is included.

The single-glazed windows appear to be performing reasonably well given their age. While most of these windows could remain in service for many more years, replacing them with double-glazed windows would help improve overall thermal performance and resistance to condensation. As such we have budgeted to eventually replace the single-glazed windows, excluding the windows at the corridor between the Recreation Centre and Library as this area has doors at either end and the space does not need to be heated. The actual timing of this project is discretionary as the windows can likely provide the current level of performance for many more years.

Maintenance Items:
- Painting wood-framed windows as needed.
- Replace double-glazing if seals fail and units fog or crack.

2.2.1 Replace Single-Glazed Windows - Library Courtyard

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$33,000	$49,738	2035	N/A	One time	3	Forecasted

2.3 Exterior Doors

Description:
The Aquatic Centre and Recreation Centre main entrances each have an automatic sliding door in an aluminum frame with single glazing.

The Aquatic Centre has two new (2024) sets of painted steel exit doors on the west elevation with an older painted metal single-swing door and an aluminum-framed set of swing doors complete with full-height glazing on the north elevation.

The Recreation Centre has exit doors on the north elevation, including a painted wood door with a side lite providing access from the stage area and three sets of painted wood swing doors from the Cedar meeting room.

The Library and Museum have a vestibule at the main entrance. The exterior door is a large automatic sliding door with an aluminum frame and double glazing. The Library entrance inside the vestibule has an older set of aluminum-framed swing doors while the Museum has a full-height glass swing door.

Other doors at the Library include a large aluminum-framed sliding door with single glazing providing access to the courtyard between the Library and Recreation Centre and a newer exit door on the north (rear) elevation consisting of a set of aluminum-framed swing doors with double glazing.

The Museum has various exit doors, most of which are painted wood.

The corridor that connects the Recreation Centre to the Library/Museum vestibule has painted metal swing doors at the Recreation Centre and a newer aluminum-framed automatic bifold sliding door at the vestibule.

History of Repairs:
2011: Library and Museum vestibule exterior door - Replaced sliding door with double-glazed assembly.
2014: Replaced door between Library/Museum vestibule and corridor to Recreation Centre.
2024: Replaced two sets of exit doors at west end of Pool area.

Condition / Recommendation:
Condition Index Ratings:

Main Entrance Doors: 4 (Poor) to 2 (Good)
Exit Doors at Aquatic Centre: 4 (Poor - North doors) to 1 (Excellent - West doors)
Exit Doors at Recreation Centre: 3 (Fair)
Exit Doors at Library: 2 (Good)
Exit Doors at Museum: 4 (Poor)

The automatic sliding doors at the Aquatic Centre and Recreation Centre are single-glazed and do not provide a level of thermal performance that a more modern double-glazed assembly would provide. The Recreation Centre sliding door is functional and expected to remain in service for several years; while the Aquatic Centre sliding door is reported to be problematic and expected to require replacement in the next few years. Budgets to eventually replace these single-glazed doors with more energy-efficient assemblies is included.

The Aquatic Centre's older exit doors along the north elevation (single-glazed aluminum set of swing doors and single-metal door) are weathered but functional. Condensation on these doors is reported to be a common occurrence given the humid pool environment during colder months of the year. The doors can likely remain in service for several more years; however, consideration may be given to door replacement to improve energy efficiency and reduce condensation. These doors can be individually replaced as needed at a cost below the threshold of this report.

The wood exit doors at the Recreation Centre are in fair condition. As these doors are sheltered by overhangs, we expect they can remain in service for the report term by completing periodic painting and local repairs as part of ongoing maintenance activities.

The sliding door from the Library to the courtyard is single-glazed; however, we understand it is seldom used. A budget to replace this door is included in the project to replace singled-glazed windows as the door is part of a larger window assembly (see "Windows" section). You may wish to consider reconfiguring this assembly to include a swing door instead of a sliding door at the time of replacement.

The Library and Museum entrance vestibule exterior sliding door is a newer double-glazed assembly and is not expected to require replacement within the report term. The doors inside the vestibule providing access to the Library and Museum are both sheltered and expected to remain in service for the term of this report.

The Museum's painted wood exit doors have worn weatherstripping and offer poor thermal performance. Given the limited number of these doors, we expect they will be replaced as needed as part of ongoing maintenance activities.

Other exterior doors are functional and expected to be repaired or replaced as needed as a maintenance expense.

Maintenance Items:
- Painting wood framed doors as needed.
- Locally replacing door hardware or door operators.
- Replace double-glazing if seals fail and units fog or crack.
- Individual replacement of exit doors or replacement of weatherstripping to maintain weather seals.

2.3.1 Replace Single-Glazed Entrance Door - Aquatic Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$15,000	$15,570	2025	N/A	One time	3	Forecasted

2.3.2 Replace Single-Glazed Entrance Door - Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$15,000	$18,762	2030	N/A	One time	3	Forecasted

2.4 Flat Roofing

Description:

Aquatic Centre:

There are several flat roof areas all protected by modified bitumen membranes with granulated cap sheets, prefinished metal flashings, and area drains. These roofs are further described as follows:

- raised upper roof over pool diving board area, estimated to be less than 10 years old
- main roof over the pool area, estimated to be less than 10 years old
- main roof over reception and change rooms, with a strip extending along the rear of the building, all covered with lightweight pavers (concrete-topped insulation pavers), estimated to be about 10 years old.
- small roof area over the family-accessible change rooms along the front of the building, estimated to be 20+ years old.

For the Recreation Centre, Library and Museum, all flat roof areas are similar assemblies consisting of modified bitumen membranes with granulated cap sheets, prefinished metal flashings, and area drains. The Recreation Centre roof is divided into three roof areas while the Library roof has four roof areas including a canopy roof that covers the entrance walkway and the Museum roof has two roof areas. A small asphalt-shingle roof area is also located over the southwest corner of the museum.

History of Repairs:

Roof renewal history based on TCA records as reported by Facility Manager:
2007: Museum/Library roof renewal ($116,627)
2009 and 2013: Portions of Aquatic Centre roof renewal, ($95,483) and ($181,028)
2013: Echo Recreation Centre roof renewal ($273,428)

Condition / Recommendation:
Condition Index Ratings:

Aquatic Centre Roof: 2 (Good) to 4 (Poor - south roof area)
Recreation Centre Roof: 2 (Good)
Library Roof: 4 (Poor)
Museum Roof: 3 (Fair) to 4 (Poor)

There were no reports of active roof leakage. Various patch repairs were evident, commonly required for modified bitumen roof assemblies to repair blisters or deterioration such as cracks or failing seams. We noted no evidence of water leakage from the interior areas accessed. One leakage stain was noted below the exterior canopy outside the Aquatic Centre office windows. The leak should be reviewed and local patch repairs performed as part of ongoing maintenance activities.

The Aquatic Centre south roof area appears the oldest and is estimated to be 20 years old. We noted multiple blisters and extensive cracking throughout the cap sheet membrane. A budget to replace this roof is included.

A portion of the Aquatic Centre roof membrane is concealed from view by lightweight pavers. Where visible, at upturns and drains, the roof membrane appeared in good condition while the pavers were moss-covered and stained suggesting the pavers were likely re-used during roof replacement. This roof, along with most of the other roof areas, is believed to have been replaced between 2009 and 2013. No blisters or areas of deterioration were noted. Based on the visible condition of the membrane and estimated age, a replacement budget is included towards the end of the report term.

For the Recreation Centre, Library and Museum, these flat roof areas are similar in assembly, with the Library and Museum roofs having been replaced in 2007 and the Recreation Centre roof replaced in 2013. The Library roof had extensive blistering, suggesting there may have been problems during the installation. The Museum roof also had some blisters but to a lesser extent than the Library. Given the extent of blistering, the Library roof is expected to be replaced sooner than the Recreation Centre and Museum roofs. The plan allows for eventual roof replacements. All roofs will require routine maintenance and periodic patch repairs to help extend their service lives.

Maintenance Items:
- Clean roof and drains twice per year to maintain drainage and protect the membranes from wear;
- Patch roof membrane blisters or damaged areas as part of annual maintenance.

2.4.1 Replace Flat Roof - Aquatic Centre South Roof Area

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$75,000	$80,808	2026	N/A	One time	3	Forecasted

2.4.2 Replace Flat Roof - Aquatic Centre Main and Upper Areas

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$851,340	$1,382,511	2037	N/A	One time	3	Forecasted

2.4.3 Replace Roof - Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$566,940	$955,653	2038	N/A	One time	3	Forecasted

2.4.4 Replace Roof - Library

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$480,000	$557,225	2028	N/A	One time	3	Forecasted

2.4.5 Replace Roof - Museum

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$245,640	$295,996	2029	N/A	One time	3	Forecasted

3. Fire Safety

3.1 Emergency Power

Description:
Emergency power is provided by a 35 kW (43.75 kVA) diesel generator which was manufactured by Simpson (Model 27375/1) in 1990 and is located in the Recreation Centre boiler room accessed via an exterior door on the north elevation. According to the drawings, the generator provides power via an automatic transfer switch to three distribution panels (historically labelled Panels 'L', 'M', and 'N') which serve various lighting and receptacles in the Recreation Centre and Museum.

The transfer switch was manufactured by Thomson (Model TS873A0200A1CY5) in 2019, rated for 200A, 120/208V, and is located in the main electrical distribution area off the storage room.

History of Repairs:
2019: Replaced emergency generator transfer switch, according to the data plate.

Condition / Recommendation:
Condition Index Ratings:

Generator: 3 (Fair)
Transfer Switch: 1 (Very Good)

The generator and transfer switch are in a serviceable condition with no reported issues with operation.

No generator logbook was located during the site visit and could not confirm the testing frequency history and the date of the last load test. At the time of review, the generator's hour meter read 17.2 + 91 = 108.2 hours. A data tag on the generator indicated there were repairs completed in 2021 but the extent of those repairs is not known.

According to data plate, the generator is original and installed in 1990. With age, performance typically degrades to the point where the generator cannot meet the full load requirements, and replacement is required. Major manufacturers typically do not support older equipment, and we cannot predict how long replacement parts will remain available. Based on age, replacement of the generator is anticipated within the report term. As the transfer switch was replaced in 2019, we anticipate it will be maintained for the report term and will be compatible with a new generator in the future.

Maintenance Items:
- Ongoing annual inspection and load testing of the generator and transfer switch and maintaining a logbook on site.

3.1.1 Replace Emergency Generator - Recreation Centre / Museum

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$88,778	$103,061	2028	35	Recurring	3	Forecasted

4. HVAC

4.1 General

Description:
The building's HVAC equipment serves the Aquatic Centre, Recreation Centre, Library, and Museum.

Please refer to the following sections of the report for a more detailed description of the main and supplemental HVAC equipment.

History of Repairs:
2013: Generally renewed Recreation Centre HVAC equipment ($862,448), as reported by the Maintenance Staff
2010: Generally renewed Aquatics Centre HVAC equipment ($624,737), as reported by the Maintenance Staff

4.2 Central Heating Plant

Description:
The Aquatic and Recreation Centres are served by a central heating plant located in the boiler room accessed via an exterior door off the north elevation of the Recreation Centre. The plant consists of three wall-mounted, gas-fired, high-efficiency condensing boilers. The boilers were manufactured by Viessmann (Model Vitodens 100-W200-WB2B-105) in 2012. Each boiler has a rated heating input of 370 MBH, and a rated heating output of 350 MBH, according to the data plates.

The boiler water temperature is controlled by the integrated DDC system which regulates the water temperature in the system based on outdoor air temperature and return loop temperature.

Pot feeders provide chemical treatment for the closed-loop distribution system.

Refer to the "HVAC Distribution System" section for further information on the hydronic heating distribution system.

History of Repairs:
2012: Installed new boilers, according to the data plates and confirmed by Maintenance Staff.
2020/21: Replaced boiler heat exchangers, according to the Asset Management database.

Condition / Recommendation:
Condition Index Ratings:

Boilers: 2 (Good)

The Maintenance Staff reported that the boilers have been performing well and the asset management lists indicate all heat exchangers were replaced in 2020 and 2021. Visually, we note no major issues.

The boilers are currently about 12 years old and service both the hydronic heating distribution systems and the domestic hot water loops. Based on a typical service life of about 25 years, replacement is anticipated later in the report term. The budget allows for replacement with similar high-efficiency units assuming the current heating capacities are suitable for the site in the future.

Maintenance Items:
- Regular inspections and repairs as needed.

4.2.1 Replace Boilers - Aquatic Centre / Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$80,850	$126,488	2036	25	Recurring	3	Forecasted

4.3 Heat Pumps and ERV Units

Description:
Packaged heat pump units provide heating, cooling, and ventilation to the Aquatic Centre, Recreation Centre, and Library. The units typically have electric heating and cooling using R410A refrigerant. The units are summarized below.

Aquatic Centre:
- Packaged rooftop heat pump units RTU-1 and RTU-2 serving the lobby, offices, and changerooms were manufactured by Trane (Model No. WSC036E3) in around 2010. The data plates are mostly faded but based on the tags and size of the units, they have heating capacities of about 34 and 46 MBH and a nominal cooling capacity of 3 and 4 tons, respectively.

- Energy Recovery Ventilator ERV-1 serving the accessible changerooms was manufactured by Greenheck (Model ERV-361S-15-C-ES) in around 2010. The data plate indicates an approximate air volume supply of 1,200 CFM.

Recreation Centre:
- Packaged rooftop heat pump units RHP-1, RHP-2, and RHP-3 serving the south offices and the Fir and Hemlock rooms were manufactured by Trane (Model No. 4WCX4024A) in 2012. The drawings indicate they have heating capacities of about 22 MBH and nominal cooling capacities of 2 tons. The units are tied to Energy Recovery Ventilator ERV-1 manufactured by Greenheck (Model ERV-251S-20-C) in 2012 with an approximate air volume supply of 600 CFM.

- Packaged rooftop heat pump units RHP-4 and RHP-5 serving the main lobby, reception, washrooms, Pine room, copy room, and offices were manufactured by Trane (Model No. 4WCX4024A and WSC072E3) in 2012. The drawings indicate they have heating capacities of about 22 and 71 MBH and nominal cooling capacities of 2 and 6 tons, respectively. The units are ducted to Energy Recovery Ventilator ERV-2 manufactured by Greenheck (Model ERV-361H-15-C) in 2012 with an approximate air volume supply of 1,200 CFM.

- Packaged rooftop heat pump units RHP-6 and RHP-7 serving the Dogwood room, Cedar West room, dressing room, and storage room were manufactured by Trane (Model No. WSC072E3 and WSC060E3) in 2012. The drawings indicate they have heating capacities of about 71 and 59 MBH and nominal cooling capacities of 6 and 5 tons, respectively. The units are ducted to Energy Recovery Ventilator ERV-3 manufactured by Greenheck (Model ERV-581H-30-C) in 2012 with an approximate air volume supply of 3,300 CFM.

- Packaged rooftop heat pump units RHP-8 and RHP-9 serving the Cedar Centre and Cedar East rooms were manufactured by Trane (Model No. WSC090E3 and WSC090H) in 2012 and 2021, respectively. The drawings indicate they have heating capacities of about 86 MBH and nominal cooling capacities of 7.5 tons. The units are ducted to Energy Recovery Ventilator ERV-4 manufactured by Greenheck (Model ERV-581H-30-C) in 2012 with an approximate air volume supply of 4,000 CFM.

- Pad-mounted split-system heat pump units HP-1 and HP-2 serving the Basement Craft rooms via air handling units AHU-1 and AHU-2 (See "Air Handling Units" Section) were manufactured by Trane (Model No. 4TWB3018) in 2012. The data plates indicate they have heating capacities of about 9 MBH and nominal cooling capacities of 1.5 tons.

- Energy Recovery Ventilator ERV-5 serving the Crawlspaces was manufactured by vanEE (Model 3000HE) in 2012 with an approximate air volume supply of 364 CFM.

- Ductless split-system heat pump unit HP-3 located in the dropped ceiling space with terminal units DS-1 and DS-2 serving the main offices was manufactured by Friedrich (Model No. M24DYF) in 2012. The drawings indicate it has a heating capacity of 10.5 MBH and a cooling capacity of 1 ton.

Library:
- Packaged rooftop heat pump units HP-1 to HP-4 were manufactured by Trane (Model No. 4WCY4024A) in 2012. The data plates indicate the units have heating capacities of around 22 MBH and cooling capacities of 2 tons.

History of Repairs:
2021: Replaced RHP-9 after burn-out, according to the Asset Management List.

Condition / Recommendation:
Condition Index Ratings:

Aquatic Centre units: 3 (Fair)
Recreation Centre units: 2 (Good - RHP-9 only) to 3 (Fair)
Library units: 3 (Fair)

The rooftop units were operating at the time of our site review. Maintenance Staff reports no major issues outside of routine maintenance and local repairs. We noted the following:

- The Recreation Centre split-system heat pumps HP-1 and HP-2 are north-facing and subject to moss growing on the chassis and fins which reduces unit performance. Moss mixed with rain and warmth can lead to legionella and reduce the equipment's service life; therefore, cleaning and maintenance are recommended to improve the equipment's service life.

- All exhaust and supply grilles, registers, and diffusers showed signs of dust build-up. We understand annual vacuum cleaning of grilles, diffusers, and registers is completed as part of maintenance, but this does not include the ductwork. Every 10 years, we recommend the existing ductwork be vacuum cleaned as part of maintenance to improve indoor air quality and ductwork lifetime.

- The cooling equipment uses R-410A refrigerant, which is a hydrofluorocarbon (HFC)-based refrigerant. In 2021, the EPA released a plan to phase out HFC-based refrigerants, based on the American Innovation & Manufacturing (AIM) Act, due to their global warming potential. The plan includes a phase-out of R-410A in new A/C equipment by 2025 and an 85% reduction in HFC production by 2036. Like with the previous R-22 phase-out, this is expected to make R-410A refrigerant less available and more expensive, although the extent of these changes is not yet known. Refrigerant is needed to top-up equipment where some has been lost due to repairs or leaks. As such, the phase-out is expected to affect mainly older equipment with greater repair needs.

Most of the units are approximately 12 years old. The typical service life of rooftop units can range from 20 to 30 years and is highly dependent on maintenance practices. Based on the age and current condition, along with anticipated escalating repair needs and the phase-out of refrigerants, the plan allows for replacing all heat pump units across the three building areas later in the report term, spread over multiple years. No budgets for structural upgrades are included; depending on the load differential between the original and new units, a structural review and upgrades may be needed.

Replacement of the newer RHP-9 is not anticipated in the report term provided proactive maintenance practices are in place.

Periodic repair and replacement of individual components (such as compressors, burners, valves, blowers, etc.) are expected to be managed as a maintenance expense.

Maintenance Items:
- Cleaning of pad-mounted north-elevation heat pump units to mitigate moss growth that can impact unit performance and service life.
- Every 10 years, we recommend the existing ductwork be vacuum cleaned as part of maintenance to improve indoor air quality and ductwork lifetime.

4.3.1 Replace Rooftop Heat Pumps and ERV Unit - Aquatic Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$32,125	$48,419	2035	25	Recurring	3	Forecasted

Project Phased

2035	2036
50%	50%
$24,209	$25,129

4.3.2 Replace Heat Pumps and ERV Units - Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$251,890	$379,649	2035	25	Recurring	3	Forecasted

Project Phased

2035	2036	2037	2038
25%	25%	25%	25%
$94,912	$98,519	$102,263	$106,149

4.3.3 Replace Rooftop Heat Pump Units - Library

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$59,000	$88,925	2035	25	Recurring	3	Forecasted

Project Phased

2035	2036
50%	50%
$44,462	$46,152

4.4 Air Handling Units

Description:
There are air handling units (AHUs) that provide heating, cooling, and ventilation to the Aquatic Centre, Recreation Centre, and Museum. The units are summarized below.

Aquatic Centre:
- Rooftop dehumidifier unit DHU-1 was manufactured by Desert Aire (Model No. SA35R5WCH2I9092) in 2010. The unit is equipped with a cooling coil, heating coil, pre-heat coil, humidification system, outdoor air supply dampers, and supply and return air fans. According to the drawings, the heating coil is supplied by a hot water distribution loop from the central heating plant and the pre-heat coil is supplied by a circulation loop from the main pool water return (see "Central Heating Plant" section). The cooling coil is served by a dedicated remote condenser located next to the main unit which was also manufactured by Desert Aire (Model No. ROCH009S01C5N00) in 2010 and uses R410A refrigerant.

Recreation Centre:
- Packaged AHUs (AHU-1 and AHU-2) serving the Basement Craft rooms were manufactured by Trane (Model No. 4TWB3018) in 2012. The units are each equipped with a 3.6 kW electric heating coil and a cooling coil supplied from pad-mounted heat pump units HP-1 and HP-2, respectively (see "Heat Pumps and ERV Units" section). According to the drawings, each AHU has an approximate air volume capacity of 600

CFM.

Museum:
- Built-up rooftop AHU manufactured by Engineered Air (Model No. FWA-22A-KMO) in 2002. The data plate on the unit is illegible so size information could not be confirmed. According to the drawings, the unit is 5000 lbs and equipped with a cooling coil, electric heating coil, pre-heat coil, humidification system, outdoor air supply dampers, and supply and return air fans.

Condition / Recommendation:
Condition Index Ratings:

Aquatic Centre Dehumidifier Unit: 3 (Fair)
Recreation Centre Units: 3 (Fair)
Museum Unit: 4 (Poor)

The AHUs were operating at the time of our site review. The Maintenance Staff report that the AHUs have been performing well, with only normal maintenance needs to date.

The cooling equipment serving the AHUs uses R410A refrigerant, which is a hydrofluorocarbon (HFC)-based refrigerant. In 2021, the EPA released a plan to phase out HFC-based refrigerants, based on the American Innovation & Manufacturing (AIM) Act, due to their global warming potential. The plan includes a phase-out of R-410A in new A/C equipment by 2025 and an 85% reduction in HFC production by 2036. Like with the previous R-22 phase-out, this is expected to make R-410A refrigerant less available and more expensive, although the extent of these changes is not yet known. Refrigerant is needed to top-up equipment where some has been lost due to repairs or leaks. As such, the phase-out is expected to affect mainly older equipment with greater repair needs.

Based on a typical service life of about 20 to 25 years, replacement of the AHUs is anticipated in the report term. As the rooftop units are located outdoors and indoor Recreation Centre units are accessible through an exterior doorway, the budget assumes the units will be wholly replaced. The Recreation Centre AHU replacement is timed to occur with the heat pump unit HP-1 and HP-2 replacement to maximize economies of scale and reduce access and overhead costs.

Maintenance Items:
Regular maintenance and local repairs as needed

4.4.1 Replace AHU - Museum

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$225,750	$252,476	2027	25	Recurring	3	Forecasted

4.4.2 Replace Dehumidifier Unit - Aquatic Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$416,500	$604,768	2034	25	Recurring	3	Forecasted

4.4.3 Replace AHUs - Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$15,240	$22,970	2035	25	Recurring	3	Forecasted

Project Phased

2035	2036
50%	50%
$11,485	$11,921

4.5 Supplemental HVAC

Description:
The building contains the following local HVAC equipment that supplements the main HVAC equipment:

Aquatic Centre:
- Electric duct heater DH-3 serving the Pool Storage Room was manufactured by Thermolec (Model No. FC-8x8-2kW) in 2012. According to the drawings, the heater is rated for 240 CFM with a heating capacity of 2kW. The duct heater tempers fresh outdoor air and is connected to fresh air fan FA-2 (see "Ventilation/Exhaust System" section).

Recreation Centre:
- Electric duct heater DH-1 serving the Basement Craft rooms was manufactured by Thermolec (Model No. FC-8x8-2kW) in 2012. According to the drawings, the heater is rated for 240 CFM with a heating capacity of 2kW. The duct heater tempers fresh outdoor air which is then supplied to AHU-1 and AHU-2 (See "Air Handling Units" section) via fresh air fan FA-1 (see "Ventilation/Exhaust System" section).

- Electric duct heater DH-2 serving the Crawlspaces was manufactured by Thermolec (Model No. TER-8-3120) in 2012. According to the drawings, the heater is rated for 364 CFM with a heating capacity of 3kW. The duct heater tempers fresh outdoor air which is then supplied to ERV-5 (See "Heat Pump and ERV Units" section).

Library:
- Electric duct heater DH-1 serving the storage room was manufactured by Thermolec and is rated for 400 CFM.

Condition / Recommendation:
Condition Index Ratings:

Supplemental HVAC Equipment: 3 (Fair)

The supplemental HVAC equipment appeared to be operating where and when reviewed, and the Maintenance Staff reported no issues.

Most of these supplemental units were installed in 2012 and expected to have a service life in excess of 25 years. Based on the age and condition, replacing some of the supplemental HVAC equipment will be required later in the report term. Given the relatively small size of these components, replacements costs are anticipated to occur as a maintenance expense or at a cost below the capital threshold of this report.

Maintenance Items:
- Repairs and replacement of some of the supplemental HVAC equipment as needed

4.6 Ventilation/Exhaust Fans

Description:
The building contains the following ventilation and exhaust equipment:

Aquatic Centre:
- three rooftop exhaust fans serving the lobby, washrooms, and janitor's closet. One fan was manufactured by ACME (Model No. PV165), the second (EF-7) was manufactured by Reversomatic (Model No. QCF80ES-FF) rated at 40 CFM, and the third did not have a legible data plate.

- two large through-wall exhaust fans above the pool located in the raised roof space at the western end. According to the data plates, the fans were manufactured by Twin City (Model No. WPB-E-38L) and rated at 1 1/2 HP each.

- Fresh air supply fan FA-2 serving the Pool Storage Room was manufactured by Greenheck (Model No. CSP-A5100) and rated at 400 CFM.

- one through-wall exhaust fan serving the water treatment room. No other data was available.

- one through-wall exhaust fan serving the sauna. No other data was available.

Recreation Centre:
- Fresh air supply fan FA-1 serving the Basement Craft rooms was manufactured by Greenheck (Model No. CSP-A390) and rated at 240 CFM. The fan supplies fresh outdoor air to AHU-1 and AHU-2 (See "Air Handling Units" section).

- Exhaust fan EF-1 serving the Janitor's Room was manufactured by Greenheck (Model No. G075-D) and rated for 120 CFM and 1/25 HP.

- Exhaust fan EF-2 serving the Storage Room was manufactured by Greenheck (Model No. G090-G) and rated for 270 CFM and 1/25 HP.

- Exhaust fan EF-3 serving the Breezeway was manufactured by Greenheck (Model No. G103-C) and rated for 500 CFM and 1/8 HP.

- Three exhaust fans (EF-4 to EF-6) serve the kitchen hood and dishwasher exhausts rated between 2100 and 2500 CFM

Library:
- Exhaust fan EF-1 serving the washroom was manufactured by Broan (Model No. QTRE110C) and rated for 110 CFM.

- Exhaust fan EF-2 serving the staff room was manufactured by Broan (Model No. QT130) and rated for 126 CFM.

Museum:
- Exhaust fan EF-1 serving the washrooms was manufactured by Greenheck (Model No. CBE-10) and is rated for 480 CFM and 1/4 HP.

- Exhaust fan EF-2 serving the dark room was manufactured by Greenheck (Model No. CBE-10) and is rated for 300 CFM and 1/4 HP.

- Exhaust fan EF-3 serving the silk screen room was manufactured by Koehler (Model No. FE-5) and is rated for 370 CFM and 1/2 HP.

- Exhaust fan EF-4 serving the conservatory was manufactured by Greenheck (Model No. CE-8) and is rated for 191 CFM and 1/4 HP.

Condition / Recommendation:
Condition Index Ratings:

Aquatic Centre Units: 3 (Fair) to 4 (Poor)
Recreation Centre Units: 3 (Fair) to 4 (Poor)
Library Units: 3 (Fair)
Museum Units: 3 (Fair)

Where checked, the ventilation and exhaust system equipment was operating during our visit. Some of the equipment reviewed had illegible data plates and appeared to be original to building section construction while other equipment has been replaced or repaired as needed in previous years. We noted the following:

- The large exhaust fans serving the pool area have louvres that are understood to be sealed shut and therefore moisture could get trapped and cause further corrosion to the fans and components.

- We were unable to access the kitchen and dishwasher exhaust ductwork, but they are in close proximity to the make-up gravity intake hoods and goosenecks and therefore recommended to be assessed and cleaned.

Given the number of fans and the suspected age range between equipment, some of the supply and exhaust fans have surpassed their expected service lives and will need to be repaired or replaced individually as needed as a maintenance expense or at a cost below the capital threshold of this report.

Maintenance Items:
- Cleaning, local repairs, and replacement as needed.

4.7 Control System

Description:
A Delta Controls building automation system (BAS) monitors and controls the operation of the HVAC and hot water distribution systems. The equipment is controlled by direct digital control (DDC) actuation.

The BAS is operated from a workstation in the maintenance manager's office.

According to the work station interface, the BAS consists of about 248 points.

Condition / Recommendation:
Condition Index Ratings:

BAS: 2 (Good)

The BAS is reported to be in serviceable condition. The existing system is reasonably modern, and the Maintenance Staff reports it is functioning well with no current issues maintaining the system. We assume future BAS upgrades to keep pace with changing technology, including software and head-end system upgrades and partial point device replacements, would occur as a maintenance expense or at a cost below the capital threshold of this report.

Maintenance Items:
- Local control point repairs or replacement and software updates as needed.

4.8 HVAC Distribution System

Description:
The central hydronic distribution system across the Aquatic and Recreation Centre includes:

- Steel distribution piping ranging from 4" to 3/4" diameter from the central plant to various radiant heaters, heat exchangers, and heating coils
- 14 total circulation and distribution pumps rated from 0.4 to 1 1/2 HP, 11 of which serve the hydronic heating system and the other three serve the domestic hot water system
- three heat exchangers which transfer heat to the Aquatic Centre hot tub, tot pool, and main pool
- three-way valves which control the temperature in the secondary loops
- isolation and other flow control valves located throughout the system
- two expansion tanks, one for the hydronic heating system and the other for the domestic hot water system
- automatic chemical treatment system which helps maintain a neutral pH level in the water and reduces the potential for corrosion of the piping

Condition / Recommendation:
Condition Index Ratings:

Piping: 3 (Fair)
Circulation Pumps: 3 (Fair) to 4 (Poor)
Heat Exchangers: 3 (Fair) to 4 (Poor)
Expansion Tanks: 3 (Fair)

The hydronic system equipment varies in age but the majority is 20+ years old. Most of the hydronic pumps have had motor and impeller replacements over the years, but the pump bodies have surpassed their expected service life and are recommended to be replaced to mitigate pump body catastrophic failure. The pool perimeter pump has recently been replaced after corrosion was observed on the piping. Maintenance Staff indicated rust sediment is observed during pool draining periods which suggests pumps are likely failing prematurely due to rust in the pump body from corrosion of the existing pool perimeter heating piping and impeller causing overheating and damage that can result in pump failure.

The system components (excluding the piping) have varying expected service lives ranging from 20 to over 50 years. Based on age and current condition, we have included a replacement budget for the larger distribution pumps, heat exchangers, and three-way valves. Replacement of small components such as boiler circulation pumps, valves, and expansion tanks is assumed to be handled individually as needed as part of regular maintenance.

The distribution piping is mostly concealed behind interior finishes. In addition, the condition of the internal pipe walls cannot be determined without destructive cut tests or ultrasonic testing. With diligent regular maintenance and proper water treatment, these systems can often last the life of the building without capital repairs. Therefore, based on the presence of a water treatment system and given the reported absence of major concerns to date, general replacement of the hydronic distribution piping is not expected within the report term. Test cuts or ultrasonic testing is advisable to confirm this assumption. The previous Asbestos Inventory conducted in 2014 reports asbestos lagging on the distribution piping and hot water tank in the boiler room which contains relatively high levels of asbestos; if distribution piping replacement is completed, additional costs for asbestos containment and abatement procedures will apply and will need to be factored into the budget. We assume minor issues and isolated replacements will be managed from repair and maintenance budgets.

We recommend that a commissioning agent be engaged periodically to review the operation of the overall HVAC and plumbing systems. This often identifies inefficiencies or poor operating practices that have crept into the system over time and can identify energy savings opportunities. The cost of commissioning is assumed to be a maintenance expense. Needed work identified by commissioning would presumably either be maintenance-type (adjustments), would replace other projects in this report, or would be considered separately due to pay-back possibilities, so no additional budgets are provided.

Maintenance Items:
- Ongoing repairs and inspections as needed.

4.8.1 Replace Hydronic System Equipment - Aquatic / Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$20,212	$22,605	2027	N/A	One time	3	Forecasted

5. Finishes, Furniture and Equipment

5.1 Aquatic Centre Interior Finishes

Description:

Reception area / Offices:

The entrance area contains the reception desk and several small offices. Floors are generally carpeted and walls painted. The reception area ceiling is finished with wood decking.

Pool area:

There is a main pool, children's pool, whirlpool, and two saunas. Pool areas have concrete basins and surrounding deck surfaces covered in ceramic tile. Some carpet tile has been used in the sitting area at the wood-framed retractable bleachers. The walls are painted concrete block with ceramic tiles covering the lower portions of the walls. Ceiling areas above the pool have cedar wood slats and painted wood beams. A decorative painted wood trellis is provided in the seating area. Pool fixtures such as ladders and accessible ramps and lifts are generally stainless steel. The two saunas have cedar finishes. There are shower areas at the entrance to the saunas with tile finishes. An aluminum-framed automatic sliding door separates the pool area from the reception.

Change Rooms / Washrooms:

The primary change rooms include washroom facilities and large showers. Finishes include ceramic tile at floors and lower portions of the wall areas in showers and washrooms, painted concrete-block walls, and T-bar tile ceilings. Tiles are a mix of 6x6 and 1x1 inch sizes. Metal dividers are provided at washroom stalls. Storage lockers, benches, and wall hooks are provided in the change room areas.

Two smaller washroom facilities are provided in the reception area. These washrooms have similar finishes with tiled and painted surfaces, and typical washroom fixtures and metal divider panels.

There are four large family-accessible change rooms along the south side of the pool. These rooms include a shower, toilet, sink and benches. Finishes are tile floors and the lower portion of the walls and painted upper portions of walls and ceilings.

Exercise Gym:

A gym area is located in the northwest corner of the Aquatic Centre. Finishes include rubber tile flooring, painted concrete block and some drywall on walls, and a painted wood-slat ceiling with painted drywall over support beams.

Condition / Recommendation:
Condition Index Ratings:

Ceramic tiles: 2 (Good) to 3 (Fair - showers to saunas)
Carpet: 2 (Good - carpet tiles) to 3 (Fair - reception area)
Wall finishes: 2 (Good)

The common area finishes appear reasonably maintained. We did not note excessive wear and tear in the areas reviewed. The timing and scope of interior finish renewal generally depend on management objectives. On-site operations staff did not indicate any planned major interior renovations. It appears that individual areas are partially renovated as needed, rather than undertaking larger-scale renovations. As such, we assume this approach will continue.

Ceramic tiles are generally intact. There are local patch repairs with some areas of tile replaced and grouting completed. Operations staff reported annual repairs are performed to maintain all tiled surfaces throughout the aquatic centre. The tiled shower areas at the saunas are older and a general retiling of this area is expected within the next few years; as this would be a larger project, we have included a budget for this work. Aside from the sauna shower area, the tile finishes throughout the Aquatic Centre are expected to remain in service for several more years provided annual repairs and maintenance continue. A budget is included for the eventual retiling of the pool basin and surrounding deck surfaces. This project is a preliminary budget and does not include allowances for other considerations (structural and piping) discussed below. Before implementing a major renewal, we recommend a functional assessment of the facility to determine whether upgrades to amenities should be considered in the design, or whether a larger facility renewal should be considered. We have not included the retiling of the changerooms and family change rooms as we assume they will be maintained through annual repairs.

We understand that the piping serving the pool, embedded within the pool deck, is corroding. A review of this piping is beyond the scope of this report. Should piping require replacement, we recommend it be undertaken in conjunction with retiling of the pool deck.

A pool drainage trench is provided around the pool perimeter. A review of a sample of the access hatches identified local spalling of the concrete in the trench. The crawl space below the deck that surrounds the whirlpool was also locally spalled, with visible rust staining at the exposed rebar. It would appear that some of the rebar was installed without sufficient concrete cover. The extent of deterioration observed did not appear to be a major structural concern. That said, we recommend a detailed structural review of the drainage trenches, pool basin and surrounding deck/crawl spaces. A budget for the structural review is included. No allowance for concrete repairs has been included, pending completion of the evaluation.

Painted walls and ceilings are in serviceable condition. Some local wear and tear was noted in the gym area. We assume the operations team will complete local repainting as needed, therefore we have not budgeted for general repainting.

Fixtures for washrooms and showers are in good condition and replaced individually as needed. Washroom dividers are ceiling hung which helps reduce deterioration.

Carpet tiles are generally newer and individual tiles can be replaced as needed. The reception area and some of the offices have older carpets and replacement of these carpets is expected to occur in the next 3 to 5 years. Given the small area of older carpet, replacement is not expected to exceed the capital threshold of this report.

Pool fixtures such as handrails and ramps are generally stainless steel. Some corrosion was noted at the handrail anchor connections, resulting in staining of the surrounding tiles. Local replacement of hardware is assumed to be an operating expense.

Maintenance Items:
- Routine janitorial cleaning by operations staff.
- Individual replacement of carpet tiles, or local repairs to the ceramic tile and regrouting, as needed.
- Touch-up painting of interior finishes, as needed.
- Replacing individual washrooms and shower fixtures, as needed.

5.1.1 Structural Review of Pool Deck/Basin/Crawl Spaces - Aquatic Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$20,000	$20,760	2025	N/A	One time	3	Forecasted

5.1.2 Retile Shower Rooms at Saunas - Aquatic Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$30,000	$32,323	2026	N/A	One time	3	Forecasted

5.1.3 Retile Pool and Deck Areas - Aquatic Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$815,400	$946,586	2028	N/A	One time	3	Forecasted

5.2 Recreation Centre Interior Finishes

Description:

Lobby / Reception Area:

Finishes included carpet tile, vinyl wallpaper, and paint on walls. The ceiling has exposed wood decking and painted wood beams. The reception area has a wood-framed front desk and cubicle-style workstations.

Meeting Rooms / Offices:

There are two large spaces in the recreation centre referred to as the Dogwood and Cedar rooms. Finishes typically include vinyl tile flooring, wallpaper and painted walls, and acoustic panels on the ceiling. The Cedar meeting room has two accordion-style wall dividers and a raised stage area with parquet flooring.

A commercial kitchen is provided adjacent to the Cedar room. Finishes included vinyl tile floor and painted drywall walls and ceilings along with some stainless steel panels. Working surfaces included stainless-steel countertops on wood-framed cabinets and stainless-steel sinks. Large appliances included a grill with a hood vent, an industrial dishwasher with a hood vent, and various coolers/freezers.

Two medium-sized meeting rooms are located along the south side. One has vinyl tile flooring while the other has newer carpet tile. Walls and ceilings are generally painted.

Three offices are provided along the south side, finished with older carpet and paint.

A small lounge adjacent to the reception desk has newer carpet tile and painted vinyl wallpaper walls.

Washrooms:

Finishes include newer tile flooring, older ceramic tile on lower portions of walls, painted upper portions of walls, and T-bar tile ceilings. Metal washroom dividers are provided at washroom stalls.

The Asbestos Inventory report dated October 24, 2014, prepared by Mid Island Safety Consulting Inc., indicates various finishes contain asbestos including drywall joint compound and vinyl floor tile in various areas/rooms. Refer to the inventory report for specific locations.

Condition / Recommendation:
Condition Index Ratings:

Vinyl Tile Flooring: 2 (Good) to 3 (Fair - Dogwood room older tile)
Carpet: 2 (Good - carpet tiles) to 3 (Fair - offices w roll carpet)
Paint: 2 (Good)

The Recreation Centre finishes appear well maintained. We did not note excessive wear and tear in the areas reviewed. The timing and scope of interior finish renewal generally depend on management objectives.

Most carpet areas have been recently replaced with carpet tile and, therefore, we do not anticipate general replacement of carpets within the report term. The three offices have older roll carpets that will likely be replaced in the next few years but replacement costs are not expected to exceed the capital threshold of this report.

Vinyl flooring is generally in good condition; however, the older tiles in the Dogwood meeting room are worn and were reported to contain asbestos according to a test report prepared in 2014. These tiles can likely remain in service for several more years. A budget to replace these tiles is included. Other tiled areas are expected to remain in service longer, and local replacements of non-asbestos-containing vinyl tile are not expected to exceed the capital threshold of this report.

The washroom and commercial kitchen finishes are in good condition and we do not anticipate any major renovations to these spaces within the term of this report.

A review of the furnishings, equipment or appliances was beyond the mandate of this report.

Maintenance Items:
- Routine janitorial cleaning by operations staff.
- Individual replacement of carpet tiles or vinyl flooring, as needed.
- Touch-up painting of interior finishes, as needed.
- Replacing individual fixtures in washrooms or commercial kitchen, as needed.

5.2.1 Replace Vinyl Tile - Dogwood Room in Recreation Centre

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$20,493	$22,919	2027	N/A	One time	3	Forecasted

5.3 Library Interior Finishes

Description:
The Library has older carpet tile throughout the main area and newer carpet behind the reception desk. Walls are painted, and ceilings are painted wood deck boards and beams in the main area and a T-bar tile ceiling in the newer rear addition.

There is a small men's and women's washrooms, each with a single-stall configuration with resilient sheet flooring, ceramic tile on the lower part of walls, and painted upper wall areas.

The interior corridor that provides access from the Recreation Centre to the vestibule outside the Library/Museum entrance is finished with newer carpet tile similar to the carpet tile in the Recreation Centre. The vestibule has a concrete floor and stained wood siding on the walls.

Condition / Recommendation:
Condition Index Ratings:

Carpet tile: 3 (Fair - main areas of the Library) to 2 (Good - behind reception area)
Painted surfaces: 2 (Good)
Resilient sheet flooring: 3 (Fair - washrooms)

We understand that the Library is operated under a lease agreement held by the Vancouver Island Regional Library (VIRL). As such, we assume any interior renovations would be the responsibility of the leaseholder. Therefore, budgets for interior renovations are not included in this report.

The Library finishes appear well maintained. We did not note excessive wear and tear in the areas reviewed. We understand the VIRL is considering an interior renovation; however, the scope of work or timing of the project has not yet been defined.

Most carpet areas are older but as they are carpet tile format they can easily be locally replaced as needed. General replacement of the carpeting throughout the Library is anticipated within the next 2 to 4 years.

The resilient sheet flooring in the washrooms is worn but functional. Replacement of the washroom flooring should be anticipated in the next 3 to 5 years. Replacing fixtures or local repainting in the washrooms can be completed as needed as part of ongoing maintenance activities.

A review of the library furnishings, shelving, and equipment was beyond the mandate of this report.

Maintenance Items:
- Routine janitorial cleaning by operations staff.
- Individual replacement of carpet tiles or vinyl flooring, as needed.
- Touch-up painting of interior finishes, as needed.
- Replacing individual fixtures in washrooms, as needed.

5.4 Museum Interior Finishes

Description:
The museum includes a reception area, a main exhibit area with portions incorporating a mezzanine, a rear service/storage area, and a small basement area used for artifact storage.

The reception area has a wood-framed desk/workstation and wall cabinets. The flooring in the reception area is ceramic tiles.

The exhibit areas are carpeted. Wall finishes are generally concealed by exhibit structures, with some areas painted and others covered by stained wood panelling. The ceilings are generally painted wood decking and beams. The mezzanine structure is timber framed, providing a second-floor exhibit area.

There are two office spaces adjacent to the exhibit floor area with carpet floors and painted walls and ceilings.

The rear storage areas and the basement storage areas have vinyl tile flooring and painted walls and ceilings.

There is a men's and women's washroom, each containing two stalls. The men's room has vinyl tile while the women's washroom has newer reliant sheet flooring. Walls and ceilings are painted. Washroom stalls have metal dividers.

The Asbestos Inventory report dated October 24, 2014, prepared by Mid Island Safety Consulting Inc., indicates various finishes contain asbestos including drywall joint compound and vinyl floor tile in various areas/rooms. Refer to the inventory report for specific locations.

Condition / Recommendation:
Condition Index Ratings:

Carpet: 3 (Fair)
Vinyl tile: 3 (Fair)
Resilient sheet flooring: 2 (Good - women's washroom)
Painted surfaces: 2 (Good)

The Museum finishes appear well maintained. The exhibit space's illumination is kept relatively low and no windows are provided to help preserve the artifacts. The timing and scope of interior finish renewal generally depend on management objectives.

Carpet in the exhibit areas and one of the offices are older role carpeting but generally remain intact. Some scuffs and stretched areas were noted. Replacement of the carpets is expected in the next 2 to 5 years. It would be difficult to replace the carpet in some museum areas due to large exhibits covering the flooring. The budget provided has allowed for some costs associated with temporarily relocating artifacts and removing/reinstalling exhibit structures; however, the overall budget should be considered preliminary until the scope of work has been clearly defined.

The vinyl flooring in the storage areas and the men's washroom are worn but functional. Replacement of the men's washroom flooring can be completed in conjunction with the Museum carpet replacement. General replacement of the storage area flooring is not anticipated within the report term. Local areas of vinyl tile flooring are expected to be replaced as needed, with the cost of replacement not expected to exceed the capital threshold of this report.

The resilient sheet flooring in the women's washroom is newer and replacement of this flooring is not anticipated within the term of this report.

A review of the museum shelving and equipment was beyond the mandate of this report.

Maintenance Items:
- Routine janitorial cleaning by operations staff.
- Local replacement of carpet or vinyl flooring, as needed.
- Touch-up painting of interior finishes, as needed.
- Replacing individual fixtures in washrooms, as needed.

5.4.1 Replace Carpet - Museum

Present Cost	Inflated Cost	First Occur.	Cycle	# Occurrence	Class	Status
$140,250	$156,854	2027	N/A	One time	3	Forecasted

Scope Of Work

Authorization

This report was prepared at the request of Dave Arsenault, P.Eng., Project Manager of The City of Port Alberni to support future capital planning for the property.

Mandate

Our scope of work is in general conformance with the ASTM Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment (ASTM E2018-15) with specific exceptions:
- We considered a higher capital threshold than is recommended by the Standard to better align with the scale of the building and typical management objectives;
- We did not make requests to building and fire officials for outstanding work-orders or violations on file; we believe this is part of your legal due diligence;
- We make no comment on requirements of the Americans with Disabilities Act (an American standard which does not apply here) or any RBQ or NBC of Canada barrier-free provisions as these generally apply to new construction only;
- We make no comment on seismic or flood plain risks; and
- We did not review rent roll, lease agreements, zoning or other documents related to the business operations at the site.

The purpose of this report is to provide a general indication of the present physical condition of the building(s) with respect to easily visible portions of the following specific building systems: Structural, Exterior Cladding, Roofing, Emergency Power, Interior Finishes, and HVAC. All other building systems are specifically excluded from our mandate. We were to record deficiencies or conditions noted during a single visual walk-through review that, in our opinion, will likely require Capital expenditures by the Owner over the next 20 years. Capital expenditures are defined as expenditures that are expected to exceed an annual threshold of $20,000 anticipated to occur in years 1 to 5, and an annual threshold of $50,000 for expenditures anticipated to occur in years 6 to 20.

Our opinions of cost, assume a prudent level of ongoing maintenance. It is not within our mandate to check the adequacy of existing maintenance practices, or confirm that all mandatory system tests and inspections have been completed (e.g., annual fire alarm testing). In the course of our review, we may identify some maintenance-type issues, but this should not be seen to indicate that a maintenance audit has been completed.

Our mandate was to complete a visual walk-through survey of items, components, and systems that are conspicuous, patent, and that may be observed visually during the walk-through survey without intrusion, removal of material, exploratory probing, and the use of special equipment or design calculations. Therefore, concealed physical deficiencies and design inadequacies are specifically excluded from our mandate. Our interviews of building personnel attempt to uncover known concerns at the property, but we cannot attest to the integrity or knowledge of the interviewees, nor can this process, or the scope of work in its entirety, be considered technically exhaustive or be considered to eliminate all risks related to owning this property. Only conditions actually seen during examination of representative samples can be said to have been assessed, and comments on the balance of the conditions are assumptions based upon extrapolation.

Our mandate does not include an exhaustive review of visible conditions against all code, property standards by-law, or other legislative requirements that existed at the time of construction, or that may retroactively apply, including Human Rights Code violations. During our review patent concerns may be identified such as adequacy and acceptability of guards (at stairs, retaining walls, etc.). The inclusion of these findings in the report does not imply or infer that an exhaustive review has been completed.

Our mandate is to provide opinions of probable costs that reflect the repair strategies that we foresee and should be considered preliminary budgets only. Accurate figures can only be obtained by establishing a scope of work and receiving quotes from suitable contractors. We cannot guarantee the actual age of equipment, apparent maintenance practices, or the service lives that we have predicted. Time frames given for undertaking work represent our opinion of when to budget for the work. Failure of the item, or the optimum repair/replacement process, may vary

from our estimate. There can be no assurance that this forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated. Accordingly, readers should not place undue reliance on forward-looking information. Typically further investigation and design will be needed to firm up construction budgets and timing for any significant projects.

In selecting repair strategies, we try to select strategies to match the client's business strategy for the building, when this is communicated to us. In many circumstances, more or less conservative repair approaches could be selected. Our opinions of costs apply only to the strategies described in our report.

Our review was intended to identify conditions resulting from past and current uses. Additional evaluation may be required if a change of use, renovations or additions are anticipated.

Our work is subject to the terms, conditions and limitations referenced in our proposal submission and the contract for services signed at the time of engagement.

Survey Method

WSP conducted a visual review of the select building components on May 9, 2024.

Our field observers and report authors were Scott Gassen, Craig Harrison and Kevin Grasty. The report was reviewed by Kevin Grasty, P.Eng. of WSP.

Information Provided

Dave Arsenault, P.Eng., Project Manager answered our questions about the history of performance of the various systems, described existing capital plans, etc., and accompanied us during portions of our site visit.

Various buildings-specific reports/documents and portions of the building drawings were provided for our review.

We trust that this report addresses your requirements. Should you require clarification, please contact the undersigned.

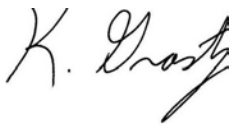
Respectfully submitted,
WSP Canada Inc.



Scott Gassen, P.Eng.
Site Reviewer and Report Author



Bobbi Nicol-Cote C.Tech (Arch)
Project Manager



Kevin Grasty, P.Eng., LEED AP
Project Director

Limitations

WSP Canada Inc (“WSP”) prepared this report solely for the use of the intended recipient, The City of Port Alberni, in accordance with the professional services agreement. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The intended recipient is solely responsible for the disclosure of any information contained in this report. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. WSP does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

It is understood and agreed by WSP and the recipient of this report that WSP provides no warranty, express or implied, of any kind. Without limiting the generality of the foregoing, it is agreed and understood by WSP and the recipient of this report that WSP makes no representation or warranty whatsoever as to the sufficiency of its scope of work for the purpose sought by the recipient of this report.

Only the specific information identified has been reviewed. No physical or destructive testing and no design calculations have been performed unless specifically recorded. Conditions existing but not recorded were not apparent given the level of study undertaken. Only conditions actually seen during examination of representative samples can be said to have been appraised and comments on the balance of the conditions are assumptions based upon extrapolation. Therefore, this work does not eliminate uncertainty regarding the potential for existing or future costs, hazards, or losses in connection with a property. We can perform further investigation on items of concern if so required.

Applicable codes and design standards may have undergone revision since the subject property was designed and constructed. Unless specifically included in our scope, no calculations or evaluations have been completed to verify compliance with current building codes and design standards.

Unless otherwise agreed in writing by WSP, the Report shall not be used to express or imply warranty as to the suitability of the site for a particular purpose. WSP disclaims any responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions or costs.

WSP is not responsible for, or obligated to identify, mistakes or insufficiencies in the information obtained from the various sources, or to verify the accuracy of the information.

WSP makes no other representations whatsoever concerning the legal significance of its findings.

WSP is not investigating or providing advice about pollutants, contaminants or hazardous materials. The Client and other users of this report expressly deny any right to any claim against the Consultant, including claims arising from personal injury related to pollutants, contaminants or hazardous materials, including but not limited to asbestos, mould, mildew or other fungus.

Budget figures are our opinion of a probable current dollar value of the work and are provided for approximate budget purposes only. Accurate figures can only be obtained by establishing a scope of work and receiving quotes from suitable contractors.

Time frames given for undertaking work represent our opinion of when to budget for the work. Failure of the item, or the optimum repair/replacement process, may vary from our estimate.

WSP disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation or evidence.

The original of this digital file will be kept by WSP for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP, its integrity cannot be assured. As such, WSP does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient.

This limitations statement is considered an integral part of this report.

Photos



Photo #1: Rec Centre South Elevation



Photo #2: Aquatic Centre South & East Elevations



Photo #3: Library & Museum South Elevation



Photo #4: Aquatic Centre North Elevation



Photo #5: Rec Centre North Elevation



Photo #6: Recreation Centre - Exterior Raised Walkway



Photo #7: Library North Elevation



Photo #8: Museum North & West Elevations



Photo #9: Cedar Siding Deteriorated at Rec Centre Canopy



Photo #10: Cladding - Deteriorating Wood Trim



Photo #11: Exterior Stucco Cladding



Photo #12: Exterior Concrete Block with Peeling Paint



Photo #13: Library Wood Framed Windows



Photo #14: Aquatic Centre - Roof with Insulated Concrete Panels



Photo #15: Aquatic Centre Older Roof Over Family Change Rooms



Photo #16: Aquatic Centre - Roof and Metal Cladding



Photo #17: Roof Over Library - Blisters and Patch Repairs



Photo #18: Roof Over Museum



Photo #19: Emergency Back-up Generator



Photo #20: Generator Transfer Switch



Photo #21: Hydronic Heating Hot Water Boilers



Photo #22: Hydronic Heating Hot Water Storage Tanks



Photo #23: Hydronic Heating Plant Expansion Tank



Photo #24: Hydronic Heating Circulation Pumps - Typical



Photo #25: Hydronic Perimeter Heaters - Typical



Photo #26: Rooftop Heat Pump Unit - Typical



Photo #27: Pad-Mounted Heat Pump Units



Photo #28: Rooftop ERV Unit - Typical



Photo #29: Heat Pump Supply and Return Ducting - Typical



Photo #30: Aquatic Centre Dehumidifier Unit



Photo #31: Museum Rooftop Air Handling Unit



Photo #32: Rec Centre Air Handling Unit



Photo #33: Duct Heater - Typical



Photo #34: Aquatic Centre Exhaust Fans



Photo #35: Rooftop Exhaust Fans - Typical



Photo #36: Through-wall Exhaust Fan



Photo #37: Central DDC Controls

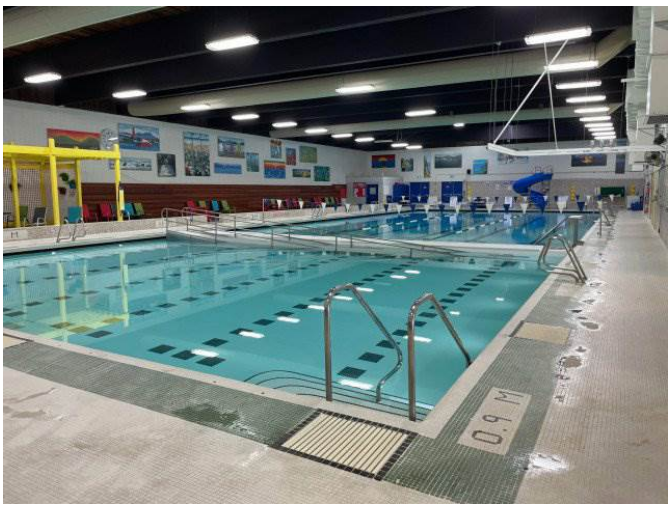


Photo #38: Aquatic Centre - Main Pool



Photo #39: Childrens Pool



Photo #40: Aquatic Centre - Showers at Saunas with Older Tile



Photo #41: Aquatic Centre - Pool Drainage Trough with Spalling Concrete



Photo #42: Aquatic Centre - Crawl Space below Whirlpool with Corroding Reinforcing Steel



Photo #43: Aquatic Centre Reception Area



Photo #44: Aquatic Centre - Gym



Photo #45: Family Change Rooms



Photo #46: Recreation Centre - Reception Area



Photo #47: Recreation Centre - Dogwood Room



Photo #48: Recreation Centre - Commercial Kitchen



Photo #49: Interior Corridor between Rec Centre and Library Vestibule



Photo #50: Library - Interior



Photo #51: Library Interior Doors at Vestibule

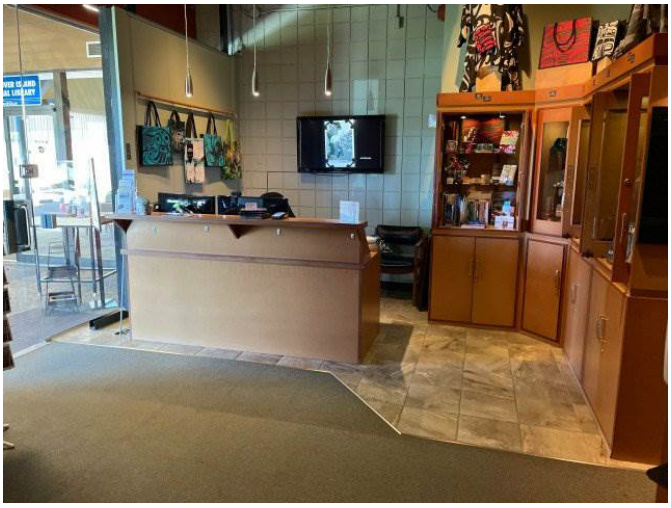


Photo #52: Museum - Reception Area



Photo #53: Museum - Interior with Mezzanine

DRAFT

Appendix F - Cost Report

DRAFT

ADVICAS
Professional Quantity Surveyors

CLASS D R1 ESTIMATE

ACRD ECHO POOL FACILITY REVIEW AND FEASIBILITY STUDY

4255 WALLACE PLACE PORT ALBERNI, BC

January 19, 2026

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APPENDICES

A SUMMARY TABLE
B ESTIMATE BREAKDOWN – Life Extension Option
C ESTIMATE BREAKDOWN – Modernization Option

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Advicas Project No. 2025102

INTRODUCTION

This report sets out the estimate of capital construction cost at conceptual design stage for the proposed ACRD Echo Pool Facility Review and Feasibility Study at 4255 Wallace Place Port Alberni, BC.

Project Description

The project comprises the feasibility assessment of the existing ACRD Echo Pool Facility to extend its service life and to meet current operational safety and performance standards. Two options are being considered, Life Extension Option and Modernization Option. The scope of work includes structural, architectural, mechanical and electrical work.

Gross Floor Area

The gross renovation floor area[1] is 1,850m²

[1] measured to the outside face of exterior walls

ESTIMATE COSTS

The estimate costs have been developed in current (January 2026) dollars only. The estimated capital construction cost is as follows:

Life Extension Option	$9,659,900
Modernization Option	$12,058,900

A summary table is provided in Appendix A with detailed estimate breakdown included in Appendix B for Life Extension Option and Appendix C for Modernization Option.

Escalation

Escalation during Construction Period – the estimate, as is typical, includes any cost increases incurred by the contractor/sub-contractor, and suppliers in conforming to contractor/supplier timelines dictated by the construction schedule. These increases are built into the respective detailed unit rate costs.

Future Escalation – Escalation beyond the current date is not included in the estimate and will be based on values given in the table below.

	Annual Escalation
2026	+5.0%
2027	+4.5%
2028	+4.5%
2029	+4.0%

Canadian/US Tariffs

The current trade tariffs between Canada and the United States, promulgated March 4, 2025, will result in a premium on material and equipment, sourced across the border. This will also impact corresponding Canadian sourced items which will increase to uphold the pricing margin between themselves and US competition. Suppliers are still coming to terms with the full pricing implication of the tariffs, and how they impact their bottom line price. At this juncture, we have excluded a provisional premium allowance in the estimate to account for the expected overall increase in construction costs related to the tariffs.

General Requirements and Fee

The General Requirements provide for all Construction Manager's costs associated with the management and supervision of the construction work in accordance with the contract documents and construction schedule. Typical costs include site superintendent/foreman, site set up and demobilization, temporary office and storage, temporary equipment including crane, first aid facilities, bonding, and construction insurance.

The Construction Manager's Fee is remuneration for acting as general contractor and/or construction manager to construct improvements, supervise, and coordinate projects that are completed in a timely and safe manner, as well as meeting required quality standards.

BASIS OF THE ESTIMATE

We have assumed that the work will be tendered competitively in the open market.

It is assumed the work will be performed in an occupied building and require a portion of the work to be completed out of normal working hours.

In all cases the estimates are based upon our assessment of fair value for the work to be carried out. We define fair value as the amount a prudent contractor, taking into account all aspects of the project, would quote for the work. We expect our estimate to be in the middle of the bid range to ensure that funding for the work remains adequate for the duration of the project.

It should be noted that Advicas Group Consultants Inc. does not have control over the cost of labour, materials, or equipment, over the Contractor's methods of determining bid prices, or over competitive market conditions. We define competitive conditions in the project as attracting a minimum of three general contractors' bids with a minimum of two sub-trade tenders, and suppliers' tenders, within each of the sub-trade categories. Accordingly, Advicas Group Consultants Inc. cannot and does not warrant or represent that bids will not vary from the estimate.

The current construction market remains active, bringing with it a volatility in tender price levels. Whilst we endeavor to gauge the developing market conditions, it is not always possible to predict industry interest in this project, and the likely-hood of a poor, uncompetitive, response.

Contingency Reserves

Contingency is an allowance specifically identified within the estimate to meet unforeseen circumstances and represents an assessment of the financial risk relating to this project.

Design Contingency – A design contingency allowance has been included, calculated at 20% of the construction costs, to provide for unforeseen items arising during the design phase.

Design contingency is introduced into the estimated cost at the earliest estimate stage and is a measurement of the amount and detail of the design information available. As the design develops and systems and material selections are fixed, the amount of the contingency allowance is reduced and is absorbed into the measured elements. On completion of contract documents, at tender stage, the allowance is normally reduced to zero. Our determination of this risk level and the amount of the contingency allowance is the result of many years of cost planning, on over 4,000 construction projects, and of monitoring the increasing design information that occurs during the design phase. The design contingency is not a discretionary cost element.

Construction Contingency – No allowance has been made for construction contingency. This typically provides for unforeseen items arising during the construction period – such as field conditions, coordination discrepancies – which will result in change orders and extra costs to the contract, other than changes in scope.

Project Contingency – No allowance has been made for project contingency. This is a contingency, held by the Client, to be used at their discretion to fund specific Client driven changes to the project scope, conditions, etc.

Taxes

PST at 7% is included in the estimate. GST is excluded from the estimate.

Documentation

The estimate is based on the following:

- Herold Engineering
  - Aquatic Facility Review and Feasibility - Draft — Received December 16, 2025
- Celerity Engineering Limited
  - ACRD Echo Pool Facility Review – 4255 Wallace St. – Code Review - Draft — Received December 16, 2025
- AME Group Consulting Mechanical Engineers
  - Building Condition Assessment Mechanical Report — Received December 16, 2025
- HCMA
  - Echo Pool Facility Assessment and Feasibility Study — Received January 7, 2026
- Emails and telephone discussions with the client during the preparation of the estimate

Exclusions

The following items are excluded from the capital construction cost:

- Removal and relocation of loose furniture, fittings, and equipment from the construction zone prior to construction work commencing
- Relocation and reinstallation of loose furniture, fittings, and equipment upon completion of construction work
- Costs associated with temporary relocation, i.e., decanting and relocating staff from the construction zone
- Storage costs
- Soft landscaping
- Site fencing
- Site furniture
- Site signage
- Separate prices
- Client Administration costs
- Clerk of Works
- Client Project Manager
- Land acquisition costs
- Offsite costs
- Material testing
- Premium costs associated with environmental contaminants
- Traffic study costs
- Survey fees
- Financing costs
- Legal fees
- Client Insurances costs
- Development cost charges
- Development permit fees
- Phasing of the work
- Out of hours working
- Consultants' fees and expenses
- Construction contingency
- Project contingency
- Escalation
- GST

APPENDIX A

SUMMARY TABLE

INPUT

Life Extension	Amount
1.1 Fire Supression	
1.1.1 Provide fire suppression system for building.	$378,100
1.2 Address Spatial Separation of Storage Seacan	
1.2.1 Clad seacan with fire rated assembly (interior or exterior)	$32,700
1.3 Exposure hazard of front exit	
1.3.1 Infill or protect windows on community centre to create 3m horizontal distance from pool entrance.	$8,800
1.4 Fire Alarm - Visual Signal Devices	
1.4.1 Upgrade fire alarm to include visual signal devices as required	$11,500
1.5 Tactile Indicators on Walking Surfaces	
1.5.1 Install tactile indication strips at stairs throughout facility.	$11,400
1.6 Bleachers	
1.6.1 Install guards at ends of bleachers	$51,600
1.6.2 Modify existing bleachers to incorporate access aisle.	$11,200
1.6.3 Modify existing bleachers to ensure that travel distance to exits does not exceed the permitted 30m	$11,200
1.7 Safety Glass	
1.7.1 Replace glass in entry door, exterior exit doors, wading pool doors, and separation walls with safety glass	$22,800
1.8 Exit Stairs	
1.8.1 Replace / modify exterior stairs serving the rear of the pool with closed riser stair.	$14,400
1.9 Exit Signage	
1.9.1 Replace exit signage throughout with modernized exit signs	$33,700
1.9.2 Provide tactile exit signage at the approach side of exit doors	$3,800
1.9.3 Exit door from wading pool cannot have a fabric curtain covering. Look at reducing glazing in this area if required.	$3,400
1.10 Exterior walks / stairs / ramps / handrails	
1.10.1 Rebuild exterior walks which form an accessible path of travel to have regular surface.	See below
1.10.2 Rebuild exterior ramps to have max 8% slope	$37,100
1.10.3 Install handrails at exterior stairs / ramps as required.	$83,900
1.10.4 Replace exterior handrails at building entrance with compliant handrails.	See above
1.11 Universal Washroom / Plumbing facilities / Showers	
1.11.1 Provide universal washroom in lobby – or – adapt family	$147,000
1.11.2 Provide accessible washroom in changerooms.	$32,200
1.11.3 Retrofit family changerooms to meet accessibility requirements.	See above
1.12 Assisted listening system	
1.12.1 Install assisted listening system at reception	$19,700
1.13 Doors / Hardware	
1.13.1 All doors on accessible path of travel should have clear width of min 850mm	See below
1.13.2 Some office room doors are too narrow	$16,300
1.13.3 Washroom doors in lobby do not provide clear width – to be widened with acc. washroom renovation	$11,300
1.13.4 Replace door hardware throughout to comply with acc. req's	$23,400
1.14 Controls	
1.14.1 Relocate manual stations to be within height requirements	$33,700
1.15 Guards	
1.15.1 Replace exterior guards at rear exits from Filtration Room, Wading Pool and Storage Room, with compliant guardrails.	$47,100

1.16 Signs and Indicators	
1.16.1 Update signage throughout to identify accessible / universal washrooms.	$3,300
1.16.2 Ensure updated signage encompasses adding tactile information to current building signage	$10,000
2.1 Water Meter	
2.1.1 Replace water meter, backflow preventor, pressure release valve	$54,600
2.1.2 Connect pool water meter to BMS system to monitor for pool leakage	$15,200
2.2 Domestic Hot Water	
2.2.1 Replace domestic hot water tanks	$29,300
2.3 Deck bottle filler	
2.3.1 Replace piping servicing the deck bottle filler with lead free piping	$16,300
2.3.2 Replace drinking fountains	$30,700
2.4 Plumbing fixtures	
2.4.1 Replace plumbing fixtures throughout	$116,900
2.5 Fire Suppression	
See Item 1.1	
2.6 Boilers	
2.6.1 Continue to service, plan for replacement in 10 years.	
2.7 Natatorium HVAC	
2.7.1 Replace Natatorium Air handling unit (like for like)	$1,296,800
2.7.2 Provide pressure controls for natatorium that operate exhaust fans. Add VFDs on exhaust fans and series of pressure sensors throughout the building.	$87,000
2.8 Building HVAC	
2.8.1 Replace packaged rooftop air handlers (like for like)	$381,000
2.9 Pool Systems	
2.9.1 Replace open pit tanks with sand filters or pressure regenerative media filters	$687,100
2.9.2 Provide new main drain valves with fail close valves	$193,200
2.9.3 Provide new balance tank level controls, modulating valves to automatically control pool levels	$41,700
2.9.4 Replace Lap Pool UV filter	$167,000
2.9.4 Replace hot pool filter, filter pump and jet pump	$99,400
2.9.6 Replace Soda Ash agitator & injection pumps	$75,100
2.9.7 Replace chlorine solenoids & sensors	$48,100
2.9.8 Upgrade chlorine room exhaust fan and ductwork	$44,200
3.1 Structural	
3.1.1 Replace low roof envelope	$633,700
3.1.2 Replace upper roof envelope	$128,600
3.1.3 Upgrades to OFC restraint throughout.	$421,200
4.1 Exterior cladding	
4.1.1 Replace / repair / stain wood cladding throughout (fascias and beam casings)	$50,500
4.1.2 Exterior Painting throughout	$135,800
4.2 Roofing	
4.2.1 Replace low roof membrane, including over family changerooms. Ensure proper tie in between lower roof and family changeroom.	$1,218,900
4.2.2 Replace upper roof membranes	$121,700
4.2.3 Install proper roof sleepers under rooftop pipe and conduit.	$22,800
4.2.4 Install proper splash pads at all downspouts	$9,900
4.3 Doors and Windows	
4.3.1 Replace Steel doors with sill deterioration. Ensure exterior doors have thermally broken frames	See below

4.3.2 Remove and infill covered skylights (2)	$15,900
4.3.3 Replace aluminum exit door from wading pool.	$16,300
4.4 Pool Basins	
4.4.1 Replace perimeter pool gutters	$557,900
4.4.2 Replace bulkhead	$305,700
4.5 Pool ramps & lift	
4.5.1 Replace stainless steel pool ramps.	$34,800
4.5.2 Remove existing accessible lift;provide new accessible lift (mobile)	$47,800
4.6 Sauna	
4.6.1 Renovate Sauna and Hot Pool Area	$120,800
4.7 Tile finishes	
4.7.1 Selectively replace deck tile around lap pool and up pool wall.	$353,200
4.8 Paint	
4.8.1 Interior painting	$282,300
4.8.2 Stain interior wood ceilings	$410,200
4.8.3 Exterior painting	See 4.1 above
4.9 Flooring	
4.9.1 Update flooring throughout reception, admin, washrooms and changerooms	$256,000
4.10 Changerooms / Washroom	
See Item 1.11 - update to code minimum	
4.10 Reception / Lobby / Admin	
4.11.1 Re-configure staff room - provide IT closet	$72,700
	$ 9,659,900.00

INPUT

Modernization	Amount
1.1 Fire Supression	
1.1.1 Provide fire suppression system for building	$378,100
1.2 Address Spatial Separation of Storage Seacan	
1.2.1 New Chemical Storage	$181,100
1.3 Exposure hazard of front exit	
1.3.1 Infill or protect windows on community centre to create 3m horizontal distance from pool entrance.	$8,800
1.4 Fire Alarm - Visual Signal Devices	
1.4.1 Upgrade fire alarm to include visual signal devices as	$11,500
1.5 Tactile Indicators on Walking Surfaces	
1.5.1 Install tactile indication strips at stairs throughout facility.	$11,400
1.6 Bleachers	
1.6.1 Replace bleachers with new, code compliant solution	$86,500
1.7 Safety Glass	
1.7.1 Replace glass in entry door, exterior exit doors, wading pool doors, and separation walls with safety glass	$22,800
1.8 Exit Stairs	
1.8.1 Replace / modify exterior stairs serving the rear of the pool with closed riser stair.	$14,400
1.9 Exit Signage	
1.9.1 Replace exit signage throughout with modernized exit sign	$33,700
1.9.2 Provide tactile exit signage at the approach side of exit doc	$3,800
1.9.3 Exit door from wading pool cannot have a fabric curtain covering. Look at reducing glazing in this area if required.	$3,400
1.10 Exterior walks / stairs / ramps / handrails	
1.10.1 Rebuild exterior walks which form an accessible path of travel to have regular surface.	See below
1.10.2 Rebuild exterior ramps to have max 8% slope	$37,100
1.10.3 Install handrails at exterior stairs / ramps as required.	$83,900
1.10.4 Replace exterior handrails at building entrance with compliant handrails.	See above
1.11 Universal Washroom / Plumbing facilities / Showers	
1.11.1 New Gendered Changerooms	$574,000
1.11.2 Provide accessible washroom in changerooms.	$67,100
1.12 Assisted listening system	
1.12.1 Install assisted listening system at reception	$19,700
1.13 Doors / Hardware	
1.13.1 All doors on accessible path of travel should have clear width of min 850mm	See below
1.13.2 Some office room doors are too narrow	$16,300
1.13.3 Washroom doors in lobby do not provide clear width – to be widened with acc. washroom renovation	$11,300
1.13.4 Replace door hardware throughout to comply with acc. re	$23,400
1.14 Controls	
1.14.1 Relocate manual stations to be within height requirement:	$33,700
1.15 Guards	
1.15.1 Replace exterior guards at rear exits from Filtration Room, Wading Pool and Storage Room, with compliant guardrails.	$47,100
1.16 Signs and Indicators	
1.16.1 Update signage throughout to identify accessible / universal washrooms.	$3,300
1.16.2 Ensure updated signage encompasses adding tactile information to current building signage	$10,000

2.1 Water Meter	
2.1.1 Replace water meter, backflow preventor, pressure release	$54,600
2.1.2 Connect pool water meter to BMS system to monitor for pool leakage	$15,200
2.2 Domestic Hot Water	
2.2.1 Replace domestic hot water tanks	$29,300
2.3 Deck bottle filler	
2.3.1 Replace piping servicing the deck bottle filler with lead free piping	$16,300
2.3.2 Replace drinking fountains	$30,700
2.4 Plumbing fixtures	
2.4.1 Replace plumbing fixtures throughout	$116,900
2.5 Fire Suppression	
See Item 1.1	
2.6 Boilers	
2.6.1 Continue to service, plan for replacement in 10 years.	
2.7 Natatorium HVAC	
2.7.1 Replace Natatorium Air handling unit (like for like)	$1,296,800
2.7.2 Provide pressure controls for natatorium that operate exhaust fans. Add VFDs on exhaust fans and series of pressure sensors throughout the building.	$87,000
2.8 Building HVAC	
2.8.1 Replace packaged rooftop air handlers (like for like)	$381,000
2.9 Pool Systems	
2.9.1 Replace open pit tanks with sand filters or pressure regenerative media filters	$687,100
2.9.2 Provide new main drain valves with fail close valves	$193,200
2.9.3 Provide new balance tank level controls, modulating valves to automatically control pool levels	$41,700
2.9.4 Replace Lap Pool UV filter	$167,000
2.9.4 Replace hot pool filter, filter pump and jet pump	$99,400
2.9.6 Replace Soda Ash agitator & injection pumps	$75,100
2.9.7 Replace chlorine solenoids & sensors	$48,100
2.9.8 Upgrade chlorine room exhaust fan and ductwork	$44,200
3.2 Option 3 from Structural Assessment	
3.1.1 Seismically Separate Aquatic Facility Community Centre	$885,200
3.1.2 Replace low roof envelope	$633,700
3.1.3 Replace upper roof envelope	$128,600
4.1 Exterior cladding	
4.1.1 Replace / repair / stain wood cladding throughout (fascias and beam casings)	$50,500
4.1.2 Exterior Painting throughout	$135,800
4.2 Roofing	
4.2.1 Replace low roof membrane, including over family changerooms. Ensure proper tie in between lower roof and family	$1,218,900
4.2.2 Replace upper roof membranes	$121,700
4.2.3 Install proper roof sleepers under rooftop pipe and conduit	$22,800
4.2.4 Install proper splash pads at all downspouts	$9,900
4.3 Doors and Windows	
4.3.1 Replace Steel doors with sill deterioration. Ensure exterior doors have thermally broken frames	See below
4.3.2 Remove and infill covered skylights (2)	$15,900
4.3.3 Replace aluminum exit door from wading pool.	$16,300
4.4 Pool Basins	
4.4.1 Replace perimeter pool gutters	$557,900
4.4.2 Replace bulkhead	$305,700

4.5 Pool ramps & lift	
4.5.1 Replace stainless steel pool ramps.	$34,800
4.5.2 Remove existing accessible lift;provide new accessible lift (mobile)	$47,800
4.6 Sauna	
4.61.1 New Sauna Shower & Cold Plunge	$390,400
4.7 Tile finishes	
4.7.1 All new deck and wall tile throughout	$1,008,100
4.8 Paint	
4.8.1 Interior painting	$282,300
4.8.2 Stain interior wood ceilings	$410,200
4.8.3 Exterior painting	See 4.1 above
4.9 Flooring	
4.9.1 Update flooring throughout reception, admin, washrooms and changerooms	$256,000
4.10 Changerooms / Washroom	
See Item 1.11 - update to code minimum	
4.10 Reception / Lobby / Admin	
4.11.1 Re-configure staff room - provide IT closet	$72,700
Others	
Reception/Lobby/Admin Renovation	$387,700
	$ 12,058,900.00

APPENDIX B

ESTIMATE BREAKDOWN

Class D R1 DATE: 19-Jan-26

Life Extension Option	QUANTITY	UNIT	RATE	COST
1.1.1 Provide fire suppression system for building.	2,930	m²	$129.04	$378,100
D22 Alterations				
Fire sprinkler system	2,930	m²	$85.00	$249,050
Z11 General Requirements		15.00%		$37,358
Z12 Fee		10.00%		$28,641
Z21 Design Contingency		20.00%		$63,010
Z22 Escalation				Excluded
GST				Excluded
1.2.1 Clad seacan with fire rated assembly (interior or exterior)	15	m²	$2,180.00	$32,700
D21 Demolitions				
Site clearing	15	m²	$20.00	$300
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Structural / Architectural				
A11 Standard Foundations				
150mm thick concrete slab on grade including placement and finish, screed and cure, reinforcement, formwork, expansion and contraction joints	15	m²	$150.00	$2,250
A39 Projections				
Supply and install pre-fabricated seacan structures 6.10x2.44	1	sum	$5,000.00	$5,000
D11 General Sitework				
Allowance for general sitework	1	sum	$5,000.00	$5,000
Mechanical				
Allowance for mechanical	1	sum	$7,500.00	$7,500
Electrical				
Allowance for minor lighting	15	m²	$100.00	$1,500
Z11 General Requirements		15.00%		$3,233
Z12 Fee		10.00%		$2,478
Z21 Design Contingency		20.00%		$5,452
Z22 Escalation				Excluded
GST				Excluded
1.3.1 Infill or protect windows on community centre to create 3m horizontal distance from pool entrance.				$8,800
D21 Demolitions				
Remove existing window and frame	1	sum	$600.00	$600
Dustscreen and hoarding				N/a

Life Extension Option	QUANTITY	UNIT	RATE	COST
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$2,000.00	$2,000
Remove existing loose furniture and equipment				
D22 Alterations				
Infill area where existing windows removed	1	sum	$2,200.00	$2,200
Allowance to make good existing finishes where affected	1	sum	$1,000.00	$1,000
Z11 General Requirements		15.00%		$870
Z12 Fee		10.00%		$667
Z21 Design Contingency		20.00%		$1,467
Z22 Escalation				Excluded
GST				Excluded
1.4.1 Upgrade fire alarm to include visual signal devices as required	1,850	m^2	$6.22	$11,500
D22 Alterations				
Pool including Sauna and Family Change Room				
Upgrade fire alarm visual signal devices - upgrade to main FA panel	1,850	m^2	$12.00	$22,200
Z11 General Requirements		15.00%		$3,330
Z12 Fee		10.00%		$2,553
Z21 Design Contingency		20.00%		$5,617
Z22 Escalation				Excluded
GST				Excluded
1.5.1 Install tactile indication strips at stairs throughout facility.	13	m^2	$876.92	$11,400
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Stairs at Fitness Room, Filtration Room, and Storage Room Entrance				
Clean, prepare surface and install new tactile strips at stairs	13	m	$500.00	$6,500
Make good existing floor finish where affected	1	sum	$1,000.00	$1,000
Z11 General Requirements		15.00%		$1,125
Z12 Fee		10.00%		$863
Z21 Design Contingency		20.00%		$1,898
Z22 Escalation				Excluded
GST				Excluded

Class D R1 DATE: 19-Jan-26

Life Extension Option	QUANTITY	UNIT	RATE	COST
1.6.1 Install guards at ends of bleachers	16	m²	$3,225.00	$51,600
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Prepare surface and install new customized foldable guardrails at ends of bleachers	16	m	$2,000.00	$32,000
Make good existing floor and wall finish where affected	1	sum	$2,000.00	$2,000
Z11 General Requirements		15.00%		$5,100
Z12 Fee		10.00%		$3,910
Z21 Design Contingency		20.00%		$8,602
Z22 Escalation				Excluded
GST				Excluded
1.6.2 Modify existing bleachers to incorporate access aisle.	49	m²	$228.57	$11,200
D21 Demolitions				
Remove existing two row of bleachers	49	m	$50.00	$2,450
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Patch and repair existing surface of bleachers where modification made	49	m	$100.00	$4,900
Z11 General Requirements		15.00%		$1,103
Z12 Fee		10.00%		$845
Z21 Design Contingency		20.00%		$1,860
Z22 Escalation				Excluded
GST				Excluded
1.6.3 Modify existing bleachers to ensure that travel distance to exits does not exceed the permitted 30m	49	m²	$228.57	$11,200
D21 Demolitions				
Remove existing two row of bleachers	49	m	$50.00	$2,450
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a

Life Extension Option	QUANTITY	UNIT	RATE	COST
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Patch and repair existing surface of bleachers where modification made	49	m	$100.00	$4,900
Z11 General Requirements		15.00%		$1,103
Z12 Fee		10.00%		$845
Z21 Design Contingency		20.00%		$1,860
Z22 Escalation				Excluded
GST				Excluded
1.7.1 Replace glass in entry door, exterior exit doors, wading pool doors, and separation walls with safety glass				$22,800
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing glazed door and frame: Pair	1	pr.	$270.00	$270
Remove existing door and frame: Single	1	lvs.	$150.00	$150
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A34 Walls Above Main Floor				
Make good existing exterior finish where affected	2	no.	$500.00	$1,000
A36 Doors & Glazed Screens				
New aluminum double glazed, thermally broken door and frame including hardware: Pair	1	pr.	$9,000.00	$9,000
New metal door and frame including hardware and finish: Single	1	lvs.	$3,300.00	$3,300
B23 Wall Finishes				
Make good existing wall finish where affected	2	no.	$150.00	$300
Z11 General Requirements		15.00%		$2,253
Z12 Fee		10.00%		$1,727
Z21 Design Contingency		20.00%		$3,800
Z22 Escalation				Excluded
GST				Excluded

Class D R1 DATE: 19-Jan-26

Life Extension Option	QUANTITY	UNIT	RATE	COST
1.8.1 Replace / modify exterior stairs serving the rear of the pool with closed riser stair.				$14,400
D21 Demolitions				
Remove existing exterior stairs at the rear of the pool	1	sum	$1,000.00	$1,000
Dustscreen and hoarding				
Negative air allowance				N/a
Hazmat Abatement - allowance				
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A23 Stair Construction				
2.44m wide new concrete stairs structure including risers, landings and finish	1	m	$8,500.00	$8,500
Z11 General Requirements		15.00%		$1,425
Z12 Fee		10.00%		$1,093
Z21 Design Contingency		20.00%		$2,404
Z22 Escalation				Excluded
GST				Excluded
1.9.1 Replace exit signage throughout with modernized exit signs	1,850	m^2	$18.22	$33,700
D22 Alterations				
Pool including Sauna and Family Change Room				
Replace exit signage - assume that wiring will stay in place	1,850	m^2	$12.00	$22,200
Z11 General Requirements		15.00%		$3,330
Z12 Fee		10.00%		$2,553
Z21 Design Contingency		20.00%		$5,617
Z22 Escalation				Excluded
GST				Excluded

Class D R1 DATE: 19-Jan-26

Life Extension Option	QUANTITY	UNIT	RATE	COST
1.9.2 Provide tactile exit signage at the approach side of exit doors	5	m^2	$760.00	$3,800
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New tactile exit signage at exit doors (exterior)	5	m	$500.00	$2,500
Z11 General Requirements		15.00%		$375
Z12 Fee		10.00%		$288
Z21 Design Contingency		20.00%		$633
Z22 Escalation				Excluded
GST				Excluded
1.9.3 Exit door from wading pool cannot have a fabric curtain covering. Look at reducing glazing in this area if required.				$3,400
D21 Demolitions				
Carefully remove existing glazing at wading pool exit door; existing frame and door to remain	1	no.	$250.00	$250
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Infill area where glazing removed including making good existing finish where affected	1	no.	$1,000.00	$1,000
Z11 General Requirements		15.00%		$338
Z12 Fee		10.00%		$259
Z21 Design Contingency		20.00%		$569
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
1.10.1 Rebuild exterior walks which form an accessible path of travel to have regular surface.				
See below				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.10.2 Rebuild exterior ramps to have max 8% slope	82	m^2	$452.44	$37,100
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing exterior concrete ramps to meet code compliance				
Sawcut existing exterior ramp	5	m	$40.00	$200
Demolish existing exterior ramp	82	m^2	$80.00	$6,560
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
D11 General Sitework				
Pool including Sauna and Family Change Room				
New concrete ramp with 8%	82	m^2	$200.00	$16,400
Tie in to existing	5	m	$250.00	$1,250
Z11 General Requirements		15.00%		$3,662
Z12 Fee		10.00%		$2,807
Z21 Design Contingency		20.00%		$6,176
Z22 Escalation				Excluded
GST				Excluded
1.10.3 Install handrails at exterior stairs / ramps as required.				$83,900
D21 Demolitions				
Remove existing handrails	13	m	$100.00	$1,300
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
D22 Alterations				
Pool including Sauna and Family Change Room				
New handrails at existing exterior stairs	13	m	$1,000.00	$13,000
New handrails at new exterior ramps	36	m	$1,000.00	$36,000
New handrails at new exterior stairs	5	m	$1,000.00	$5,000
Z11 General Requirements		15.00%		$8,295
Z12 Fee		10.00%		$6,360
Z21 Design Contingency		20.00%		$13,991
Z22 Escalation				Excluded
GST				Excluded
1.10.4 Replace exterior handrails at building entrance with compliant handrails.				
See above				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.11.1 Provide universal washroom in lobby – or – adapt family changerooms to provide a universal washroom (insulate water lines, relocate fixtures, etc.)	13	m²	$11,307.69	$147,000
D21 Demolitions				
Remove existing partition wall including backup assemblies	11	m²	$90.00	$990
Remove existing ceiling	16	m²	$60.00	$960
Remove existing floor finish	13	m²	$30.00	$390
Remove existing door and frame: Single	2	lvs.	$135.00	$270
Dustscreen and hoarding	36	m²	$250.00	$9,000
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$5,000.00	$5,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Structural / Architectural				
A21 Lowest Floor Construction				
Make good existing slab on grade	1	sum	$3,000.00	$3,000
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	1	lvs.	$3,100.00	$3,100
B21 Floor Finishes				
Prepare subfloor and new tile flooring	13	m²	$615.00	$7,995

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Life Extension Option	QUANTITY	UNIT	RATE	COST
B22 Ceiling Finishes				
Suspended gypsum wallboard including paint	16	m²	$240.00	$3,840
B23 Wall Finishes				
Painted finish	51	m²	$37.50	$1,913
Wall tile allowance	31	m²	$600.00	$18,600
B31 Fittings and Fixtures				
Washroom accessories	1	loc.	$5,000.00	$5,000
Electrical				
D21 Demolitions				
Allowance for electrical fixture	10	m²	$325.00	$3,250
D22 Alterations				
Allowance for electrical fixture	10	m²	$1,300.00	$13,000
Mechanical				
Allowance for sanitary fixtures and plumbing	3	no.	$6,000.00	$18,000
Allowance for exhaust	1	sum	$2,500.00	$2,500
Z11 General Requirements		15.00%		$14,521
Z12 Fee		10.00%		$11,133
Z21 Design Contingency		20.00%		$24,492
Z22 Escalation				Excluded
GST				Excluded
1.11.2 Provide accessible washroom in changerooms.				$32,200
D21 Demolitions				
Re&re existing concrete slab and wall to allow sanitary upgrades re	1	sum	$6,000.00	$6,000
Remove existing partition stall/compartment	2	no.	$100.00	$200
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
B21 Floor Finishes				
Make good existing floor finish to match existing	1	sum	$4,000.00	$4,000
B23 Wall Finishes				
Make good existing wall finish where affected	1	sum	$1,500.00	$1,500
B31 Fittings and Fixtures				
New standard toilet compartment/stall	2	no.	$2,500.00	$5,000
New accessible toilet compartment/stall	1	no.	$4,500.00	$4,500
Z11 General Requirements		15.00%		$3,180
Z12 Fee		10.00%		$2,438
Z21 Design Contingency		20.00%		$5,364
Z22 Escalation				Excluded
GST				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
1.11.3 Retrofit family changerooms to meet accessibility requirements.				
See above				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.12.1 Install assisted listening system at reception				$19,700
D22 Alterations				
Instal assisted listening system at reception	1	sum	$13,000.00	$13,000
Z11 General Requirements		15.00%		$1,950
Z12 Fee		10.00%		$1,495
Z21 Design Contingency		20.00%		$3,289
Z22 Escalation				Excluded
GST				Excluded
1.13.1 All doors on accessible path of travel should have clear width of min 850mm				
See below				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.13.2 Some office room doors are too narrow				$16,300
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing door and frame: Single	3	lvs.	$135.00	$405
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
D22 Alterations				
Pool including Sauna and Family Change Room				
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	3	lvs.	$3,100.00	$9,300
Z11 General Requirements		15.00%		$1,606
Z12 Fee		10.00%		$1,231
Z21 Design Contingency		20.00%		$2,708
Z22 Escalation				Excluded
GST				Excluded
1.13.3 Washroom doors in lobby do not provide clear width – to be widened with acc. washroom renovation				$11,300
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing door and frame: Single	2	lvs.	$135.00	$270
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	2	lvs.	$3,100.00	$6,200
Z11 General Requirements		15.00%		$1,121
Z12 Fee		10.00%		$859
Z21 Design Contingency		20.00%		$1,890
Z22 Escalation				Excluded
GST				Excluded
1.13.4 Replace door hardware throughout to comply with acc. req's	14	m^2	$1,671.43	$23,400
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing door hardware	14	no.	$100.00	$1,400
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B14 Internal Doors				
New door hardware	14	no.	$1,000.00	$14,000

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Life Extension Option	QUANTITY	UNIT	RATE	COST
Z11 General Requirements		15.00%		$2,310
Z12 Fee		10.00%		$1,771
Z21 Design Contingency		20.00%		$3,896
Z22 Escalation				Excluded
GST				Excluded
1.14.1 Relocate manual stations to be within height requirements				$33,700
Pool including Sauna and Family Change Room				
Relocate manual stations	1,850	m²	$12.00	$22,200
Z11 General Requirements		15.00%		$3,330
Z12 Fee		10.00%		$2,553
Z21 Design Contingency		20.00%		$5,617
Z22 Escalation				Excluded
GST				Excluded
1.15.1 Replace exterior guards at rear exits from Filtration Room, Wading Pool and Storage Room, with compliant guardrails.				$47,100
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing exterior guards at Filtration Room, Wading Pool, Storage Room and Whirl Pool Entrance	27	m	$150.00	$4,050
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New guardrails	27	m	$1,000.00	$27,000
Z11 General Requirements		15.00%		$4,658
Z12 Fee		10.00%		$3,571
Z21 Design Contingency		20.00%		$7,856
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
1.16.1 Update signage throughout to identify accessible / universal washrooms.				$3,300
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing signages	10	no.	$20.00	$200
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New Signages	10	no.	$200.00	$2,000
Z11 General Requirements		15.00%		$330
Z12 Fee		10.00%		$253
Z21 Design Contingency		20.00%		$557
Z22 Escalation				Excluded
GST				Excluded
1.16.2 Ensure updated signage encompasses adding tactile information to current building signage				$10,000
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing signages	30	no.	$20.00	$600
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B31 Fittings and Fixtures				
New signages with tactile	30	no.	$200.00	$6,000
Z11 General Requirements		15.00%		$990
Z12 Fee		10.00%		$759
Z21 Design Contingency		20.00%		$1,670
Z22 Escalation				Excluded
GST				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
2.1.1 Replace water meter, backflow preventor, pressure release valve				$54,600
D21 Demolitions				
Remove water meter, backflow preventor, pressure release valve	1	sum	$6,000.00	$6,000
D22 Alterations				
New water meter	1	sum	$15,000.00	$15,000
New backflow preventor	1	sum	$10,000.00	$10,000
New pressure release valve	1	sum	$5,000.00	$5,000
Mechanical contractor's general conditions	1	sum		
Z11 General Requirements		15.00%		$5,400
Z12 Fee		10.00%		$4,140
Z21 Design Contingency		20.00%		$9,108
Z22 Escalation				Excluded
GST				Excluded
2.1.2 Connect pool water meter to BMS system to monitor for pool leakage				$15,200
D22 Alterations				
Connect pool water meter to BMS system	1	sum	$10,000.00	$10,000
Z11 General Requirements		15.00%		$1,500
Z12 Fee		10.00%		$1,150
Z21 Design Contingency		20.00%		$2,530
Z22 Escalation				Excluded
GST				Excluded
2.2.1 Replace domestic hot water tanks				$29,300
D21 Demolitions				
Remove existing domestic hot water tanks	2	no.	$900.00	$1,800
D22 Alterations				
New domestic hot water tanks	2	no.	$8,755.00	$17,510
Z11 General Requirements		15.00%		$2,897
Z12 Fee		10.00%		$2,221
Z21 Design Contingency		20.00%		$4,885
Z22 Escalation				Excluded
GST				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
2.3.1 Replace piping servicing the deck bottle filler with lead free piping				$16,300
D21 Demolitions				
Remove DCW to bottle filler	1	sum	$750.00	$750
D22 Alterations				
New DCW to bottle filler	1	sum	$10,000.00	$10,000
Z11 General Requirements		15.00%		$1,613
Z12 Fee		10.00%		$1,236
Z21 Design Contingency		20.00%		$2,720
Z22 Escalation				Excluded
GST				Excluded
2.3.2 Replace drinking fountains				$30,700
D21 Demolitions				
Remove bottle fillers	3	no.	$750.00	$2,250
D22 Alterations				
New bottle fillers	3	no.	$6,000.00	$18,000
Z11 General Requirements		15.00%		$3,038
Z12 Fee		10.00%		$2,329
Z21 Design Contingency		20.00%		$5,123
Z22 Escalation				Excluded
GST				Excluded
2.4.1 Replace plumbing fixtures throughout				$116,900
D21 Demolitions				
Remove sanitary fixtures	20	no.	$350.00	$7,000
D22 Alterations				
New sanitary fixtures	20	no.	$3,500.00	$70,000
Z11 General Requirements		15.00%		$11,550
Z12 Fee		10.00%		$8,855
Z21 Design Contingency		20.00%		$19,481
Z22 Escalation				Excluded
GST				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
2.7.1 Replace Natatorium Air handling unit (like for like)				$1,296,800
Electrical				
D22 Alterations				
Connection existing feeders - no allowance for increased power or increase feeder size/changes in panels or breakers	1	sum	$5,000.00	$5,000
Mechanical				
D21 Demolitions				
Remove existing AHU	1	no.	$50,000.00	$50,000
D22 Alterations				
New AHU with packaged dehumidifier	1	no.	$695,000.00	$695,000
Mechanical contractor's general conditions	1	sum	$104,250.00	$104,250
Z11 General Requirements		15.00%		$128,138
Z12 Fee		10.00%		$98,239
Z21 Design Contingency		20.00%		$216,125
Z22 Escalation				Excluded
GST				Excluded
2.7.2 Provide pressure controls for natatorium that operate exhaust fans. Add VFDs on exhaust fans and series of pressure sensors throughout the building.				$87,000
D22 Alterations				
VFDs to be added on exhaust fans	8	no.	$4,600.00	$36,800
Allowance for pressure sensors	10	no.	$1,500.00	$15,000
Mechanical contractor's general conditions	1	sum	$5,520.00	$5,520
Z11 General Requirements		15.00%		$8,598
Z12 Fee		10.00%		$6,592
Z21 Design Contingency		20.00%		$14,502
Z22 Escalation				Excluded
GST				Excluded
2.8.1 Replace packaged rooftop air handlers (like for like)				$381,000
Electrical				
D21 Demolitions				
Remove connection	2	sum	$2,500.00	$5,000
D22 Alterations				
Connection existing feeders - no allowance for increased power or increase feeder size/changes in panels or breakers	2	sum	$5,000.00	$10,000

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Life Extension Option	QUANTITY	UNIT	RATE	COST
Mechanical				
D21 Demolitions				
Remove existing RTU-WSHP	2	sum	$15,000.00	$30,000
D22 Alterations				
New RTU - WSHP	2	sum	$89,550.00	$179,100
Mechanical contractor's general conditions	1	sum	$26,900.00	$26,900
Z11 General Requirements		15.00%		$37,650
Z12 Fee		10.00%		$28,865
Z21 Design Contingency		20.00%		$63,503
Z22 Escalation				Excluded
GST				Excluded
2.9.1 Replace open pit tanks with sand filters or pressure regenerative media filters				$687,100
D21 Demolitions				
Drain, clean, remove and dispose tanks	1	sum	$75,000.00	$75,000
D22 Alterations				
Allowance for new sand filters	1	sum	$377,608.00	$377,608
Z11 General Requirements		15.00%		$67,891
Z12 Fee		10.00%		$52,050
Z21 Design Contingency		20.00%		$114,510
Z22 Escalation				Excluded
GST				Excluded
2.9.2 Provide new main drain valves with fail close valves				$193,200
D22 Alterations				
Drian and pools, cut out existing valve, install new valve and flanges	1	sum	$30,270.00	$30,270
New valve body, fail close actuator and controls	3	sum	$24,000.00	$72,000
Water disposal, refill, chemical rebalancing	1	sum	$20,000.00	20,000.00
Mechanical controls	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$19,091
Z12 Fee		10.00%		$14,636
Z21 Design Contingency		20.00%		$32,199
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
2.9.3 Provide new balance tank level controls, modulating valves to automatically control pool levels				$41,700
D21 Demolitions				
Remove existing valves	1	sum	$2,000.00	$2,000
D22 Alterations				
Allowance for new valves	1	sum	$20,500.00	$20,500
Mechanical controls	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$4,125
Z12 Fee		10.00%		$3,163
Z21 Design Contingency		20.00%		$6,958
Z22 Escalation				Excluded
GST				Excluded
2.9.4 Replace Lap Pool UV filter				$167,000
D21 Demolitions				
Remove UV filter	1	sum	$10,000.00	$10,000
D22 Alterations				
Allowance for new UV filter	1	sum	$100,000.00	$100,000
Z11 General Requirements		15.00%		$16,500
Z12 Fee		10.00%		$12,650
Z21 Design Contingency		20.00%		$27,830
Z22 Escalation				Excluded
GST				Excluded
2.9.4 Replace hot pool filter, filter pump and jet pump				$99,400
D21 Demolitions				
Remove existing filter, and pumps	1	sum	$10,000.00	$10,000
D22 Alterations				
Hot pool filter	1	sum	$24,500.00	$24,500
Filter pump	1	sum	$12,250.00	$12,250
Jet pump	1	sum	$18,750.00	$18,750
Z11 General Requirements		15.00%		$9,825
Z12 Fee		10.00%		$7,533
Z21 Design Contingency		20.00%		$16,572
Z22 Escalation				Excluded
GST				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
2.9.6 Replace Soda Ash agitator & injection pumps				$75,100
D21 Demolitions				
Remove existing soda ash agitator & injection pumps	1	sum	$7,500.00	$7,500
D22 Alterations				
New agitator and tank	1	sum	$15,000.00	$15,000
Injection pumps	2	no.	$7,500.00	$15,000
Piping and containment	1	sum	$6,000.00	$6,000
Mechanical controls	1	sum	$6,000.00	$6,000
Z11 General Requirements		15.00%		$7,425
Z12 Fee		10.00%		$5,693
Z21 Design Contingency		20.00%		$12,524
Z22 Escalation				Excluded
GST				Excluded
2.9.7 Replace chlorine solenoids & sensors				$48,100
D21 Demolitions				
Remove existing soda ash agitator & injection pumps	1	sum	$7,500.00	$7,500
D22 Alterations				
Chlorine solenoid valves	4	no.	$2,500.00	$10,000
Chlorine sensors (free chlorine probe, ORP probe, flow cell and calibration	1	sum	$8,200.00	$8,200
Mechanical controls	1	sum	$6,000.00	$6,000
Z11 General Requirements		15.00%		$4,755
Z12 Fee		10.00%		$3,646
Z21 Design Contingency		20.00%		$8,020
Z22 Escalation				Excluded
GST				Excluded
2.9.8 Upgrade chlorine room exhaust fan and ductwork				$44,200
D21 Demolitions				
Remove existing exhaust fan	1	sum	$375.00	$375
D22 Alterations				
New exhaust fan	1	no.	$10,000.00	$10,000
Ductwork and accessories	1	sum	$15,000.00	$15,000
Mechanical contractor's general conditions	1	sum	$3,750.00	$3,750
Z11 General Requirements		15.00%		$4,369
Z12 Fee		10.00%		$3,349
Z21 Design Contingency		20.00%		$7,369
Z22 Escalation				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
GST				Excluded
3.1.1 Replace low roof envelope	813	m²	$779.46	$633,700
D21 Demolitions				
Lower Roof				
Remove existing roof covering - See 4.2 below				
Remove existing roof sheathing	813	m²	$45.00	$36,585
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance - See 4.2 below				
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Lower Roof				
A24 Roof Construction				
Allowance to repair existing suspended flat wood roof structure with additional beams, and new sheathing	813	m²	$450.00	$365,850
Allowance for access/lift/scaffolding	1	sum	$15,000.00	$15,000
Z11 General Requirements		15.00%		$62,615
Z12 Fee		10.00%		$48,005
Z21 Design Contingency		20.00%		$105,611
Z22 Escalation				Excluded
GST				Excluded
3.1.2 Replace upper roof envelope	161	m²	$798.76	$128,600
D21 Demolitions				
Upper Roof Natatorium Roof				
Remove existing roof covering - See 4.2 below				
Remove existing roof sheathing	161	m²	$45.00	$7,245
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance - See 4.2 below				
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Upper Roof Natatorium Roof				
A24 Roof Construction				
Allowance to repair existing suspended flat wood roof structure with additional beams, and new sheathing	161	m²	$450.00	$72,450
Allowance for access/lift/scaffolding	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$12,704
Z12 Fee		10.00%		$9,740
Z21 Design Contingency		20.00%		$21,428
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
3.1.3 Upgrades to OFC restraint throughout.	1,850	m²	$227.68	$421,200
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Allowance to upgrade operational and function component structure	1,850	m²	$150.00	$277,500
Z11 General Requirements		15.00%		$41,625
Z12 Fee		10.00%		$31,913
Z21 Design Contingency		20.00%		$70,208
Z22 Escalation				Excluded
GST				Excluded
4.1.1 Replace / repair / stain wood cladding throughout (fascias and beam casings)	266	m²	$189.85	$50,500
D22 Alterations				
Pool including Sauna and Family Change Room				
Replace or repair existing stain wood cladding	266	m²	$125.00	$33,250
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
Z11 General Requirements		15.00%		$4,988
Z12 Fee		10.00%		$3,824
Z21 Design Contingency		20.00%		$8,412
Z22 Escalation				Excluded
GST				Excluded
4.1.2 Exterior Painting throughout	994	m²	$136.62	$135,800
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, prepare surface and new exterior paint	994	m²	$40.00	$39,760
Allowance for scaffolding	994	m²	$50.00	$49,700

Life Extension Option	QUANTITY	UNIT	RATE	COST
Z11 General Requirements		15.00%		$13,419
Z12 Fee		10.00%		$10,288
Z21 Design Contingency		20.00%		$22,633
Z22 Escalation				Excluded
GST				Excluded
4.2.1 Replace low roof membrane, including over family changerooms. Ensure proper tie in between lower roof and family changeroom.	1,945	m²	$626.68	$1,218,900
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing roof membrane, insulation and vapour barrier - existing roof sheathing (elsewhere)	1,945	m²	$60.00	$116,700
Remove existing curb and flashings	171	m	$30.00	$5,130
Remove existing roof accessories	1	sum	$10,000.00	$10,000
Weather protection - allowance	1	sum	$20,000.00	$20,000
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$40,000.00	$40,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A37 Roof Covering				
2 ply roofing membrane including insulation, vapour barrier and existing roof sheathing	1,945	m²	$300.00	$583,500
New curb and cap flashing, flashings at intersection	171	m	$150.00	$25,650
Reinstall/replace roof accessories	1	sum	$2,000.00	$2,000
Z11 General Requirements		15.00%		$120,447
Z12 Fee		10.00%		$92,343
Z21 Design Contingency		20.00%		$203,154
Z22 Escalation				Excluded
GST				Excluded
4.2.2 Replace upper roof membranes	161	m²	$755.90	$121,700
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing roof membrane, insulation and vapour barrier - existing roof sheathing (elsewhere)	161	m²	$60.00	$9,660
Remove existing curb and flashings	53	m	$30.00	$1,590
Remove existing roof accessories	1	sum	$2,000.00	$2,000
Weather protection - allowance	1	sum	$1,700.00	$1,700
Dustscreen and hoarding				N/a

Life Extension Option	QUANTITY	UNIT	RATE	COST
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$4,000.00	$4,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A37 Roof Covering				
2 ply roofing membrane including insulation, vapour barrier and existing roof sheathing	161	m^2	$300.00	$48,300
New curb and cap flashing, flashings at intersection	53	m	$150.00	$7,950
Reinstall/replace roof accessories	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$12,030
Z12 Fee		10.00%		$9,223
Z21 Design Contingency		20.00%		$20,291
Z22 Escalation				Excluded
GST				Excluded
4.2.3 Install proper roof sleepers under rooftop pipe and conduit.				$22,800
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New roof sleepers including necessary sealant and flashings	15	no.	$1,000.00	$15,000
Z11 General Requirements		15.00%		$2,250
Z12 Fee		10.00%		$1,725
Z21 Design Contingency		20.00%		$3,795
Z22 Escalation				Excluded
GST				Excluded
4.2.4 Install proper splash pads at all downspouts				$9,900
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New splash pads	13	no.	$500.00	$6,500

Life Extension Option	QUANTITY	UNIT	RATE	COST
Z11 General Requirements		15.00%		$975
Z12 Fee		10.00%		$748
Z21 Design Contingency		20.00%		$1,645
Z22 Escalation				Excluded
GST				Excluded
4.3.1 Replace Steel doors with sill deterioration. Ensure exterior doors have thermally broken frames				
See below				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
4.3.2 Remove and infill covered skylights (2)				$15,900
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing skylights including necessary acess/scaffolfing	2	no.	$300.00	$600
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$2,000.00	$2,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A24 Roof Construction				
Infill area where existing skylights removed including necessary access/scaffolding required to complete the work	2	no.	$1,400.00	$2,800
A37 Roof Covering				
New roof membrane, insulation, vapour barrier	2	no.	$1,200.00	$2,400
B22 Ceiling Finishes				
Patch and repair existing soffit where affected	5	m^2	$530.00	$2,650
Z11 General Requirements		15.00%		$1,568
Z12 Fee		10.00%		$1,202
Z21 Design Contingency		20.00%		$2,644
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
4.3.3 Replace aluminum exit door from wading pool.				$16,300
D21 Demolitions				
Remove existing door and frame: Pair	1	pr.	$270.00	$270
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Aluminum double glazed, thermally broken door and frame including hardware: Pair	1	pr.	$9,000.00	$9,000
Make good existing wall finish where affected	1	sum	$500.00	$500
Z11 General Requirements		15.00%		$1,616
Z12 Fee		10.00%		$1,239
Z21 Design Contingency		20.00%		$2,725
Z22 Escalation				Excluded
GST				Excluded
4.4.1 Replace perimeter pool gutters				$557,900
D21 Demolitions				
Remove existing perimeter concrete pool gutters	105	m	$500.00	$52,500
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Structural repairs to edge of pool	105	m	$1,200.00	$126,000
New perimeter pool gutters	105	m	$200.00	$21,000
Retile deck around new gutter including	105	m^2	$800.00	$84,000
3' down pool wall	105	m^2	$800.00	$84,000
Z11 General Requirements		15.00%		$55,125
Z12 Fee		10.00%		$42,263
Z21 Design Contingency		20.00%		$92,978
Z22 Escalation				Excluded
GST				Excluded

Life Extension Option	QUANTITY	UNIT	RATE	COST
4.4.2 Replace bulkhead				$305,700
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing bulkhead	14	m	$100.00	$1,400
Dustscreen and hoarding				
Negative air allowance				
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New stainless steel bulkhead	14	m	$14,285.71	$200,000
Z11 General Requirements		15.00%		$30,210
Z12 Fee		10.00%		$23,161
Z21 Design Contingency		20.00%		$50,954
Z22 Escalation				Excluded
GST				Excluded
4.5.1 Replace stainless steel pool ramps.				$34,800
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing pool diving board	10	m²	$150.00	$1,500
Remove existing stair	2	m²	$100.00	$200
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New stainless steel pool ramps including necessary connection	1	sum	$20,000.00	$20,000
New pool stair	2	m²	$600.00	$1,200
Z11 General Requirements		15.00%		$3,435
Z12 Fee		10.00%		$2,634
Z21 Design Contingency		20.00%		$5,794
Z22 Escalation				Excluded
GST				Excluded
4.5.2 Remove existing accessible lift;provide new accessible lift (mobile)				$47,800
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing accessible lift	1	no.	$1,500.00	$1,500
Dustscreen and hoarding				

Life Extension Option	QUANTITY	UNIT	RATE	COST
Negative air allowance				
Hazmat Abatement - allowance				
Remove existing loose furniture and equipment				
D22 Alterations				
Pool including Sauna and Family Change Room				
New manual accessible mobile lift	1	no.	$25,000.00	$25,000
Make good existing finishes where affected	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$4,725
Z12 Fee		10.00%		$3,623
Z21 Design Contingency		20.00%		$7,970
Z22 Escalation				Excluded
GST				Excluded
4.6.1 Renovate Sauna and Hot Pool Area	12	m²	$10,066.67	$120,800
D21 Demolitions				
Remove dividing walls between existing sauna shower / change areas	51	m²	$75.00	$3,825
Remove existing ceiling	12	m²	$60.00	$720
Remove existing door and frame: Single	5	lvs.	$135.00	$675
Selectively demolish existing CMU wall to open sauna and hot pool area to notatorium	34	m²	$90.00	$3,060
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$5,000.00	$5,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
B11 Fixed Partitions				
Steel stud @ 400mm o/c, acoustic insulation, gypsum wallboard both sides	50	m²	$285.00	$14,250
B14 Internal Doors				
Aluminum glazed door and frame including hardware: Single	1	lvs.	$4,000.00	$4,000
B21 Floor Finishes				
Make good existing floor finish	32	m²	$120.00	$3,840
B22 Ceiling Finishes				
Make good existing ceiling finish	44	m²	$105.00	$4,620
B23 Wall Finishes				
Painted wall	48	m²	$37.50	$1,800
Wall tile allowance	72	m²	$400.00	$28,800
B31 Fittings and Fixtures				
Sauna bath accessories allowance	1	sum	$5,000.00	$5,000
New bench	1	sum	$4,000.00	$4,000
B32 Equipment				
By Others				
Z11 General Requirements		15.00%		$11,939

Life Extension Option	QUANTITY	UNIT	RATE	COST
Z12 Fee		10.00%		$9,153
Z21 Design Contingency		20.00%		$20,136
Z22 Escalation				Excluded
GST				Excluded
4.7.1 Selectively replace deck tile around lap pool and up pool wall.	282	m²	$1,252.48	$353,200
D21 Demolitions				
Carefully remove existing damaged pool tile	282	m²	$25.00	$7,050
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, prepare surfance and install new pool tile	282	m²	$800.00	$225,600
Z11 General Requirements		15.00%		$34,898
Z12 Fee		10.00%		$26,755
Z21 Design Contingency		20.00%		$58,860
Z22 Escalation				Excluded
GST				Excluded
4.8.1 Interior painting	4,595	m²	$61.44	$282,300
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B22 Ceiling Finishes				
Paint finish	1,824	m²	$45.00	$82,080
B23 Wall Finishes				
Paint finish	2,771	m²	$37.50	$103,913
Z11 General Requirements		15.00%		$27,899
Z12 Fee		10.00%		$21,389
Z21 Design Contingency		20.00%		$47,056
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
4.8.2 Stain interior wood ceilings	730	m²	$561.92	$410,200
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$22,000.00	$22,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, sand, apply pre-stain wood conditioner and necessary sealant/topcoat on existing wood ceiling surface	730	m²	$90.00	$65,700
Scaffolding	730	m²	$250.00	$182,500
Z11 General Requirements		15.00%		$40,530
Z12 Fee		10.00%		$31,073
Z21 Design Contingency		20.00%		$68,361
Z22 Escalation				Excluded
GST				Excluded
4.8.3 Exterior painting				
See 4.1				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
4.9.1 Update flooring throughout reception, admin, washrooms and changerooms	273	m²	$937.73	$256,000
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing floor finish including base	273	m²	$30.00	$8,190
Dustscreen and hoarding	23	m²	$250.00	$5,750
Negative air allowance				
Hazmat Abatement - allowance	1	sum	$33,000.00	$33,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B21 Floor Finishes				
Prepare subfloor to receive new floor finish	273	m²	$10.00	$2,730
New carpet tile	78	m²	$100.00	$7,800
Floor tile	195	m²	$500.00	$97,500
Tile base	26	m²	$500.00	$13,000

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Life Extension Option	QUANTITY	UNIT	RATE	COST
Rubber base	45	m	$15.00	$675
Z11 General Requirements		15.00%		$25,297
Z12 Fee		10.00%		$19,394
Z21 Design Contingency		20.00%		$42,667
Z22 Escalation				Excluded
GST				Excluded

4.10.1 Changerooms / Washrooms

See Item 1.11 - update to code minimum

Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded

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Life Extension Option	QUANTITY	UNIT	RATE	COST
4.11.1 Re-configure staff room - provide IT closet	7	m²	$10,385.71	$72,700
D21 Demolitions				
Remove existing partition wall including backup assemblies	27	m²	$90.00	$2,430
Remove existing door and frame: Single	1	lvs.	$135.00	$135
Remove existing ceiling	7	m²	$60.00	$420
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$3,000.00	$3,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B11 Fixed Partitions				
Steel stud @ 400mm o/c, acoustic insulation, gypsum wallboard both sides	41	m²	$285.00	$11,685
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	3	lvs.	$3,100.00	$9,300
B21 Floor Finishes				
Patch and repair existing floor finish	7	m²	$120.00	$840
B22 Ceiling Finishes				
Make good existing ceiling finish	7	m²	$105.00	$735
B23 Wall Finishes				
Painted finish	130	m²	$37.50	$4,875
B31 Fittings and Fixtures				
New reception counter	1	sum	$10,000.00	$10,000
New built in IT closet at Staff Room	1	sum	$4,500.00	$4,500
Z11 General Requirements		15.00%		$7,188
Z12 Fee		10.00%		$5,511
Z21 Design Contingency		20.00%		$12,124
Z22 Escalation				Excluded
GST				Excluded

APPENDIX C

ESTIMATE BREAKDOWN

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Modernization Option	QUANTITY	UNIT	RATE	COST
1.1.1 Provide fire suppression system for building				$378,100
D22 Alterations				
Fire sprinkler system	2,930	m²	$85.00	$249,050
Z11 General Requirements		15.00%		$37,358
Z12 Fee		10.00%		$28,641
Z21 Design Contingency		20.00%		$63,010
Z22 Escalation				Excluded
GST				Excluded
1.2.1 New Chemical Storage	12	m²	$15,091.67	$181,100
D21 Demolitions				
Site clearing	12	m²	$20.00	$240
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Structural / Architectural				
A11 Standard Foundations				
150mm thick concrete slab on grade including placement and finish, screed and cure, reinforcement, formwork, expansion and contraction joints	12	m²	$150.00	$1,800
A24 Roof Construction				
Suspended flat wood roof structure including columns, beams, trusses and sheathing	12	m²	$500.00	$6,000
A34 Walls Above Main Floor				
Prefinished metal cladding including Z-bars including air barri	66	m²	$800.00	$52,800
Exterior gypsum wallboard sheathing, steel studs @400mm o/c, insulation, vapour barrier and interior gypsum wallboard	66	m²	$205.00	$13,530
A36 Doors & Glazed Screens				
Metal door and frame including glazed lights, hardware and finish: Pair	2	pr.	$6,000.00	$12,000
A37 Roof Covering				
2 ply roofing membrane including insulation, vapour barrier and protection board	12	m²	$450.00	$5,400
Roof wall intersection	6	m	$250.00	$1,500
B21 Floor Finishes				
Sealer on concrete floor	12	m²	$40.00	$480
B22 Ceiling Finishes				
Painted exposed ceiling	12	m²	$30.00	$360
B23 Wall Finishes				
Painted wall	87	m²	$25.00	$2,175
D11 General Sitework				
Allowance for general sitework	1	sum	$5,000.00	$5,000
Allowance for alterations at loading area	1	sum	$10,000.00	$10,000

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Modernization Option	QUANTITY	UNIT	RATE	COST
Mechanical				
Allowance for mechanical	1	sum	$5,000.00	$5,000
Electrical				
Allowance for electrical	12	m²	$250.00	$3,000
Z11 General Requirements		15.00%		$17,893
Z12 Fee		10.00%		$13,718
Z21 Design Contingency		20.00%		$30,179
Z22 Escalation				Excluded
GST				Excluded
1.3.1 Infill or protect windows on community centre to create 3m horizontal distance from pool entrance.				$8,800
D21 Demolitions				
Remove existing window and frame	1	sum	$600.00	$600
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$2,000.00	$2,000
Remove existing loose furniture and equipment				
D22 Alterations				
Infill area where existing windows removed	1	sum	$2,200.00	$2,200
Allowance to make good existing finishes where affected	1	sum	$1,000.00	$1,000
Z11 General Requirements		15.00%		$870
Z12 Fee		10.00%		$667
Z21 Design Contingency		20.00%		$1,467
Z22 Escalation				Excluded
GST				Excluded
1.4.1 Upgrade fire alarm to include visual signal devices as required (may require electrical input?)				$11,500
D22 Alterations				
Pool including Sauna and Family Change Room				
Upgrade fire alarm visual signal devices - upgrade to main FA panel	1,850	m²	$12.00	$22,200
Z11 General Requirements		15.00%		$3,330
Z12 Fee		10.00%		$2,553
Z21 Design Contingency		20.00%		$5,617
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
1.5.1 Install tactile indication strips at stairs throughout facility.				$11,400
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Stairs at Fitness Room, Filtration Room, and Storage Room Entrance				
Clean, prepare surface and install new tactile strips at stairs	13	m	$500.00	$6,500
Make good existing floor finish where affected	1	sum	$1,000.00	$1,000
Z11 General Requirements		15.00%		$1,125
Z12 Fee		10.00%		$863
Z21 Design Contingency		20.00%		$1,898
Z22 Escalation				Excluded
GST				Excluded
1.6.1 Replace bleachers with new, code compliant solution				$86,500
D21 Demolitions				
Remove existing bleachers	1	sum	$5,000.00	$5,000
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, prepare area and new bleachers including necessary connection and sealant	1	sum	$50,000.00	$50,000
Make good existing floor finish where affected	1	sum	$1,000.00	$1,000
Make good existing wall finish where affected	1	sum	$1,000.00	$1,000
Z11 General Requirements		15.00%		$8,550
Z12 Fee		10.00%		$6,555
Z21 Design Contingency		20.00%		$14,421
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
1.7.1 Replace glass in entry door, exterior exit doors, wading pool doors, and separation walls with safety glass				$22,800
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing glazed door and frame: Pair	1	pr.	$270.00	$270
Remove existing door and frame: Single	1	lvs.	$150.00	$150
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A34 Walls Above Main Floor				
Make good existing exterior finish where affected	2	no.	$500.00	$1,000
A36 Doors & Glazed Screens				
New aluminum double glazed, thermally broken door and frame including hardware: Pair	1	pr.	$9,000.00	$9,000
New metal door and frame including hardware and finish: Single	1	lvs.	$3,300.00	$3,300
B23 Wall Finishes				
Make good existing wall finish where affected	2	no.	$150.00	$300
Z11 General Requirements		15.00%		$2,253
Z12 Fee		10.00%		$1,727
Z21 Design Contingency		20.00%		$3,800
Z22 Escalation				Excluded
GST				Excluded
1.8.1 Replace / modify exterior stairs serving the rear of the pool with closed riser stair.				$14,400
D21 Demolitions				
Remove existing exterior stairs at the rear of the pool	1	sum	$1,000.00	$1,000
Dustscreen and hoarding				
Negative air allowance				N/a
Hazmat Abatement - allowance				
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A23 Stair Construction				
2.44m wide new concrete stairs structure including risers, landings and finish	1	m	$8,500.00	$8,500
Z11 General Requirements		15.00%		$1,425
Z12 Fee		10.00%		$1,093
Z21 Design Contingency		20.00%		$2,404

Modernization Option	QUANTITY	UNIT	RATE	COST
Z22 Escalation				Excluded
GST				Excluded
1.9.1 Replace exit signage throughout with modernized exit signs				$33,700
D22 Alterations				
Pool including Sauna and Family Change Room				
Replace exit signage - assume that wiring will stay in place	1,850	m^2	$12.00	$22,200
Z11 General Requirements		15.00%		$3,330
Z12 Fee		10.00%		$2,553
Z21 Design Contingency		20.00%		$5,617
Z22 Escalation				Excluded
GST				Excluded
1.9.2 Provide tactile exit signage at the approach side of exit doors				$3,800
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New tactile exit signage at exit doors (exterior)	5	m	$500.00	$2,500
Z11 General Requirements		15.00%		$375
Z12 Fee		10.00%		$288
Z21 Design Contingency		20.00%		$633
Z22 Escalation				Excluded
GST				Excluded
1.9.3 Exit door from wading pool cannot have a fabric curtain covering. Look at reducing glazing in this area if required.				$3,400
D21 Demolitions				
Carefully remove existing glazing at wading pool exit door; existing frame and door to remain	1	no.	$250.00	$250
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
D22 Alterations				
Pool including Sauna and Family Change Room				
Infill area where glazing removed including making good existing finish where affected	1	no.	$1,000.00	$1,000
Z11 General Requirements		15.00%		$338
Z12 Fee		10.00%		$259
Z21 Design Contingency		20.00%		$569
Z22 Escalation				Excluded
GST				Excluded
1.10.1 Rebuild exterior walks which form an accessible path of travel to have regular surface.				
See below				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.10.2 Rebuild exterior ramps to have max 8% slope				$37,100
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing exterior concrete ramps to meet code compliance				
Sawcut existing exterior ramp	5	m	$40.00	$200
Demolish existing exterior ramp	82	m²	$80.00	$6,560
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
D11 General Sitework				
Pool including Sauna and Family Change Room				
New concrete ramp with 8%	82	m²	$200.00	$16,400
Tie in to existing	5	m	$250.00	$1,250
Z11 General Requirements		15.00%		$3,662
Z12 Fee		10.00%		$2,807
Z21 Design Contingency		20.00%		$6,176
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
1.10.3 Install handrails at exterior stairs / ramps as required.				$83,900
D21 Demolitions				
Remove existing handrails	13	m	$100.00	$1,300
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New handrails at existing exterior stairs	13	m	$1,000.00	$13,000
New handrails at new exterior ramps	36	m	$1,000.00	$36,000
New handrails at new exterior stairs	5	m	$1,000.00	$5,000
Z11 General Requirements		15.00%		$8,295
Z12 Fee		10.00%		$6,360
Z21 Design Contingency		20.00%		$13,991
Z22 Escalation				Excluded
GST				Excluded
1.10.4 Replace exterior handrails at building entrance with compliant handrails.				
See above				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.11.1 New Gendered Changerooms				$574,000
D21 Demolitions				
Remove existing partition walls including backup assemblies	288	m²	$90.00	$25,920
Remove existing door and frame: Single	5	lvs.	$135.00	$675
Remove existing floor and base	186	m²	$30.00	$5,580
Remove existing ceiling	186	m²	$60.00	$11,160
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
New partition wall, door & frame, wall finishes, floor finishes, ceiling finishes and fittings and fixtures	186	m²	$1,800.00	$334,800

Modernization Option	QUANTITY	UNIT	RATE	COST
Z11 General Requirements		15.00%		$56,720
Z12 Fee		10.00%		$43,486
Z21 Design Contingency		20.00%		$95,668
Z22 Escalation				Excluded
GST				Excluded
1.11.2 Provide accessible washroom in changerooms.				$67,100
Architectural				
D21 Demolitions				
Re&re existing concrete slab and wall to allow sanitary upgrades	1	sum	$6,000.00	$6,000
Remove existing partition stall/compartment	2	no.	$100.00	$200
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
B21 Floor Finishes				
Make good existing floor finish to match existing	1	sum	$4,000.00	$4,000
B23 Wall Finishes				
Make good existing wall finish where affected	1	sum	$1,500.00	$1,500
B31 Fittings and Fixtures				
New standard toilet compartment/stall	2	no.	$2,500.00	$5,000
New accessible toilet compartment/stall	1	no.	$4,500.00	$4,500
Mechanical				
D21 Demolitions				
Remove existing sanitary fixtures	5	no.	$500.00	$2,500
D22 Alterations				
Allowance for sanitary fixtures and plumbing	3	no.	$6,000.00	$18,000
Allowance for exhaust	1	sum	$2,500.00	$2,500
Z11 General Requirements		15.00%		$6,630
Z12 Fee		10.00%		$5,083
Z21 Design Contingency		20.00%		$11,183
Z22 Escalation				Excluded
GST				Excluded
1.11.3 Retrofit changerooms showers to provide at least one accessible stall in each group -or- retrofit family changerooms to meet accessibility requirements.				
See above				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		

Modernization Option	QUANTITY	UNIT	RATE	COST
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.12.1 Install assisted listening system at reception				$19,700
D22 Alterations				
Instal assisted listening system at reception	1	sum	$13,000.00	$13,000
Z11 General Requirements		15.00%		$1,950
Z12 Fee		10.00%		$1,495
Z21 Design Contingency		20.00%		$3,289
Z22 Escalation				Excluded
GST				Excluded
1.13.1 All doors on accessible path of travel should have clear width of min 850mm				
See below				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
1.13.2 Some office room doors are too narrow				$16,300
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing door and frame: Single	3	lvs.	$135.00	$405
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	3	lvs.	$3,100.00	$9,300
Z11 General Requirements		15.00%		$1,606
Z12 Fee		10.00%		$1,231
Z21 Design Contingency		20.00%		$2,708
Z22 Escalation				Excluded

Modernization Option	QUANTITY	UNIT	RATE	COST
GST				Excluded
1.13.3 Washroom doors in lobby do not provide clear width – to be widened with acc. washroom renovation				$11,300
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing door and frame: Single	2	lvs.	$135.00	$270
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	2	lvs.	$3,100.00	$6,200
Z11 General Requirements		15.00%		$1,121
Z12 Fee		10.00%		$859
Z21 Design Contingency		20.00%		$1,890
Z22 Escalation				Excluded
GST				Excluded
1.13.4 Replace door hardware throughout to comply with acc. req's				$23,400
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing door hardware	14	no.	$100.00	$1,400
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B14 Internal Doors				
New door hardware	14	no.	$1,000.00	$14,000
Z11 General Requirements		15.00%		$2,310
Z12 Fee		10.00%		$1,771
Z21 Design Contingency		20.00%		$3,896
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
1.14.1 Relocate manual stations to be within height requirements				$33,700
Pool including Sauna and Family Change Room				
Relocate manual stations	1,850	m²	$12.00	$22,200
Z11 General Requirements		15.00%		$3,330
Z12 Fee		10.00%		$2,553
Z21 Design Contingency		20.00%		$5,617
Z22 Escalation				Excluded
GST				Excluded
1.15.1 Replace exterior guards at rear exits from Filtration Room, Wading Pool and Storage Room, with compliant guardrails.				$47,100
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing exterior guards at Filtration Room, Wading Pool, Storage Room and Whirl Pool Entrance	27	m	$150.00	$4,050
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New guardrails	27	m	$1,000.00	$27,000
Z11 General Requirements		15.00%		$4,658
Z12 Fee		10.00%		$3,571
Z21 Design Contingency		20.00%		$7,856
Z22 Escalation				Excluded
GST				Excluded
1.16.1 Update signage throughout to identify accessible / universal washrooms.				$3,300
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing signages	10	no.	$20.00	$200
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New Signages	10	no.	$200.00	$2,000

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Modernization Option	QUANTITY	UNIT	RATE	COST
Z11 General Requirements		15.00%		$330
Z12 Fee		10.00%		$253
Z21 Design Contingency		20.00%		$557
Z22 Escalation				Excluded
GST				Excluded
1.16.2 Ensure updated signage encompasses adding tactile information to current building signage				$10,000
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing signages	30	no.	$20.00	$600
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B31 Fittings and Fixtures				
New signages with tactile	30	no.	$200.00	$6,000
Z11 General Requirements		15.00%		$990
Z12 Fee		10.00%		$759
Z21 Design Contingency		20.00%		$1,670
Z22 Escalation				Excluded
GST				Excluded
2.1.1 Replace water meter, backflow preventor, pressure release valve				$54,600
D21 Demolitions				
Remove water meter, backflow preventor, pressure release valve	1	sum	$6,000.00	$6,000
D22 Alterations				
New water meter	1	sum	$15,000.00	$15,000
New backflow preventor	1	sum	$10,000.00	$10,000
New pressure release valve	1	sum	$5,000.00	$5,000
Mechanical contractor's general conditions	1	sum		
Z11 General Requirements		15.00%		$5,400
Z12 Fee		10.00%		$4,140
Z21 Design Contingency		20.00%		$9,108
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
2.1.2 Connect pool water meter to BMS system to monitor for pool leakage				$15,200
D22 Alterations				
Connect pool water meter to BMS system	1	sum	$10,000.00	$10,000
Z11 General Requirements		15.00%		$1,500
Z12 Fee		10.00%		$1,150
Z21 Design Contingency		20.00%		$2,530
Z22 Escalation				Excluded
GST				Excluded
2.2.1 Replace domestic hot water tanks				$29,300
D21 Demolitions				
Remove existing domestic hot water tanks	2	no.	$900.00	$1,800
D22 Alterations				
New domestic hot water tanks	2	no.	$8,755.00	$17,510
Z11 General Requirements		15.00%		$2,897
Z12 Fee		10.00%		$2,221
Z21 Design Contingency		20.00%		$4,885
Z22 Escalation				Excluded
GST				Excluded
2.3.1 Replace piping servicing the deck bottle filler with lead free piping				$16,300
D21 Demolitions				
Remove DCW to bottle filler	1	sum	$750.00	$750
D22 Alterations				
New DCW to bottle filler	1	sum	$10,000.00	$10,000
Z11 General Requirements		15.00%		$1,613
Z12 Fee		10.00%		$1,236
Z21 Design Contingency		20.00%		$2,720
Z22 Escalation				Excluded
GST				Excluded

Modernization Option	QUANTITY	UNIT	RATE	COST
2.3.2 Replace drinking fountains				$30,700
D21 Demolitions				
Remove bottle fillers	3	no.	$750.00	$2,250
D22 Alterations				
New bottle fillers	3	no.	$6,000.00	$18,000
Z11 General Requirements		15.00%		$3,038
Z12 Fee		10.00%		$2,329
Z21 Design Contingency		20.00%		$5,123
Z22 Escalation				Excluded
GST				Excluded
2.4.1 Replace plumbing fixtures throughout				$116,900
D21 Demolitions				
Remove sanitary fixtures	20	no.	$350.00	$7,000
D22 Alterations				
New sanitary fixtures	20	no.	$3,500.00	$70,000
Z11 General Requirements		15.00%		$11,550
Z12 Fee		10.00%		$8,855
Z21 Design Contingency		20.00%		$19,481
Z22 Escalation				Excluded
GST				Excluded
2.7.1 Replace Natatorium Air handling unit (like for like)				$1,296,800
Electrical				
D22 Alterations				
Connection existing feeders - no allowance for increased power or increase feeder size/changes in panels or breakers	1	sum	$5,000.00	$5,000
Mechanical				
D21 Demolitions				
Remove existing AHU	1	no.	$50,000.00	$50,000
D22 Alterations				
New AHU with packaged dehumidifier	1	no.	$695,000.00	$695,000
Mechanical contractor's general conditions	1	sum	$104,250.00	$104,250
Z11 General Requirements		15.00%		$128,138
Z12 Fee		10.00%		$98,239
Z21 Design Contingency		20.00%		$216,125
Z22 Escalation				Excluded
GST				Excluded

Modernization Option	QUANTITY	UNIT	RATE	COST
2.7.2 Provide pressure controls for natatorium that operate exhaust fans. Add VFDs on exhaust fans and series of pressure sensors throughout the building.				$87,000
D22 Alterations				
VFDs to be added on exhaust fans	8	no.	$4,600.00	$36,800
Allowance for pressure sensors	10	no.	$1,500.00	$15,000
Mechanical contractor's general conditions	1	sum	$5,520.00	$5,520
Z11 General Requirements		15.00%		$8,598
Z12 Fee		10.00%		$6,592
Z21 Design Contingency		20.00%		$14,502
Z22 Escalation				Excluded
GST				Excluded
2.8.1 Replace packaged rooftop air handlers (like for like)				$381,000
Electrical				
D21 Demolitions				
Remove connection	2	sum	$2,500.00	$5,000
D22 Alterations				
Connection existing feeders - no allowance for increased power or increase feeder size/changes in panels or breakers	2	sum	$5,000.00	$10,000
Mechanical				
D21 Demolitions				
Remove existing RTU-WSHP	2	sum	$15,000.00	$30,000
D22 Alterations				
New RTU - WSHP	2	sum	$89,550.00	$179,100
Mechanical contractor's general conditions	1	sum	$26,900.00	$26,900
Z11 General Requirements		15.00%		$37,650
Z12 Fee		10.00%		$28,865
Z21 Design Contingency		20.00%		$63,503
Z22 Escalation				Excluded
GST				Excluded
2.9.1 Replace open pit tanks with sand filters or pressure regenerative media filters				$687,100
D21 Demolitions				
Drain, clean, remove and dispose tanks	1	sum	$75,000.00	$75,000
D22 Alterations				
Allowance for new sand filters	1	sum	$377,608.00	$377,608

Modernization Option	QUANTITY	UNIT	RATE	COST
Z11 General Requirements		15.00%		$67,891
Z12 Fee		10.00%		$52,050
Z21 Design Contingency		20.00%		$114,510
Z22 Escalation				Excluded
GST				Excluded
2.9.2 Provide new main drain valves with fail close valves				$193,200
D22 Alterations				
Drian and pools, cut out existing valve, install new valve and flanges	1	sum	$30,270.00	$30,270
New valve body, fail close actuator and controls	3	sum	$24,000.00	$72,000
Water disposal, refill, chemical rebalancing	1	sum	$20,000.00	20,000.00
Mechanical controls	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$19,091
Z12 Fee		10.00%		$14,636
Z21 Design Contingency		20.00%		$32,199
Z22 Escalation				Excluded
GST				Excluded
2.9.3 Provide new balance tank level controls, modulating valves to automatically control pool levels				$41,700
D21 Demolitions				
Remove existing valves	1	sum	$2,000.00	$2,000
D22 Alterations				
Allowance for new valves	1	sum	$20,500.00	$20,500
Mechanical controls	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$4,125
Z12 Fee		10.00%		$3,163
Z21 Design Contingency		20.00%		$6,958
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
2.9.4 Replace Lap Pool UV filter				$167,000
D21 Demolitions				
Remove UV filter	1	sum	$10,000.00	$10,000
D22 Alterations				
Allowance for new UV filter	1	sum	$100,000.00	$100,000
Z11 General Requirements		15.00%		$16,500
Z12 Fee		10.00%		$12,650
Z21 Design Contingency		20.00%		$27,830
Z22 Escalation				Excluded
GST				Excluded
2.9.4 Replace hot pool filter, filter pump and jet pump				$99,400
D21 Demolitions				
Remove existing filter, and pumps	1	sum	$10,000.00	$10,000
D22 Alterations				
Hot pool filter	1	sum	$24,500.00	$24,500
Filter pump	1	sum	$12,250.00	$12,250
Jet pump	1	sum	$18,750.00	$18,750
Z11 General Requirements		15.00%		$9,825
Z12 Fee		10.00%		$7,533
Z21 Design Contingency		20.00%		$16,572
Z22 Escalation				Excluded
GST				Excluded
2.9.6 Replace Soda Ash agitator & injection pumps				$75,100
D21 Demolitions				
Remove existing soda ash agitator & injection pumps	1	sum	$7,500.00	$7,500
D22 Alterations				
New agitator and tank	1	sum	$15,000.00	$15,000
Injection pumps	2	no.	$7,500.00	$15,000
Piping and containment	1	sum	$6,000.00	$6,000
Mechanical controls	1	sum	$6,000.00	$6,000
Z11 General Requirements		15.00%		$7,425
Z12 Fee		10.00%		$5,693
Z21 Design Contingency		20.00%		$12,524
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
2.9.7 Replace chlorine solenoids & sensors				$48,100
D21 Demolitions				
Remove existing soda ash agitator & injection pumps	1	sum	$7,500.00	$7,500
D22 Alterations				
Chlorine solenoid valves	4	no.	$2,500.00	$10,000
Chlorine sensors (free chlorine probe, ORP probe, flow cell and calibration	1	sum	$8,200.00	$8,200
Mechanical controls	1	sum	$6,000.00	$6,000
Z11 General Requirements		15.00%		$4,755
Z12 Fee		10.00%		$3,646
Z21 Design Contingency		20.00%		$8,020
Z22 Escalation				Excluded
GST				Excluded
2.9.8 Upgrade chlorine room exhaust fan and ductwork				$44,200
D21 Demolitions				
Remove existing exhaust fan	1	sum	$375.00	$375
D22 Alterations				
New exhaust fan	1	no.	$10,000.00	$10,000
Ductwork and accessories	1	sum	$15,000.00	$15,000
Mechanical contractor's general conditions	1	sum	$3,750.00	$3,750
Z11 General Requirements		15.00%		$4,369
Z12 Fee		10.00%		$3,349
Z21 Design Contingency		20.00%		$7,369
Z22 Escalation				Excluded
GST				Excluded
4.1.1 Replace / repair / stain wood cladding throughout (fascias and beam casings)	266	m^2	$189.85	$50,500
D22 Alterations				
Pool including Sauna and Family Change Room				
Replace or repair existing stain wood cladding	266	m^2	$125.00	$33,250
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
Z11 General Requirements		15.00%		$4,988
Z12 Fee		10.00%		$3,824
Z21 Design Contingency		20.00%		$8,412

Modernization Option	QUANTITY	UNIT	RATE	COST
Z22 Escalation				Excluded
GST				Excluded
4.1.2 Exterior Painting throughout				$135,800
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, prepare surface and new exterior paint	994	m²	$40.00	$39,760
Allowance for scaffolding	994	m²	$50.00	$49,700
Z11 General Requirements		15.00%		$13,419
Z12 Fee		10.00%		$10,288
Z21 Design Contingency		20.00%		$22,633
Z22 Escalation				Excluded
GST				Excluded
4.2.1 Replace low roof membrane, including over family changerooms. Ensure proper tie in between lower roof and family changeroom.	1,945	m²	$626.68	$1,218,900
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing roof membrane, insulation and vapour barrier - existing roof sheathing (elsewhere)	1,945	m²	$60.00	$116,700
Remove existing curb and flashings	171	m	$30.00	$5,130
Remove existing roof accessories	1	sum	$10,000.00	$10,000
Weather protection - allowance	1	sum	$20,000.00	$20,000
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$40,000.00	$40,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A37 Roof Covering				
2 ply roofing membrane including insulation, vapour barrier and existing roof sheathing	1,945	m²	$300.00	$583,500
New curb and cap flashing, flashings at intersection	171	m	$150.00	$25,650
Reinstall/replace roof accessories	1	sum	$2,000.00	$2,000
Z11 General Requirements		15.00%		$120,447
Z12 Fee		10.00%		$92,343

Modernization Option	QUANTITY	UNIT	RATE	COST
Z21 Design Contingency		20.00%		$203,154
Z22 Escalation				Excluded
GST				Excluded
4.2.2 Replace upper roof membranes	161	m²	$755.90	$121,700
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing roof membrane, insulation and vapour barrier - existing roof sheathing (elsewhere)	161	m²	$60.00	$9,660
Remove existing curb and flashings	53	m	$30.00	$1,590
Remove existing roof accessories	1	sum	$2,000.00	$2,000
Weather protection - allowance	1	sum	$1,700.00	$1,700
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$4,000.00	$4,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A37 Roof Covering				
2 ply roofing membrane including insulation, vapour barrier and existing roof sheathing	161	m²	$300.00	$48,300
New curb and cap flashing, flashings at intersection	53	m	$150.00	$7,950
Reinstall/replace roof accessories	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$12,030
Z12 Fee		10.00%		$9,223
Z21 Design Contingency		20.00%		$20,291
Z22 Escalation				Excluded
GST				Excluded
4.2.3 Install proper roof sleepers under rooftop pipe and conduit.				$22,800
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New roof sleepers including necessary sealant and flashings	15	no.	$1,000.00	$15,000
Z11 General Requirements		15.00%		$2,250
Z12 Fee		10.00%		$1,725
Z21 Design Contingency		20.00%		$3,795
Z22 Escalation				Excluded
GST				Excluded

Modernization Option	QUANTITY	UNIT	RATE	COST
4.2.4 Install proper splash pads at all downspouts				$9,900
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New splash pads	13	no.	$500.00	$6,500
Z11 General Requirements		15.00%		$975
Z12 Fee		10.00%		$748
Z21 Design Contingency		20.00%		$1,645
Z22 Escalation				Excluded
GST				Excluded
4.3.1 Replace Steel doors with sill deterioration. Ensure exterior doors have thermally broken frames				
See below				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded
4.3.2 Remove and infill covered skylights (2)				$15,900
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing skylights including necessary acess/scaffolfing	2	no.	$300.00	$600
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$2,000.00	$2,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A24 Roof Construction				
Infill area where existing skylights removed including necessary access/scaffolding required to complete the work	2	no.	$1,400.00	$2,800
A37 Roof Covering				
New roof membrane, insulation, vapour barrier	2	no.	$1,200.00	$2,400
B22 Ceiling Finishes				

Modernization Option	QUANTITY	UNIT	RATE	COST
Patch and repair existing soffit where affected	5	m²	$530.00	$2,650
Z11 General Requirements		15.00%		$1,568
Z12 Fee		10.00%		$1,202
Z21 Design Contingency		20.00%		$2,644
Z22 Escalation				Excluded
GST				Excluded
4.3.3 Replace aluminum exit door from wading pool.				$16,300
D21 Demolitions				
Remove existing door and frame: Pair	1	pr.	$270.00	$270
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$1,000.00	$1,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Aluminum double glazed, thermally broken door and frame including hardware: Pair	1	pr.	$9,000.00	$9,000
Make good existing wall finish where affected	1	sum	$500.00	$500
Z11 General Requirements		15.00%		$1,616
Z12 Fee		10.00%		$1,239
Z21 Design Contingency		20.00%		$2,725
Z22 Escalation				Excluded
GST				Excluded
4.4.1 Replace perimeter pool gutters				$557,900
D21 Demolitions				
Remove existing perimeter concrete pool gutters	105	m	$500.00	$52,500
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Structural repairs to edge of pool	105	m	$1,200.00	$126,000
New perimeter pool gutters	105	m	$200.00	$21,000
Retile deck around new gutter including	105	m²	$800.00	$84,000
3' down pool wall	105	m²	$800.00	$84,000
Z11 General Requirements		15.00%		$55,125
Z12 Fee		10.00%		$42,263
Z21 Design Contingency		20.00%		$92,978

Modernization Option	QUANTITY	UNIT	RATE	COST
Z22 Escalation				Excluded
GST				Excluded
4.4.2 Replace bulkhead				$305,700
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing bulkhead	14	m	$100.00	$1,400
Dustscreen and hoarding				
Negative air allowance				
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New stainless steel bulkhead	14	m	$14,285.71	$200,000
Z11 General Requirements		15.00%		$30,210
Z12 Fee		10.00%		$23,161
Z21 Design Contingency		20.00%		$50,954
Z22 Escalation				Excluded
GST				Excluded
4.5.1 Replace stainless steel pool ramps.				$34,800
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing pool diving board	10	m²	$150.00	$1,500
Remove existing stair	2	m²	$100.00	$200
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
New stainless steel pool ramps including necessary connection	1	sum	$20,000.00	$20,000
New pool stair	2	m²	$600.00	$1,200
Z11 General Requirements		15.00%		$3,435
Z12 Fee		10.00%		$2,634
Z21 Design Contingency		20.00%		$5,794
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
4.5.2 Remove existing accessible lift;provide new accessible lift (mobile)				$47,800
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing accessible lift	1	no.	$1,500.00	$1,500
Dustscreen and hoarding				
Negative air allowance				
Hazmat Abatement - allowance				
Remove existing loose furniture and equipment				
D22 Alterations				
Pool including Sauna and Family Change Room				
New manual accessible mobile lift	1	no.	$25,000.00	$25,000
Make good existing finishes where affected	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$4,725
Z12 Fee		10.00%		$3,623
Z21 Design Contingency		20.00%		$7,970
Z22 Escalation				Excluded
GST				Excluded
4.7.1 All new deck and wall tile throughout	805	m²	$1,252.30	$1,008,100
D21 Demolitions				
Remove existing damaged pool tile	805	m²	$25.00	$20,125
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, prepare surfance and install new pool tile	805	m²	$800.00	$644,000
Z11 General Requirements		15.00%		$99,619
Z12 Fee		10.00%		$76,374
Z21 Design Contingency		20.00%		$168,024
Z22 Escalation				Excluded
GST				Excluded
4.8.1 Interior painting	4,595	m²	$61.44	$282,300
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
D22 Alterations				
Pool including Sauna and Family Change Room				
B22 Ceiling Finishes				
Paint finish	1,824	m²	$45.00	$82,080
B23 Wall Finishes				
Paint finish	2,771	m²	$37.50	$103,913
Z11 General Requirements		15.00%		$27,899
Z12 Fee		10.00%		$21,389
Z21 Design Contingency		20.00%		$47,056
Z22 Escalation				Excluded
GST				Excluded
4.8.2 Stain interior wood ceilings	730	m²	$561.92	$410,200
D21 Demolitions				
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$22,000.00	$22,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
Clean, sand, apply pre-stain wood conditioner and necessary sealant/topcoat on existing wood ceiling surface	730	m²	$90.00	$65,700
Scaffolding	730	m²	$250.00	$182,500
Z11 General Requirements		15.00%		$40,530
Z12 Fee		10.00%		$31,073
Z21 Design Contingency		20.00%		$68,361
Z22 Escalation				Excluded
GST				Excluded
4.8.3 Exterior painting				
See 4.1				
Z11 General Requirements		15.00%		
Z12 Fee		10.00%		
Z21 Design Contingency		20.00%		
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
4.9.1 Update flooring throughout reception, admin, washrooms and changerooms	273	m²	$937.73	$256,000
D21 Demolitions				
Pool including Sauna and Family Change Room				
Remove existing floor finish including base	273	m²	$30.00	$8,190
Dustscreen and hoarding	23	m²	$250.00	$5,750
Negative air allowance				
Hazmat Abatement - allowance	1	sum	$33,000.00	$33,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B21 Floor Finishes				
Prepare subfloor to receive new floor finish	273	m²	$10.00	$2,730
New carpet tile	78	m²	$100.00	$7,800
Floor tile	195	m²	$500.00	$97,500
Tile base	26	m²	$500.00	$13,000
Rubber base	45	m	$15.00	$675
Z11 General Requirements		15.00%		$25,297
Z12 Fee		10.00%		$19,394
Z21 Design Contingency		20.00%		$42,667
Z22 Escalation				Excluded
GST				Excluded
4.11.1 Re-configure staff room - provide IT closet				$72,700
D21 Demolitions				
Remove existing partition wall including backup assemblies	27	m²	$90.00	$2,430
Remove existing door and frame: Single	1	lvs.	$135.00	$135
Remove existing ceiling	7	m²	$60.00	$420
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$3,000.00	$3,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
B11 Fixed Partitions				
Steel stud @ 400mm o/c, acoustic insulation, gypsum wallboard both sides	41	m²	$285.00	$11,685
B14 Internal Doors				
Solid core wood door and frame including hardware, and finish: Single	3	lvs.	$3,100.00	$9,300
B21 Floor Finishes				
Patch and repair existing floor finish	7	m²	$120.00	$840
B22 Ceiling Finishes				
Make good existing ceiling finish	7	m²	$105.00	$735

Modernization Option	QUANTITY	UNIT	RATE	COST
B23 Wall Finishes				
Painted finish	130	m²	$37.50	$4,875
B31 Fittings and Fixtures				
New reception counter	1	sum	$10,000.00	$10,000
New built in IT closet at Staff Room	1	sum	$4,500.00	$4,500
Z11 General Requirements		15.00%		$7,188
Z12 Fee		10.00%		$5,511
Z21 Design Contingency		20.00%		$12,124
Z22 Escalation				Excluded
GST				Excluded
Reception/Lobby/Admin Renovation	126	m²	$3,076.98	$387,700
D21 Demolitions				
Remove existing partition walls including backup assemblies	184	m²	$90.00	$16,560
Remove existing door and frame: Single	5	lvs.	$135.00	$675
Remove existing floor and base	126	m²	$30.00	$3,780
Remove existing ceiling	126	m²	$60.00	$7,560
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
New partition wall, door & frame, wall finishes, floor finishes, ceiling finishes and fittings and fixtures	126	m²	$1,800.00	$226,800
Z11 General Requirements		15.00%		$38,306
Z12 Fee		10.00%		$29,368
Z21 Design Contingency		20.00%		$64,610
Z22 Escalation				Excluded
GST				Excluded
4.61.1 New Sauna Shower & Cold Plunge	52	m²	$7,507.69	$390,400
Architectural				
D21 Demolitions				
Remove existing partition walls including backup assemblies	64	m²	$90.00	$5,760
Remove existing door and frame: Single	1	lvs.	$135.00	$135
Remove existing floor and base	52	m²	$30.00	$1,560
Remove existing ceiling	52	m²	$60.00	$3,120
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance				N/a
Remove existing loose furniture and equipment				Excluded

Modernization Option	QUANTITY	UNIT	RATE	COST
D22 Alterations				
New partition wall, door & frame, wall finishes, floor finishes, ceiling finishes and fittings and fixtures	52	m²	$1,800.00	$93,600
Mechanical				
New sauna shower - included in sanitary fixture replacement above				
Cold plunge pool	1	sum	$60,000.00	$60,000
Insulated piping and drainage	1	sum	$25,000.00	$25,000
Plunge pool chiller, circulation pump, sand filtration, valves, strainers, gauges and chemical controller	1	sum	$50,000.00	$50,000
Mechanical controls	1	sum	$18,000.00	$18,000
Z11 General Requirements		15.00%		$38,576
Z12 Fee		10.00%		$29,575
Z21 Design Contingency		20.00%		$65,065
Z22 Escalation				Excluded
GST				Excluded
3.1.1 Seismically Separate Aquatic Facility Community Centre				$885,200
D21 Demolitions				
Replacement of the entire roof system - 3.1.2, 3.1.3,3.1.4 below		m²		
Sawcut existing slab on grade	33	m	$88.59	$2,923
Demolish existing slab on grade	50	m²	$60.00	$3,000
Remove existing floor finish	50	m²	$30.00	$1,500
Remove existing ceiling	50	m²	$60.00	$3,000
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance	1	sum	$10,000.00	$10,000
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
A11 Standard Foundations				
Standard concrete strip footing and foundation wall including reinforcement, formwork, excavation, backfill, dampproofing, insulation, in slab on grade condition	33	m²	$2,500.00	$82,500
Tie in ends of footing and foundation wall to existing foundation	1	m	$1,000.00	$1,000
Ongoing minor to moderate concrete repairs to the pool basin and cast-in place concrete piers and foundation systems, (measured area on plan) - allowance	554	m²	$631.77	$350,000
A21 Lowest Floor Construction				
Reinstate existing concrete slab on grade including placement and finish, screed and cure, reinforcement, moisture barrier, expansion and contraction joints and structural fill	50	m²	$177.50	$8,875
Tie in existing slab on grade	33	m	$187.50	$6,188
A24 Roof Construction				
Cut seismic gap in existing roof	36	m	$100.00	$3,600

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Modernization Option	QUANTITY	UNIT	RATE	COST
Temporary support for the roof	1	sum	$10,000.00	$10,000
A34 Walls Above Main Floor				
Exterior wall finish to match existing at seismic gap	7	m	$300.00	$2,100
A37 Roof Covering				
Flashings and curbs at seismic gap including re&re roofing	36	m	$500.00	$18,000
B11 Fixed Partitions				
Steel stud @ 400mm o/c, acoustic insulation, gypsum wallboard	119	m²	$240.00	$28,560
B12 Structural Partitions				
New steel post, beam including braced frame and necessary connection	119	m²	$300.00	$35,700
B21 Floor Finishes				
Patch and repair existing floor finish	50	m²	$120.00	$6,000
B22 Ceiling Finishes				
Make good existing ceiling finish	50	m²	$105.00	$5,250
B23 Wall Finishes				
Paint finish	132	m²	$37.50	$4,950
Z11 General Requirements		15.00%		$87,472
Z12 Fee		10.00%		$67,062
Z21 Design Contingency		20.00%		$147,536
Z22 Escalation				Excluded
GST				Excluded
3.1.2 Replace low roof envelope	813	m²	$779.46	$633,700
D21 Demolitions				
Lower Roof				
Remove existing roof covering - See 4.2				
Remove existing roof sheathing	813	m²	$45.00	$36,585
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance - See 4.2 below				
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Lower Roof				
A24 Roof Construction				
Allowance to repair existing suspended flat wood roof structure with additional beams, and new sheathing	813	m²	$450.00	$365,850
Allowance for access/lift/scaffolding	1	sum	$15,000.00	$15,000
Z11 General Requirements		15.00%		$62,615
Z12 Fee		10.00%		$48,005
Z21 Design Contingency		20.00%		$105,611
Z22 Escalation				Excluded
GST				Excluded

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Modernization Option	QUANTITY	UNIT	RATE	COST
3.1.3 Replace upper roof envelope	161	m²	$798.76	$128,600
D21 Demolitions				
Upper Roof Natatorium Roof				
Remove existing roof covering - See 4.2 below				
Remove existing roof sheathing	161	m²	$45.00	$7,245
Dustscreen and hoarding				N/a
Negative air allowance				N/a
Hazmat Abatement - allowance - See 4.2 below				
Remove existing loose furniture and equipment				Excluded
D22 Alterations				
Pool including Sauna and Family Change Room				
A24 Roof Construction				
Allowance to repair existing suspended flat wood roof structure with additional beams, and new sheathing	161	m²	$450.00	$72,450
Allowance for access/lift/scaffolding	1	sum	$5,000.00	$5,000
Z11 General Requirements		15.00%		$12,704
Z12 Fee		10.00%		$9,740
Z21 Design Contingency		20.00%		$21,428
Z22 Escalation				Excluded
GST				Excluded

We are **hcma**. We believe human connections are the best path to solving the fundamental problems of our time.

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