TOFINO INDOOR RECREATION CENTRE

SCHEMATIC DESIGN REPORT
ISSUED FOR SCHEMATIC DESIGN
JANUARY 23, 2019

STUDIO 531 architects inc.
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APPENDICES
1. SITE INFORMATION

PROJECT DESCRIPTION

The Tofino Recreation Centre will provide a much needed place to gather and recreate for the residents of Tofino. Project scope is to design and construct a new Indoor Recreation Centre for the District of Tofino. The scope was defined in a Request for Proposal’s document, issued by the district of Tofino in October 2018. In November 2018, Studio 531 Architects was engaged to provide architectural services project in collaboration with the rest of the project team (see below).

The Indoor Recreation Centre will provide a place for the residents of Tofino to use all-year, regardless of the weather. The Centre will be designed to support a variety of recreational needs that include sports, fitness and community events. Key aspects of the design are:

- Appx. 1200 m² gross floor area, and contain a gym, multi-purpose room and ancillary support spaces.
- Connection with the existing Community Centre, adjacent to the site.
- Construction budget of appx. 4.5m
- Universally accessible design
- Energy use that exceeds code minimum by 25%

ADDRESS

Street Address: 360 Arnet Road, Tofino, BC
SITE CHARACTERISTICS

The site for the new Indoor Recreation Centre is located adjacent to the existing Tofino Community Centre on Arnet Road. The site is appx. 500m south of downtown Tofino, and easily accessible via car, foot or bicycle. The site was cleared and partially blasted during the construction of the Tofino Community Centre and currently contains a road, parking area, bicycle track.

The terrain of the existing site is generally intact bedrock surrounded by mature native trees and shrubs.

In order to best locate the new building, a significant site preparation is required that includes additional blasting in order to achieve the desired building elevation and grades. The site concept is based on utilizing all of the blasted rock material on site for re-grading the new parking area, as well as for drainage and landscaping.

The site is within the coastal a temperate rainforest bioregion of British Columbia that is characterized by moderate temperatures, significant rain-fall and prevailing winds from the Pacific Ocean.
PLANNING AND BYLAW SUMMARY

Municipality: District of Tofino
Development Zone: P1
Within Sewer Zone: Yes

RELEVANT PERMITTED USES:
Civic uses;
1. Assembly use;
2. Accessory residential uses; and,
3. Accessory buildings and uses in accordance with Section 4.6.

<table>
<thead>
<tr>
<th></th>
<th>REQUIRED</th>
<th>PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot Area</td>
<td>TBD</td>
<td>668 m² (min)</td>
</tr>
<tr>
<td>Lot Width</td>
<td>irregular</td>
<td></td>
</tr>
<tr>
<td>Lot Depth</td>
<td>irregular</td>
<td></td>
</tr>
<tr>
<td>Lot Coverage</td>
<td>40% max</td>
<td></td>
</tr>
<tr>
<td>Open Site Space</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>Gross Floor Area (Bylaw)</td>
<td>Appx. 1250 m²</td>
<td></td>
</tr>
<tr>
<td>Maximum Height</td>
<td>10.4m (max)</td>
<td>13m</td>
</tr>
<tr>
<td>Setback - Front</td>
<td>7.5m</td>
<td></td>
</tr>
<tr>
<td>Setback - Side</td>
<td>1.5m</td>
<td></td>
</tr>
<tr>
<td>Setback - Rear</td>
<td>9m</td>
<td></td>
</tr>
<tr>
<td>Parking</td>
<td>One space per 4 seats</td>
<td>75 required based on 300</td>
</tr>
<tr>
<td>1% Accessible</td>
<td>3 provided</td>
<td></td>
</tr>
<tr>
<td>Loading</td>
<td>1 space per 1850 m²</td>
<td>1 provided</td>
</tr>
</tbody>
</table>

Other Relevant Provisions:

4.4.3. (d). Notwithstanding anything else contained in this bylaw, except where relief is granted by the Ministry of Environment, Lands and Parks, no building shall be constructed within 8 metres (26 feet) of the natural boundary of a lake or any other natural watercourse, fish bearing.

Parking Notes:

Parking Stall Size (perpendicular): 2.5m x 6m
Parking Stall Size (parallel): 2.5m x 7m
Accessible Stall Size: 3.66m x 6m
Aisle width (90 degrees): 7.5m

Loading Bay size: 3m x 9.25m
## PROJECT TEAM

<table>
<thead>
<tr>
<th>Client</th>
<th>Aaron Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Tofino</td>
<td>Manager of Community Sustainability</td>
</tr>
<tr>
<td></td>
<td>T: 250.725.3229, x701</td>
</tr>
<tr>
<td></td>
<td>E: <a href="mailto:arodgers@tofino.ca">arodgers@tofino.ca</a></td>
</tr>
</tbody>
</table>

| Architect +            | Jesse Garlick, architect AIBC, LEED AP Principal |
| Coordinating Registered Professional |                      |
| Studio 531 Architects Inc | Principal                  |
| Victoria, BC            | T 250.384.2131 | C 778.885.4066 |
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|                        | bob@propelloradvisors.ca |
2. PROJECT REQUIREMENTS

PROGRAM

The functional programing for this project has been developed over the past 5 years, and involved many community workshops and engagement sessions. Inform Planning, has been retained by the District of Tofino to develop a functional program that aligns with the project scope identified in this report. From November 2018 – January 2019, they have developed the following program that incorporates information collected during a community workshop session in Dec. 2018. Below is a summary of the functional areas, with optional elements shown in yellow. In addition to the area summary below, Inform has provided a complete list of other requirements that are too lengthy to include in this report. See Appendix E for a full description.

<table>
<thead>
<tr>
<th>Room</th>
<th>Width (m)</th>
<th>Depth (m)</th>
<th>Area (m²)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foyer</td>
<td>6</td>
<td>6</td>
<td>36 m²</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>3.6</td>
<td>2.5</td>
<td>9 m²</td>
<td></td>
</tr>
<tr>
<td>Concession</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Gymnasium</td>
<td>22</td>
<td>32</td>
<td>704 m²</td>
<td></td>
</tr>
<tr>
<td>Gym - Additional bay</td>
<td>22</td>
<td>4</td>
<td>88 m²</td>
<td>Optional</td>
</tr>
<tr>
<td>Gym Seating</td>
<td>4</td>
<td>32</td>
<td>128 m²</td>
<td>For 200 people</td>
</tr>
<tr>
<td>Gym Storage</td>
<td>3</td>
<td>6</td>
<td>18 m²</td>
<td></td>
</tr>
<tr>
<td>Multipurpose Storage</td>
<td>3</td>
<td>6</td>
<td>18 m²</td>
<td></td>
</tr>
<tr>
<td>Activity Room</td>
<td>9</td>
<td>8</td>
<td>72 m²</td>
<td>Optional</td>
</tr>
<tr>
<td>Fitness Room</td>
<td>12</td>
<td>4</td>
<td>48 m²</td>
<td>Optional</td>
</tr>
<tr>
<td>Washrooms</td>
<td>5</td>
<td>14</td>
<td>70 m²</td>
<td>12 stalls for 399 occupancy</td>
</tr>
<tr>
<td>Change Rooms</td>
<td>5</td>
<td>2</td>
<td>10 m²</td>
<td>No showers</td>
</tr>
<tr>
<td>Universal WC/Change</td>
<td>2</td>
<td>3</td>
<td>48 m²</td>
<td>2 stalls</td>
</tr>
<tr>
<td>Janitor Closet</td>
<td>2</td>
<td>2</td>
<td>4 m²</td>
<td></td>
</tr>
<tr>
<td>Water Entry Room</td>
<td>3.6</td>
<td>2.5</td>
<td>9 m²</td>
<td></td>
</tr>
<tr>
<td>Electrical Room</td>
<td>2.5</td>
<td>2.5</td>
<td>6.25 m²</td>
<td>Confirm requirements</td>
</tr>
<tr>
<td>Subtotal Net Area</td>
<td></td>
<td></td>
<td>1223.25 m²</td>
<td></td>
</tr>
<tr>
<td>Net to Gross (10%)</td>
<td></td>
<td></td>
<td>122.325 m²</td>
<td>Circulation + walls etc</td>
</tr>
<tr>
<td>TOTAL GROSS AREA:</td>
<td></td>
<td></td>
<td>1345.575 m²</td>
<td>Note area doesn’t include covered outdoor space</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1209.575  m²</td>
<td>Excluding Optional items</td>
</tr>
</tbody>
</table>
ENERGY PERFORMANCE

The District of Tofino has requested that the energy performance targets for the project exceed code minimums. The Request for Proposal states,

“The proposed Indoor Recreation Facility must be designed to meet or exceed any applicable energy efficiency standards for buildings outlined in the Pan-Canadian Framework on Clean Growth and Climate Change, and the energy efficiency requirements of the National Energy Code of Canada for Buildings 2015 by at least 25%...”

After reviewing both standards, above,

The Pan Canadian Framework (PCF) on Clean Growth and Climate change is an aspirational document that provides a high level overview of an approach. After review of the document, below are several items that apply to the design of this project:
- Implement policies and designs that reduce Greenhouse Gas (GHG) emissions significantly.
- Respect the rights of Indigenous Peoples and incorporate Traditional Knowledge into the project
- Transition to a low-carbon future
- Create resilient infrastructure that can withstand climatic changes

The National Energy Code for Canada, in contrast to the PCF document is a technical standard for building construction. The 2015 edition of the NECB is currently the highest published standard available that meets energy code requirements for this jurisdiction. After discussion with the client we determined that the project will be designed to exceed the NECB 2015 for overall Energy Use, by a minimum of 25%.

ACCESSIBILITY AND UNIVERSAL DESIGN

The District of Tofino has requested that facility be designed for a level of accessibility that exceeds code minimums. In particular that the building be designed to,

“...the highest published accessibility standard in this jurisdiction, defined as the requirements in the Canadian Standards Association Technical Standard Accessible Design for the Built Environment (CAN/CSA B651-12).

The highest published standard currently available is the CAN/CSA B651-18, published in 2018.

This document is quite new, and not many facilities have been constructed to meet this standard. In general a design that uses this standard takes more floor area than previous standards, in order to incorporate the larger room sizes and clearances. For example the 2018 edition of the BC Building Code is based on a wheelchair turning radius of 1500mm. The CAN/CSA B651-18 standard increases this to 1700mm.
EMERGENCY RESPONSE CENTRE

The adjacent Community Hall and Emergency Reception Centre and functions as a meeting place during emergency events. The facility has a generator and supplies to serve people who are displaced during an emergency event.

The new Indoor Recreation Centre is designed to support and expand this functionality, in particular, the new gymnasium provides additional spaces for people to shelter overnight.

The Indoor Recreation Centre design has the following requirements:

- Provide a facility design that is open, safe, barrier free and function as place for people to temporarily shelter overnight.
- Design the structure to a higher level of seismic safety – “high importance category” under the BC building code means that the structure has a higher chance of withstanding a seismic event, than a structure designed to minimum code compliance.
- Provide an area for the storage of emergency supplies. This could be a container located outside of the building.
- Provide a Standby Generator to supply basic lighting and ventilation during an emergency event.
- A loading bay for vehicle access to the back of the building.

At this point, the facility does NOT need to provide:

- A secondary drinking water supply. It is assumed that this will be handled separately using portable pumps into the local stream network.
- Functional washrooms, (and flush toilets) during an emergency event, where the municipal water supply is compromised.
- Emergency Generator - requires monthly testing and additional cost, not currently required.
3. DESIGN RESPONSE

DESIGN RATIONALE

The design for the Tofino Indoor Recreation Centre is intended to become a new hub for community activities within the region. The facility is designed around flexibility and creating synergies with existing community buildings including the adjacent Community Hall.

Site Design

- The existing site is lowered to create a floor elevation that allows a barrier-free connection to the existing community hall without the use of an elevator.
- A large flat portion to the east of the site is designed as a flexible space for community events and future expansion.
- A new fully accessible parking and drop-off area will be shared between the community hall and recreation centre.
- The sloped area connecting the two buildings is seen as a multi-functional plaza space that includes a kids play area, garden, and covered sitting spaces to encourage community interaction.
- A new trailhead for the Tonquin trail network is located at the front of the site. This new location provides better wayfinding and integrates the project into the natural surrounding.

Form and Character:

- The building massing is terraced in order to visually integrate with the existing topography, provide a human scale to the entry, and stepped to minimize shading on the north facing entry plaza.
- The shape of the gymnasium volume recalls the gabled roof forms of traditional architecture in the region.
- The building is wrapped with a low volume, with full-height glazing to reveal the activities within.
- The materials of the gymnasium are dark metal cladding, in order to blend with the surrounding forest. The lower volume is wrapped in local cedar cladding, and zinc metal panels. A solid timber roof and soffit is a strong visible element as the building is approached from below. This creates a warm inviting atmosphere, day and night.
- Curved “tree-like” columns made of cor-ten steel support a solid wood entry canopy link at the entry highlight the connection to nature.

Interior:

- The main foyer is a “living room” for the community, visible at the entry, providing soft seating and fireplace.
- The multi-purpose activity room, with its sprung floor, provides ample storage and is visible from the exterior.
- The gymnasium is designed as a large community hall. Finishes are solid wood, with integrated wood bleachers constructed that provides seating for 200. Carefully placed windows reveal the forest outside.
- A large hallway provides access to the change rooms, and easy wayfinding.
- The washrooms and change rooms are designed to connect to a future aquatic centre.
- Durable materials throughout reduce maintenance and operational costs.
OPTIONS

The project has designed with several optional elements that allow the scope to be tailored to the project budget.

OPTION 1) FITNESS AREA
   a) Add appx. 45m² (3m x 15m) to the north portion of the building to create a Fitness Room that meets the program requirements.
   b) The option requires reconfiguration of the adjacent Activity Room and Storage areas. See diagram.
   c) Finishes for flooring walls and lighting to match adjacent Activity Room.

OPTION 2) GYM ADDITION
   a) Add one structural bay (4m x 26m) to the south portion of the gymnasium, appx. 108 m².
   b) All finishes to be identical to Gymnasium.
   c) Bleacher area is not extended.

OPTION 3) ROOF UPGRADE
   a) Upgrade roof over the washroom area to accommodate a future floor. Note the future floor is NOT included in this option, simply the upgrade to make this possible.
   b) This option generally involves the addition of glu-laminated timber beams at 4m spacing. See structural design report.

OPTION 4) CONNECTING ROOF
   a) The design drawings include a covered roof structure that creates covered link between the existing Community Centre and the new facility.
   b) The structure is appx. 250 m² in area, constructed in 2 flat segments of Cross Laminated timber, and supported by 6 total “Y” shaped steel columns.

FUTURE EXPANSION

The design anticipates future expansion, and is configured so that an aquatic facility or other future use could be constructed adjacent on the site directly east of the building. The building services have been organized to make this possible with minimal disturbance to the existing building.

Also, there is an option to add a second floor above the washroom area, as described in Option 3 above. A second storey is allowed under the current building classification, however an elevator and 2 stairs would be necessary to meet accessibility and exiting requirements.
# Building Code Summary

<table>
<thead>
<tr>
<th>Code Standard</th>
<th>BCBC 2018 - Part 3</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Occupancy</td>
<td>A3 up to 2 Storeys, Sprinklered</td>
<td>3.2.2.31</td>
</tr>
<tr>
<td>Building Height:</td>
<td>13m proposed</td>
<td></td>
</tr>
<tr>
<td>Building Area:</td>
<td>1250m2</td>
<td></td>
</tr>
<tr>
<td>Construction Type:</td>
<td>non-combustible</td>
<td></td>
</tr>
<tr>
<td>Fire Protection:</td>
<td>Sprinklered</td>
<td></td>
</tr>
<tr>
<td>Roofs:</td>
<td>no rating required</td>
<td></td>
</tr>
<tr>
<td>Floors:</td>
<td>1 hour FRR</td>
<td></td>
</tr>
<tr>
<td>Exits:</td>
<td>1 hour FRR</td>
<td></td>
</tr>
<tr>
<td>Janitors Room</td>
<td>no rating required</td>
<td></td>
</tr>
<tr>
<td>Service Shafts</td>
<td>not applicable</td>
<td></td>
</tr>
</tbody>
</table>

Relevant code sections:

3.1.2.3 - “An arena-type building intended for occasional use for trade shows and similar exhibition purposes shall be classified as Group A, Division 3 occupancy.”
3.2.2.31 - Group A, Division 3, up to 2 stories Sprinklered
3.2.2.8 - Exceptions to Major Occupancies
3.3.1.4.3 - "If a storey is sprinklered throughout, no fire-resistance is required for a fire separation between a public corridor and the remainder of the storey...."
OCCUPANCY LOAD AND WASHROOMS

The occupant load below is calculated using the Functional Program areas.

<table>
<thead>
<tr>
<th>Room</th>
<th>Occupancy Area m²</th>
<th>Area per Person m²</th>
<th>Occupant Load</th>
<th>Functional Load**</th>
<th>Occupancy Classification (BCBC 2018)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gym Activity</td>
<td>720</td>
<td>.95</td>
<td>758</td>
<td>300</td>
<td>Exit widths calculated based on 758 occupant load.</td>
</tr>
<tr>
<td>Gym Seating</td>
<td>80</td>
<td>Fixed seats</td>
<td>200</td>
<td>200</td>
<td>Fixed Seats</td>
</tr>
<tr>
<td>Foyer</td>
<td>50</td>
<td>3.7</td>
<td>13</td>
<td>13</td>
<td>Used area for Classroom</td>
</tr>
<tr>
<td>Activity Room</td>
<td>72</td>
<td>1.85</td>
<td>38</td>
<td>38</td>
<td>Used area for Classroom</td>
</tr>
<tr>
<td>Office + Concession</td>
<td>26</td>
<td>9.3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WC</td>
<td>85</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Circulation</td>
<td>90</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Stor</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Mech/Elec</td>
<td>24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td>1103</td>
<td></td>
<td>1012</td>
<td>554</td>
<td>Building shall have a posted occupant load of 600 based on washroom count maximum.</td>
</tr>
</tbody>
</table>

* Table 3.1.17.1 of BCBC 2018
** The number of fixed seats in the waiting area TBD

Washroom Count:

The washroom count is based on a limited occupant load of 600 people. Based on discussions with the client this will serve most uses including bi-annual gatherings in the building.

<table>
<thead>
<tr>
<th>Occupants</th>
<th>Male WC</th>
<th>Male Lav</th>
<th>Female WC</th>
<th>Female Lav</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 or less</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>5</td>
<td>** design basis</td>
</tr>
<tr>
<td>1100 or less</td>
<td>7</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.7.2.2.-A of BCBC 2018
SUSTAINABILITY + ENERGY PERFORMANCE

As noted in the previous section, the building is design to exceed code minimums for energy performance and sustainability.

GHG EMISSIONS REDUCTION STRATEGIES:

1. Integrated solution for GHG emission reduction that combines reduced energy use and carbon neutral construction.
2. Building utilizes clean, non-GHG emitting energy sources (Electricity generated from hydro). no gas is used for heating.
3. Mass timber structure, appx. 500 m3 of wood, potentially offsetting 589 metric tons of carbon in the construction alone.
4. Integrated approach to transportation for large community events, the District of Tofino provides bus opportunities. The parking area is limited in size, with ample bicycle parking, that discourages automobile use.
5. 

SOCIAL SUSTAINABILITY STRATEGIES:

1. Building is located well above the tsunami hazard zone, with bedrock soils to reduce the risk of natural disaster impacts, contributes to infrastructure resiliency.
2. Designed as a mass-timber structure, that promotes the local, value-added wood economy. An industry that seen by most research as being an essential component for any low Carbon economy.
3. The building actively contributes to the health and wellness of the residents of Tofino by providing a place to exercise all year round in a healthy environment.

MECHANICAL DESIGN STRATEGIES:

1. The gymnasium will be served by a hybrid ventilation system, utilizing natural ventilation whenever possible, and an air-source heat pump with ventilation heat recovery when peak conditions demand.
2. The mechanical system will use a displacement ventilations strategy, promoting optimal air distribution and indoor air quality with lower overall air volumes and fan power.
3. Domestic hot water will be provided by a hybrid heat pump water heater. Lighting with be LED throughout.
4. A local building automation system (BAS) is proposed, to ensure HVAC systems operate as intended throughout all conditions

**Note that Phase 2 of the design process, will include a detailed energy model used to optimize the building systems to improve energy efficiency.
OUTLINE SPECIFICATIONS

1. **GENERAL**

1.1. **Building Code Compliance**
   1.1.1. All system shall comply with the BC Building Code 2018 Edition as well as the requirements of all authorities having jurisdiction.
   1.1.2. The building is designed as a “high importance” (not Post Disaster) category, for use as an emergency response centre.

1.2. **Sustainability**
   1.2.1. All materials, methods and building systems shall be selected, designed and performed to maximize sustainability of resources, to minimize carbon footprint, and to protect the air and water quality of the environment, both during construction and during operation of the completed building.

2. **SITE WORKS**

2.1. **Excavation & Backfilling**
   2.1.1. Blast rock as required to achieve the new finished floor elevation.
   2.1.2. Blasted rock to be processed on-site to achieve the civil specification for fill and free draining material required for building construction.
   2.1.3. It is assumed that no blasted rock will be removed from site and that all material will be used for completion of the site works.
   2.1.4. Excavate for required building foundations and footings as required.
   2.1.5. Excavate for underground services and building servicing as required.

2.2. **Parking and Roads**
   2.2.1. Construct new parking and roads, as shown in the Civil drawings.
   2.2.2. Lower parking area and access roads to be compacted gravel.
   2.2.3. New turn-around and drop off to be asphalt paving.
   2.2.4. Sidewalks and stairs to be placed concrete, with broom finish.
   2.2.5. Widen Arnet road as shown, to accommodate parallel parking on either side.

2.3. **Stormwater Management**
   2.3.1. Provide stormwater management plan and works during construction.
   2.3.2. Construct drainage swales as shown in Civil and Landscape plans.

2.4. **Servicing**
   2.4.1. Provide new underground water and sanitary service to the building.
   2.4.2. Electrical service to be via new overhead transmission lines on Arnet road, connecting to a new pad-mount transformer located on the south east corner of the building.
   2.4.3. Provide a standby generator. See elec.

2.5. **Concrete Steps and Paving**
   2.5.1. Provide cast-in-place concrete steps, paving and ramps as shown in drawings.
   2.5.2. Concrete to be broom finished, with saw-cut control joints at appx. 2400 o.c., or as shown on drawings.

2.6. **Perimeter drainage+path**
   2.6.1. Provide 600 wide strip, free-draining, clear-crushed rock around entire building perimeter, from grade to u/s of footing. Integrate with footing drain.
2.6.2. Provide 1200 wide compacted gravel path, adjacent to drainage strip, where shown on drawings. Separate from free-draining drainage strip with landscape fabric.

3. **FOUNDATIONS**

3.1. **Building foundations**
   3.1.1. Excavate, Backfill and compact for new reinforced concrete building foundations in accordance with Geotechnical report, and with structural drawings.
   3.1.2. Place reinforced concrete footings, foundation walls, floor slabs, all as structural drawings.

4. **STRUCTURE**

4.1. **Slab on Grade**
   4.1.1. All buildings constructed with concrete slab on grade
   4.1.2. Exposed roof/ceiling decking shall be of exposed heavy/mass Cross Laminated timber.

4.2. **Walls**
   4.2.1. Gymnasium walls to be cross laminated timber panels, supported by glu-lam members where shown.
   4.2.1.1. Walls to be shop fabricated for rapid assembly on site.
   4.2.2. Ancillary building walls to be light wood framing.

4.3. **Roof**
   4.3.1. Roof assemblies to be cross laminated timber panels, supported by glu-laminated timber members where shown.
   4.3.1.1. Roof Panels to be shop fabricated for rapid assembly on site.

4.4. **Gymnasium Frame**
   4.4.1. Gymnasium timber frame constructed of glu-laminated timber members with concealed connections.

4.5. **Covered stair and ramp**
   4.5.1. Constructed of cross laminated timber panels supported on steel columns and beams – see structural.
   4.5.2. Note: SEPARATE PRICE ITEM

4.6. **Metal Fabrications**
   4.6.1. Exterior Handrails
   4.6.1.1. Vertical Posts @ 1200 o.c. and horizontal handrail constructed of 12mm x 50mm steel bar, with galvanized finish.
   4.6.1.2. Custom exterior louvres
   4.6.1.2.1. To cover the natural ventilation dampers on both sides of the façade.
   4.6.1.2.2. Appx. area 30 m² on each side
   4.6.1.2.3. Fabricate from 6mm flat plate Cor-Ten weathering steel. Each fin 300mm wide, at 45 degree angle, as shown on drawings.

5. **BUILDING ENVELOPE**
5.1. **General**
5.1.1. All exterior walls shall be constructed as rainscreen assemblies.
5.1.2. All exterior wall assemblies shall comply with the current BC Building Code and ASHRAE requirements for vapour control, water infiltration, air infiltration and thermal performance.
5.1.3. Performance Requirements: Building to exceed NECB by 25% based on energy use.

5.2. **Aluminum Glazing**
5.2.1. High performance clear anodized aluminum curtain wall assembly having the following minimum characteristics:
5.2.2. High performance thermal transmission properties of frame and glazing assembly
5.2.3. Low-e coatings. VT 72%; HGC .41
5.2.4. Pressure-equalized rain screen system design for highest water and air penetration ratings.
5.2.5. Design Standard: Kawneer 1600 UT Wall system
5.2.6. Provide engineered drawings and field review of completed installation by engineer registered with the Engineers and Geoscientists of BC.

5.3. **Metal Cladding**
5.3.1. Where shown on the architectural drawings, exterior walls shall be clad prefinished metal cladding.
5.3.2. TYPE 1: Typical for Gym
   5.3.2.1. Profile to be custom bent shape, pre-fabricated into panels, appx. 300 wide, running the full height of the building.
   5.3.2.2. Fastened to “L” clips and horizontal “Z” girts fabricated from galvanized steel with spacing to suit.
   5.3.2.3. Fasteners are concealed by interlocking panel joints
   5.3.2.4. Panels shall be fabricated from 22 ga. AZM 150 Core PVDF Coated galvanized
   5.3.2.5. All hidden fasteners shall have DT2000 corrosion resistant coating or be stainless steel to suit engineering requirements.
   5.3.2.6. Design Standard: LKMe Products Ltd. #310 – 197 Forrester Street, North Vancouver, BC, www.lkme.com

5.3.3. TYPE 2: Accent Panel, for lower building
   5.3.3.1. Same as Type 1, except:
      5.3.3.1.1. horizontal custom profile.
      5.3.3.1.2. Material colour change
      5.3.3.1.3. Alternate backing system to suit horizontal configuration.

5.3.4. Provide engineered drawings and field review of completed installation by engineer registered with the Engineers and Geoscientists of BC.

5.4. **Wood Cladding**
5.4.1. Where shown on architectural drawings.
5.4.2. To be cedar wood boards, locally sourced, 25mm x 200 size
5.4.3. Rainscreen backing to be vertical wood boards with notched profile to create lapped configuration
5.4.4. Fasten with stainless steel screws

5.5. **Roofing and Flashing**
5.5.1. All roofing shall be to applicable RCABC installation standards.
5.5.2. All roofing shall be subject to RCABC roof inspection program.
5.5.3. All roofing to be 2 ply SBS asphaltic roofing system with sand-face cap sheet. Black colour.
5.5.4. Base sheet underlay to be high-density mineral fibre insulation board with bitumen cap sheet.
5.5.5. Provide Rigid Tapered Insulation package at 2% slope for flat roof areas. (structure is flat).
5.5.6. Rigid Insulation to be Expanded Polystyrene (EPS)
5.5.7. Supply and install all products and accessories required to complete the installation.

5.6. **INSULATION:**

5.6.1. Rigid insulation for Roof:
   5.6.1.1. Expanded Polystyrene (EPS), thickness as shown in drawings
   5.6.1.2. Tapered insulation package to be Expanded Polystyrene (EPS).
   5.6.1.3. Base sheet underlay to be high-density mineral fibre insulation board with bitumen cap sheet.
   5.6.1.4. See drawings/ assemblies for thickness

5.6.2. Rigid insulation for Walls:
   5.6.2.1. Medium Density Mineral Fibre insulation,
   5.6.2.1.1. Design Standard: Comfortboard by Roxul
   5.6.2.2. Install with galvanized “Z” girts to match insulation thickness.

5.6.3. Rigid insulation for Under Slab
   5.6.3.1. Extruded Polystyrene (XPS), thickness as shown in drawings/assemblies.

5.6.4. Cement Faced Rigid Insulation
   5.6.4.1. Pre-Finished Cement faced board, with tongue and grove profile
   5.6.4.2. Install on exposed concrete retaining wall, and continuous strip along foundation wall.
   5.6.4.3. Install per manufacturer’s recommendations with metal clips and accessories.
   5.6.4.4. Design Standard: CFI Wall panels by Tech Crete. Tech-crete.com

5.6.5. Batt insulation for Wood Framed Walls
   5.6.5.1. Mineral Fibre Batt insulation
   5.6.5.2. Fill stud cavity completely

5.7. **Fascia, and Flashing**

5.7.1. All roof flashings to be 24 ga. Prefinished steel. AZM 150 core PVDF Coated.
5.7.2. Fabricate aluminum break shapes and closure pieces of anodized aluminum, to match window frame, as detailed on the architectural drawings.

5.8. **Doors and Windows**

5.8.1. Exterior Entrance Doors within Vestibule and Curtainwall Framing: Heavy duty, high thermal and infiltration performance storefront aluminum and glass entrances meeting the applicable fenestration standards for the project region.
   5.8.1.1. Provide auto operator and card reader for access control.
5.8.2. Other exterior doors shall be exterior rated insulated metal doors with thermally broken pressed steel frames

6. **INTERIOR WORK**

6.1. **Partitions**
   6.1.1. Wood studs. See drawings and assemblies.

6.2. **Flooring**
6.2.1. Typical Flooring: Rubber Tiles
  6.2.1.1. 3mm rubber sheet tiles (aprx. 500x500) with solid colour and hammered surface
  6.2.1.2. Adhered to concrete slab.
  6.2.1.3. Design Standard: Norament Hammered by Nora.
  6.2.1.4. Wall base: Rubber, 100 high

6.2.2. Gymnasium: Hardwood athletic flooring, on sprung floor system.
  6.2.2.1. Hardwood flooring surface with painted lines for 4 different sport configurations.
  6.2.2.2. Engineered assembly by supplier including subfloor panels, and resilient layers.
  6.2.2.3. Design Standard: Bio-Cushion Classic by Robbins
  6.2.2.4. Provide metal grommets for volleyball, badminton and pickle-ball standards. 12 total.
  6.2.2.5. Wall base: Vent cove base by flooring manufacturer

6.2.3. Activity Room: Dance Vinyl floor, on sprung floor system.
  6.2.3.1. 2mm Vinyl Dance Floor
  6.2.3.2. Engineered assembly by supplier including subfloor panels and resilient layers.
  6.2.3.3. Design Standard: Arabesque by Rosco for floor covering, on Le Lena B subfloor system by Robbins
  6.2.3.4. Wall base: Vent cove base by flooring manufacturer

6.2.4. Change/Washrooms
  6.2.4.1. 2mm sheet rubber flooring
  6.2.4.2. Design Standard: Noraplan unita by Nora
  6.2.4.3. Wall base: Flash Cove

6.3. Wall finishes
  6.3.1. Hallways and public corridors:
    6.3.1.1. GWB, per wall schedule, with applied finishes for wall protection etc.
      Include:
      6.3.1.1.1. 10 panels, cold formed steel sheets, 3mm thick; 1500 x 2400
      6.3.1.1.2. 5 panels, homosote tack board, 12mm thick; 1200 x 2400
      6.3.1.1.3. 5 panels, 6mm mirror, 600 x 2400
      6.3.1.1.4. 5 panels, 6mm backpainted glass, white board surface, 600 x 2400

  6.3.2. Gym
    6.3.2.1. Exposed timber structure where shown on interior elevations, coated with 4 coats, acrylic-polyurethane coating
    6.3.2.2. Acoustic wall paneling where shown, above 4000 high, to be horizontal wood slats with acoustic backing:
      6.3.2.2.1. 30 x 30 wood boards @ 76 o.c. – clear finished
      6.3.2.2.2. 38 fiberglass batt insulation installed between vert wood boards @ 1200 o.c.
      6.3.2.2.3. Design Standard Geopanel grille by Geometrics.

  6.3.3. Activity Room
    6.3.3.1. GWB, per wall schedule with applied finishes for wall protection and display
6.3.3.1. Wall mirror, 2400h x 6000w

6.3.4. Service Rooms
6.3.4.1. 19mm Plywood paneling on all walls, to 2400h. Clear finish.

6.3.5. Washrooms + Change rooms:
6.3.5.1. Toilet areas finished with porcelain tile to 2150 high
6.3.5.1.1. Design Standard: Keystones by Daltile, 50mmx50mm
6.3.5.2. Change Areas
6.3.5.2.1. Finish with wood paneling, Douglas fir plywood, G1S, 19mm to 2150 high

6.3.6. Exposed Timber:
6.3.6.1. All interior exposed timber to receive one coat water based stain, and 2 coats water based acrylic/polyurethane top coat.

6.4. Interior Glazing:
6.4.1. Aluminum storefront windows, anodized finish, configuration as shown in drawings.
6.4.2. Glazing into gymnasium to be
6.4.2.1. 6mm tempered glass for all glazing above 1200h.
6.4.2.2. 6mm polycarbonate for all glazing below 1200h.
6.4.3. Glazed aluminum entry doors, as shown on drawings.
6.4.3.1. Include panic release hardware for doors into foyer

6.5. Suspended Ceilings
6.5.1. All suspended ceilings to applicable seismic suspension standard.
6.5.2. Drywall suspended ceilings and bulkheads where indicated.
6.5.3. Acoustic T bar ceiling system, where shown in drawings to be:
6.5.3.1. 600x600 grid
6.5.3.2. Panels to be high quality panel, tegular profile.
6.5.3.3. Design Standard: Optima mineral wool panels by Armstrong.

6.5.4. Custom wood ceiling in Foyer to be:
6.5.4.1. Wood slats, supported by wood substructure and acoustic fabric backing.
6.5.4.2. Blade size: 30mm x 30mm
6.5.4.3. Design Standard: Geopanel Grille by Geometriks

6.6. Doors and Hardware
6.6.1. All interior doors shall be either solid core wood, or hollow metal in pressed steel frames.
6.6.2. All interior doors in fire separations shall be rated hollow metal in pressed steel frames.
6.6.3. Door hardware shall meet accessibility standards, shall be medium duty institutional grade.

7. FINISHED CARPENTRY

7.1. General
7.1.1. All millwork shall be to AMAC custom grade, as architectural drawings.

7.2. Cabinetry
7.2.1. Materials shall include plywood counter cores. Plywood casework cores. Plastic laminate to all casework faces.
7.2.2. Counters:
7.2.2.1. WC: to be stainless steel with undermount stainless steel sinks
7.2.2.2. Other locations: plywood with plastic laminate surface and exposed plywood edge.
7.2.3. See Section 8, specialties and accessories for descriptions and locations.

8. **SPECIALTIES + ACCESSORIES**

8.1.1. **GYM**

8.1.1.1. Basketball hoops on adjustable, wall mounted frames. 2 total
8.1.1.2. Floor grommets to suit the sports configurations.
8.1.1.3. Custom Wood Bleachers and stairs with integrated displacement air distribution louvres.
  8.1.1.3.1. See drawings for size and configuration
  8.1.1.3.2. Bench constructed of engineered wood panels, 38mm thick. Clear wood finish
8.1.1.4. 120 total fabric wrapped foam cushions. 500x500x50
8.1.1.5. 4 projection screens, wall mount, motorized. 4000x3000 each.
8.1.1.6. Motorized roller shades, with .05% opacity, black colour, to cover all exterior windows.
8.1.1.7. **Divider Curtain**
  8.1.1.7.1. Size 18m x 7.5m
  8.1.1.7.2. Manual, walk-draw operation
  8.1.1.7.3. Vinyl mesh fabric
  8.1.1.7.4. Design standard: Walk-draw Gym Divider by draperinc.com

8.1.2. **ACTIVITY ROOM**

8.1.2.1. Wall mounted mirror, 6m x 2.5m
8.1.2.2. Wood Ballet bar, floor mounted, 6m long
8.1.2.3. Millwork including counter, sink and storage cabinets. 4m long

8.1.3. **FOYER**

8.1.3.1. Drinking fountain with integrated water bottle filling station.
8.1.3.2. LED flat panel display showing activities and District info
8.1.3.3. 1200 x 2400 tack board surface for community events and notices

8.1.4. **OFFICE**

8.1.4.1. Counter with transaction surface facing Foyer. 2400 wide, with lockable sliding panel.

8.1.5. **CONCESSION**

8.1.5.1. Counter with transaction surface facing Foyer. 2400 wide with lockable sliding panel.
8.1.5.2. Counter with double sink and upper/lower cabinets. 3000 wide

8.1.6. **WASHROOMS + CHANGE ROOMS**

8.1.6.1. Stainless steel counter and sinks as shown in drawings.
8.1.6.2. Hand dryers 1 per 3 lavatories
8.1.6.3. Wood bench and open cubbies, for change areas
8.1.6.4. Toilet partitions phenolic resin, 2400 high.
8.1.6.5. Provide washroom accessories including grab bars for Accessible toilets, toilet paper dispensers, soap dispensers and mirrors
8.1.6.6. Provide one water fountain/water bottle filling station outside of WC/Change room area.

8.2. **SIGNAGE:**

8.2.1. Building Signage:
8.2.1.1. 300h free standing letters reading “TOFINO RECREATION CENTRE”, laser cut from 6mm plate Corten (weathering) Steel. Mounted as individual letters to parapet of entry canopy as shown on drawings.

8.2.2. Interior Signage:
   8.2.2.1. Individual plaques mounted adjacent to each interior door indicating room number and name.
   8.2.2.1.1. Plaques to be fabricated from 3mm steel sheets, laser cut letters. Each panel size to be 100 mm x 400.
   8.2.2.1.1.2. Provide larger size panels 400mm x 2400mm for the following rooms:
       8.2.2.1.1.2.1. Each WC./Change room
       8.2.2.1.1.2.2. Multipurpose room

8.3. MECHANICAL SYSTEMS

   8.3.1. Provide full building mechanical system as mechanical engineering drawings, including:
   8.3.2. Provide an all new Heating and Ventilating system.
   8.3.3. Provide all new engineered fire sprinkler system to NFPA 13

9. ELECTRICAL SYSTEMS

   9.1.1. Install new electrical systems as electrical drawings

END OF OUTLINE SPECIFICATIONS
4. APPENDICES

APPENDIX A:  **DESIGN DRAWINGS (11X17)**  
STUDIO 531 ARCHITECTS (ARCH)  
MCELHANNEY CONSULTING (CIVIL)  
BIOPHILIA COLLECTIVE (LANDSCAPE)

APPENDIX B:  **STRUCTURAL REPORT**  
ASPECT STRUCTURAL ENGINEERS

APPENDIX C:  **MECHANICAL/ELECTRICAL REPORT**  
INTEGRAL GROUP

APPENDIX D:  **LANDSCAPE REPORT**  
BIOPHILIA COLLECTIVE

APPENDIX E:  **FUNCTIONAL PROGRAM**  
INFORM CONSULTING

APPENDIX F:  **GEOTEchnICAL REPORT**  
LEWKOWICH ENGINEERING