



Municipality of East Hants, Nova Scotia

## Functional Program and Fit Test for a new Aquatic Facility in East Hants

March, 2016



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## Part 1 – Planning Context

### 1.1 Introduction

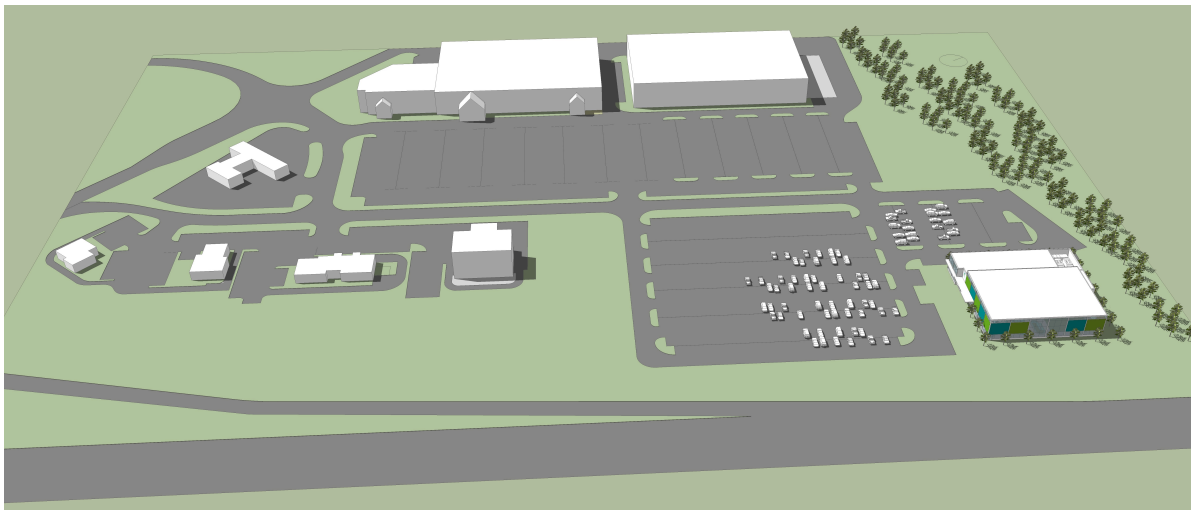
The Municipality of East Hants will be developing a new aquatic facility in the Elmsdale or 'corridor' area. Currently, the community operates a six-lane lap pool that is approaching the end of its service life as well as functionally inefficient (small and lacking modern amenities). As well, the current facility has about 45% cost recovery and a new facility would be expected to operate with a 65-70% cost recovery rate. This report examines the feasibility and options for a new replacement facility that could be completed within the next three to five years. The budget for the project has been defined as being between \$13 and \$17 million, all in. Program requirements have been determined by the Municipality and will include:

- Six-lane, 25-metre program or lap tank (no diving well)
- Leisure body of water with ramp access
- A lazy river resistance moving-water pool
- A hot pool with a capacity of between 15-20 persons and a sauna
- A waterslide
- Women's and men's change rooms
- Family or universal change room
- Reception, administration and lifeguards area, staff and building support spaces
- Multi-purpose room capable of holding up to 50 people, with storage
- Kitchenette adjacent to the multi-purpose room
- Public lobby and a pool viewing area
- Pool and building mechanical rooms

Parking will be shared with the shopping centre and is not part of the scope of this study.

### 1.2 Site

The footprint area allocated for the new Aquatic Centre described in the land lease agreement with the developer / land-owner will be in the order of 27,000 sf or 2,500 sm. The agreement letter with Choice Properties dated September 4, 2015 indicates lease footprint area dimensions of 200-feet or 61-metres x 135-feet or 41-metres. Parking would be shared with the shopping centre and would not be part of this project or project cost.



*Isometric view of site facing west, with pool building site located to the north (right) end of the site*

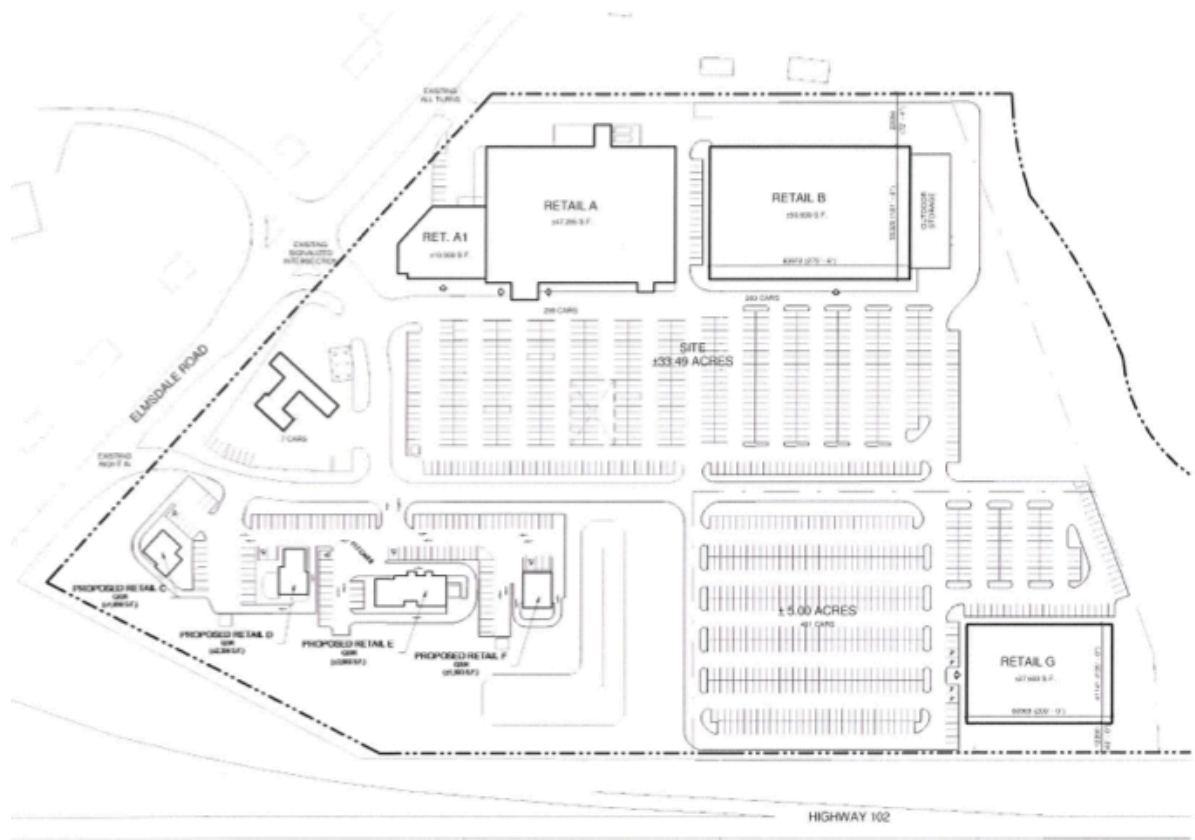
There is a 12.2-metre or 40-foot setback from the Highway 102 easement (bottom of above diagram) to the edge of the east edge of the site. A great advantage to the new aquatic centre will be it's easily identifiable location and high-visibility from the highway, especially after dark when the building would be illuminated.

The concept developed in section 3.1 of this report is slightly wider than the prescribed amount (46-metres or 150-feet), but the developer has indicated there was latitude for flexibility with dimensions. In any case the 2,500 sm area should be sufficient for the aquatic centre building. Stacking of the aquatic centre building will conserve site footprint area utilizing only about 22,500 sf and conserving 4,500 sf for hard and soft landscaping, and land for a possible future outdoor splash park and patio.

The Municipality is in receipt of a topographic or contour site map for the relatively level site. The grade drops outside of the pool footprint by about 6-metres into the drainage ditch and 4-metres to the south for a stormwater pond. North of the footprint area towards the river, the site rises by about 3-4 metres for a dyke.

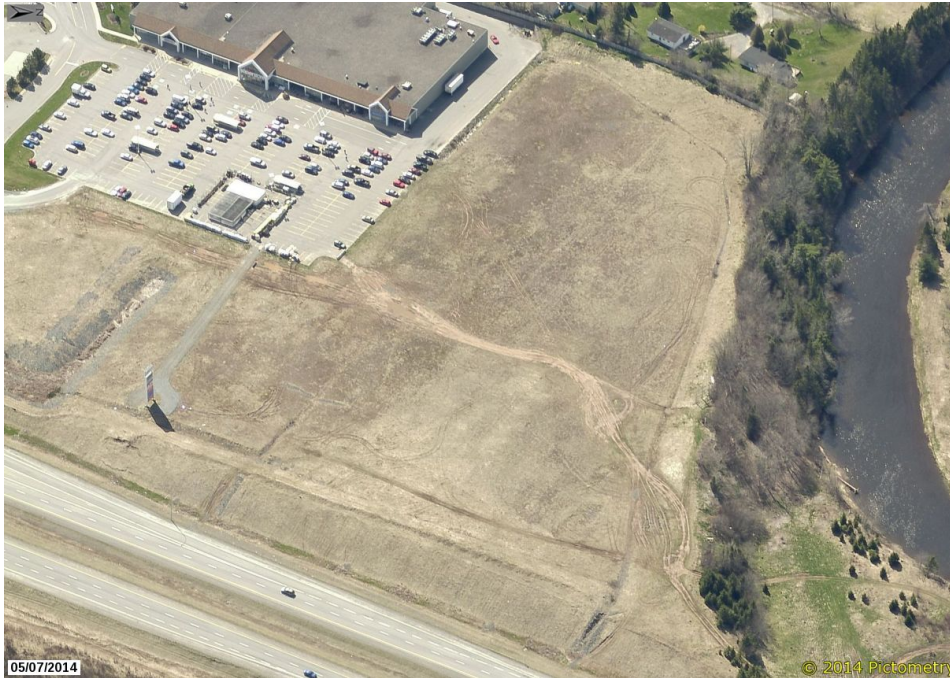
Access to the site from the highway will be via the off-ramps to Elmsdale Road and into the shopping centre entrance (left side of diagram as north is to the right). The new Aquatic Centre will be in the deepest and most remote part of the site. At times site traffic may be congested, likely only 4-6 PM weekdays and daytime on Saturdays. However, the benefits (including nominal cost of the land lease) of co-location outweigh the challenges. Pedestrian access would also be from Elmsdale Road. There is no local public transit in East Hants.

The Aquatic Centre will become an anchor for the shopping centre that when built out would include a second 'big box' retail, highway frontage restaurants and services



Site plan from developer with pool site shown as RETAIL G





*Aerial photograph of the partially developed site with the pool location in the foreground*

### 1.3 Operational Requirements

The East Hants Aquatic Centre will be a facility operated 7AM to 8-9PM, seven days per week, 50 weeks per year (closed for annual maintenance and for holidays). Translating population into demand is not a precise science, but estimating what a pool can offer in terms of time inventory and relating that to participation is. Most pools are operated with a prime-time schedule of 50 hours per week (approximately 4-9pm weekdays, 9am to 9pm weekends). Prime-time is usually allocated to swim lessons, swim clubs, and all-ages leisure play. Daytime use will also be significant at the new East Hants pool. Mornings in particular are and will continue to be busy times as well individual and club lane swim, adult aqua-fit and leisure use by parents with very young children.

The Heath Act would limit capacity of a 6-lane program tank and a roughly equal size leisure tank to a maximum of 400 occupants. A nominal prime-time load might see 30-40 swimmers in the lane pool (6 per lane) and 40-60 on the leisure side, plus 5-10 in the spa pool. This could translate into a peak demand of about 90-100 persons per hour prime time, or conservatively an average of 1,500 one-hour visits per week or 75,000 annual user visits. That would be equivalent to less than one visit per month for every household in East Hants, a realistically attainable utilization target given that some swimmers will use the facility almost daily and others sporadically. By comparison, the Truro aquatic centre also has about 75,000 annual user visits. Operating budgeting suggests this level of utilization at an average of \$5.50 per visit would yield over \$400,000 per year and about a 60% cost recovery (assuming costs in the \$650-700,000 range annually).

Lifeguarding will primarily be part-time staff, though there will be at least 1 FTE head lifeguard on staff. The current East Hants pool has up to 30 part-time lifeguards, a number expected to be the same (with more hours per person) or greater number of guards. Given the scale of the facility at least two lifeguards will be on duty during every operating hour. During peak periods when the number of swimmers approaches the bather load limit or when the waterslide is open there may be 1-3 more.

Office staff will include a full-time manager and a program manager as well as the equivalent of 2FTEs for one reception person for every operating hour and augmented with a second part-time person during peak

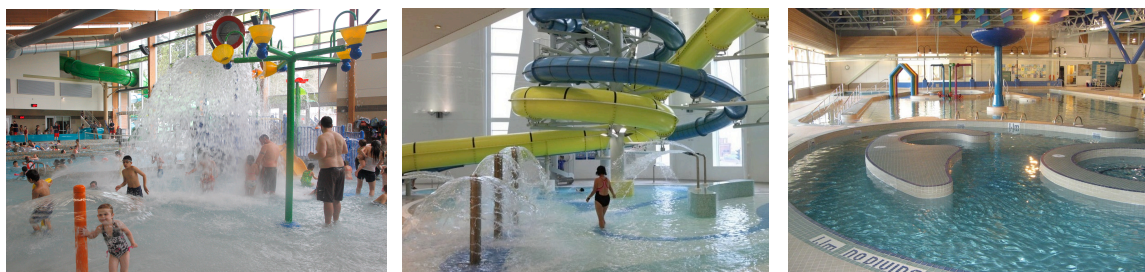
volume periods. The new facility will have at least dedicated full-time maintenance staff person augmented by part-time staff and contracted custodial and security.

#### 1.4 Overview of Consultation Input

Public engagement process was part of the process in determining the program needs for the new Aquatic Facility. An open house was held on February 18 and was attended by about 80 people, 60 that filled out comment sheets. In addition, an on-line survey gleaned about 500 responses. Input informed the facility program and has now framed the scope of the new aquatic facility. The design team will not need to revisit the fundamental choices made to date, and can focus now on developing the design and on the specific types of amenities to be included.

Overwhelmingly, the community welcomed the idea of incorporating a significant leisure water component in the new facility, rather than making the program pool larger than just replicating the six lanes found in the existing facility. Citing the need to create recreation and fun opportunities for families with young children, warm shallow play water with spray and splash features were overwhelmingly endorsed. Staff input suggested that leisure water with steps down and a ramp created more usable water than a zero-beach entry would. A waterslide and Lazy River were also identified as top priorities, especially since the water-in-motion could be used for therapeutic resistance-water walking by seniors. The height and complexity of the waterslide will be a function of budget and building clear height (though the tower itself can be made taller). As an aside, given the cost and proper size of tank required for a wave pool, that type of water feature was not opened up for consideration.

The majority of respondents that while the program pool serves a vital role for lane swim, swimming lessons, aquasize and swim club, this facility did not need to duplicate the sport-focused facilities in existence in the Halifax region. Consequently, additional lanes and a diving well in the main tank were removed from further consideration.



*Examples of types of spray and splash water features, a waterslide and a lazy river that were popularly received at the open house presentation*

The community was made to understand that the budget was finite and cannot be extended should pricing come in higher than anticipated. Recognizing that the program tank cannot be incrementally reduced in size, value engineering if necessary will need to occur on the leisure side. If necessary, attendees of the open house understood the scale of the leisure water may need to be reduced, as well as the size and complexity of the lazy river and the waterslide. The functional program is already as lean as possible, so circulation, support spaces, change rooms and mechanical spaces are not areas that can be reduced much more.

## Part 2 – Detailed Functional Program

### 2.1 Program Spacelist

**Table 1. Functional Program**

		Units	Unit SM	Net SM	Unit SF	Net SF	
<b>1.0 Natatorium (Total Bather Load: +/- 400)</b>							
1.1	Lap Pool 25m - 6-lane	1	385	385	4145	4145	
1.2	Leisure Pool with Ramp	1	195	195	2099	2099	
1.3	Lazy River Resistance Moving-Water Pool	1	130	130	1399	1399	
1.4	Spa Hot Pools (15-20 person capacity) with Ramp	1	40	40	431	431	
1.5	On-Deck Shower	1	1	1	11	11	
1.6	Waterslide Tower and Run-out	1	80	80	861	861	
1.7	Waterslide Flume (airspace over tanks and deck or outdoor)	1		0		0	
1.8	Sauna	1	10	10	108	108	
1.9	Parents Viewing Galllery (capacity 50)	1	40	40	431	431	
1.10	Pool Deck	1	475	475	5113	5113	
	<b>Sub-Total</b>			<b>1356</b>		<b>14597</b>	56%
<b>2.0 Facility Support Spaces</b>							
2.1	Lifeguarding Office	1	16	16	172	172	
2.2	Staff Unisex Change Room and Lockers	1	15	15	161	161	
2.3	First Aid Room	1	8	8	86	86	
2.4	Reception / Control Counter (2 staff workstations)	1	26	26	280	280	
2.5	Pool Manager and Programmer's Offices	2	9	18	97	194	
2.6	Copier / Storage Area	1	5	5	54	54	
2.7	Pool Storage	1	35	35	377	377	
2.8	Chemical Storage (with Pool Mech'l.)	1	8	8	86	86	
	<b>Sub-Total</b>			<b>131</b>		<b>1410</b>	5%
<b>3.0 Universal Change Rooms</b>							
3.1	Universal Change Dry Cubicles	12	2.6	31	28	336	
3.2	Common Gang Shower Area	1	15	15	161	161	
3.3	Full-Height Locker Columns and Aisle (54 locker columns)	54	1	54	11	581	
3.4	Disabled Change Cubicle and WC	1	5.5	6	59	59	
3.5	Vanity Stations	1	2	2	22	22	
3.6	Stroller / Wheelchair Area	1	2	2	22	22	
	<b>Sub-Total</b>			<b>110</b>		<b>1181</b>	5%
<b>4.0 Men's and Women's Locker Rooms</b>							
4.1	Women's Locker Room (84 columns, 150 lockers)	84	0.6	50	6.5	543	
4.2	Women's WCs, Showers, Vanities (6 of each)	18	2.9	52	31	562	
4.3	Men's Locker Room (84 columns, 150 lockers)	84	0.6	50	6.5	543	
4.4	Men's WCs, Showers, Vanities (6 of each)	18	2.9	52	31	562	
4.5	Custodial Closet	1	2	2	22	22	
	<b>Sub-Total</b>			<b>207</b>		<b>2231</b>	9%
<b>5.0 Multi-Purpose Space / Lounge</b>							
5.1	Multi-Purpose Room (seated capacity 75 or 40 banquet)	1	112	112	1206	1206	
5.2	Kitchen	1	20	20	215	215	
5.3	Multi-Purpose Rooms Storage	1	14	14	151	151	
				<b>146</b>		<b>1572</b>	6%
<b>Component Assigned Area Sub-Total</b>				<b>1950</b>		<b>20991</b>	
	Lobby and Circulation (excluding Pool Deck circulation)	1	155	155	1669	1669	6%
	Pool Mechanical Room	1	175	175	1884	1884	7%
	Pro-Rated Building Mechanical / Electrical 6%			117		1259	
	Pro-Rated Walls and Structure 2%			39		420	
<b>Building Gross Area Total</b>				<b>2436</b>		<b>26222</b>	
Net-to-Gross Ratio (pool deck area out and in)						<b>1.25</b>	1.65
Percentage Assignable (pool deck area out and in)						<b>80%</b>	61%

The facility program spacelist on the previous page identifies the functional components (groups by function or building shell-type) and individual assigned spaces (usable space within the walls of a room) to be accommodated in the new aquatic centre. The components include 1.0 Natatorium, the controlled environment of the pool tanks, wet floor area and high-humidity conditions. Other components include 2.0 facility Support Spaces that include staff areas and storage; 3.0 Universal or Family Change Rooms; 4.0 Men's and Women's Locker Rooms; and, 5.0 Multi-Purpose Space / Lounge.

The 1.0 Natatorium includes the large lane or program 'flat-water' rectangular tank and the irregular-shaped warmer-water leisure pool, connected to the lazy river. The decision has been made that there will be no diving well or springboards in the 25-metre, 6-lane lane tank. The tank bottom will be gently sloping from a depth at the shallow end of 1.0 metre, to a depth of 1.5-metres (approximately 1:40 slope). The leisure body of water will start at a depth of 0.6-metres to a depth of 1.0-metre, before sloping down to a 1.2-metre depth for the lazy river (to be re-confirmed with staff in the design phase). The natatorium also will include a partially recessed hot pool with ramp access and a waterslide (run will be a function of final building interior clear height or a decision to raise a small portion of the roof, and whether the run will be the preferred interior or less desirable on the exterior).

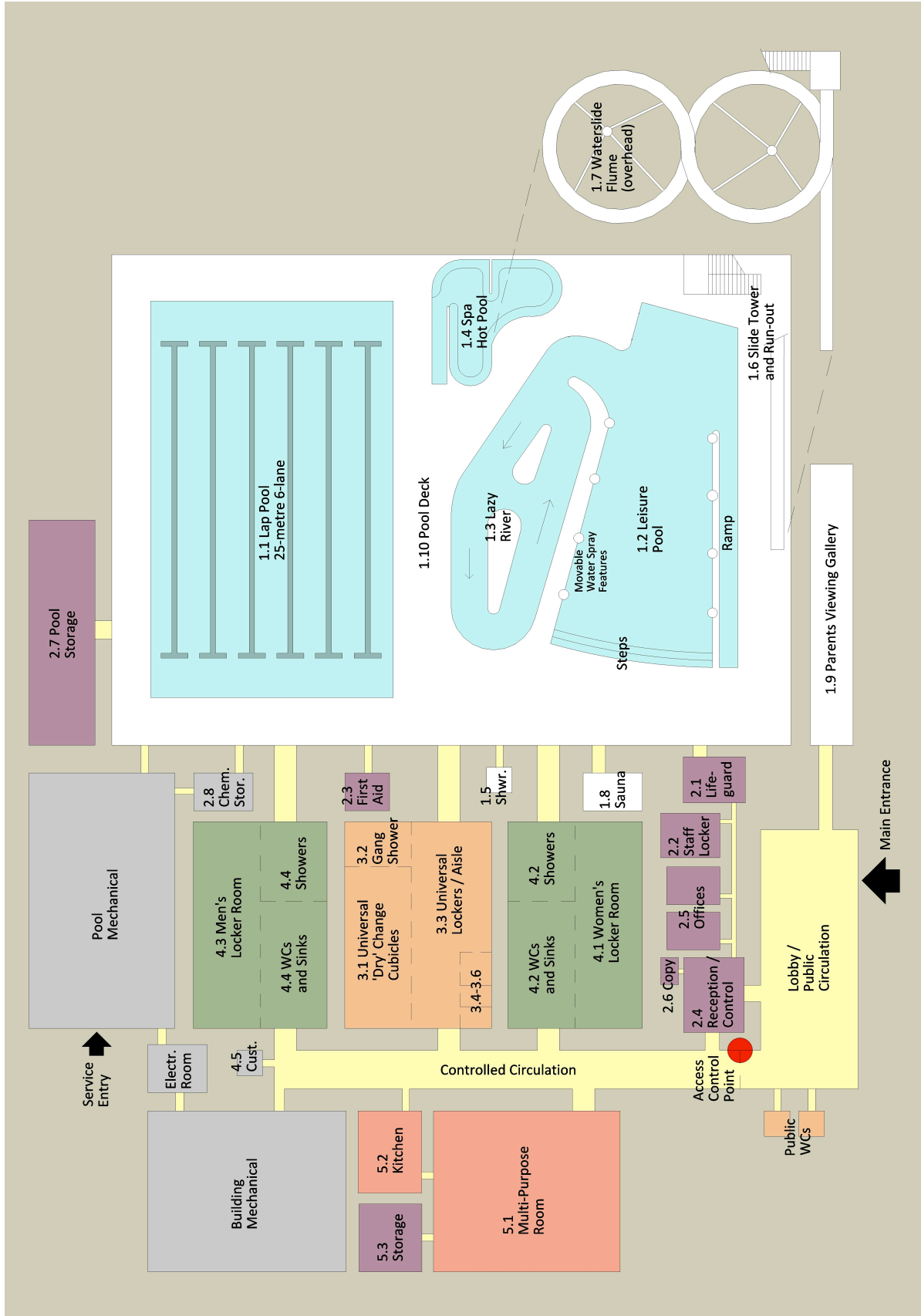
The program also includes staff and support areas, change rooms and multi-purpose space that can double as lounge space when not otherwise booked. Staff areas will include reception / control counter (with 2 workstations), lifeguard office, 2 enclosed offices and a staff change room with 2 showers and 1 toilet. Staff day-lockers lockers will be located in the change room for guards on shift, while all 30+ staff will have assigned small lockers (basket or 1/3-height lockers) to conserve space. User change rooms will be roughly 1/3 universal, 1/3 women's and 1/3 men's. This decision can be revisited during the design to decide whether to increase the universal / family change at the expense of the gender locker rooms. The universal change room will have a gang shower (bathing suits on) and 'dry' privacy change cubicles, while the gender locker rooms will have privacy shower stalls. Final washroom stall count will be a function of occupant (nominal) and bather load (swimmers per area) count. Maximum bather load will be in the order of 400 persons (based on 2.7sm / person in the lane pool and 1.0sm / person in the leisure pool). Nominal load will be the practical peak load and will be about ½ of the maximum.

All assigned areas are added to arrive at a Component Assigned Area Sub-Total. To this amount building system allowances (also called grossing factors) are added for circulation and lobby (with public washrooms), mechanical and electrical space, pool mechanical space and area for building walls and structure (columns, plenums). The combined total is the gross building area. The net-to-gross ratio is an industry standard expression of gross area over assigned area and 1:1.25 of is within the range common for recreation facilities (80% assigned area). Pools however have the added circulation of deck area that raise the actual ration to about 1:1.65 60% assigned area).

## 2.2 Functional Relationships Diagram and Pools Layout

The functional relationship diagram illustrates the relative scale of spaces as well as their functional relationship and proximity requirements to other spaces. The diagram also indicates what is public circulation and what is controlled or paid-admissions circulation. Some functions, such as the Multi-Purpose Room and Kitchen could be located on the controlled side, or the public side, depending on design.

The diagram also illustrates the recommended configuration for the natatorium tanks and features. The warm-water Leisure Tank should be closer to the main entrance and viewing area, as well as near the universal and women's change rooms for parents with young children (shallow water near the change room entrances being safer than deep water). The lane tank will be closer to the north end of the building where indirect day-light presents less risk of glare, though all water areas should be screened from direct sunlight falling on the water's surface. The waterslide tower and run-out will be inside the building but the run or flume will be above water and deck or outside the building.



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## 2.3 Technical Guidelines

### *Building Construction and Envelope*

The building structure and envelope present the dual challenge of the extreme climate conditions of Nova Scotia as well as the high performance interior environmental conditions required for an aquatic facility. Compromising either will result in a building with shortened building service life and increasingly higher maintenance costs over time. The building will likely be a concrete slab-on-grade foundation with a steel structure and a combination of composite wall panels and energy-efficient glazing.

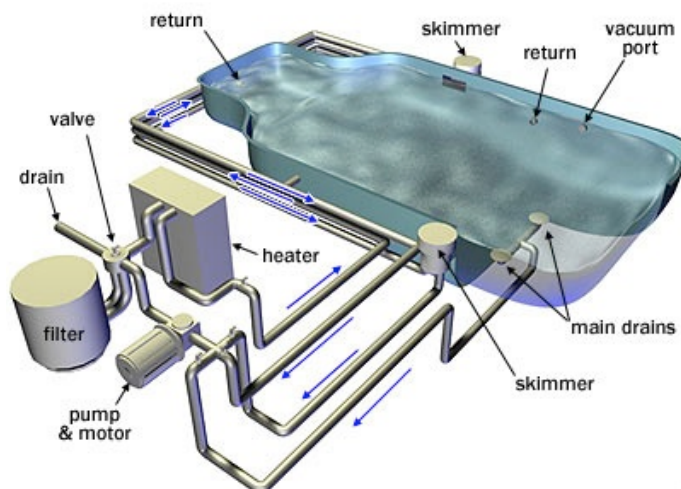
Foundation conditions for the pool tanks may be complicated by soils and groundwater unknowns. A raft slab may be required that would to the foundation cost. Geo-technical analysis of the site was being initiated as this study was being completed. The roof structure will likely be built-up roofing on insulated metal decking.

Wall panels will likely be the most economical solution budget permits such as composite insulated panels with metal or cost comparable cladding. Tilt-up construction was investigated and while more durable with low maintenance over the life of the building, the size of building isn't large enough to achieve the economies of scale resulting in a cost premium. Wood and brick are locally produced materials and while more aesthetically pleasing than metal and concrete, may be cost prohibitive. Wood and brick could however be used as highlights for interior feature walls and at the front entrance exterior.

Interior material connections, openings, fitting and equipment all need to be marine grade to prevent leakage, corrosion and mold from developing. Glazing being more expensive than solid walls will need to be used selectively and to maximum advantage. Day-lighting if glare is managed can reduce energy load. Glazing should be maximized on the north (river) and east (highway) walls. Day-light and view are vital for creating a sense of openness and connection to the outside and, essential to the bottom line: attracting visitors and consequently maximizing revenues. Interior floors (tile, lino or treated concrete) and walls (i.e. CMU) should be durable and easily washable.

### *Pool Mechanical Systems*

Pool fittings and equipment should all be marine grade and of good quality. PVC piping, painted steel and similar materials are not acceptable compromises and should be avoided. Tanks and deck areas should be tile and grout and not treated concrete. Steel-lined pool tanks (i.e. Mertha) would be an acceptable alternative to grout and tile, but is likely cost-prohibitive.



The pool tank retaining walls and floors should be poured-in-place concrete. Pool gutters handle supply and return (with skimmer) Options and costs should be investigated in the design stage but from a user and operator perspective, systems where the water line is flush with the deck (sloped or flat, but not rolled lip) are preferred over the above water-line overflow channel profiles or the step-down gutter profile. The flush profiles can also reduce the risk of injury. The client has expressed the desire for separate tanks for lane and leisure in order to operate at different temperatures, but also to prevent cross contamination (and avoid total shutdowns when contamination incidents occur).

The pool circulation system is composed of the tank, return, top up supply, skimmer primary sanitization, secondary sanitization, re-heating, testing and supply distribution. Ozone and ultraviolet light are the currently the preferred systems, most often with a chlorine back-up In many places chlorine is still required by Health Act). U/V can be used as a back-up system for ozone as well. Ozone and U/V are also popular for reducing chemical use and improving indoor air quality, thereby reducing HVAC energy consumption.

Chlorine or chlorine / bromine are seldom primary systems anymore due to toxic off-gassing and bather skin and eye irritation problems. Salt water while popular with bathers, requires more costly marine fittings and can aggressively corrode all other metals in the natatorium such as doors, trusses, window frames and ducting.

Pool pH range should be maintained in the 7.2 to 7.8 saturation index range. The higher the pH, chlorine effectiveness is reduced often resulting in increased use. Muriatic acid is the most popular system used to reduce the pH in the secondary treatment phase.

Pool filtration systems can be pressure-fed sand or diatomaceous earth (DE). Sand is more popular but has to be replaced every 5-7 years and can experience backwash issues if not carefully regulated. DE will trap finer contaminants but is banned in some places because filters must be emptied periodically discharging contaminants into the sanitary system.

### ***Building Mechanical Systems***

The building mechanical system can be manufactured rooftop HVAC units localized for support spaces and change rooms. A dedicated HVAC and dehumidification system will be required for the natatorium Systems will be designed to conform to ASHRAE 62 and local building code standards for ventilation, air change rates and exhaust air.

Poor water chemistry is the most significant source of indoor air pollution and corrosion problems in natatoriums. Depending the pool water sanitation system used, ventilation demands will be greater due to off-gassing systems like chlorine and bromine, though under-use of chlorine can result in algae and bacteria odours. Off-gassing chloramines will mix with moisture in the air to become corrosive.

Negative air pressure is desired in the natatorium but it should be noted that more exhaust air than recommended by ASHRAE will not stop moisture migration. Outdoor air should be preheated to 18-degrees Celcius and excessive intake of outdoor air should be avoided as it will add to heating costs and can cause further condensation.

All systems can be computerized to monitor conditions and react automatically. Fresh air intakes should be located away from airborne contaminants such as exhaust fans and stack vents as well as automobile exhaust. Recommended 6 air changes per hour, minimum 29.4 temperature and 45% humidity level. Heat recovery systems should be considered.

## 2.4 Building and Site Guidelines

### ***Building Massing and Orientation***

As mentioned previously in the site section, the building area will be about 26,200 sf on a site area defined as 27,000sf – roughly a 1:1 site density. Land should be reserved for hard and soft landscaping around the new building, as well as allow for the possibility of future pool outdoor compliments such as a splash park or a patio. Therefore, the stacking of low-ceiling, short span spaces on top of low-ceiling, short span spaces is encouraged to limit the building footprint and to create a more compact building massing.

In terms of orientation, the building entrance will be on the south elevation of the building, in closest proximity to parking. Glazing should be maximized on the east side (highway frontage) and on the north elevation (indirect day-lighting with no glare). Service entrance would logically be on the west side also fronting on to parking area.

### ***Access, Zoning and Controls***

The facility should be zoned into three distinct zones: public zone, paid-admission zone and staff zone. The public zone (lobby, pool viewing area) will be open to all members of the public including kids hanging out, seniors passing the time or students doing home-work as they wait for lessons or swim club after school. All residents will be welcomed. The paid-admission area will be a zone for swimmers of all ages and abilities. Staff areas are the front-of-house and back-of-house areas that make a facility work.

With single-point access control there is a single point of entry to the 'paid' area is essential allowing operations to limit staff at the front of house. Access control can be manual and/or by swipe card. Ideally, the single entry point should also have unobstructed line of sight to the locker room entrances for direct and passive supervision. The control point function is both to collect revenues and to ensure the safety of patrons.

### ***Flexibility and Adaptability***

All new facilities should be designed to consider the long-term possibilities of change. Recreation buildings, especially pools are a 30-50 year commitment and over time needs and user preferences will change. Some elements are fixed and cannot be altered like the number of lanes in a program pool. Leisure and play elements should be periodically refreshed and changed to keep things novel and attractive. The easiest way to change water features is to create a grid of piping under the slab and connection points at regular intervals along the water's edge. This allows pool spray and play features to be refreshed, relocated or replaced.

Overall, the building should be designed in a manner that would accommodate future contiguous expansion. This means undeveloped site area next to the natatorium to allow for more water, or footprint area next to support spaces to allow for addition (i.e. locker rooms). Additional multipurpose rooms may be built in the future as could functions such as fitness, childcare or other sport activity spaces. While the site may limit these types of additions, the building organization and zoning should be versatile enough for any possibilities.

### ***Quality of Environment***

The new East Hants Aquatic Centre will attract residents of all ages, physical abilities and interests. The common area and multi-purpose space will take on a particular significance as an important community social gathering place, and could in many ways become the place where all ages will feel welcomed, safe and engaged. The new aquatic centre should be open and inviting, warm and friendly to all users. Visitors should be able orient themselves and catch glimpses of activities into the natatorium or multi-purpose room and feel the sense of energy in the place. Daylight and views should connect the inside to the outside and vice versa. By design, the facility should promote participation and wellness - appealing on an emotional level and



demonstrating healthy living by example. Orientation and way finding should be clear and obvious, particularly considering the needs of the old adults and the physically disabled.

### ***Sustainability and Operational Efficiency***

A desirable outcome the new facility will be the minimizing of operating and maintenance costs. While the facility is not planned to be a LEED facility, common sense sustainable measures should be implemented including the use of day-lighting and light sensors to reduce energy consumption, and use low maintenance materials and finishes to reduce maintenance costs. The facility should be designed in a manner to avoid staffing duplication (i.e. blind spots in the control area or internal columns in the natatorium). To achieve an acceptable level of sustainability the facility should be designed to:

- Minimize energy required to heat, cool and light the facility
- Minimize the potential for vandalism and accelerated wear of finish materials
- Minimize the number of staff needed to supervise, operate and upkeep the facility

## **2.5 Room Data Sheets**

Room data sheets provide a reference for the design team and the cost consultant to quickly determine the basic and generic requirements for each individual space identified in the space program. Room data articulates critical dimensions, occupant load that determines scale, relationship to services and service loads, and they describe how and when users use the space and the demands they create on building systems.

Lastly, the room data sheets recommend interior finishing materials and describe the contents to be accommodated. These recommendations are intentionally non-specific, not defining specific products and applications as not to constrain the design team or burden the due diligence during the design process. The room data sheets start the conversation about choices, but it is not intended to close discourse or be prescriptive.

The intent is to create sufficient accuracy and detail that allows the design team to begin explorations and for the cost consultant to draw more specific comparisons into the unit costing, which is based on other similar-type buildings and indexed for location. It also allows the owners and operators to subjectively evaluate the room and its contents to ensure it meets their goals and needs.

The room data sheets on the following pages correspond with the numerical order of the Functional Spacelist in section 2.1.

**Room Number:**

1.1

**Space Name:**

**Lap Pool 25-metre 6-lane**  
Component: 1.0 Natatorium

**Function:**

FINA-standard six lane (15m width), 25-metre length swimming pool and an portable assist waterlift for disabled swimmers. Used for recreational lane swim, swim club, lessons and aquasize classes; 29.5 degrees C or as per facility operator preferences. The pool will NOT have a dive well but a gently sloped floor from 1-metre to 1.5 metre depth.

**Area (ASM):**

385 Assigned Square Metres (ASM)

**Occupant Load:**

Normal	36 (six per lane)
Maximum	130 by Health Act

**Proximity:**

Near change rooms, showers, visible from all lifeguard stations

**Operating Hours:**

Hours	Days, evenings
Days	Mo-Su

**Access Controls:**

Locking	n/a
Surveillance	Lifeguard office
Supervision	Lifeguarding staff

**Design Data:**

Clear Height	Minimum 5 metres
Clear Span	Entire pool
Floor Live Load	TBD by engineer
Layout Flexibility	Tank fixed
Critical Dimensions	15m x 25m

**Communications:**

Telephone	n/a
LAN/Wifi	n/a
Intercom / PA	In natatorium
Closed Circuit	Yes

**Power:**

Standard to Code	n/a
208/220V	n/a
Special	no

**Lighting:**

Ambient H/M/L	Min. 300 lux, non-glare overhead
Task H/M/L	Min. 300 lux overhead
Day-Lighting	Controlled for glare

**Climate Controls:**

Zonal	Yes
Spatial	n/a
Ventilation	High for dehumidification
6 air changes per hour, minimum 29.4 temperature and 45% humidity	

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction  
H/C H2O Yes  
Sump/Floor Drain Trench and drains  
Primary chemical treatment options consist of ozone with chlorine back up system and UV treatment. Vertical sand filters.

**Hazards / Contaminants:**

Personal safety, contaminants introduced by users, decontamination chemicals

**Acoustic Controls:**

Hard surfaces will result in high reflected sound –mitigated with acoustic ceiling / wall panels reducing reverb to 2-2.5 seconds.

**Materials and Finishes:**

Walls tank:	Ceramic-tiled and epoxy-grouted
Flooring tank:	Ceramic-tiled and epoxy-grouted
Built-ins	Lights, tiled lane lines, hand rails (stainless steel)

**Furnishings and Equipment:**

Pool markers and stanchions, lane ropes, nets, flags, pool ladders, lane starting plinths; pace clock, timing pads, portable climbing wall, jungle rope

**Sustainable Design Considerations:**

Heat recovery system / re-filtration system; less harmful pool chemicals; day-lighting in pool natatorium; recycled content in concrete; low VOC finishes; solar-heating of pool water if affordable

**Handicapped Accessibility:**

Portable or fixed handicapped waterlift or if affordable water-elevator lift to fully-submerged depth (see illustration)

**Special Requirements:**

None



*Portable disabled lift*



*Pool wheelchair lift (fixed)*



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Planning + Program Management

**Room Number:**

1.2

**Space Name:****Leisure Pool**

Component: 1.0 Natatorium

**Function:**

Shallow depth, irregular-shaped with warm-water, and play features; 32 to 34 C, 0.6-metre to 1.2 metre depth. Actual pool configuration should be developed with input from staff.

Water features should be flexible and adaptable to maintain the novelty factor, attracting bathers back. Plumbing should be on a fixed grid with multiple head locations.

To maximize water flexibility and programmability leisure pool should have steps in plus a ramp, as opposed to a zero-beach entry



*Kinetic water features on a fixed pipe grid allows elements to be moved around or replaced over time to maintain the novelty factor*



*Entrance combination of steps and ramp as opposed to zero-beach*

**Area (ASM):**

200 ASM

**Occupant Load:**

Normal	60
Maximum	200 by Health Act

**Proximity:**

Universal / family change rooms, locker rooms, washrooms; visible from lifeguard positions; physically separated from main tank by wide deck area (for safety of young children).

**Operating Hours:**

Hours	Days, evenings
Days	Mo-Su

**Access Controls:**

Locking	n/a
Surveillance	Lifeguard office
Supervision	Lifeguarding staff

**Design Data:**

Clear Height	Minimum 5-metres
Clear Span	Entire pool – columns should be avoided to avoid blind spots for lifeguards
Floor Live Load	n/a
Layout Flexibility	none
Critical Dimensions	TBD

**Communications:**

Telephone	n/a
LAN	n/a
Intercom / PA	n/a
Closed Circuit	no

**Power:**

Standard to Code	n/a
208/220V	n/a
Special	no

**Lighting:**

Ambient H/M/L	High
Task H/M/L	High
Day-Lighting	Controlled

**Climate Controls:**

Zonal	Yes
Spatial	n/a
Ventilation	High with dehumidification

6 air changes per hour, minimum 32 degree temperature and 45% humidity

**Plumbing:**

Note: Sprinklers throughout complex –  
all non-combustible construction  
H/C H2O Yes  
Sump/Floor Drain Trench and drains on all  
sides of pools

**Hazards / Contaminants:**

Personal safety, contaminants introduced  
by users, decontamination chemicals

**Acoustic Controls:**

Hard surfaces will result in high  
reflected sound – should be mitigated  
with acoustic ceiling and wall panels to  
reduce sound to 2 to 2.5 second reverb

**Materials and Finishes:**

Walls tank:	Ceramic tiled, epoxy grout
Flooring tank:	Ceramic tiled, epoxy grout
Built-ins	Lights, hand rails (stainless steel), spray toys designed to be moved around periodically or replaced

**Furnishings and Equipment:**

Flutterboards, inflatables, toys

**Sustainable Design Considerations:**

Heat recovery system / re-filtration system;  
use of less environmentally harmful pool  
chemicals; day lighting in pool; solar  
augmenting heating pool water

**Handicapped Accessibility:**

Ramp and gently sloping floor, handrails at  
stairs, grab bars

**Special Requirements:**

Warmer water than lane tank; sightlines  
should ensure supervision between tanks  
for lifeguards; anchors, nozzles and jets  
with shut-offs be flush-mounted and  
tamper proof; back-up UV treatment  
system to assist primary system; pool water  
return system perimeter gutters, scum  
channels or skimmers. Each feature if a  
spray component should have built in shut  
off points to prevent spraying lifeguards  
and others. Features should be individually  
controlled and activated at main lifeguard  
station. Depth Markers and 'No Diving'  
signage.

**Room Number:**

1.3

**Space Name:**

**Lazy River Resistance Moving Water Pool**  
 Component: 1.0 Natatorium

**Function:**

A Lazy River is a moving-water feature contiguous with and accessed from the Leisure Pool. Lazy Rivers typically have a depth of 1.0 to 1.3-metre depth with jets on the side walls that propel the water continuously in one direction. Lazy Rivers have a high play value with children and youth as well as a practical application for resistance water-walking therapy for older adults. Depending on width, inflatable inner tubes can be floated on current.



*A typical Lazy River pool with a still eddy in the middle*



*Resistance water-walking*

**Area (ASM):**

130 ASM: assuming width of 2.5-metres,  
 length of circuit would be about 50-metres,  
 3-metre width would be 40-metre circuit.

**Occupant Load:**

Normal	20
Maximum	40

**Proximity:**

Contiguous with Leisure Pool, near  
 waterslide, near locker rooms

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	n/a
Surveillance	n/a
Supervision	Lifeguarding staff

**Design Data:**

Clear Height	5-metre
Clear Span	Yes
Floor Live Load	n/a
Layout Flexibility	none
Critical Dimensions	7-10 metre minimum width

**Communications:**

Telephone	n/a
LAN	n/a
Intercom / PA	n/a
Closed Circuit	no

**Power:**

Standard to Code	n/a
208/220V	n/a
Special	no

**Lighting:**

Ambient H/M/L	High
Task H/M/L	High
Day-Lighting	Controlled

**Climate Controls:**

Zonal	Yes
Spatial	n/a
Ventilation	High with dehumidification

**Plumbing:**

H/C H2O	Yes
Sump/Floor Drain	Trench and drains as per manufacturer specifications

**Hazards / Contaminants:**

Personal safety, contaminants introduced by users, decontamination chemicals

**Acoustic Controls:**

Hard surfaces will result in high reflected sound

**Materials and Finishes:**

Walls tank:	Ceramic tiled, epoxy grout
Flooring tank:	Ceramic tiled, epoxy grout
Built-ins	Optional seated eddy area for user relief or rest if needed

**Furnishings and Equipment:**

None

**Sustainable Design Considerations:**

Heat recovery system / re-filtration system; use of less environmentally harmful pool chemicals; day lighting in pool; solar heating pool water

**Handicapped Accessibility:**

Pool accessible via Leisure Pool ramp

**Special Requirements:**

Warmer water; sightlines and glare control important for safety given movement on water surface; nozzles and jets with shut-offs be flush-mounted and tamper proof; Lazy River should be controlled and activated at main lifeguard station. Depth Markers, "No Diving."



**Room Number:**

1.4

**Space Name:****Spa Hot Pool**

Component: 1.0 Natatorium

**Function:**

Hot pool for 15-20 adults with wheelchair ramp access. A whirlpool of this scale could be zoned into two separate but connected pools operating at two different temperatures. Tank could be partially above floor grade to reduce ramp run.

**Area (ASM):**

40 ASM

**Occupant Load:**

Normal	10
Maximum	20

**Proximity:**

Change rooms, sightlines for parents to supervise children in other pool tanks

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	n/a
Surveillance	CCTV
Supervision	Pool staff

**Design Data:**

Clear Height	n/a
Clear Span	Yes for supervision
Floor Live Load	n/a
Layout Flexibility	None
Critical Dimensions	Ramp 1:12 slope

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	No
Closed Circuit	CCTV

**Power:**

Standard to Code	As per manufacturer
208/220V	Pumps
Special	Yes

**Lighting:**

Ambient H/M/L	Medium to low
Task H/M/L	n/a
Day-Lighting	Controlled, view

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High due to humidity

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction

H/C H2O	Yes
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Personal safety, contaminants introduced by users, decontamination chemicals

**Acoustic Controls:**

Acoustic ceiling and wall panels to reduce reverb to 2-2.5 seconds

**Materials and Finishes:**

Walls tank	Ceramic tile, epoxy grout
Glazing	n/a
Ceilings	n/a
Flooring tank	Ceramic tile, epoxy grout
Built-ins	Handrails and guards (stainless steel)

**Furnishings and Equipment:**

n/a

**Sustainable Design Considerations:**

Heat recovery system / re-filtration system; use of less environmentally harmful pool chemicals; daylighting in pool natatorium; solar heating of pool water

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including wheelchair turning radius and 1:12 underwater ramp

**Special Requirements:**

Hot water 40 degrees Celcius; sightlines allowing parents to supervise older children in other tanks; railings on ramp should be barrier free; required back-up UV treatment system to assist primary system; Pool water return system perimeter gutters, scum channels or skimmers; ramp 1:12 as per code.



**Room Number:**

1.5

**Space Name:****On-Deck Shower**

Component: 1.0 Natatorium

**Function:**

Open shower with push-button timer area on deck for washing when going between tanks or to warm or cool down.

**Area (ASM):**

1 ASM

**Occupant Load:**

Normal 1

Maximum 1

**Proximity:**

Pool deck, pool tanks

**Operating Hours:**

Hours Days, evenings

Days Mo-Su

**Access Controls:**

Locking No

Surveillance passive

Supervision pool staff

**Design Data:**

Clear Height Standard

Clear Span Yes

Floor Live Load Standard

Layout Flexibility None

Critical Dimensions None

**Communications:**

Telephone No

LAN No

Intercom / PA No

Closed Circuit No

**Power:**

Standard to Code n/a

208/220V n/a

Special n/a

**Lighting:**

Ambient H/M/L Medium

Task H/M/L No

Day-Lighting n/a

**Climate Controls:**

Zonal No

Spatial Yes

Ventilation High

**Plumbing:**

H/C H2O Yes

Sump/Floor Drain Yes

**Hazards / Contaminants:**

Slipping on floor.

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls Tile unglazed, epoxy grout

Glazing n/a

Ceilings Open

Flooring Tiling, unglazed, non-slip, easily disinfected, epoxy grout.

Built-ins n/a

**Furnishings and Equipment:**

None

**Sustainable Design Considerations:**

Solar heated shower water

**Handicapped Accessibility:**

No impediments to use

**Special Requirements:**

None

**Room Number:**

1.6 and 1.7

**Space Name:**

**Waterslide Tower and Run-out,  
Waterslide Flume**

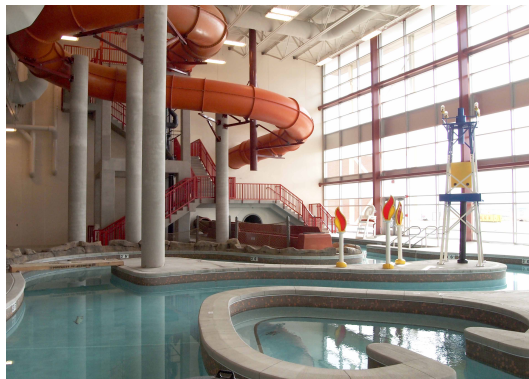
Component: 1.0 Natatorium

**Function:**

Waterslide tower ideally 6-metres to 9-metres in platform height (tower may be part of a raised section of the natatorium roof or in the roof structure for added height). Water will be continuously pumped up to the tower platform and into the tube. Tube may be open or enclosed or a combination depending on design. Standards in Nova Scotia now require the waterslide run to terminate in its own flume rather than dumping into a pool (for injury prevention and cross-contamination).

Area allocated for this function (1.6) is for tower and flume only as for efficiency and economy the flume should be above pools and deck or on the outside of the building (requiring no expensive enclosed space). Tower is a compact stairwell, deceleration flume should be 12-15 metres.

In general terms, waterslides function with an incline of between 12-15 %, sometime less or greater. This means for every 1-metre of vertical there will be 7-8 metres of run. Travelling at about 5-metres per second, a run lasts about 10-15 seconds with the deceleration. Most recreation centre waterslides can accommodate 180 runs per hour.

*Waterslide supported by column and ceiling*

Indoor and outdoor waterslide flumes will require a structural tree with arms to support the curved tubing. Occasionally indoor slides can be supported from the

*Waterslide supported from roof**Exterior flume waterslide**Exterior flume with custom insulated jacket in Fort St. John BC*

walls or ceiling. In extreme weather locations, outdoor flumes can be enclosed in an insulated jacket.

**Area (ASM):**

80 ASM

**Occupant Load:**

Normal	1 plus lifeguard
Maximum	Queue on stairs of 20

**Proximity:**

Pool deck, change rooms, on-deck shower, hot pool, other pools

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Planning + Program Management

**Operating Hours:**

Hours	Restricted to when lifeguards on duty
Days	Mo-Su

**Access Controls:**

Locking	n/a
Surveillance	CCTV
Supervision	Lifeguards

**Design Data:**

Clear Height	Ideally 8-11-metre
Clear Span	Yes
Floor Live Load	Standard
Layout Flexibility	None
Critical Dimensions	None

**Communications:**

Telephone	No
LAN	No
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	n/a
208/220V	n/a
Special	Pump

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	No
Day-Lighting	Borrowed

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High

**Plumbing:**

H/C H2O	Yes
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Risk of injury minimal

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls	Durable panel
Glazing	Yes
Ceilings	Open
Flooring	Tiling, unglazed, non-slip, easily disinfected, epoxy grout.

Built-ins

Stair tower with platform; pre-manufactured waterslide unit

**Furnishings and Equipment:**

n/a

**Sustainable Design Considerations:**

n/a

**Handicapped Accessibility:**

Not handicapped accessible

**Special Requirements:**

None

**Room Number:**

1.8

**Space Name:**

Sauna

Component: 1.0 Natatorium

**Function:**

Electric sauna with wood stepped plinths for seating.

**Area (ASM):**

10 ASM

**Occupant Load:**

Normal 3

Maximum 6

**Proximity:**

Pool deck, change rooms, on-deck shower, hotpool, drinking fountain

**Operating Hours:**

Hours Days, evenings

Days Mo-Su

**Access Controls:**

Locking No

Surveillance Passive

Supervision Pool staff

**Design Data:**

Clear Height Standard

Clear Span No

Floor Live Load n/a

Layout Flexibility None

Critical Dimensions None

**Communications:**

Telephone No

LAN No

Intercom / PA No

Closed Circuit No

**Power:**Standard to Code Yes  
208/220V Sauna heater unit, push  
button timer required

Special n/a

**Lighting:**

Ambient H/M/L Low

Task H/M/L No

Day-Lighting None

Vapour-proof lighting

**Climate Controls:**

Zonal No

Spatial Yes

Ventilation High

**Plumbing:**

H/C H2O Yes

Sump/Floor Drain Yes

**Hazards / Contaminants:**

Slipping on flooring, excessive exposure to heat

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls Cedar over waterproof cement board

Glazing n/a

Ceilings Cedar over waterproof cement board

Flooring Cedar over waterproof cement board on slab

Built-ins Raised plinths for seating

Door: Cedar planks with small window or all glass

**Furnishings and Equipment:**

Visual and tactile clues for visually impaired

**Sustainable Design Considerations:**

Heat recovery system

**Handicapped Accessibility:**

n/a

**Special Requirements:**

Two tier risers, drinking fountain in close proximity, heater and thermostat in Sauna space.

**Room Number:**

1.9

**Space Name:****Parents Viewing Gallery**

Component: 1.0 Natatorium

**Function:**

Space for family members to wait who are not participating in programs and activities such as lessons or swim club. Parents viewing gallery would be on the second level if the building has developed space above change rooms. Viewing area would be near the front entrance and lobby for a one-level building. Gallery would have bench seating or loose furnishings. Ideally, parents area should be somewhat removed from the participants but with clear line of sight.

**Area (ASM):**

40 ASM

**Occupant Load:**

Normal	20
Maximum	50

**Proximity:**

Entrance, exits, washrooms, line of sight to main program lane tank and to leisure pool

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Yes
Surveillance	CCTV
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Ideally, columns acceptable
Floor Live Load	Standard
Layout Flexibility	No
Critical Dimensions	Raked seating, rises and run to confirm to code

**Communications:**

Telephone	No
LAN/Wifi	Wifi
Intercom / PA	Yes
Closed Circuit	No

**Power:**

Standard to Code	Standard
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	Dimmer; high
Task H/M/L	n/a
Day-Lighting	No or controlled

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High due to rising heat and humidity

**Plumbing:**

H/C H2O	Water fountain
Sump/Floor Drain	No

**Hazards / Contaminants:**

Personal injury

**Acoustic Controls:**

High control due to amplified voice, music, sport whistles

**Materials and Finishes:**

Walls	CMU
Glazing	n/a
Ceilings	Open
Flooring	Treated concrete
Built-ins	Bench-type seats, safety railings

**Furnishings and Equipment:**

Optional loose seating; garbage and recycling bins

**Sustainable Design Considerations:**

Daylighting if controlled to prevent glare on water surface

**Handicapped Accessibility:**

Design should meet and exceed building code requirements, elevator required if seating on upper level

**Special Requirements:**

A portion of the gallery may be seconded as press / officials boxes during swim competitive events

**Room Number:****1.10****Space Name:****Pool Deck Area**

Component: 1.0 Natatorium

**Function:**

Perimeter deck area surrounding pool tanks on all sides varying in width from 2.5-4 metres, with an average deck width of 3m. Used for natatorium circulation, marshalling area for learn to swim or swim meets, life-guarding and life guard stations.

**Area (ASM):**

475 ASM

**Occupant Load:**

Normal	20-40
Maximum	400 total bather load

**Proximity:**

Pool tanks, change rooms, staff areas and storage

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Natatorium secured
Surveillance	Closed circuit
Supervision	Lifeguarding staff

**Design Data:**

Clear Height	Minimum 6-8 metres
Clear Span	Over all tanks and decks
Floor Live Load	Normal
Layout Flexibility	Medium
Critical Dimensions	2.5-4m width, 3m average

**Communications:**

Telephone	Emergency
LAN/Wifi	For swim meets
Intercom / PA	Loudspeakers
Closed Circuit	Cameras

**Power:**

Standard to Code	Standard
208/220V	No
Special	GCFI
Deck wired for operator plug-ins	

**Lighting:**

Ambient H/M/L	High
Task H/M/L	High

**Day-Lighting**

Controlled to prevent glare on water surfaces, underwater lights

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High due to humidity
6 air changes per hour, minimum 29.4 temperature and 45% humidity	

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction

H/C H2O	Water fountain and bottle filler, hose bib on deck
Sump/Floor Drain	Tank perimeter drains, floor slopes to drains

**Hazards / Contaminants:**

Slipping hazard; hazards for visually impaired, small children or elderly

**Acoustic Controls:**

Hard surfaces will result in high reflected sound – should be mitigated with acoustic ceiling and wall panels; 2-2.5 seconds reverb

**Materials and Finishes:**

Walls	Washable panels
Glazing	To full-height
Ceilings	Moisture-proof
Flooring	No-slip tile
Built-ins	Water fountain, curbs and railings for safety as required

**Furnishings and Equipment:**

Rescue equipment, lifeguard chair (portable), time clock.

**Sustainable Design Considerations:**

n/a

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including levered hardware, ramped level changes and wheelchair turning radius

**Special Requirements:**

Direct ambulance access from exterior to pool deck.

**Room Number:**

2.1

**Space Name:****Lifeguarding Office**

Component: 2.0 Facility Support Spaces

**Function:**

Work area for pool staff with windows and views to all deck areas and other lifeguards; central location for pool controls, lighting, water features, sound system, emergency controls, and CCTV.

**Area (ASM):**

16 ASM

**Occupant Load:**

Normal	1
Maximum	3

**Proximity:**

Pool decks and tanks, administration offices, locker rooms

**Operating Hours:**

Hours	Days, evenings
Days	Mo-Su

**Access Controls:**

Locking	Card access
Surveillance	n/a
Supervision	From Admin.

**Design Data:**

Clear Height	Office standard
Clear Span	n/a
Floor Live Load	n/a
Layout Flexibility	n/a
Critical Dimensions	none

**Communications:**

Telephone	Yes
LAN/Wifi	Both
Intercom / PA	Yes
Closed Circuit	Monitors

**Power:**

Standard to Code	Yes
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	High
Day-Lighting	n/a

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction

H/C H2O	n/a
Sump/Floor Drain	No

**Hazards / Contaminants:**

Slipping on floor (water hazard)

**Acoustic Controls:**

Privacy for work area

**Materials and Finishes:**

Walls	Washable
Glazing	Desk height
Ceilings	Drywall
Flooring	Non-slip resilient or tile
Built-ins	Counter millwork

**Furnishings and Equipment:**

Chairs, 36 staff lockers (1/3 height), coffee station

**Sustainable Design Considerations:**

Borrowed daylight if possible

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including levered hardware, level changes and wheelchair turning radius

**Special Requirements:**

Controls for underwater and overhead lighting, pool water features, sauna, sound system and emergency stop controls for operating systems, lazy river and waterslide, CCTV monitors.

**Room Number:**

2.2

**Space Name:**

**Staff Unisex Change Room and Lockers**  
 Component: 2.0 Facility Support Spaces

**Function:**

Showers (2), and convenience WC and sink,  
 12 staff ½ height day-lockers (unassigned)

**Area (ASM):**

15 ASM

**Occupant Load:**

Normal	1
Maximum	2

**Proximity:**

Lifeguarding office, admin staff areas

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Key
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	Office standard
Clear Span	Not required
Floor Live Load	Standard
Layout Flexibility	Low
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address
Closed Circuit	No

**Power:**

Standard to Code	GFCI outlets
208/220V	No
Special	Dedicated circuits with breakers for hair dryers

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	No

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	Showers, toilet and sink
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

Privacy

**Materials and Finishes:**

Walls	Painted CMU, ceramic tile behind toilets
Glazing	n/a
Ceilings	Waterproof board
Flooring	Porcelain tile (non-slip)
Built-ins	Locker columns on raised curbs, toilet and shower partitions hung from ceiling, wall-mounted hair dryer

**Furnishings and Equipment:**

12 half-height lockers (6 columns), fixed bench, hair dryers, mirror

**Sustainable design considerations:**

Grey water recycling for landscape irrigation, occupancy sensors.

**Handicapped Accessibility:**

Levered door hardware

**Special Requirements:**

None



**Room Number:**

2.3

**Space Name:****First Aid Room**

Component: 2.0 Facility Support Spaces

**Function:**

Emergency treatment area (for more serious injuries ambulance called), wheelchair storage

**Area (ASM):**

8 ASM

**Occupant Load:**

Normal	2
Maximum	2

**Proximity:**

Close to both large tanks and waterslide

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Yes
Surveillance	No
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	Standard 2.4 kPa
Layout Flexibility	No
Critical Dimensions	No

**Communications:**

Telephone	Yes
LAN/Wifi	Wifi
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	Standard
208/220V	No
Special	Defibrillator charger

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	High
Day-Lighting	No

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	Standard

**Plumbing:**

H/C H2O	Sink
Sump/Floor Drain	No

**Hazards / Contaminants:**

O2 Cylinder ,defibrillator

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Washable and easy to disinfect	
Walls	Drywall
Glazing	None
Ceilings	Drywall
Flooring	Resilient
Built-ins	Locking cabinets, Counter, sink, resuscitation equipment and defibrillator wall hung

**Furnishings and Equipment:**

Movable bed / gurney, chair, supplies and equipment, battery pack, wheelchair, clock.

**Sustainable Design Considerations:**

n/a

**Handicapped Accessibility:**

Design should meet and exceed building code requirements

**Special Requirements:**

Door minimum 1050mm width and direct egress route to accommodate gurney and other EMS equipment

**Room Number:**

2.4

**Space Name:****Reception /Control Counter**

Component: 2.0 Facility Support Sapces

**Function:**

Access control, information, membership / admissions point of sale, staff area; 2 counter stations

**Area (ASM):**

26 ASM

**Occupant Load:**

Normal	2 plus clients queuing
Maximum	2 plus clients queuing

**Proximity:**

Main front entrance, locker room entrances, administration offices, passive supervision to parents viewing area if possible (or CCTV).

**Operating Hours:**

Hours	Days, evenings
Days	Mo-Su

**Access Controls:**

Locking	Accordion security grille, door card access
Surveillance	CCTV
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	Standard
Layout Flexibility	Standard
Critical Dimensions	None

**Communications:**

Telephone	Yes
LAN/Wifi	Yes
Intercom / PA	Yes
Closed Circuit	Yes

**Power:**

Standard to Code	Standard
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	High
Task H/M/L	High
Day-Lighting	Controlled

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	Standard

**Plumbing:**

H/C H2O	No
Sump/Floor Drain	No

**Hazards / Contaminants:**

Staff safety (cash handling)

**Acoustic Controls:**

Standard

**Materials and Finishes:**

Walls	Drywall, feature wall
Glazing	Desk height between staff areas
Ceilings	T-bar
Flooring	Resilient (ergonomic)
Built-ins	Reception counter millwork (ideally featuring local wood) at least 6m in length, friendly to all ages and abilities of users

**Furnishings and Equipment:**

Chairs, computers and cash register, membership scanner, schedule whiteboard or LED screen (budget permitting), clock.

**Sustainable Design Considerations:**

Day-lighting to reduce power requirements; local, rapidly renewable high recycled content materials

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including lowered counter section and wheelchair turning radius

**Special Requirements:**

None.

**Room Number:**

2.5

**Space Name:**

**Pool Manager and Programmer Offices**  
 Component: 2.0 Facility Support Spaces

**Function:**

Offices for pool manager and programmer  
 with windows to staff areas for passive  
 supervision

**Area (ASM):**

2 x 9 ASM

**Occupant Load:**

Normal	1 each
Maximum	3 each

**Proximity:**

Pool lifeguard room, front counter

**Operating Hours:**

Hours	Days, evenings
Days	Mo-Su

**Access Controls:**

Locking	Card access
Surveillance	n/a
Supervision	n/a

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	Standard
Layout Flexibility	n/a
Critical Dimensions	none

**Communications:**

Telephone	Yes
LAN/Wifi	Both
Intercom / PA	Yes
Closed Circuit	n/a

**Power:**

Standard to Code	Standard
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	Low
Task H/M/L	High
Day-Lighting	Yes if possible

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	Standard

**Plumbing:**

Note: Sprinklers throughout complex –  
 all non-combustible construction

H/C H2O	No
Sump/Floor Drain	No

**Hazards / Contaminants:**

n/a

**Acoustic Controls:**

Privacy for work area

**Materials and Finishes:**

Walls	Drywall
Glazing	Desk height
Ceilings	T-bar
Flooring	Resilient or tile
Built-ins	None

**Furnishings and Equipment:**

Desks, chairs, filing cabinets

**Sustainable Design Considerations:**

Borrowed daylight if exterior windows not  
 possible

**Handicapped Accessibility:**

Design should meet and exceed building  
 code requirements

**Special Requirements:**

n/a

**Room Number:**

2.6

**Space Name:****Copier / Storage Area**

Component: 2.0 Facility Support Spaces

**Function:**Workcounter with storage cabinets and,  
copier and recycling area**Area (ASM):**

5 ASM

**Occupant Load:**

Normal	1
Maximum	1

**Proximity:**

Reception counter and offices

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Open area
Surveillance	No
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	Standard
Layout Flexibility	None
Critical Dimensions	None

**Communications:**

Telephone	Yes
LAN/Wifi	Yes
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	Per Code
208/220V	For copiers
Special	Dedicated circuits for photocopier / printer

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	High
Day-Lighting	None

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	Special

**Plumbing:**

H/C H2O	No
Sump/Floor Drain	No

**Hazards / Contaminants:**

None

**Acoustic Controls:**

Office Standard

**Materials and Finishes:**

Walls	Drywall
Glazing	Standard
Ceilings	T-bar
Flooring	Carpet
Built-ins	Collating counter, cabinets for office supplies

**Furnishings and Equipment:**

Copier/fax machine

**Sustainable Design Considerations:**All office areas user controlled lighting /  
HVAC systems; low VOC finishes and  
materials**Handicapped Accessibility:**

n/a

**Special Requirements:**

None

**Room Number:**

2.7

**Space Name:****Pool Storage**

Component: 2.0 Facility Support Spaces

**Function:**

Aquatics related storage including lane ropes, starting blocks, water polo nets, flutterboards, lifejackets, carts with pool toys, ropes and stanchions .

**Area (ASM):**

35 SM

**Occupant Load:**

Normal	0
Maximum	0

**Proximity:**

Pool decks and tanks

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Key access
Surveillance	No
Supervision	None

**Design Data:**

Clear Height	Overheight
Clear Span	Standard
Floor Live Load	Standard
Layout Flexibility	High
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	Standard
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	High
Task H/M/L	None
Day-Lighting	None

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	Standard

**Plumbing:**

H/C H2O	No
Sump/Floor Drains	Both (for wet items)

**Hazards / Contaminants:**

Accidental injury

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls	Concrete Block
Glazing	None
Ceilings	Unfinished
Flooring	Concrete
Built-ins	None

**Furnishings and Equipment:**

None

**Handicapped Accessibility:**

n/a

**Special Requirements:**

None

**Room Number:**

2.8

**Space Name:****Pool Chemical Storage**

Component: 2.0 Facility Support Spaces

**Function:**

Storage of hazardous materials such as sodium bicarbonate, muriatic acid, CO2 tanks. Room requirements defined by Building Code and Fire Code.

**Area (ASM):**

8 ASM

**Occupant Load:**

Normal	0
Maximum	0

**Proximity:**

Pool mechanical, pool tanks, maintenance workroom

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Card access
Surveillance	Armed
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	375 kg / sm
Layout Flexibility	No
Critical Dimensions	No

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Alarm
Closed Circuit	No

Emergency lights, smoke detectors, horn/strobe, pull-station

**Power:**

Standard to Code	No
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	Low
Task H/M/L	No
Day-Lighting	No

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction

H/C H2O	Shower eyewash outside of room
Sump/Floor Drain	Holding tank for leaks

**Hazards / Contaminants:**

Toxic materials stored in what needs to be a well-ventilated space in close proximity to panic alarm and emergency shower and eye-wash station and wash-down hose bibs

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls	4-hour rated concrete
Glazing	None
Ceilings	Concrete
Flooring	Concrete
Built-ins	None

**Furnishings and Equipment:**

Pre-manufactured locking cabinets.

**Sustainable Design Considerations:**

n/a

**Handicapped Accessibility:**

n/a

**Special Requirements:**

Explosion-proof compartment as per Code requirements. CO2 tank access from the outside for tank refilling (40-foot hoses), ground level access. CO2 gas sensors and display panel, fill box.

**Room Number:**

3.1

**Space Name:****Universal Change 'Dry' Cubicles**

Component: 3.0 Universal Change Rooms

**Function:**

12 private cubicles for drying and changing. 'Dry-cubicle' universal or family change room mean the change areas themselves have no plumbing and bathers use a common shower area ('wet cubicle' means each cubicle has its own shower which is costlier and more work to maintain). Dry cubicle take up less space meaning there is room for more cubicles. Each cubicle would be large enough for 1-2 adults or an adult with 1-2 children. The space includes ceiling mounted privacy screens, a built-in bench and wall hooks for keeping cloths dry. Universal change cubicles are popular with families and with older adults for privacy.

**Area (ASM):**

12 x 2.6 ASM or 31 ASM

**Occupant Load:**

Normal	1-2 per cubicle
Maximum	2-3 per cubicle.

**Proximity:**

Common showers, deck area, circulation to control desk

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Open pool deck, optional locking dry side
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	3m minimum
Clear Span	Not required
Floor Live Load	Standard
Layout Flexibility	Low
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address, central panic alarm button
Closed Circuit	No

**Power:**

Standard to Code	None
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	Indirect or clerestory if possible

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	None
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Painted CMU walls and laminate covered MDF privacy screen panels
Glazing	n/a
Ceilings	Waterproof board
Flooring	Porcelain tile (non-slip) Sloped to drain
Built-ins	Partition screens ceiling mounted from 300mm to 2.2-metre height, each with locking door (inward swing); b/l bench and wall hooks

**Furnishings and Equipment:**

None

**Sustainable design considerations:**

Indirect daylighting

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including levered hardware, mitigated level changes and wheelchair turning radius

**Special Requirements:**

None

**Room Number:**

3.2

**Space Name:****Common Gang Showers Area**

Component: 3.0 Universal Change Rooms

**Function:**

Shower area in universal / family change room. Common 'gang' showers is one open space with multiple shower heads. Bathers shower wearing bathing suits and change in adjacent privacy cubicles.

**Area (ASM):**

15 ASM

**Occupant Load:**

Normal	3
Maximum	6

**Proximity:**

'Dry' change cubicles, pool deck

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Open
Surveillance	No
Supervision	Passive by staff

**Design Data:**

Clear Height	3m minimum
Clear Span	Not required
Floor Live Load	n/a
Layout Flexibility	Low
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	No
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	No

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	Shower heads and controls, hose bib for washing
Sump/Floor Drain	Yes, sloped to drain, perimeter gutter

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Full height tiles
Glazing	None
Ceilings	Waterproof board or tile
Flooring	Porcelain tile (non-slip) sloped to drain
Built-ins	Towel hooks outside shower area

**Furnishings and Equipment:**

None

**Sustainable design considerations:**

Grey water recycling for landscape irrigation, occupancy sensors.

**Handicapped Accessibility:**

Design should meet and exceed building code requirements mitigated level changes and wheelchair turning radius

**Special Requirements:**

None



**Room Number:**

3.3

**Space Name:****Full-Height Locker Columns and Aisle**

Component: 3.0 Universal Change Rooms

**Function:**

Full-height lockers located in the universal / family change room. Lockers are assumed to be used by more than one individual hence all full-height or  $\frac{3}{4}$  height with shoe cubbie below. Area includes locker footprints and circulation aisle.

**Area (ASM):**

54 ASM

**Occupant Load:**

Normal	12
Maximum	40

**Proximity:**

Common 'gang' showers and 'dry' cubicles

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Individually
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	Standard
Clear Span	Not required
Floor Live Load	175 kg / sm
Layout Flexibility	Low
Critical Dimensions	1.5-metres in front of face of locker doors

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	n/a
208/220V	No
Special	n/a

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	Indirect or clerestory if possible

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	n/a
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Painted concrete block (CMU)
Glazing	n/a
Ceilings	Waterproof board
Flooring	Porcelain tile (non-slip)
Built-ins	Lockers on raised curbs for hosing floors

**Furnishings and Equipment:**

54 factory-made stainless steel lockers or coated steel if budget limitations; coin-operated only

**Sustainable design considerations:**

n/a

**Handicapped Accessibility:**

Lockers fully accessible.

**Special Requirements:**

Full height lockers may be substituted or mixed with double-wide  $\frac{1}{2}$ -height lockers (24"W, 18" deep, 36" H stacked.

**Room Number:**

3.4

**Space Name:****Disabled Change Cubicle and WC**

Component: 3.0 Universal Change Rooms

**Function:**

One change cubicle will be fully handicapped accessible and include a shower, toilet and sink. This cubicle will also serve as the convenience WC for universal change room users (who can also use the washrooms in the gender change rooms).

**Area (ASM):**

5.5 ASM

**Occupant Load:**

Normal	1
Maximum	3

**Proximity:**

Universal change room lockers, deck area, circulation to control counter

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Yes
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	Standard
Clear Span	Not required
Floor Live Load	n/a
Layout Flexibility	Low
Critical Dimensions	Wheelchair radius

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address
Closed Circuit	No

**Power:**

Standard to Code	GFCI outlets
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	Indirect or clerestory if possible

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	Shower, toilet, sink
Sump/Floor Drain	Yes, sloped to drain

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Tiled
Glazing	n/a
Ceilings	Waterproof board
Flooring	Porcelain tile (non-slip), sloped to drain
Built-ins	Shower, toilet sink, tilt mirror and grab bars

**Furnishings and Equipment:**

Ceiling-mounted handicapped hoist

**Sustainable design considerations:**

Grey water recycling for landscape irrigation, occupancy sensors.

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including levered hardware, mitigated level changes and wheelchair turning radius

**Special Requirements:**

None

**Room Number:**

3.5

**Space Name:****Vanity Stations**

Component: 3.0 Universal Change Rooms

**Function:**

Universal or family change rooms have limited washrooms area as bathers are expected to use gender change room WCs. Vanity counters with sink and wall-mounted hair dryers should be provided for patron convenience.

**Area (ASM):**

4 ASM

**Occupant Load:**

Normal	2
Maximum	2

**Proximity:**

Lockers, change cubicles

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	n/a
Surveillance	n/a
Supervision	Passive by staff

**Design Data:**

Clear Height	Standard
Clear Span	Not required
Floor Live Load	Standard
Layout Flexibility	Low
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address
Closed Circuit	No

**Power:**

Standard to Code	GFCI outlets
208/220V	No
Special	Dedicated circuits with breakers for hair dryers

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	High
Day-Lighting	n/a

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	Sinks, hose bibs under sink for floor washing
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Painted CMU
Glazing	n/a
Ceilings	Waterproof board
Flooring	Porcelain tile (non-slip)
Built-ins	Vanity counter with 2 Sinks and mirror

**Furnishings and Equipment:**

2 hand-held driers

**Sustainable design considerations:**

Grey water recycling for landscape irrigation, occupancy sensors.

**Handicapped Accessibility:**

Variable counter height

**Special Requirements:**

None

**Room Number:**

3.6

**Space Name:****Stroller / Wheelchair Area**

Component: 3.0 Universal Change Rooms

**Function:**

Open space for parking up to 6 strollers or wheelchairs

**Area (ASM):**

4 ASM

**Occupant Load:**

Normal 100

Maximum 250

**Proximity:**

Change cubicles, main entrance

**Operating Hours:**

Hours Continuous

Days Mo-Su

**Access Controls:**

Locking n/a

Surveillance n/a

Supervision Passive by staff

**Design Data:**

Clear Height Standard

Clear Span n/a

Floor Live Load n/a

Layout Flexibility Low

Critical Dimensions None

**Communications:**

Telephone No

LAN/Wifi No

Intercom / PA Public address

Closed Circuit No

**Power:**

Standard to Code n/a

208/220V No

Special n/a

**Lighting:**

Ambient H/M/L High 300 lux

Task H/M/L No

Day-Lighting n/a

**Climate Controls:**

Zonal Yes

Spatial No

Ventilation High, humidity controls

**Plumbing:**

H/C H2O No

Sump/Floor Drain Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls Painted CMU

Glazing n/a

Ceilings Waterproof board

Flooring Resilient

Built-ins None

**Furnishings and Equipment:**

None

**Sustainable design considerations:**

None

**Handicapped Accessibility:**

Wheelchair turning radius

**Special Requirements:**

None

**Room Number:**

4.1

**Space Name:****Women's Locker Room**

Component: 4.0 Men's and Women's  
Locker Rooms

**Function:**

84 locker columns with a combination of full and half height resulting in a minimum of at least 150 units. All lockers will be day-use only (not annual rental) and will be a mix of coin-operated and personal lock lockers. Area includes space in front of lockers for changing and circulation as well as benches.

**Area (ASM):**

84 x 0.6 ASM = 50 ASM

**Occupant Load:**

Normal	20 at any time
Maximum	50 at any time

**Proximity:**

Showers, toilets and sinks

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Change room locking dry side only
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	3m minimum
Clear Span	Not required
Floor Live Load	4.8 kPa
Layout Flexibility	Low
Critical Dimensions	Minimum 2.1m between face of columns

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address
Closed Circuit	No

**Power:**

Standard to Code	n/a
208/220V	No
Special	n/a

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	Indirect or clerestory if possible

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	n/a
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Painted CMU
Glazing	Clerestory or none
Ceilings	Waterproof board or open
Flooring	Porcelain tile (non-slip)
Built-ins	Curb or plinth for lockers to protect from moisture; built in benches

**Furnishings and Equipment:**

84 locker columns (130 half-height 20 full-height, fixed benches

**Sustainable design considerations:**

n/a

**Handicapped Accessibility:**

Wheelchair turning radius

**Special Requirements:**

None

**Room Number:**

4.2

**Space Name:****Women's Showers, Toilets, Vanities**

Component: 4.0 Men's and Women's  
Locker Rooms

**Function:**

6 shower stalls with privacy screens, 5  
toilets and 5 sinks. Actual washroom stall  
count for the facility will be driven by total  
occupant and bather loads and as  
interpreted by Part 3 of the Building Code.

**Area (ASM):**

18 x 2.9 ASM = 52 ASM

**Occupant Load:**

Normal	20 at any time
Maximum	50 at any time

**Proximity:**

Lockers and change areas

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Locking dry side
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	Standard
Clear Span	Not required
Floor Live Load	Standard
Layout Flexibility	Low
Critical Dimensions	Minimum 2.1m between column faces

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address
Closed Circuit	No

**Power:**

Standard to Code	GFCI outlets
Special	Dedicated circuits with breakers for hair dryers

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	Indirect or clerestory if possible

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	Showers, toilets and sinks, hose bibs under sink, slop sink
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Painted CMU, ceramic tile behind toilets
Glazing	Clerestory or none
Ceilings	Waterproof board or open ceiling
Flooring	Porcelain tile (non-slip)
Built-ins	Vanities, mirrors, grab bars, waste receptacles, privacy cubicles in showers hung from ceiling, baby-changing table, swimsuit dryer, 2 wall-mounted hair dryers, towel hooks

**Furnishings and Equipment:**

None

**Sustainable design considerations:**

Grey water recycling for landscape  
irrigation, occupancy sensors.

**Handicapped Accessibility:**

Design should meet and exceed building  
code requirements including levered  
hardware, mitigated level changes and  
wheelchair turning radius

**Special Requirements:**

None.

**Room Number:**

4.3

**Space Name:****Men's Locker Room**

Component: 4.0 Men's and Women's  
Locker Rooms

**Function:**

84 locker columns with a combination of full and half height resulting in a minimum of at least 150 units. All lockers will be day-use only (not annual rental) and will be a mix of coin-operated and personal lock lockers. Area includes space in front of lockers for changing and circulation as well as benches.

**Area (ASM):**

84 x 0.6 ASM = 50 ASM

**Occupant Load:**

Normal	20 at any time
Maximum	50 at any time

**Proximity:**

Showers, toilets and sinks

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Change room locking dry side only
Surveillance	At points of entry only
Supervision	Passive by staff

**Design Data:**

Clear Height	3m minimum
Clear Span	Not required
Floor Live Load	4.8 kPa
Layout Flexibility	Low
Critical Dimensions	Minimum 2.1m between face of columns

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Public address
Closed Circuit	No

**Power:**

Standard to Code	n/a
208/220V	No
Special	n/a

**Lighting:**

Ambient H/M/L	High 300 lux
Task H/M/L	No
Day-Lighting	Indirect or clerestory if possible

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	High, humidity controls

**Plumbing:**

H/C H2O	n/a
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Slipping on wet flooring

**Acoustic Controls:**

High due to hard reflective surfaces

**Materials and Finishes:**

Walls	Painted CMU
Glazing	Clerestory or none
Ceilings	Waterproof board or open
Flooring	Porcelain tile (non-slip)
Built-ins	Curb or plinth for lockers to protect from moisture; built in benches

**Furnishings and Equipment:**

84 locker columns (130 half-height 20 full-height, fixed benches

**Sustainable design considerations:**

n/a

**Handicapped Accessibility:**

Wheelchair turning radius

**Special Requirements:**

None

<b>Room Number:</b> 4.4	Day-Lighting	Indirect or clerestory if possible
<b>Space Name:</b> <b>Men's Showers, Toilets, Vanities</b> Component: 4.0 Men's and Women's Locker Rooms	<b>Climate Controls:</b> Zonal Spatial Ventilation	Yes No High, humidity controls
<b>Function:</b> 6 shower stalls with privacy screens, 2 toilets, 3 urinals and 5 sinks. Actual washroom stall count for the facility will be driven by total occupant and bather loads and as interpreted by Part 3 of the Building Code.	<b>Plumbing:</b> H/C H2O  Sump/Floor Drain	Showers, toilets and sinks, hose bibs under sink, slop sink Yes
<b>Area (ASM):</b> 18 x 2.9 ASM = 52 ASM	<b>Hazards / Contaminants:</b> Slipping on wet flooring	
<b>Occupant Load:</b> Normal Maximum		
	20 at any time 50 at any time	
<b>Proximity:</b> Lockers and change areas		
<b>Operating Hours:</b> Hours Days	Continuous Mo-Su	
<b>Access Controls:</b> Locking Surveillance Supervision	Locking dry side At points of entry only Passive by staff	
<b>Design Data:</b> Clear Height Clear Span Floor Live Load Layout Flexibility Critical Dimensions	Standard Not required Standard Low Minimum 2.1m between column faces	
<b>Communications:</b> Telephone LAN/Wifi Intercom / PA Closed Circuit	No No Public address No	
<b>Power:</b> Standard to Code Special	GFCI outlets Dedicated circuits with breakers for hair dryers	
<b>Lighting:</b> Ambient H/M/L Task H/M/L	High 300 lux No	
	<b>Materials and Finishes:</b> Walls  Glazing Ceilings  Flooring Built-ins	Painted CMU, ceramic tile behind toilets Clerestory or none Waterproof board or open ceiling Porcelain tile (non-slip) Vanities, mirrors, grab bars, waste receptacles, privacy cubicles in showers hung from ceiling, baby-changing table, swimsuit dryer, 2 wall-mounted hair dryers, towel hooks
	<b>Furnishings and Equipment:</b> None	
	<b>Sustainable design considerations:</b> Grey water recycling for landscape irrigation, occupancy sensors.	
	<b>Handicapped Accessibility:</b> Design should meet and exceed building code requirements including levered hardware, mitigated level changes and wheelchair turning radius	
	<b>Special Requirements:</b> None.	



**Room Number:**

4.5

**Space Name:****Custodial Closet**

Component: 4.0 Men's and Women's  
Locker Rooms

**Function:**

Custodial service areas. Decentralized to a  
strategic location(s) to reduce travel  
distances

**Area (ASM):**

2 ASM

**Occupant Load:**

Normal	0
Maximum	0

**Proximity:**

Central to all high use and activity areas  
especially locker rooms

**Operating Hours:**

Hours	Continuous
Days	Mo-Su

**Access Controls:**

Locking	Locking key access
Surveillance	n/a
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	No
Floor Live Load	Standard
Layout Flexibility	No
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	Yes
208/220V	Yes
Special	n/a

**Lighting:**

Ambient H/M/L	Low
Task H/M/L	High
Day-Lighting	None

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High

**Plumbing:**

H/C H2O	Mop sinks, emergency eyewash station.
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Storage of flammable chemicals used for  
cleaning

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls	Concrete
Glazing	None
Ceilings	Open
Flooring	Concrete
Built-ins	Storage shelving

**Furnishings and Equipment:**

Portable cleaning equipment

**Sustainable Design Considerations:**

n/a

**Handicapped Accessibility:**

n/a

**Special Requirements:**

n/a

**Room Number:**

5.1

**Space Name:****Multi-Purpose Room**

Component: 5.0 Multi-Purpose Room

**Function:**

Multi-purpose space used for birthday parties, presentations and assemblies, small banquets (catered off-site), classroom instruction, swim event management space and some exercise classes.

When not otherwise booked, the space should be adaptable as a lounge space with tables and soft seating.

**Area (ASM):**

112 ASM

**Occupant Load:**

Normal	36 catered
Maximum	60 presentations

**Proximity:**

Kitchen, storage, main entrance and control desk, seating gallery, washrooms; views to pool

**Operating Hours:**

Hours	Extended
Days	Mo-Su

**Access Controls:**

Locking	Key access
Surveillance	No
Supervision	Staff

**Design Data:**

Clear Height	Overheight
Clear Span	Preferred
Floor Live Load	Standard
Layout Flexibility	High
Critical Dimensions	Square to squared rectangular

**Communications:**

Telephone	Multiple jacks
LAN/Wifi	Both
Intercom / PA	Yes
Closed Circuit	Cabling

**Power:**

Standard to Code	Standard
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	Medium, dimmer
Task H/M/L	High
Day-Lighting	Controlled

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High

**Plumbing:**

H/C H2O	No, if kitchen adjacent
Sump/Floor Drain	No

**Hazards / Contaminants:**

None

**Acoustic Controls:**

Privacy STC 55

**Materials and Finishes:**

Walls	Drywall
Glazing	Standard
Ceilings	T-bar
Flooring	Resilient
Built-ins	None

**Furnishings and Equipment:**

Stackable tables (10) and chairs (60)

**Sustainable Design Considerations:**

Operable windows and daylighting if possible

**Handicapped Accessibility:**

Design should meet and exceed building code requirements

**Special Requirements:**

n/a

**Room Number:**

5.2

**Space Name:****Kitchen**

Component: 5.0 Multi-Purpose Room

**Function:**Kitchen for coffee and snacks preparation,  
and as servery kitchen for catered events**Area (ASM):**

20 ASM

**Occupant Load:**

Normal	2
Maximum	4

**Proximity:**

Multi-purpose space, loading doors

**Operating Hours:**

Hours	Days, evenings
Days	All

**Access Controls:**

Locking	Yes
Surveillance	No
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	Standard
Layout Flexibility	n/a
Critical Dimensions	No

**Communications:**

Telephone	Yes
LAN/Wifi	Yes
Intercom / PA	Yes
Closed Circuit	No

**Power:**

Standard to Code	Per code
208/220V	Dedicated for stove
Special	None

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	High
Day-Lighting	Not required

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	Standard

**Plumbing:**

H/C H2O	Yes
Sump/Floor Drain	Sink drain and dishwasher drain

**Hazards / Contaminants:**

User safety and security

**Acoustic Controls:**

Standard

**Materials and Finishes:**

Walls	Drywall, tile backsplash
Glazing	No
Ceilings	Drywall
Flooring	Resilient or tile
Built-ins	Laminate counter with sink

**Furnishings and Equipment:**Fridge, microwave, coffeemaker,  
dishwasher, possibly a locking cooler**Sustainable Design Considerations:**User controlled lighting / HVAC systems;  
low VOC finishes and materials**Handicapped Accessibility:**Design should meet and exceed building  
code requirements**Special Requirements:**Barrier free with room with open area for  
catering and dirty dishes carts

**Room Number:**

5.3

**Space Name:****Storage Room**

Component: 5.0 Multi-Purpose Room

**Function:**Stacking tables and chairs storage and  
program storage**Area (ASM):**

14 ASM

**Occupant Load:**

Normal	0
Maximum	0

**Proximity:**

Multi-purpose area, kitchen, staff areas

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Key access
Surveillance	No
Supervision	None

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	4.8 kPa
Layout Flexibility	No
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	No
Closed Circuit	No

**Power:**

Standard to Code	Standard
208/220V	No
Special	No

**Lighting:**

Ambient H/M/L	High
Task H/M/L	None
Day-Lighting	None

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	Standard

**Plumbing:**

H/C H2O	No
Sump/Floor Drain	No

**Hazards / Contaminants:**

None

**Acoustic Controls:**

n/a

**Materials and Finishes:**

Walls	Drywall
Glazing	None
Ceilings	Unfinished
Flooring	Concrete
Built-ins	Shelving

**Furnishings and Equipment:**

None

**Handicapped Accessibility:**

n/a

**Special Requirements:**

n/a

**Room Number:****Building Systems****Space Name:****Lobby and Circulation**

Component: Building Gross-Up

**Function:**

Entry vestibules, vertical circulation, lobby and major circulation routes in the building. Main lobby large enough for marshalling school groups and should have soft seating for waiting.

**Area (ASM):**

155 ASM

**Occupant Load:**

Normal	10
Maximum	50

**Proximity:**

Reception counter, pool viewing gallery, public washrooms

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Yes
Surveillance	CCTV
Supervision	Staff

**Design Data:**

Clear Height	Overheight
Clear Span	Ideally
Floor Live Load	4.8 kPa
Layout Flexibility	High
Critical Dimensions	Exit width determined by Building Code based on occupant load

**Communications:**

Telephone	Payphone
LAN/Wifi	Free Wifi
Intercom / PA	Yes
Closed Circuit	Cameras

**Power:**

Standard to Code	Yes
208/220V	No
Special	Vending machines

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	Medium
Day-Lighting	Yes

**Climate Controls:**

Zonal	Yes
Spatial	No
Ventilation	Standard

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction  
H/C H2O Water fountain  
Sump/Floor Drains No

**Hazards / Contaminants:**

Patron safety and security

**Acoustic Controls:**

Sound absorptive materials to mitigate hard surfaces

**Materials and Finishes:**

Walls	Local materials featured i.e. stone, brick
Glazing	Full-height
Ceilings	Open
Flooring	Polished concrete or lino
Built-ins	None

**Furnishings and Equipment:**

Loose soft seating (sofas) and end tables

**Sustainable Design Considerations:**

Day-lighting to reduce electrical load, recycling bins; featured use of rapidly renewable and recycled materials and finishes as well as locally produced materials

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including mitigated level changes, wheelchair passage and turning radius clearances, levered door hardware and large font and Braille signage

**Special Requirements:**

Sliding automatic inner and outer doors for vestibules, door contacts, glass break sensors, pedi-mats, postal box

**Room Number:****Building System****Space Name:****Convenience Unisex HC Accessible****Washrooms**

Component: Building Gross-up as part of Circulation

**Function:**

Public washrooms

**Area (ASM):**

Allowance from circulation of 4- 8 ASM for 1 or 2 convenience unisex HC WCs

**Occupant Load:**

Normal	1
Maximum	2

**Proximity:**

Lobby area, multi-purpose room, pool viewing gallery

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Yes
Surveillance	CCTV at doors only if not visible from reception
Supervision	Staff

**Design Data:**

Clear Height	Standard
Clear Span	Standard
Floor Live Load	4.8 kPa
Layout Flexibility	None
Critical Dimensions	None

**Communications:**

Telephone	No
LAN/Wifi	No
Intercom / PA	Yes
Closed Circuit	No

**Power:**

Standard to Code	Yes
208/220V	No
Special	Fan hand dryers

**Lighting:**

Ambient H/M/L	Medium
Task H/M/L	Medium
Day-Lighting	No

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	Standard

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction

H/C H2O	Yes, wall- mounted toilets, vanities
Sump/Floor Drains	Yes

**Hazards / Contaminants:**

Personal safety

**Acoustic Controls:**

Moderate privacy

**Materials and Finishes:**

Walls	Washable; tile backsplash
Glazing	n/a
Ceilings	Drywall
Flooring	Resilient or concrete
Built-ins	Sink and toilet, grab bars, dispensers, mirrors, sensor hand dryers, baby-change station

**Furnishings and Equipment:**

Garbage can

**Sustainable Design Considerations:**

Gray-water recycling; hot water through heat exchange

**Handicapped Accessibility:**

Design should meet and exceed building code requirements including levered hardware, level changes and wheelchair turning radius

**Special Requirements:**

None

**Room Number:****Building Systems****Space Name:****Pool Mechanical Room**

Component: Building Gross-up

**Function:**

Mechanical and service space for equipment for the filtration, disinfection and sanitation of swimming tanks, lazy river, hot pool and other water features. Size of mechanical equipment will be a function of disinfection type but would be between 1/3 and 1/2 of water surface area.

**Area (ASM):**

175 ASM

**Occupant Load:**

Normal	n/a
Maximum	n/a

**Proximity:**

Pools tanks, chemical storage, maintenance workbench

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Key card access
Surveillance	Entry alarm
Supervision	Staff

**Design Data:**

Clear Height	Over-height
Clear Span	No
Floor Live Load	Function of equipment selected
Layout Flexibility	Medium
Critical Dimensions	Function of equipment

**Communications:**

Telephone	Emergency
LAN/Wifi	No
Intercom / PA	Audible alarm
Closed Circuit	No

**Power:**

Standard to Code	As required by equipment
208/220V	As required by equipment
Special	As required by equipment

**Lighting:**

Ambient H/M/L	Medium 300 lux
Task H/M/L	High
Day-Lighting	No

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High for cooling

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction  
H/C H2O Janitor's sink  
Sump/Floor Drain Both

**Hazards / Contaminants:**

Equipment safety hazards

**Acoustic Controls:**

Pumps produce high levels of noise

**Materials and Finishes:**

Walls	Painted CMU
Glazing	None
Ceilings	Open
Flooring	Sealed concrete
Built-ins	Water testing station cabinets and counter, plinths for boilers, pumps and other equipment, surge tank

**Furnishings and Equipment:**

None

**Sustainable Design Considerations:**

Type of mechanical and electrical equipment selected in the design phase will affect building energy performance

**Handicapped Accessibility:**

n/a

**Special Requirements:**

Room must be at grade or below grade at tank level. Access to surge tanks and pool pumps for maintenance. Water testing station and mixing tanks in pool mechanical space. Double 1200mm access doors.

**Room Number:****Building Systems****Space Name:****Building Mechanical Room**

Component: Building Gross-up

**Function:**

Mechanical room and/or penthouse for building systems such as mechanical, heating, air handling, dehumidification and plumbing. Mechanical spaces could be at grade, rooftop or basement level.

**Area (ASM):**

118 ASM or approximately 6% of gross building area

**Occupant Load:**

Normal	n/a
Maximum	n/a

**Proximity:**

Central core of facility and mechanical plenums for most efficient distribution. Also near locker rooms and large volume space like the natatorium.

**Operating Hours:**

Hours	Continuous
Days	Continuous

**Access Controls:**

Locking	Key card access
Surveillance	No
Supervision	Staff

**Design Data:**

Clear Height	Over-height
Clear Span	Not required
Floor Live Load	3.6 kPa
Layout Flexibility	n/a
Critical Dimensions	As per equipment specifications

**Communications:**

Telephone	Emergency
LAN/Wifi	Yes
Intercom / PA	Audible alarms
Closed Circuit	Monitoring systems

**Power:**

Standard to Code	Yes
208/220V	Yes
Special	As per manufacturers specifications

**Lighting:**

Ambient H/M/L	Medium 300 lux
Task H/M/L	No
Day-Lighting	No

**Climate Controls:**

Zonal	No
Spatial	Yes
Ventilation	High for cooling

**Plumbing:**

Note: Sprinklers throughout complex – all non-combustible construction

H/C H2O	As required by equipment
Sump/Floor Drain	Yes

**Hazards / Contaminants:**

Distribution equipment safety hazards

**Acoustic Controls:**

Air handling equipment may produce high levels of noise

**Materials and Finishes:**

Walls	Rated CMU
Glazing	None
Ceilings	Open
Flooring	Concrete
Built-ins	None

**Furnishings and Equipment:**

None

**Sustainable Design Considerations:**

Type of mechanical equipment selected in the design phase will affect building energy performance and comfort. Overall in the facility, operable windows and day-lighting will reduce energy demand.

**Handicapped Accessibility:**

Not applicable.

**Special Requirements:**

Screening of rooftop penthouses and equipment; doors directly to the exterior for servicing and equipment replacement. Separate metering rooms.

Natatorium: 6 air changes per hour, minimum 29.4 temperature and 45% humidity



**Room Number:**  
**Building Systems**

determined in the  
design phase

**Space Name:**  
**Electrical and Telecommunications Room**  
Component: Building Gross-up

**Lighting:**  
Ambient H/M/L High  
Task H/M/L No  
Day-Lighting None

**Function:**  
Electrical distribution equipment rooms at  
grade level with direct exterior entrances.

**Climate Controls:**  
Zonal No  
Spatial Yes  
Ventilation High for cooling

**Area (ASM):**  
Included I Building Mechanical Allowance

**Occupant Load:**  
Normal n/a  
Maximum n/a

**Plumbing:**  
Note: Sprinklers throughout complex –  
all non-combustible construction  
H/C H2O No  
Sump/Floor Drain Yes

**Proximity:**  
Site servicing connection point, central core  
of facility for most efficient distribution  
through shared and dedicated mechanical  
plenums

**Hazards / Contaminants:**  
Electrical distribution equipment safety  
hazards

**Operating Hours:**  
Hours Continuous  
Days Continuous

**Acoustic Controls:**  
n/a

**Access Controls:**  
Locking Key card access  
Surveillance n/a  
Supervision n/a

**Materials and Finishes:**  
Walls 4-Hour rated CMU  
Glazing n/a  
Ceilings Open  
Flooring Concrete  
Built-ins None

**Design Data:**  
Clear Height Standard  
Clear Span No  
Floor Live Load Standard  
Layout Flexibility No  
Critical Dimensions None

**Furnishings and Equipment:**  
None

**Communications:**  
Telephone Distribution panels  
LAN/Wifi No  
Intercom / PA Audible alarms  
Closed Circuit No

**Sustainable Design Considerations:**  
Type of electrical equipment selected in the  
design phase will affect building energy  
performance and comfort. Overall in the  
facility, operable windows and day-lighting  
will reduce energy demand.

**Power:**  
Standard to Code Distribution panels  
208/220V n/a  
Special Power supply  
requirements

**Handicapped Accessibility:**  
n/a

**Special Requirements:**  
To be determined

## Part 3 – Pre-Design Program Test

### 3.1 Concept Fit Test

A preliminary layout concept was developed in order to test program fit, areas and functional relationships. The functional spacelist in this report identifies a gross building area of 2,436 sm or 26,222 sf and a net-to-gross ratio of 1:1.24 or 80% assignable area. The space program was made as lean as possible in order to achieve the project budget target of \$16.2 million. Circulation has been minimized as most assigned spaces are interconnected (i.e. change rooms). If the pool deck were included in the circulation allowance, the net-to-gross ratio would have been 1:1.64 or only 61% assignable area.

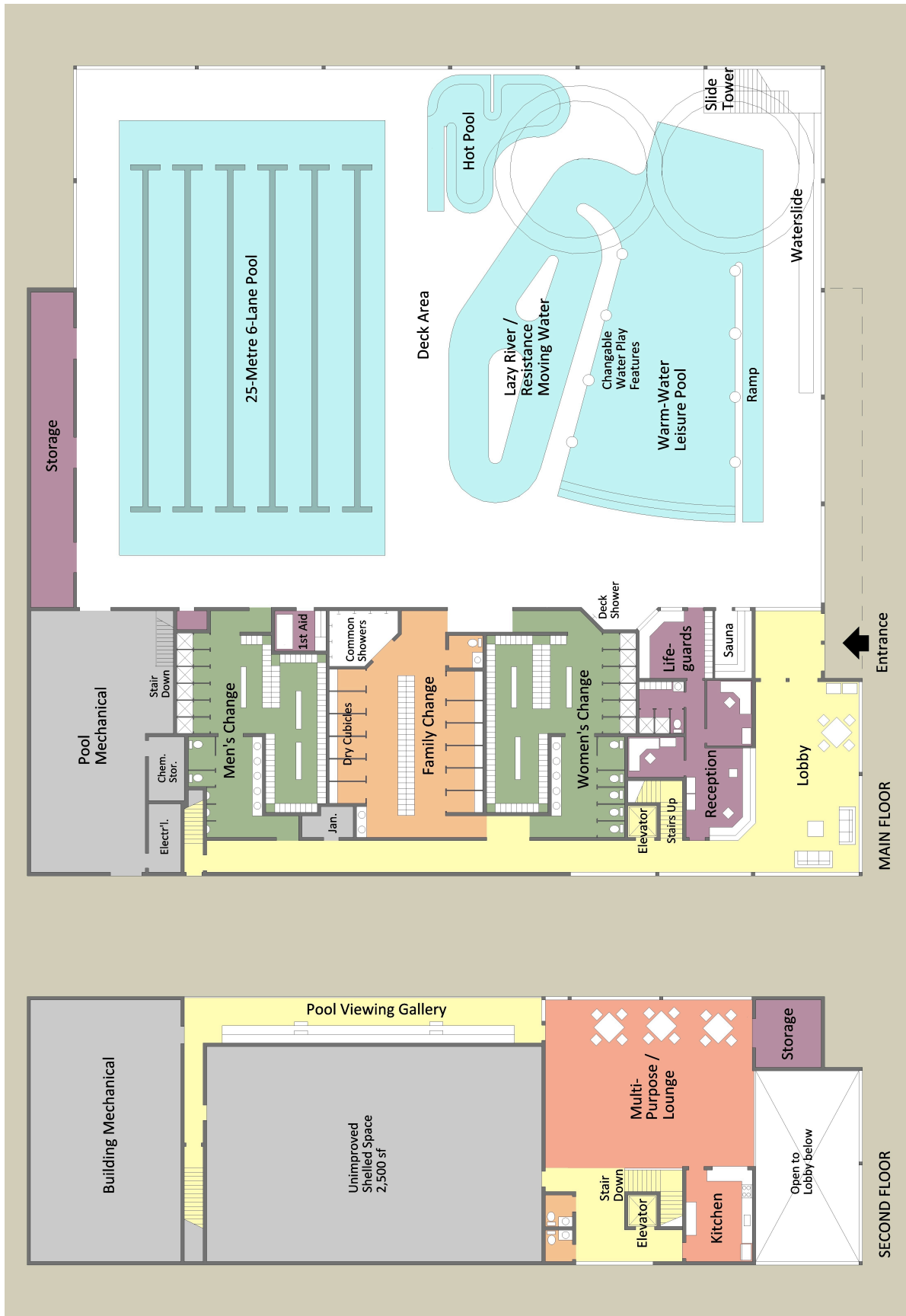
The concept fit test assumes a two-storey solution in order to create as compact a building on the site as possible and limit horizontal circulation. The aquatic centre has two basic building shell types: the large, high-ceiling, clear-span natatorium, and the low-ceiling, short span change rooms and support spaces. The latter lends itself well to the stacking of other low-ceiling, short-span spaces above it including the multi-purpose room, kitchen, pool viewing gallery and building mechanical spaces. The lobby and change rooms must be at the same elevation as and contiguous with the pool deck for primarily for safety reasons. There is less assigned function for the second level than what must be on the grade level. Therefore, part of the upper floor plate shows an unimproved shelled-space that can be developed in the future (being more economical long-term than roof area to be added to in the future).



*A perspective view of the concept massing for the aquatic facility illustrating the large volume natatorium (right side, close to the highway edge) and the stacked smaller spaces (left, parking lot side) that also simplifies the roofline*

The concept images were also used during the consultation process to help the public understand what the pool could look like and what the scale of the project was limited to. The public was made to understand the final design will likely have less glazing than the concept, but that openness and transparency would be maximized in sharp contrast to the existing windowless pool. Glazing in the concept was shown at clerestory and at grade level to minimize glare and heat gain, but maximize controlled day-lighting and views in and out. At night, the building would appear as an attractive beacon of light seen from the highway.

The plans on the following page are within 1% of the space program at about 26,500 sf (excluding the shelled unimproved space on the second level). The leisure water has been placed closer to the front entrance for high exposure and the program tank at the north end. The concept assumes the waterslide is on the inside suspended above the leisure pool, but could also be on the outside of the building to save space and cost. The multi-purpose room on the second level can double as lounge space when not in scheduled use. The viewing gallery can be accessed by either stairwell. The concept includes a small, two-stop hydraulic elevator.



### 3.2 Preliminary Capital Cost Estimate

An order-of-magnitude cost estimate has been prepared to ensure the program is in alignment with the Municipality's approved project budget at this stage. The cost estimate is based on comparative construction cost data and is not based on a fully-resolved architectural design where materials and equipment can be quantified.

According to quantity surveyors Altus and Hanscomb and StatsCan, current construction cost indexes for non-residential construction in Halifax (100) are equal to those in Toronto GTA (excluding core) and Montreal, higher than Quebec City, Ottawa, London and Kitchener (98-99), but lower than Winnipeg (105). Halifax had been experiencing a construction boom in the three years prior to 2015 but indications are that the construction market is cooling significantly and pricing is becoming more competitive. However, some pool elements and equipment can only be sourced from the United States and exchange rates have impacted costs adversely.

Cost data for ten relatively new aquatic facilities across the Maritimes and the rest of Canada were compared, including Pictou County Wellness Centre, New Glasgow and the Lunenburg County Lifestyle Centre. Projects were made comparable to the East Hants project, escalated to 2016 and indexed by location. An additional 1% was added to the East Hants region to allow for added transportation costs for materials and labour outside of the metropolitan area of Halifax.

The cost estimate assumes an economical-quality, lower-end institutional quality building with a pre-engineered metal structure, and infill sandwich panels between perimeter columns with concrete foundation with CMU walls on the main level for the change rooms and mechanical spaces. The roof structure is assumed steel truss and metal roof deck over the natatorium and second floor spaces. Wood and masonry can likely only be used as accent materials on feature walls and at the main entrance given the higher material and labour costs. Tilt-up construction was examined as an alternative but eliminated due to high fixed site costs and high transportation costs. The building envelope however, must be of a high enough performance standard to meet the environmental conditions of a pool facility. For the budget, the building will not be a LEED-standard building but should embrace practical green solutions such as day-lighting and light-sensors to reduce energy consumption and grey-water management to reduce waste.

Based on a blended unit construction rate of \$480/SF or \$5,150/SM, total project cost would be in the order of \$620/SF or \$6,650/SM. Soft costs include design fees, construction management, permits and licenses, FF&E (assuming some re-use of chattels and equipment from the existing pool) and a modest contingency allowance. Not included are taxes, site development costs (i.e. geotechnical issues) beyond basic service connections from the property line, and additional contingencies. There will be no land acquisition cost for this project

Construction cost indexed to 2016: \$480 / sf or \$5,150 / sm	\$12,500,000
Elevator (two-stop hydraulic \$200,000) and waterslide (150 lineal feet \$300,000)	\$500,000
Site servicing and site development cost allowance (parking excluded)	\$500,000
Soft Costs and Contingency Allowance 20%	\$2,700,000
<b>Total project cost: \$620 / sf or \$6,650 / sm</b>	<b>\$16,200,000</b>