

# Red Deer Multi-Use Aquatic Centre

City of Red Deer

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Phase 2: Conceptual Model - Final Report  
July 7, 2011



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## INTRODUCTION

This document represents the Final design of the Phase 2 Conceptual Model for a Multi-Use Aquatic Facility for Red Deer. It follows the previous Phase 1 Comparative Site Analysis that concluded with the selection of Rotary Recreation Park as the location for the facility.

In comparison to a Green Field site, the study demonstrated that Rotary Recreation Park is more successful in achieving the urban and sustainable goals set out in planning agenda created by the City. This location creates parking and transportation synergies not to be found on a green field site and it allows for flexibility and diversity of use due to all the adjacent facilities, activities, businesses and social groups at this established downtown location. Building within the existing infrastructure proved to be a more cost effective approach than the Green Field alternative. The site selection was approved by Council in March 2011.

The design presented here, for the conceptual model of a Multi-Use Aquatic Facility, is the result of a series of considerations, including Functional Requirements, Site Configuration, Sustainability and Architectural Expression. Leading to the final schematic design, various approaches to site and program has been studied and presented to CAAC/CORD as well as to City Council on May 30 2011. Comments from these meetings have been incorporated into the design presented in this report.

### FUNCTIONAL REQUIREMENTS

The requirements provided by CAAC/CORD for the new facility:

54m Competitive Pool

Diving Tank and Tower: 1, 3, 5, 7.5 and 10m

Leisure Pools, including the double Flow Rider and Hot Tubs

Spectator Seating for 500-1000

Swim Club Offices, Dry Land Training Area

Wellness Centre

Multi-Purpose Rooms, Concession, Retail, Child Minding

Outdoor Lap and Leisure Pool

These requests were in turn processed by MJMA/MTA, with input from the CAAC/CORD user group, to include support space like change rooms, service and administration areas, scaled to fit the new facility according to Alberta Regulations and experience from equivalent facilities.

The facility is designed to contain a wide range of core aquatic uses, including Competitive Swimming and Diving, Instructional Classes, Fitness and Therapy as well as indoor and outdoor Leisure. Other activities will range from Kayak Instruction, Scuba Diving and Para Swim to Aquafit Classes. Pools and Spectator Seating, along with support areas for athletes and spectators, is dimensioned to accommodate large Regional Swim Meets. The 54m pool will have a moveable floor and bulkheads, allowing its depth and length to be adjusted to fit a number of simultaneous pool activities, like Water Polo + Synchronized Swimming or Beach Entry Leisure + Hydrotherapy, ensuring maximum use and program flexibility. The Flow Rider is another example showing the width of the targeted demographic; not only trained athletes, children and seniors, but also teenagers will have a place in Red Deer Multi-Use Aquatic Facility. Outdoors, generous Lap and Leisure Pools along with landscaped Sunbathing Terraces will be 'the' summer place to be in Red Deer for all sun and swim worshippers.

The program also contains considerable Wellness and Community Centre components.

## **SITE CONFIGURATION**

The driving concept in the development of the site layout has been to maximize the benefit of the selected location by reinforcing the planned Promenade (Red Deer Rotary Recreation Park & South Site Study Report, August 2010) as an organizing element and a spine of activity through the park. This will animate the park, and create an Event Space unique to Red Deer and to the province.

The new building has been given a linear form that interacts with the Promenade along its entire length, weaving the Aquatic Hall, Spectator Gallery and Public Concourse into the Park. Operable glazed walls between the Concourse and the Promenade will open the building up to the park, turning the concession into a sidewalk café all through the spring and summer.

Proposed new park attractions include the Splash Pad, Playground and Picnic Terrace, while existing features like Heritage Square will be revitalized by its new role in the continuous Park Agora. The concept of the 'Agora' is articulated in Red Deer Community Culture Vision & Outline for Action (2008) as a 'connection between spaces and places that will enable culture', which is an excellent way to describe the proposed Promenade. It is designed to be a robust and flexible space, as perfect for established events like the Farmer's Market as for casual Sunday strolls.

Parking will be provided both on north and south ends of the building. Green islands with coniferous and deciduous canopy trees continue the 'park mode' into the parking areas and help 'Green' this important Park site.

## **INTERIOR LAYOUT**

The linearity presented by the Park shape and Promenade is also expressed in the length of the aquatic space, where the existing pool becomes the first in a linear series of pools in one unified Aquatic Hall. This single span clear space, 100m in length and 15m clear height will be a powerful and memorable space, iconically linked as a symbol of Red Deer.

New and existing buildings are seamlessly connected, to each other and to the Promenade, by the Public Concourse. This Concourse also acts as an extension of the Spectator area, with unrestricted views into the Aquatic Hall for the length of the building. Program space like Meeting Rooms, Concession and Child Minding are also located off of the Concourse, strengthening its role as the Main Street of the facility. The reception is located centrally at the Concourse, providing a single point of control where staff is in visual contact with all parts of the public area. Consolidated new Changes Rooms will be stacked below the Public Concourse, which enables a direct walk-out to the new pool deck.

Ongoing comments from CAAC/CORD regarding spatial relationships between program elements have been incorporated into the design.

## **EXISTING BUILDING**

Special Care has been taken to re-use and integrate the existing facility, in good condition after 2005 renovation, to the fullest extent possible. All parts of the building are retained 'as is' with the exception of portions of the ground floor, converting the existing lobby to a large Wellness Studio and bringing the Concourse through to the new addition. The existing Pool, Hot Tub and Saunas will be part of the new Aquatic Hall.

The upper and lower level will be connected to the new facility's circulation, but otherwise left as is, while the ground floor of the existing building will be selectively altered to give way to the new Public Concourse. The lower level will become accessible from the main concourse with light and views opening up existing Activity Rooms to the facility.

## **ARCHITECTURAL EXPRESSION**

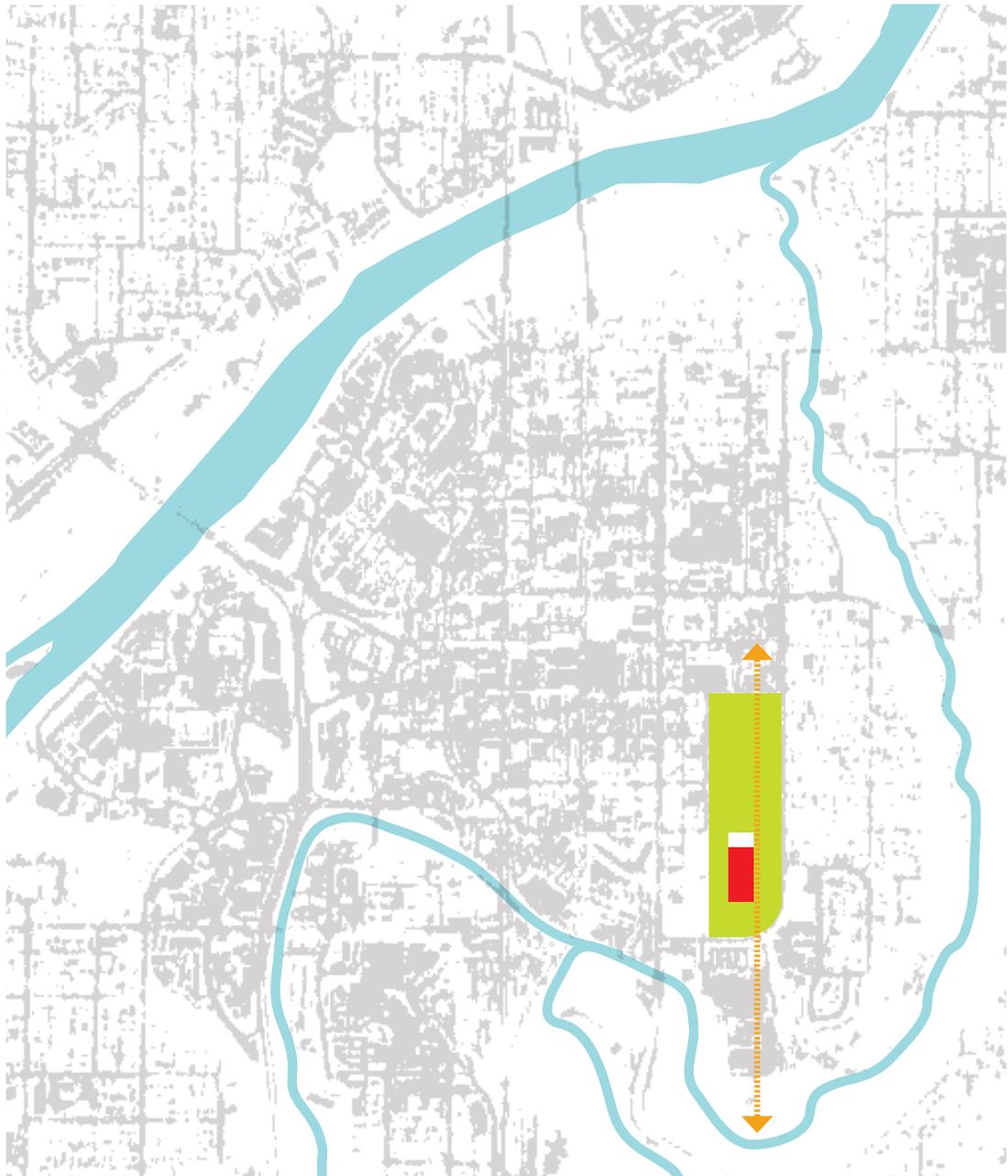
The building has been designed as a Landmark Civic Building in Red Deer, taking cues from contemporary international competition venues and Alberta landmark buildings. As such, the building exterior has been allowed a bold character; the cladding, folding its way around the structure like Origami, culminates in a grand gesture towards the park at the main (south facing) facade. Inspiration has also been drawn from the region's traditional agricultural buildings, leading to the monolithic building shell and simple form. As a nod to the site's Railway History, the rhythmic wood frames running down the Aquatic Hall forms a structure that is both rational and monumental, and also resembles the timber sleepers of the railroad once coming up to the Fairground located at the site.

Generous expanses of glass let the building glow on dark winter evenings, while filling the interiors with natural light in the daytime. This light is a key feature of the Aquatic Hall, conceived as a crystalline space, where the expansive water surfaces and tall ceilings create a striking spatial experience.

## **SUSTAINABILITY**

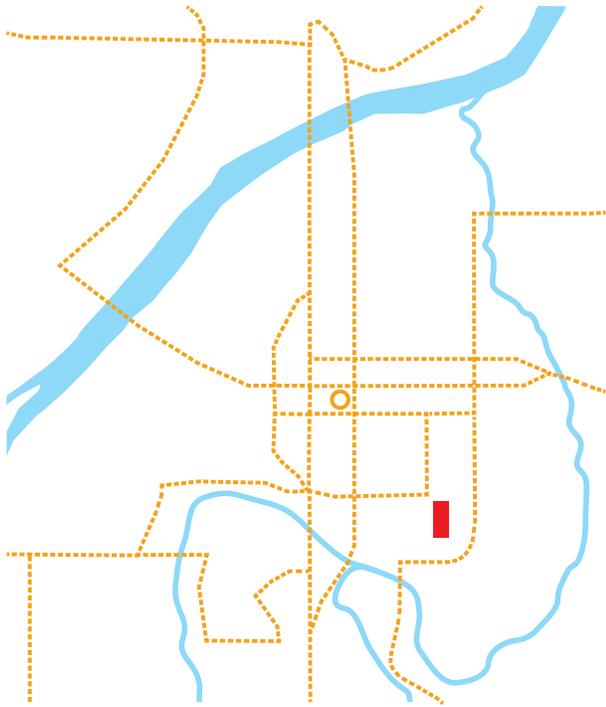
While a range of technological concepts are employed to achieve the equivalent of a LEED gold rating, the design first utilizes all the basic Passive and Common Sense-based principles of sustainable design, such as site orientation to light, prevailing winds, high insulation values and robust maintenance free detailing. This way, sustainable gain are achieved at low or no cost.

Both a site feature and sustainability asset, the site is designed with a system of Rain Water Collectors, leading rain water to a large Naturalized Bio-filter Pond. As well as providing water retention and treatment, the pond will also add wildlife habitat, recreation and gardening opportunities to the south end of the park. The outfall will flow through, following the green connection along the promenade as it continues south towards the Ice Arena, to the Waskasoo Creek, reconnecting with the riverine park system at the heart of the history of the City.



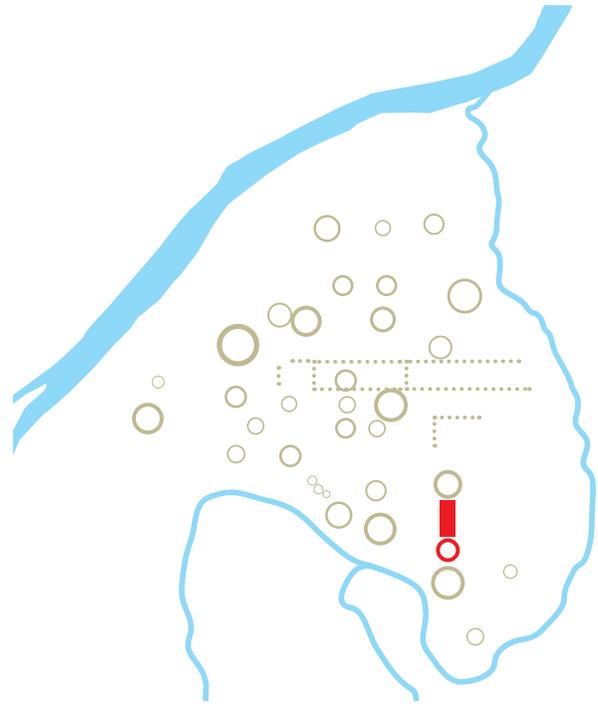
## CONTEXT DIAGRAM

Building Situation in the Downtown of Red Deer



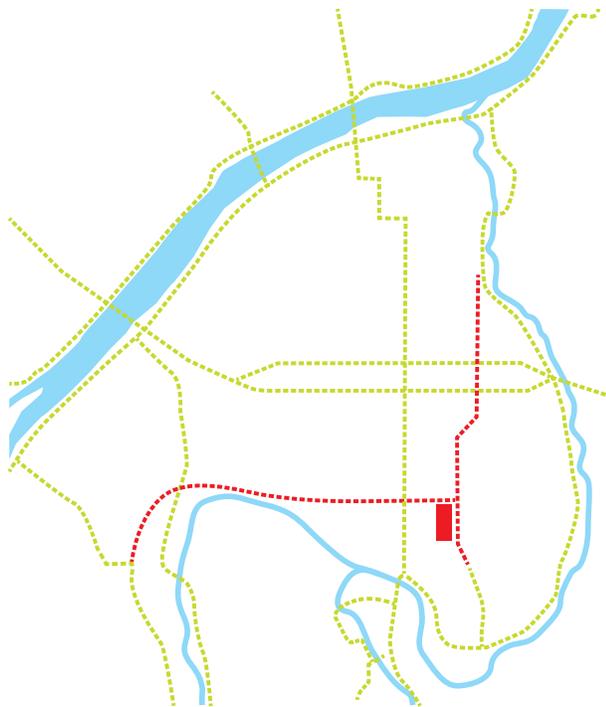
PUBLIC TRANSIT

- Existing Transit Routes
- Sorensen Station



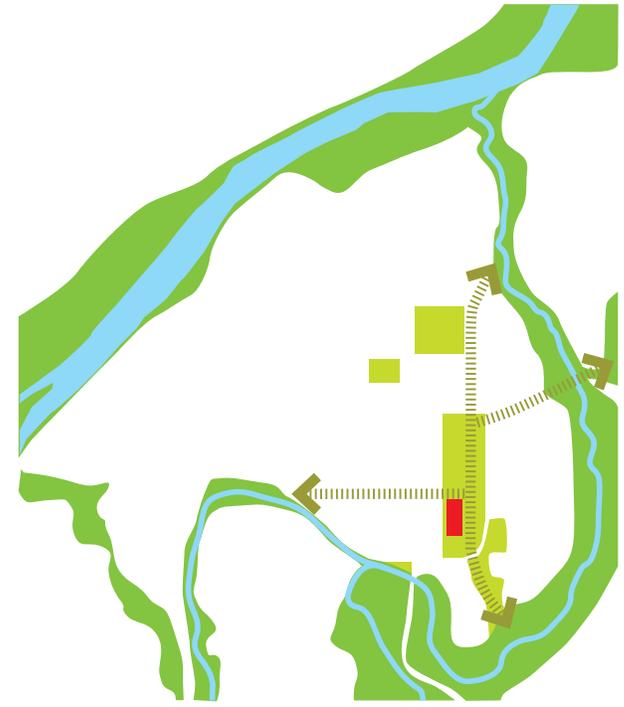
PARKING

- Existing Parking
- Proposed Parking
- Street Parking



BICYCLE TRAILS

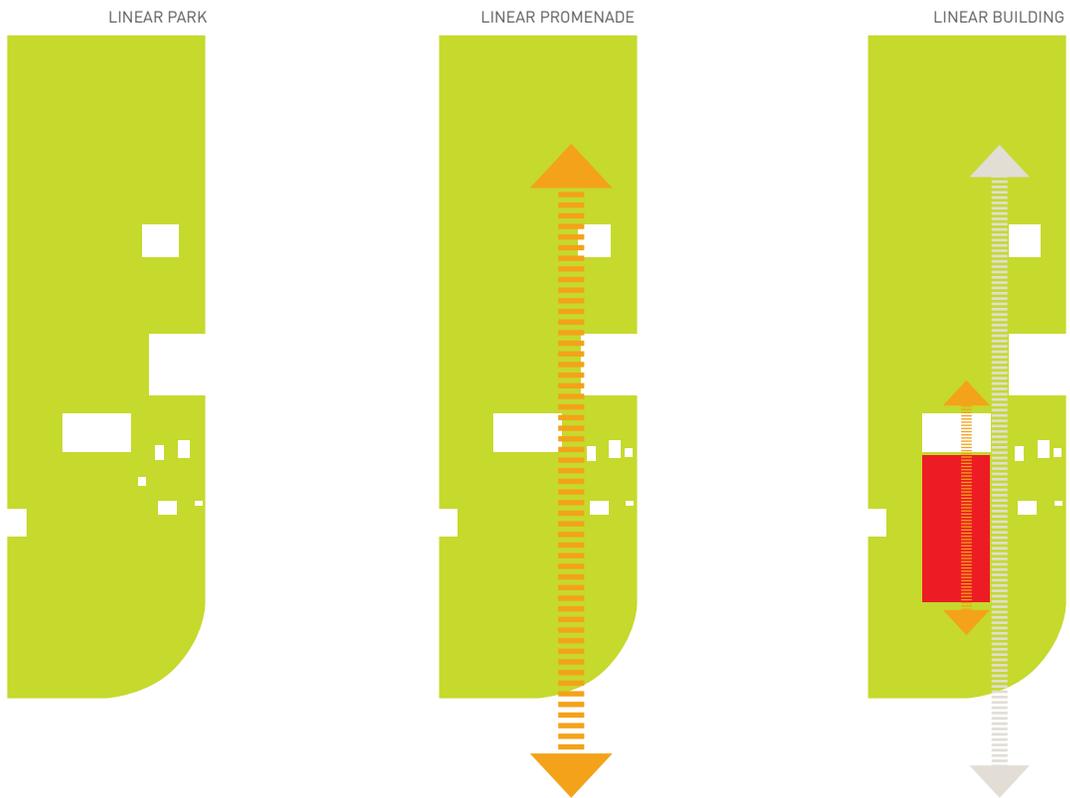
- Existing Hard Surface Trails
- Proposed Hard Surface Trail



GREEN SPACE

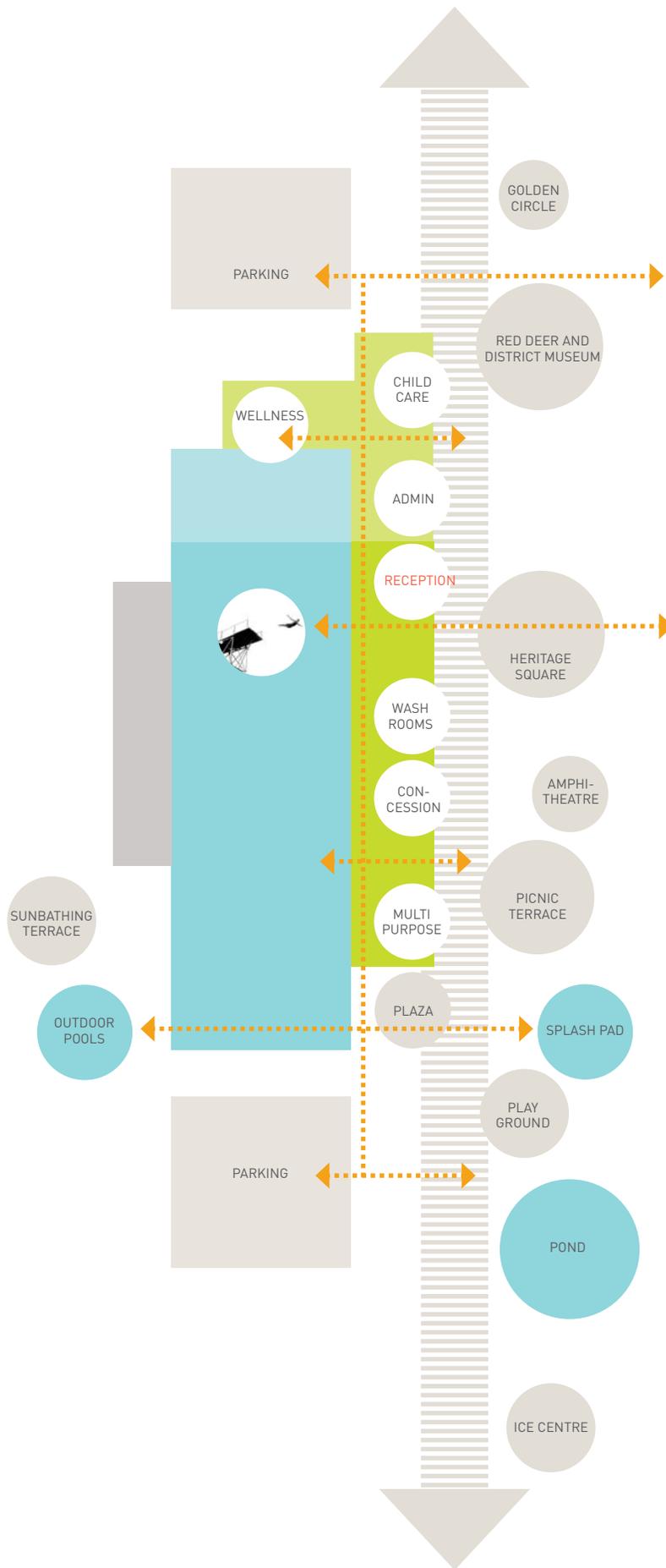
- Existing Green Space
- Existing Urban Green Space / Recreation
- Proposed Connections

SITE DIAGRAMS



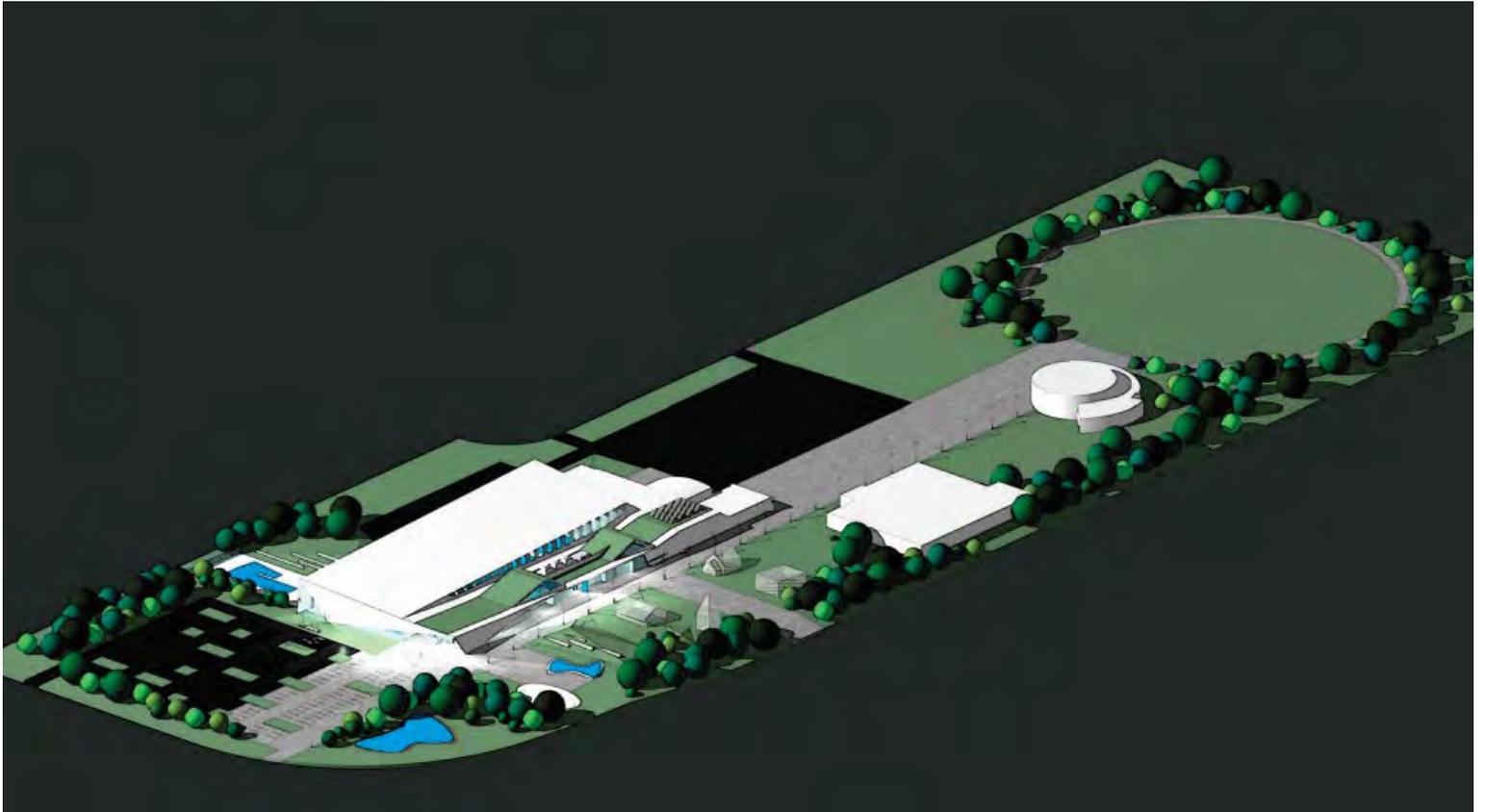
## PARK / BUILDING DIAGRAM

Diagram demonstrating reinforcement of Park Linearity in Building and Site Configuration



## PROMENADE DIAGRAM

Connectivity of indoor and outdoor Activities to Park Promenade



## SITE RENDERING

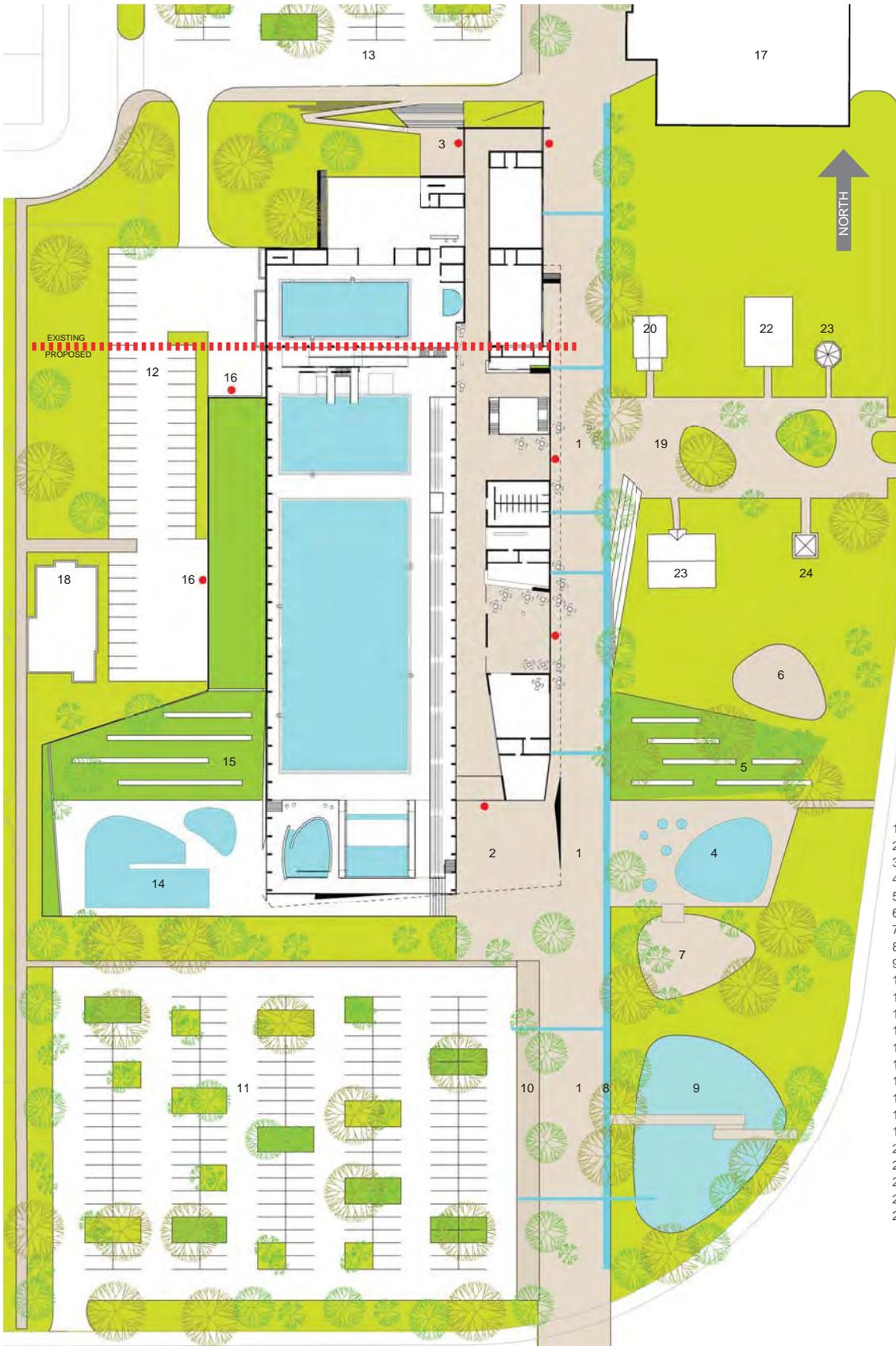
AERIAL AXO VIEW OF SITE



- 1 PROMENADE
- 2 EXISTING RECREATION CENTRE
- 3 PROPOSED ADDITION
- 4 SPLASH PAD
- 5 PLAYGROUND
- 6 NATURALIZED BIOFILTER POND
- 7 PARKING
- 8 OUTDOOR LAP- AND LEISURE POOL
- 9 RED DEER MUSEUM + ART GALLERY
- 10 GOLDEN CIRCLE
- 11 HERITAGE SQUARE
- 12 EXISTING TENNIS COURTS

**SITE PLAN**

1:2500



- 1 PROMENADE
- 2 MAIN ENTRANCE PLAZA
- 3 NORTH ENTRANCE PLAZA
- 4 SPLASH PAD
- 5 PICNIC TERRACE
- 6 AMPHITHEATER
- 7 PLAYGROUND
- 8 RAINWATER COLLECTOR
- 9 NATURALIZED BIOFILTER POND
- 10 DROP-OFF
- 11 156 PARKING SPOTS
- 12 47 PARKING SPOTS
- 13 180 EXISTING PARKING SPOTS
- 14 OUTDOOR LAP- AND LEISURE POOL
- 15 SUNBATHING TERRACE
- 16 SERVICE ENTRANCE
- 17 RED DEER MUSEUM + ART GALLERY
- 18 EXISTING TENNIS CLUB
- 19 HERITAGE SQUARE
- 20 CROSSING SCHOOL
- 21 STEPHENS ON-HALL BLOCK
- 22 RELOCATED GAETZ LIBRARY PAVILION
- 23 NORWEGIAN LAFT HUS
- 24 PRESBYTERIAN CHURCH STEEPLE

# SITE PLAN

1:1200



## PARK USE / FEATURE DIAGRAM



## AQUATIC USER GROUPS



50m Competition



25m + 25m Competition



25m + 25m Competition



30m Water Polo



Synchronized Swimming

25m Lane Swimming, Classes



25m Lane Swimming, Classes



Beach Entry Leisure, Hydrotherapy



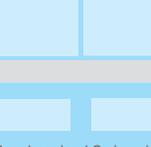
25m Lane Swimming



Aquafit, Classes

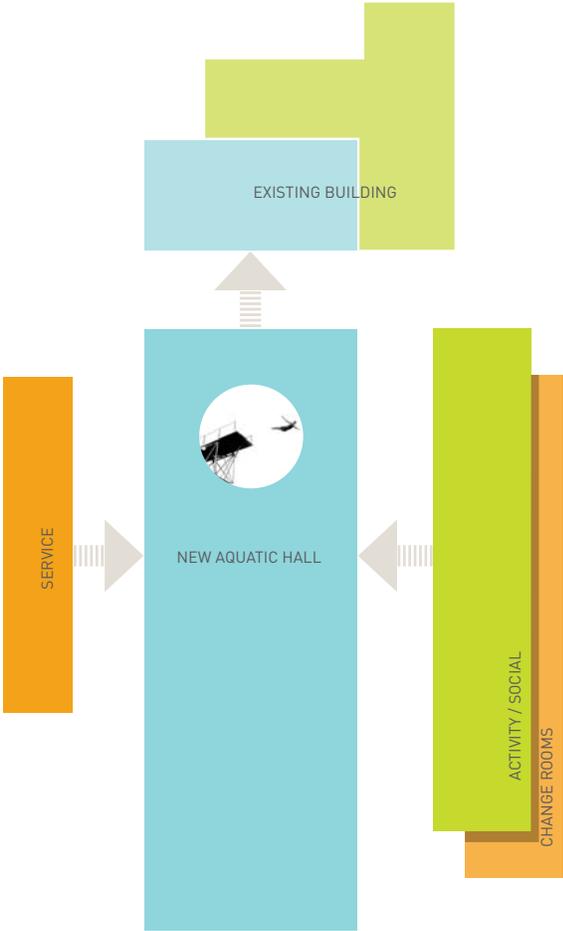


Synchronized Swimming  
12m x 12m Competition Formats

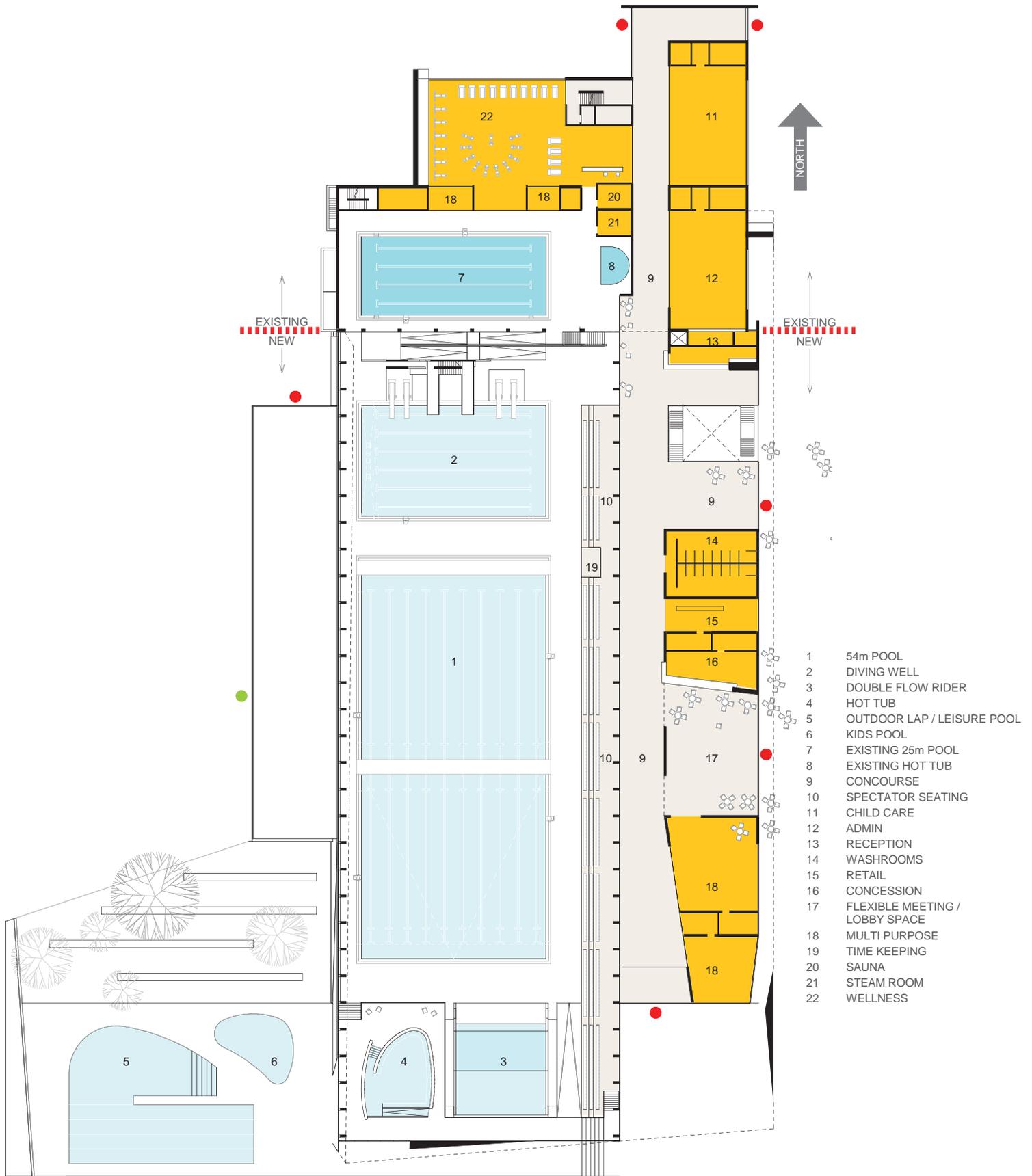


Synchronized Swimming  
10m x 3m Competition Formats

## POOL USE FLEXIBILITY DIAGRAM

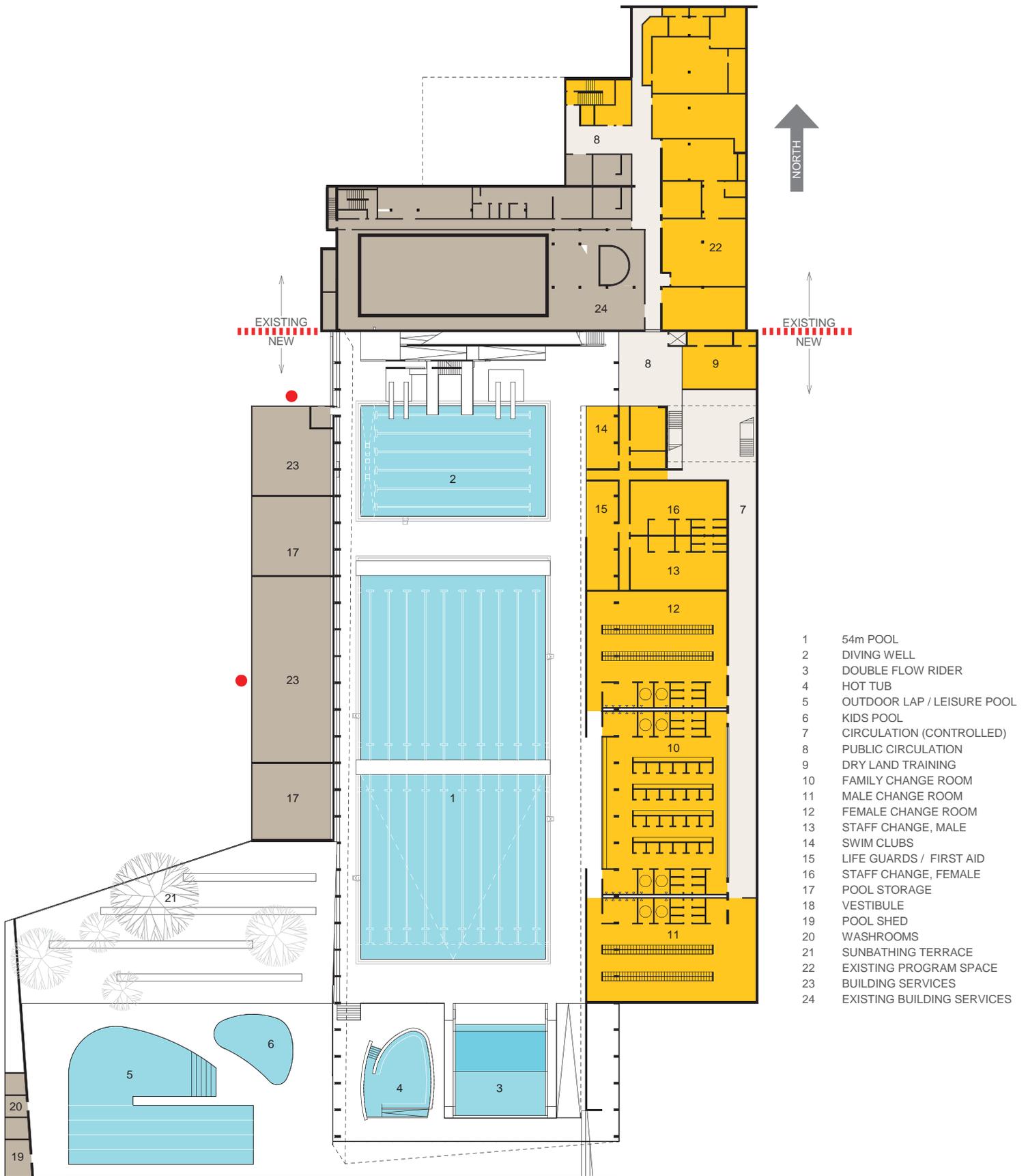


**BUILDING DIAGRAM**  
Conceptual Building Program Layout



PLAN, EXISTING DECK LEVEL

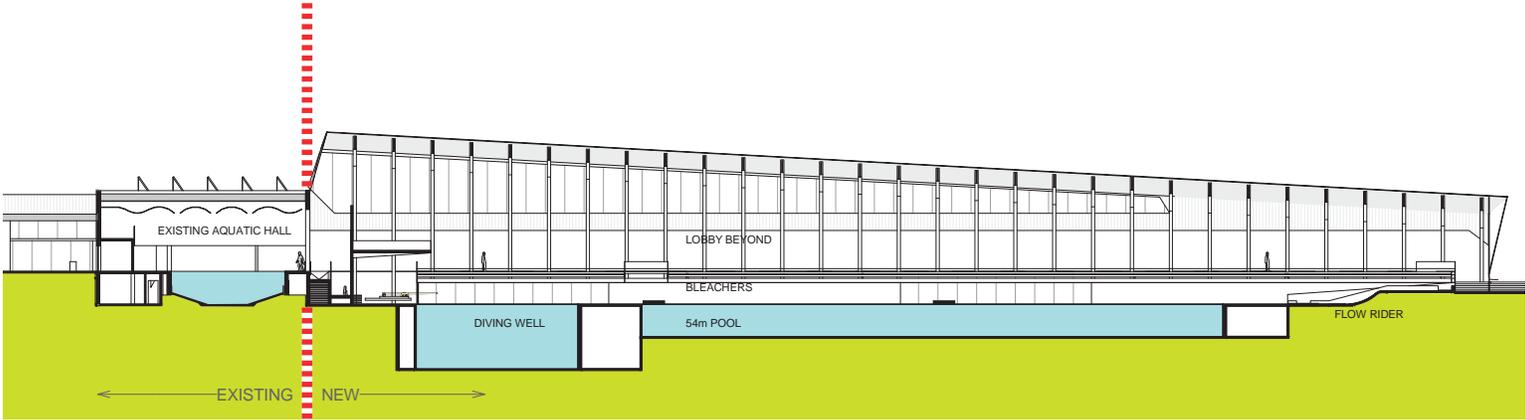
NTS



- 1 54m POOL
- 2 DIVING WELL
- 3 DOUBLE FLOW RIDER
- 4 HOT TUB
- 5 OUTDOOR LAP / LEISURE POOL
- 6 KIDS POOL
- 7 CIRCULATION (CONTROLLED)
- 8 PUBLIC CIRCULATION
- 9 DRY LAND TRAINING
- 10 FAMILY CHANGE ROOM
- 11 MALE CHANGE ROOM
- 12 FEMALE CHANGE ROOM
- 13 STAFF CHANGE, MALE
- 14 SWIM CLUBS
- 15 LIFE GUARDS / FIRST AID
- 16 STAFF CHANGE, FEMALE
- 17 POOL STORAGE
- 18 VESTIBULE
- 19 POOL SHED
- 20 WASHROOMS
- 21 SUNBATHING TERRACE
- 22 EXISTING PROGRAM SPACE
- 23 BUILDING SERVICES
- 24 EXISTING BUILDING SERVICES

PLAN, NEW DECK AND CHANGE LEVEL

NTS



# BUILDING SECTION

LONG SECTION, LOOKING EAST

In addition to typical Mechanical, Electrical and LEED Shadow items we will incorporate the following as unique sustainable features :



**1 GREEN ROOF**

Minimizes heat island effect and reduces storm water run off. Provides open space for occupants.

**2 NATURAL VENTILATION**

Passive, natural ventilation through operable skylights; use of operable overhead garage-style doors located along the exterior enables fresh air to be drawn through the building

**3 NATURAL DAYLIGHTING**

Skylights admit diffuse daylight into core of building



**4 SOLAR PHOTOVOLTAIC PANELS**

South Facing PVs generate electricity for building use; all generated electricity benefits from 'feed-in-tariff' going to grid or building, particularly for the large Aquatic Volume.

**5 SOLAR WATER HEATING**

Solar thermal panels will supplement the building and pool's hot water needs



**6 SOLAR WALL**

The use of a solar wall to preheat ventilation air can significantly reduce energy consumption on conditioning incoming fresh air

**7 RAIN WATER REUSE**

Rain water harvested from green roof and planters used for irrigations and flushing toilets/urinals; storm water runoff and potable water consumption reduced



**8 REDUCE WATER CONSUMPTION**

Dual flush toilets, pint flush urinals and ultra low flow faucets/showers achieve >40% water savings

**9 INTELLIGENT CONTROL SYSTEMS**

Demand control ventilation for low occupancy rooms adjusts number of air changes based on CO<sub>2</sub> sensors; Occupancy and daylight sensors control levels of artificial lights and reduces energy consumption. Zoned lighting control to maximize daylighting in Aquatic Hall.



**10 SHADING DEVICES**

Vegetated aluminum grille provides shade in summer to reduce solar gains; daylight and thermal gains maximized during winter



**11 HIGH PERFORMANCE BUILDING ENVELOPE**

Comprising R20 walls and R20 roof, R12 spandrels and clear high performance glazing with enhanced thermal break

**12 REDUCE HEAT ISLAND EFFECT**

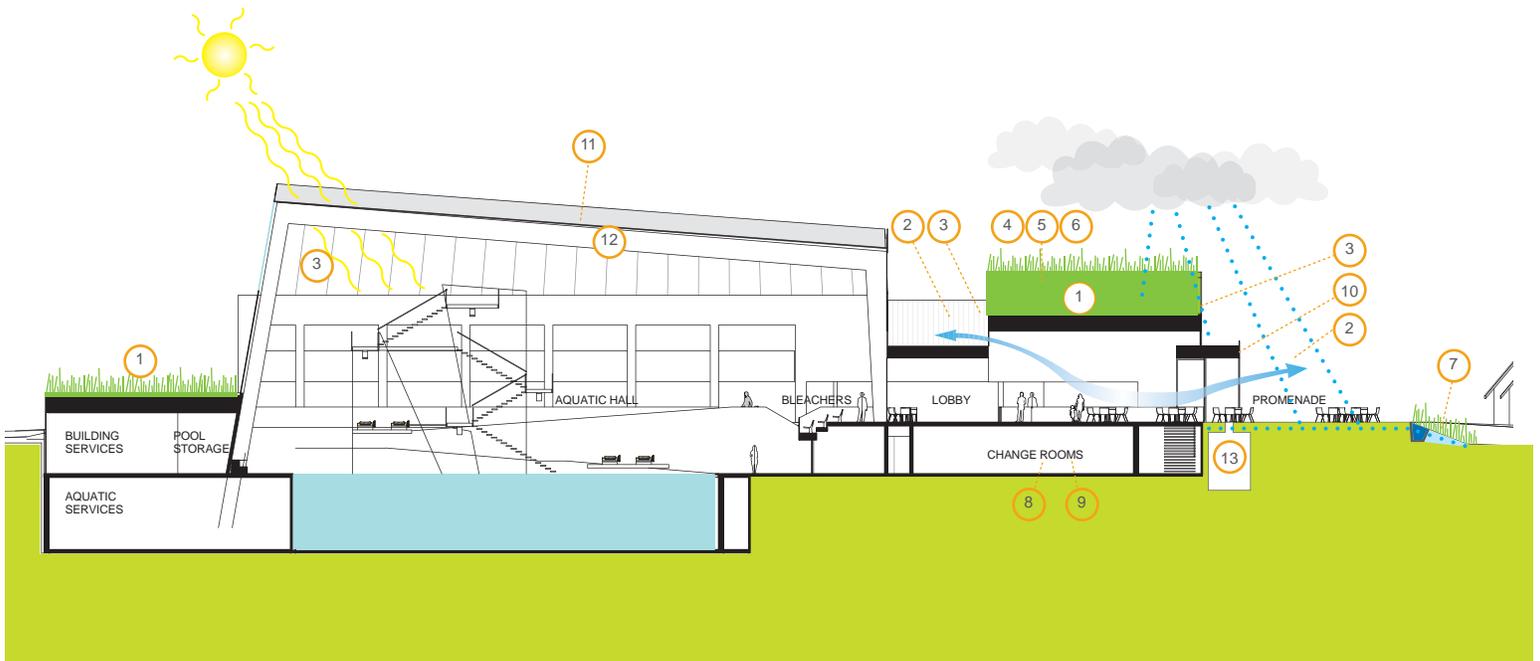
Use of permeable asphalt and Tree shading at parking and reflective roof area.



**13 HEAT RECOVERY**

High efficiency Mechanical HRVs and Heat Recovery from Shower water drains.

## FEATURED SUSTAINABLE APPROACHES



**SUSTAINABLE FEATURES**

- 1 GREEN ROOF
- 2 NATURAL VENTILATION
- 3 INDIRECT DAYLIGHTING
- 4 SOLAR PHOTOVOLTAIC PANELS
- 5 SOLAR WATER HEATING
- 6 SOLAR WALL
- 7 RAIN WATER REUSE
- 8 REDUCE WATER CONSUMPTION
- 9 INTELLIGENT CONTROL SYSTEMS
- 10 SHADING DEVICES
- 11 HIGH PERFORMANCE BUILDING ENVELOPE
- 12 ZONED LIGHTING CONTROL
- 13 RAIN WATER CISTERN FOR IRRIGATION

**SUSTAINABLE FEATURES**

BUILDING SECTION LOOKING NORTH



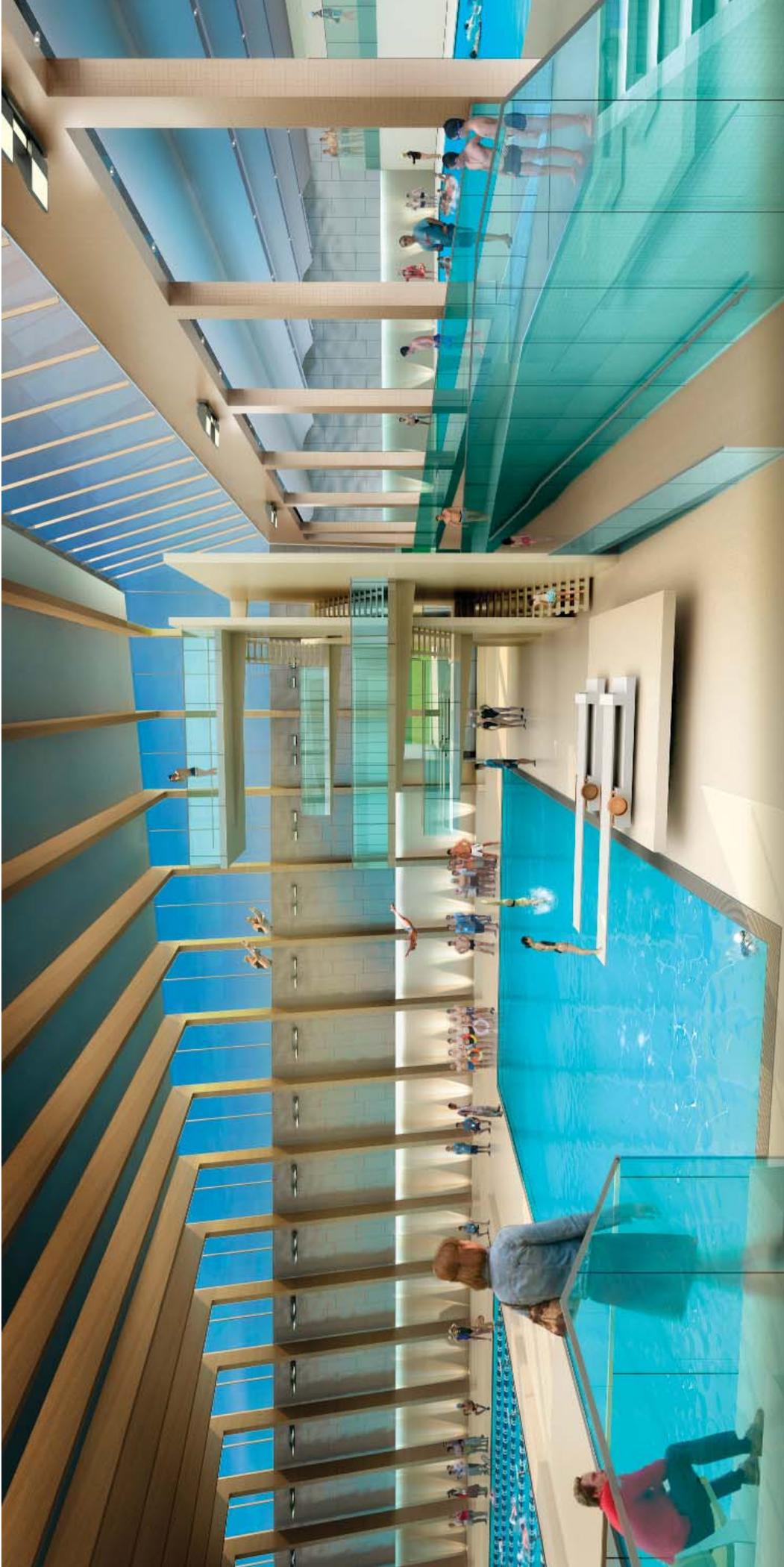
## EXTERIOR RENDERING

SOUTH VIEW FROM 43 STREET



## AQUATIC HALL

LOOKING SOUTH



## AQUATIC HALL

VIEWS FROM PUBLIC CONCOURSE INTO AQUATIC HALL



## PUBLIC CONCOURSE AND PROMENADE

VIEW FROM THE SOUTH EAST



OUTDOOR LAP AND LEISURE POOL



## HERITAGE SQUARE

VIEW FROM 47 AVENUE



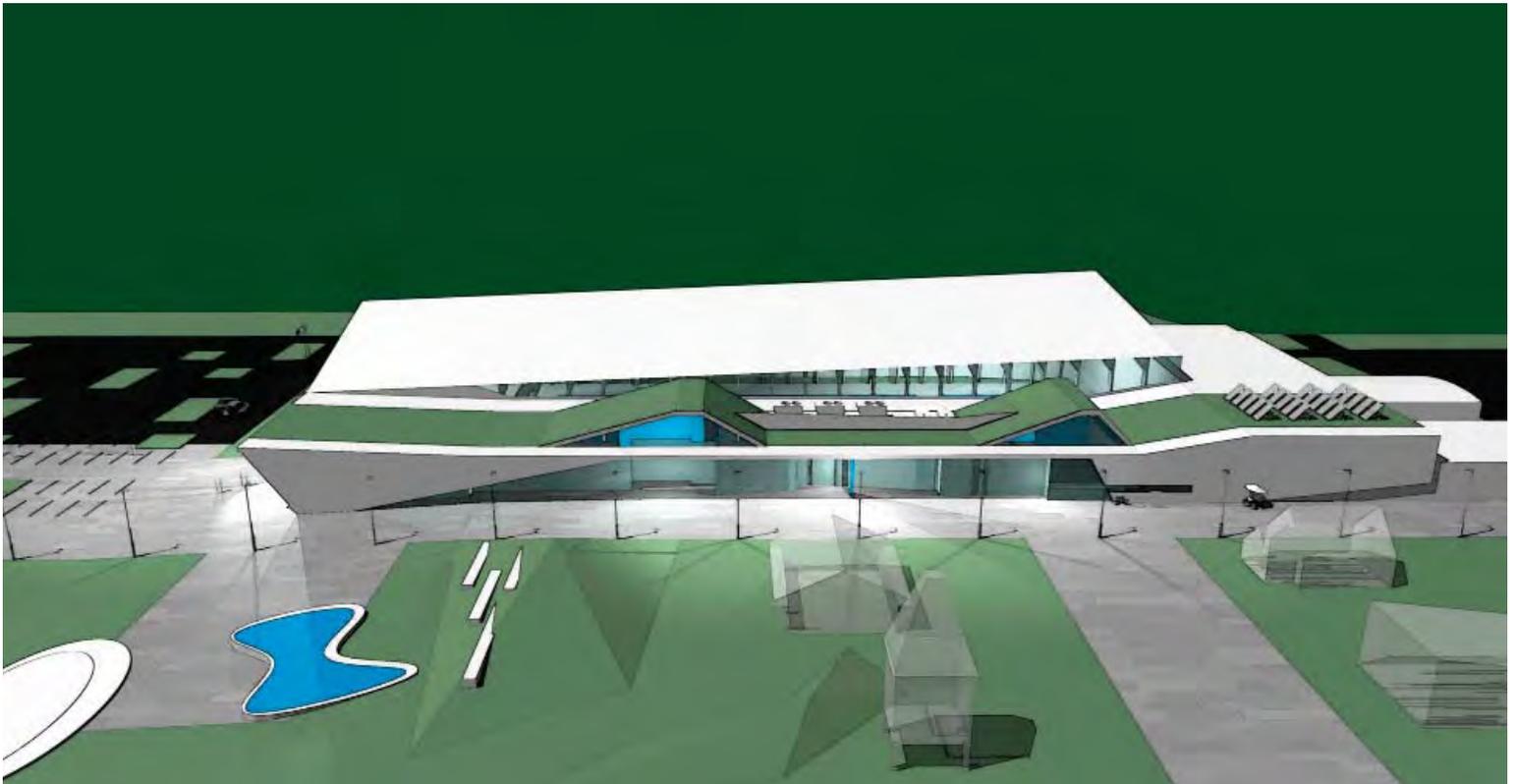
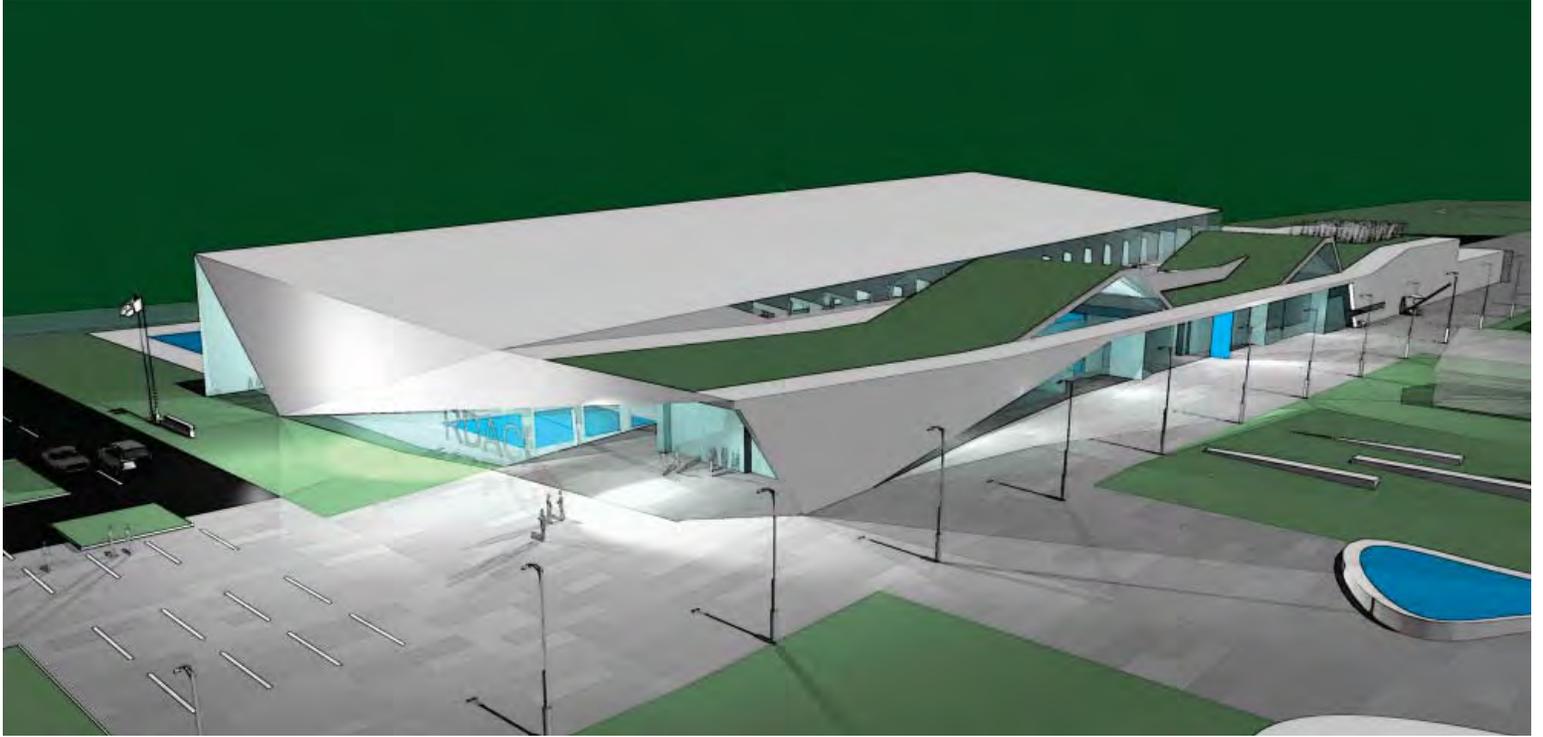
## SPLASH PAD AND MAIN ENTRANCE

VIEW FROM THE SOUTH EAST



## EXISTING BUILDING

NORTH VIEW

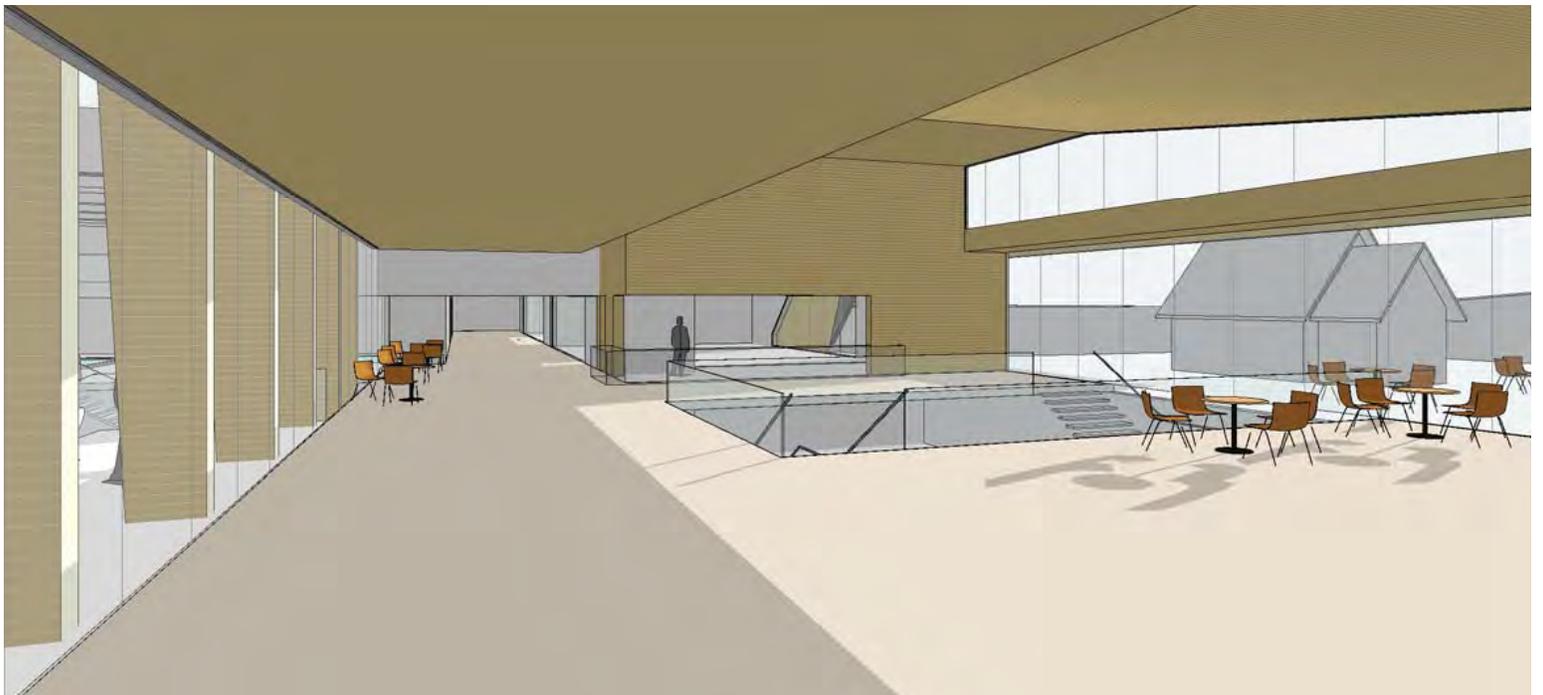


## EXTERIOR SKETCHES

AERIAL VIEW FROM ENTRANCE AND PARK



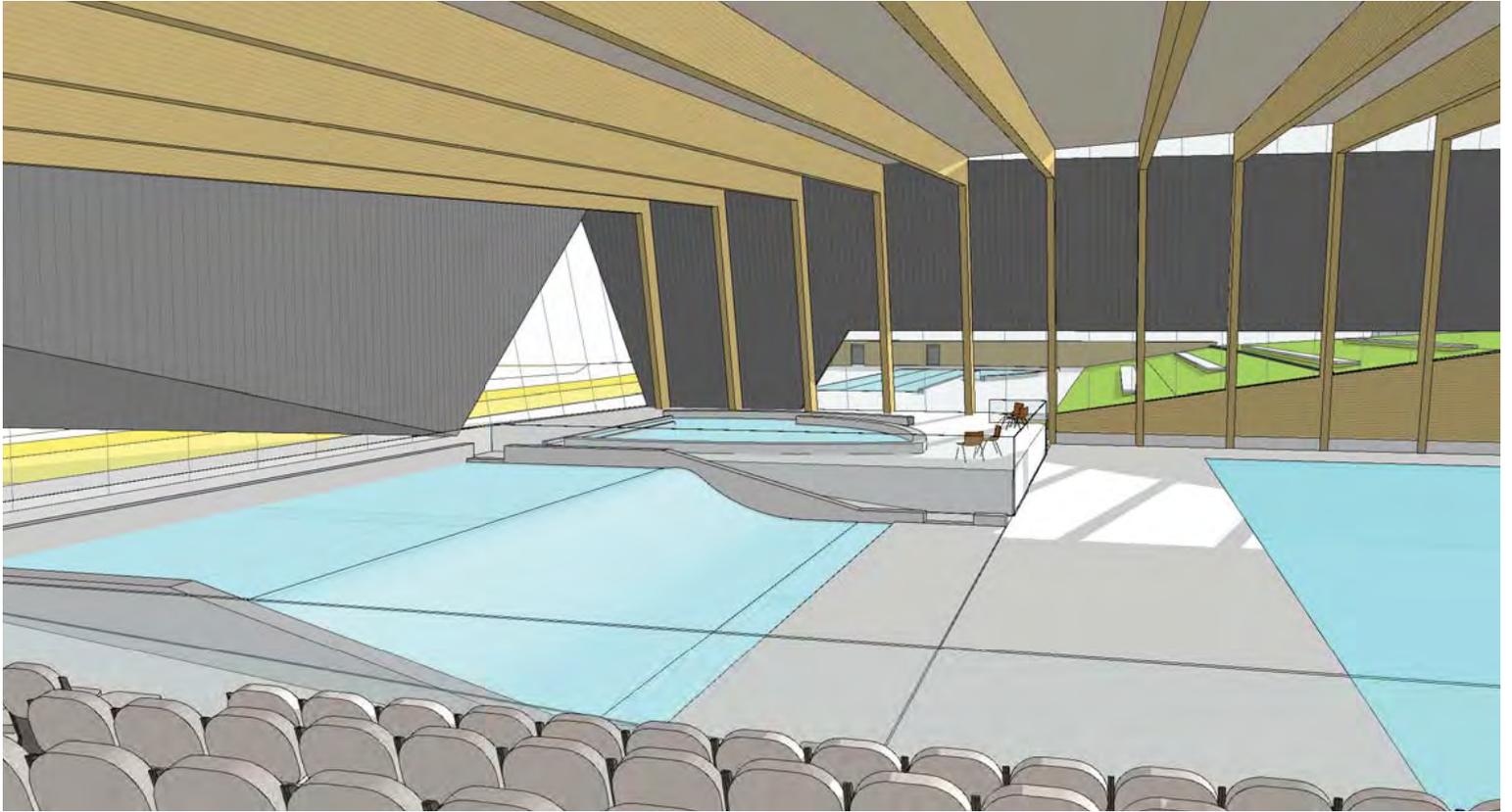
Lobby looking south past Control



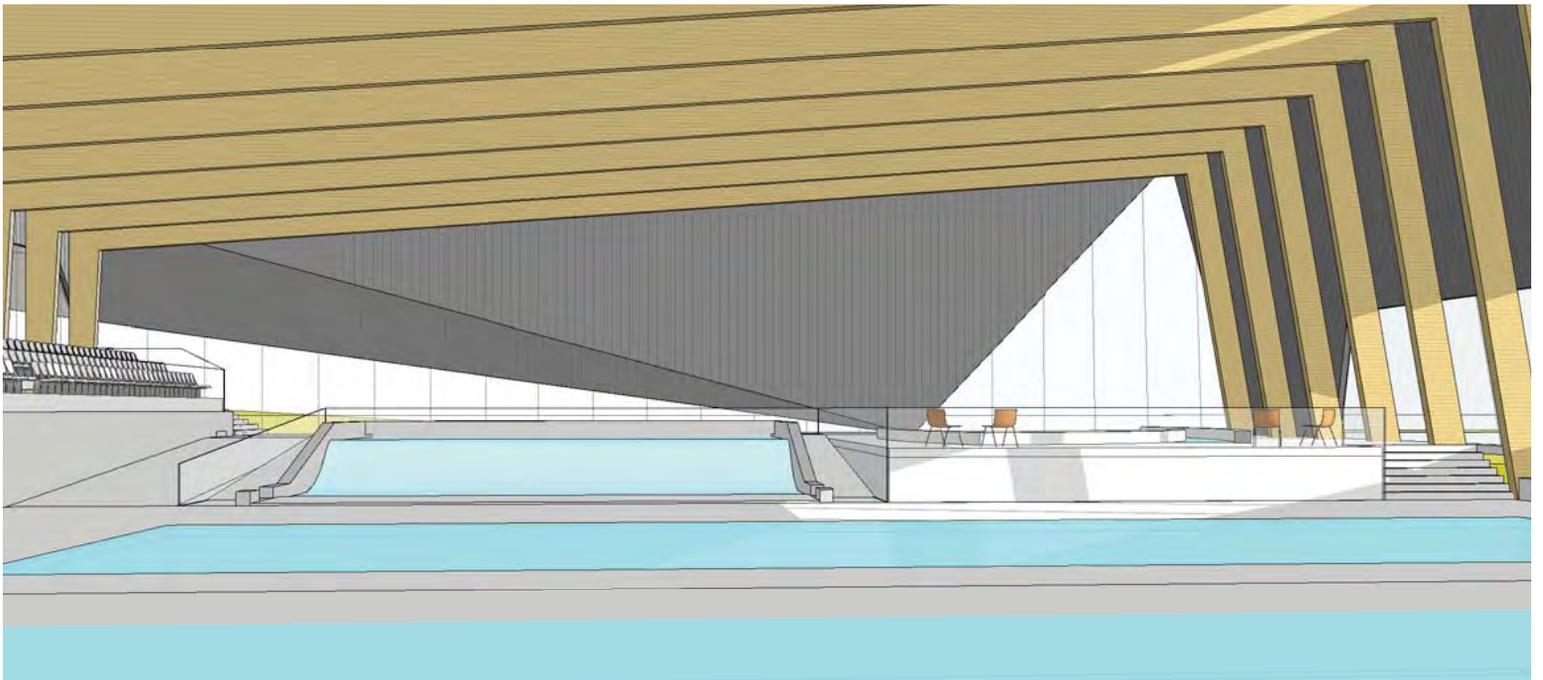
Lobby looking North

## INTERIOR SKETCHES

VIEWS FROM PUBLIC CONCOURSE



Views of Flow Rider and Whirlpool from Concourse



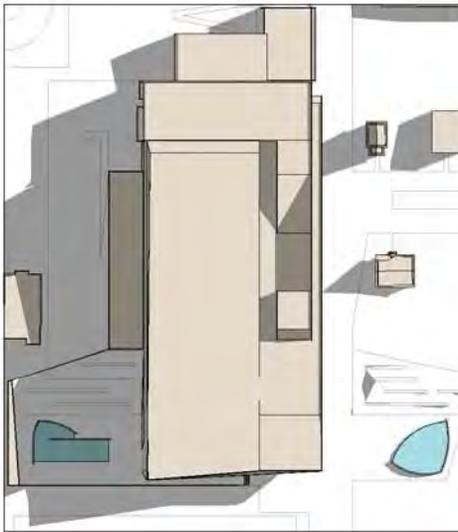
Views of Flow Rider and Whirlpool from 50m Pool

## INTERIOR SKETCHES

VIEWS FROM AQUATIC HALL

An aerial photograph of a large body of water, likely a lake or ocean, showing intricate patterns of ripples and reflections. The water is a deep, vibrant blue, with lighter blue and white highlights where the sun reflects off the surface. The reflections create a shimmering, textured effect across the entire scene. A white rectangular box is positioned in the upper right quadrant, containing the word "APPENDIX" in a simple, black, sans-serif font.

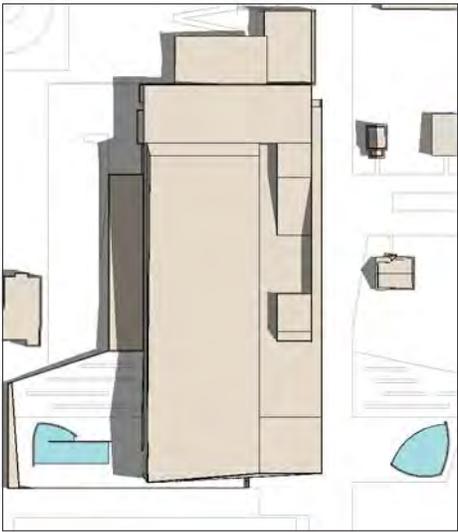
APPENDIX



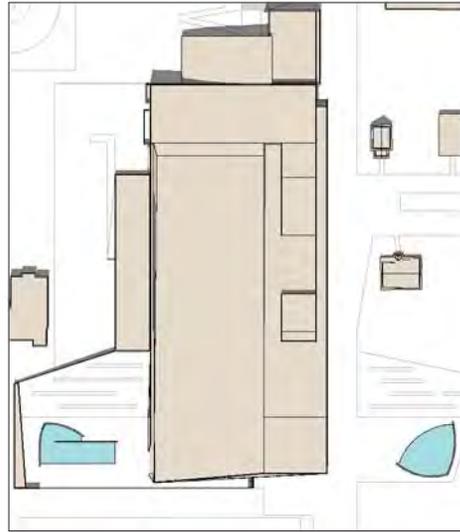
6 AM



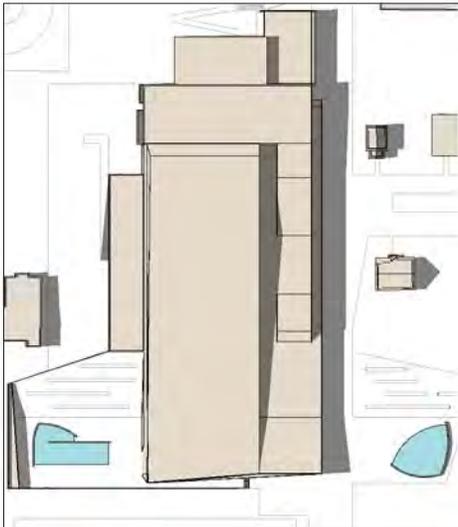
7 AM



9 AM



1 AM



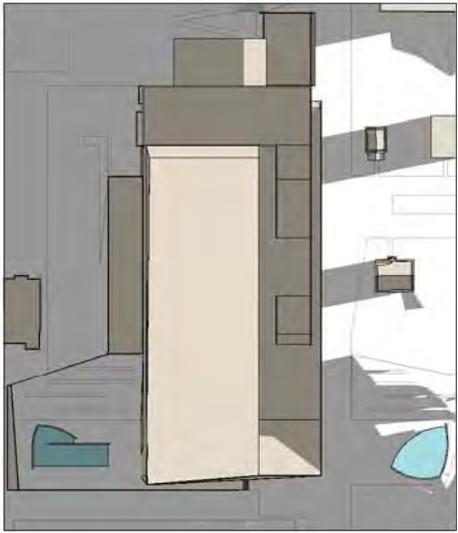
5 PM



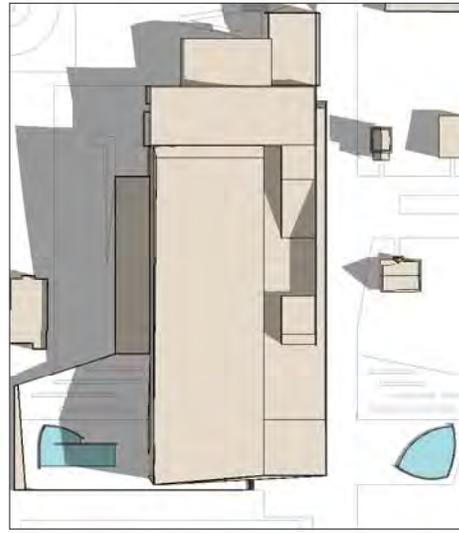
8 PM

## SOLAR STUDIES

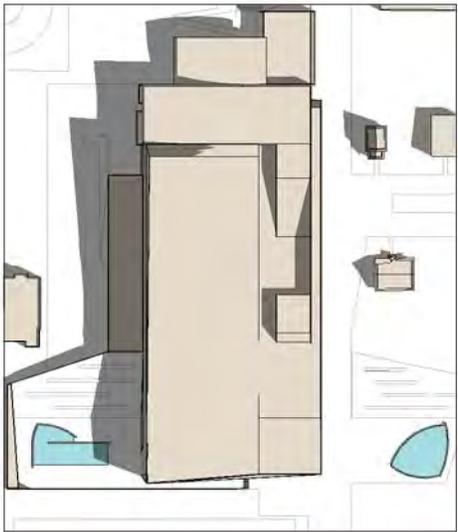
JUNE 21 - SUMMER SOLSTICE



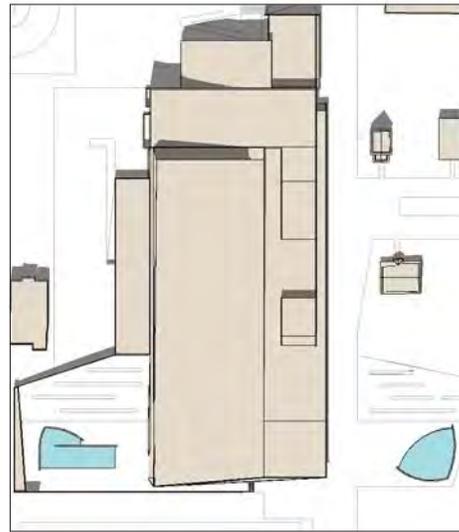
6 AM



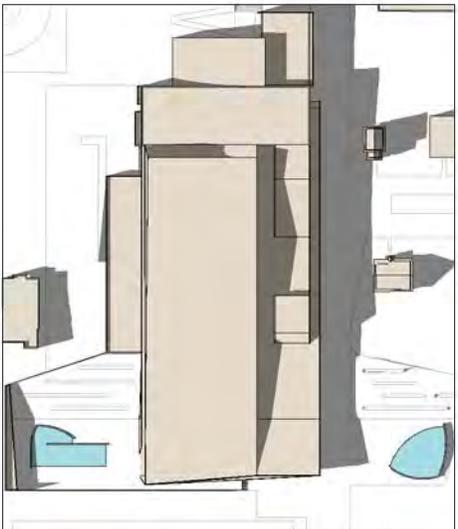
8 AM



9 AM



1 PM



5 PM



6 PM

## SOLAR STUDIES

SEPTEMBER 5 - EXTERIOR POOL CLOSING DAY



<b>DEVELOPMENT COSTS</b>	
<b>LAND COST</b>	<b>\$6,200,000</b>
Investment (City owned land)	<b>-\$6,200,000</b>
Service charges to property line	<b>\$75,000</b>
<b>SOFT COSTS</b>	
Survey, Legal, misc (5% of constr. cost)	<b>\$4,278,650</b>
Traffic Study	<b>\$15,000</b>
<b>TOTAL DEVELOPMENT COST</b>	<b>\$4,369,000</b>

**DEVELOPMENT COSTS | Order Of Magnitude (Class D) Cost Estimate:**

includes land acquisition costs and costs associated with bringing services such as utility lines , roads, etc. to the site. On-site costs such as grading, landscaping and utilities from the property line to the building are excluded here, but included in the Capital Cost.

Land Costs and Service Charges shown are approximate values based on numbers from similar recent projects in Red Deer. These numbers have been supplied by the City of Red Deer. A credit is included for the Rotary Recreation Park Land Cost, since this land is already in the City's possession.

Off-site Levies has not been calculated as the site is located within the exempt area of Bylaw No. 3452/2010.

**DEVELOPMENT COSTS**

ORDER OF MAGNITUDE (CLASS D)



<b>CAPITAL COSTS</b>	
<b>HARD COSTS</b>	
Renovate existing facility	<b>\$3,834,000</b>
Addition - including hard & soft landscaping	<b>\$67,740,750</b>
Exterior Lap Pool, Deck Area	<b>\$3,150,000</b>
Naturalized Biofilter Pond	<b>\$150,000</b>
South Parking Lot	<b>\$468,000</b>
West Parking & Service Entry	<b>\$135,000</b>
Site:	<b>\$250,000</b>
Water supply, Sanitary & Storm Sewer, Incoming Electrical distribution and Lighting - from Property Line to new Addition, no change in services to existing building	
Sum:	<b>\$75,728,000</b>
<b>SOFT COSTS</b>	
13% of Hard Costs: Design Fees, Geotechnical, Survey, Environmental, Hydrogeology, Commission, LEED, Energy Modelling, Envelope & Roofing Assessment, Photo's, Disbursements, Legal, Testing & Inspection, etc.	<b>\$9,845,000</b>
<b>TOTAL CAPITAL COST</b>	<b>\$85,573,000</b>

<b>TOTAL DEVELOPMENT AND CAPITAL COST</b>	<b>\$89,942,000</b>
	Excluding GST

<b>SEPARATE COSTS:</b>	
Splash Pad, Picnic Terrace, Amphitheatre, Playground	<b>\$2,000,000</b>
Hard & Soft Landscaping, Heritage Square	<b>\$200,000</b>

**CAPITAL COSTS | Order Of Magnitude (Class D) Cost Estimate Definition:**

This estimate provides an indication of the total cost of the project, based on the user's functional requirements to the degree known at the time.

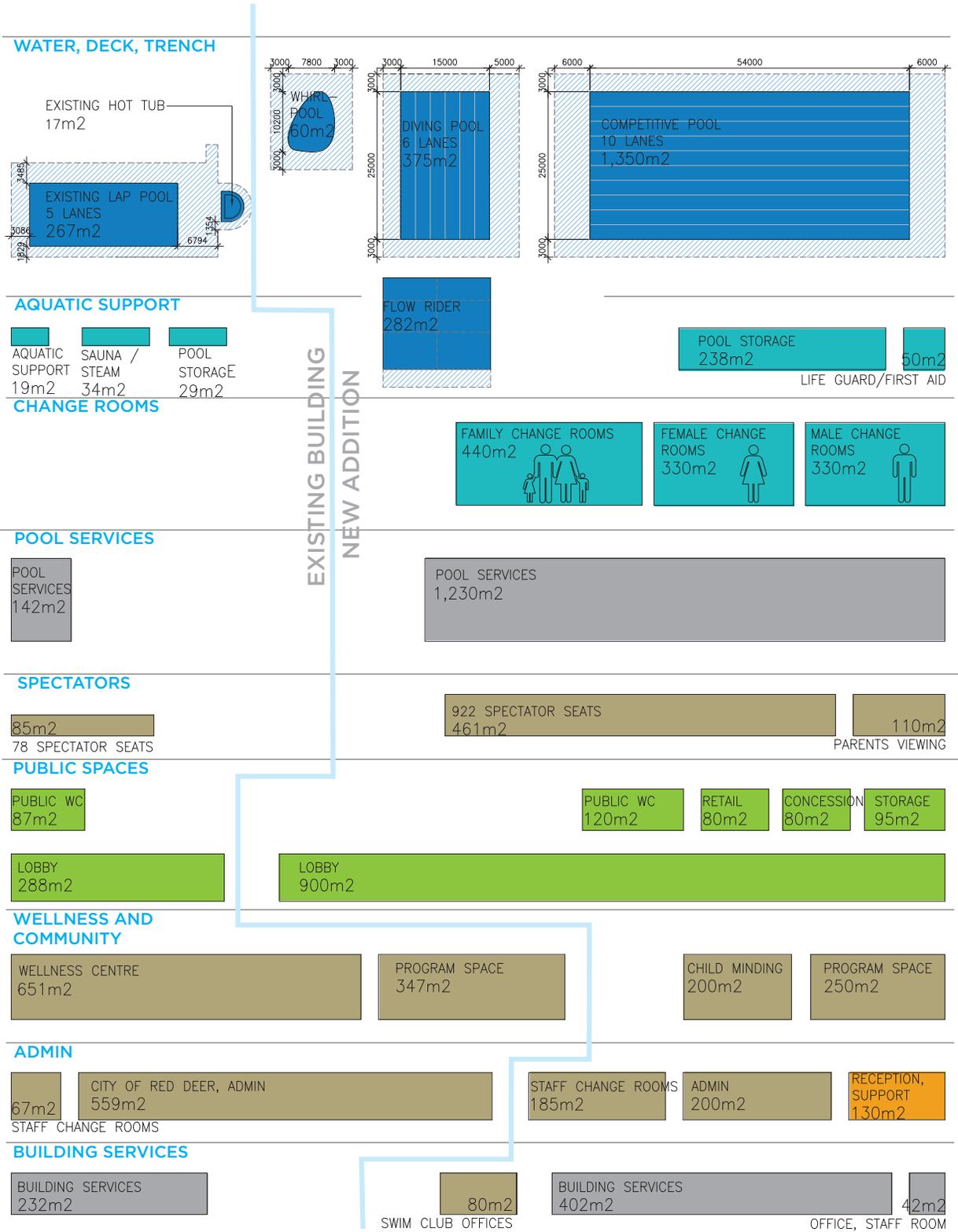
It is based upon historical data for similar work, adjusted for such factors as: effect of inflation, location, risk, quality, size and time. All related factors affecting cost are considered to the extent possible.

Such an estimate is strictly an indication (rough order of magnitude) of the total cost of the project. The expected degree of accuracy of a Class D estimate is **+/- 20%**

**Basis of the Estimate:** The estimate is based upon the space program provided by MTA + MJMA. Pricing shown reflect **probable construction costs obtainable in the third quarter of 2011** and are based upon receiving competitive bids under a stipulated lump sum form of contract.

**CAPITAL COSTS & TOTAL PROJECT COST**

BY SPIEGEL SKILLEN AND ASSOCIATES LIMITED  
 ORDER OF MAGNITUDE (CLASS D)



# SPACE INVENTORY

**Renovated Rotary Facility**

<b>Gross Area:</b>	<b>4,000 m2</b>	43,056 sf
Circulation / Building Systems (20%)	621 m2	6,684 sf
<b>Net Area:</b>	<b>3,379 m2</b>	36,371 sf
Water + Deck Area	603 m2	6,491 sf
Support Area	2,813 m2	30,279 sf

**New Addition**

<b>Gross Area:</b>	<b>12,903 m2</b>	138,881 sf
Circulation / Building Systems (30%)	2,978 m2	32,050 sf
<b>Net Area:</b>	<b>9,925 m2</b>	106,832 sf
Water + Deck Area	2,960 m2	31,861 sf
Support Area	6,965 m2	74,971 sf

**AREA SUMMARY**

<b>Gross Area</b>		<b>3,962 m2</b>	42,647 sf	<b>Gross / Net: 1.2</b>	
Level 0	1,270 m2		13,670 sf		
Level 1	1,952 m2		21,011 sf	Includes pool tunnel but not lower pool	
Level 2	740 m2		7,965 sf	Not including double height spaces	
<b>Net Area</b>		<b>3,182 m2</b>	34,251 sf		
<b>Aquatic Centre</b>		<b>1,346 m2</b>	14,488 sf		
Water Area	284 m2		3,057 sf		
				Pool	267 m2 2,874 sf
				Hot Tub	17 m2 183 sf
Seating	86 m2		926 sf		
				Spectator Seating, permanent	86 m2 926 sf
Deck	382 m2		4,112 sf		
				Deck Area	319 m2 3,434 sf
				Sauna	17 m2 183 sf
				Steam room	17 m2 183 sf
				Storage	29 m2 312 sf
Change Facilities	415 m2		4,467 sf		
				Family (Universal)	67 m2 721 sf
				Female	173 m2 1,862 sf
				Male	175 m2 1,884 sf
Aquatic Support	19 m2		205 sf		
				Deck Staff	11 m2 118 sf
				Infirmary	8 m2 86 sf
Aquatic Services	160 m2		1,722 sf		
				022 Filtration, HVAC, Boiler (022)	152 m2 1,636 sf
				Chemical storage	8 m2 86 sf
<b>Program Rooms</b>		<b>630 m2</b>	6,781 sf		
				113 Multi-purpose Studio	95 m2 1,023 sf
				114 Exercise Room	95 m2 1,023 sf
				107 Multi-purpose Room	22 m2 237 sf
				011 Multi-purpose Room	56 m2 603 sf
				Pottery Room	103 m2 1,109 sf
				Art Room	75 m2 807 sf
				Dark Room	13 m2 140 sf
				016 Multi-purpose Room	100 m2 1,076 sf
				Storage	71 m2 764 sf
<b>Administration</b>		<b>692 m2</b>	7,449 sf		
				Second floor Admin area	559 m2 6,017 sf
				Ground floor Offices, Reception	66 m2 710 sf
				Staff Change Room and Lounge	67 m2 721 sf
<b>Public Spaces</b>		<b>282 m2</b>	3,035 sf		
				Lobby, Vestibule	195 m2 2,099 sf
				Public Washrooms, Ground Floor	44 m2 474 sf
				Public Washrooms, Basement	43 m2 463 sf
<b>Building Services</b>		<b>232 m2</b>	2,497 sf		
				Maintenance Room	66 m2 710 sf
				Storage (027)	52 m2 560 sf
				Mechanical (HVAC) (021)	33 m2 355 sf
				Work Room	26 m2 280 sf
				Water meter, Electrical, Elevator n	20 m2 215 sf
				Laundry	12 m2 129 sf
				Furnace	23 m2 248 sf
<b>Exterior Program</b>		<b>2,421 m2</b>	26,059 sf		
Not included in Net (or Gross) Area				Lap Pool	606 m2 6,523 sf
				Splash Pad	175 m2 1,884 sf
				Deck Area	1,640 m2 17,653 sf

## EXISTING BUILDING

<b>Gross Area</b>	<b>12,903 m2</b>	138,883 sf	<b>Gross/Net: 1.3</b>	
	2,978 m2	32,050 sf	Walls, partitions, circulation - 30% of net area	

<b>Net Area</b>	<b>9,925 m2</b>	106,833 sf		
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<b>Aquatic Centre</b>	<b>7,441 m2</b>	80,094 sf		
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<b>Water Area</b>	<b>1,785 m2</b>	19,214 sf			<b>bathing load</b>	Ref. Alberta Regulation 247/1985 s20 54 x 25m, 10 lanes, combined w/ Synchronized Swimming and Water Polo. Moveable Bulkheads and Hydraulic Floor at one end. (RFP, Site Study)	
			<b>54 x 25m Competitive Pool</b>	<b>1,350 m2</b>	14,531 sf	<b>900</b>	25 x 15m, 6 lanes (RFP) Site Study: 25 x 18m. Combine w/54m pool?
			<b>25 x15m Diving Pool</b>	<b>375 m2</b>	4,036 sf	<b>250</b>	Site Study only - not in RFP
			<b>Whirlpools</b>	<b>60 m2</b>	646 sf	<b>60</b>	
			<b>Flow Rider</b>	<b>226 m2</b>	2,433 sf	<b>226</b>	
						<b>1,436</b>	<b>persons: BATHING LOAD NEW ADDITION</b>
<b>Seating</b>	<b>461 m2</b>	4,962 sf					
			<b>422 Spectator Seats, permanent</b>	<b>211 m2</b>	2,271 sf		422 seats on upper level (RFP). 1 seat = 0.5m2
			<b>500 Spectator Seats, removable</b>	<b>250 m2</b>	2,691 sf		500 seats (RFP), retractable seating on pool deck. 1 seat = 0.5m2
<b>Pool Deck</b>	<b>1,197 m2</b>	12,884 sf					
			<b>Deck, Competitive Pool</b>	<b>696 m2</b>	7,492 sf		John's notes (different from Aquatic Sports Council / National Swimming?)
			<b>Deck, Diving Pool</b>	<b>338 m2</b>	3,638 sf		John's notes (different from Aquatic Sports Council / National Diving?)
			<b>Deck, Whirlpools</b>	<b>163 m2</b>	1,755 sf		See sketch
<b>Deck Program</b>	<b>110 m2</b>	1,184 sf					
			<b>Parents viewing</b>	<b>110 m2</b>	1,184 sf		Same area as Commonwealth
<b>Pool Storage</b>	<b>238 m2</b>	2,562 sf					
			<b>Combined, pools in new addition</b>	<b>238 m2</b>	2,562 sf		water area x 0.1333 (Commonwealth) See calculation based on Water Area and AR 247/1985 s20
<b>Change Facilities</b>	<b>1,100 m2</b>	11,840 sf					
			<b>Family (Universal)</b>	<b>440 m2</b>	4,736 sf		Note: Group2 Plan Sketch = 80m2
			<b>Female</b>	<b>330 m2</b>	3,552 sf		Note: Group2 Plan Sketch = 280m2
			<b>Male</b>	<b>330 m2</b>	3,552 sf		Note: Group2 Plan Sketch = 280m2
<b>Aquatic Support</b>	<b>262 m2</b>	2,820 sf					
			<b>Life Guards</b>	<b>25 m2</b>	269 sf		Commonwealth: 15m2
			<b>First Aid</b>	<b>25 m2</b>	269 sf		Commonwealth: 20m2
			<b>Swim Clubs</b>	<b>93 m2</b>	1,001 sf		
			<b>Time Keeping</b>	<b>43 m2</b>	463 sf		
			<b>Dry Land Training</b>	<b>76 m2</b>	818 sf		Commonwealth: 20m2
<b>Aquatic Services</b>	<b>2,288 m2</b>	24,628 sf					
			<b>Pool Filtration</b>	<b>528.9 m2</b>	5,693 sf		water area x 0.2963 (Commonwealth)
			<b>Pool HVAC + domestic hot water</b>	<b>1190 m2</b>	12,809 sf		water area x 0.6666 (Commonwealth)
			<b>Chemical storage</b>	<b>40 m2</b>	431 sf		
			<b>Pool trench</b>	<b>1,058 m2</b>	11,388 sf		See Space Inventory
<b>Common</b>	<b>130 m2</b>	1,399 sf					
Plan Sketch: 100m2 reception + admin			<b>Reception</b>	<b>40 m2</b>	431 sf		Same area as Commonwealth

## NEW ADDITION

Staff Common	30 m2	323 sf	Same area as Commonwealth
Security	20 m2	215 sf	Same area as Commonwealth
Control Support	20 m2	215 sf	Same area as Commonwealth
Storage (Wheelchair, strollers)	20 m2	215 sf	Same area as Commonwealth

**Administration**      **385 m2**      4,145 sf

Admin Offices (4 offices)	50 m2	538 sf	Facility Director; 3 Support staff
Meeting Room	25 m2	269 sf	15 people boardroom
General office	50 m2	538 sf	5 Work stations
Admin Support	30 m2	323 sf	Reception; NAR Rm; Supply Rm (photocopier; storage; printer);
Servery	10 m2	108 sf	Bar fridge, small sink, water cooler, cabinetry
Offices	35 m2	377 sf	Pool Manager, Pool Programmer, Head Lifeguard - view of pool
Staff Change rooms	185 m2	1,992 sf	Male to Female - 50:50; laundry space + small flex space (water area x 0.1037)

**Public Spaces**      **1,525 m2**      16,415 sf

Lobby	900 m2	9,688 sf	
Community Rooms	250 m2	2,691 sf	
Concessions	80 m2	861 sf	
Retail	80 m2	861 sf	
Public Washrooms	120 m2	1,292 sf	See calculation
Warm Dry Storage	95 m2	1,023 sf	Same area as Commonwealth

**Building Services**      **444 m2**      4,779 sf

Maintenance Mgr Office	12 m2	129 sf	Same area as Commonwealth
Maint Staff Room	30 m2	323 sf	Same area as Commonwealth
Maintenance /Custodial	90 m2	969 sf	Same area as Commonwealth
Mechanical Room	260 m2	2,799 sf	
Electrical Room	52 m2	560 sf	

**Exterior Program**      **1,050 m2**      11,302 sf

Not included in Net (or Gross) Area

Lap Pool	375 m2	4,036 sf	Zero depth entry, swim lanes, splash features (Site Study)
Splash Pad	175 m2	1,884 sf	Match size of existing fenced Splash Pad
Deck Area	500 m2	5,382 sf	

**References:**

Request for Proposals

(Sept 29 2010)

Alberta Regulation 247/85  
(Swimming Pool Regulation /  
Public Health Act)

Red Deer Rotary Recreation Park &  
South Site Study Report, page 27 and 97  
(August 2010)

Alberta Building Code:  
Section 7.2 Plumbing Facilities  
Section 3.1.17 Occupant Load

Facility Information and Design  
Swim Alberta / Synchro Alberta

Design Prototypes  
MJMA / Aquatic Sport Council Ontario

Proposed New Reed Deer Aquatic Centre  
(Nov 14 2008)

North Central Multi-Purpose Recreation Centre / Space Requirements Estimates  
MJMA

## NEW ADDITION