

Dustin Froese

Thunderbird Centre Resort



vancouver 2010



Thesis Statement

How can Architecture transform
Obsolete Sporting facilities into
community assets in a post
olympic environment?

Thunderbird



Project Emphasis



Two Scales



Thawing Snow
 In winter, snow cover on the site provides a natural insulation layer for the gas and water lines. In the summer, the snow cover provides a natural insulation layer for the site. The snow cover also provides a natural insulation layer for the site.



Perennial Seedbank
 The site is a perennial seedbank. The site is a perennial seedbank. The site is a perennial seedbank. The site is a perennial seedbank. The site is a perennial seedbank.



Rocky Creek
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FLOOR PLANS

0' 20' 50'

SOUTH

SECOND

FIRST

DIRECTIONAL GLASS

ROCK

WOOD

CONCRETE

GLASS

STEEL

BRICK

STONE

PLASTER

PAINT

LANDSCAPE

ARCHITECTURE

Location



Olympic Trends

What next for the Olympic venues?

1 Olympic Stadium

Cost: £430m
 Where: Newham
 What next: New national centre for athletics. Has received four bids: from Leyton Orient and West Ham football clubs, Intelligent Transport Services, Formula One and University College of Football Business. May host the IAAF 2017 World Athletics Championships.

2 Athletes Village

Cost: £1.1bn
 Where: Newham
 What next: Apartments will have kitchens added and will be transformed into 2,800 rental properties from summer next year. Has a target of 50 per cent affordable housing for lower-income tenants. Bought by developer Delancey and Qatari investors for £557m.

3 Arcelor Mittal Orbit

Cost: £22.7m
 Where: Newham
 What next: Tower designed by Anish Kapoor to be used as a visitor attraction, with unique views across London from two glass enclosed platforms. 114m-high tower will be open from spring 2014.

4 Aquatics Centre

Cost: £250m
 Where: Newham
 What next: To be reopened in 2014 as a community facility with a significantly reduced capacity. Anticipated 800,000 visitors a year. London has bid to host the 2016 European Swimming Championship in the centre.



5 Multi-use arena

Cost: £43m
 Where: Hackney
 What next: The 'Copper Box', which hosted the handball and will host Paralympic goalball, will be transformed into a venue for community sports, competitions, cultural and business events, reopening in summer 2013.

6 Velopark

Cost: £87m
 Where: Hackney and Newham
 What next: One mile road cycle circuit and mountain bike trial to be added to the 6,000 Velodrome to create a Velopark. Will be owned and managed by Lee Valley Regional Park Authority.

7 Eton Manor

Cost: £60m
 Where: Waltham Forest
 What next: To become the Lee Valley Tennis and Hockey Centre, featuring four indoor and six outdoor tennis courts and five-a-side football pitches. Will host the 2015 European Hockey Championships.

8 Broadcast and press centres

Cost: £295m
 Where: Hackney
 What next: To become a data and business enterprise centre under proposals from preferred bidder ICity. Anticipated 3,500 jobs based here.

Bobsled tracks around the world



Bobsled tracks around the world

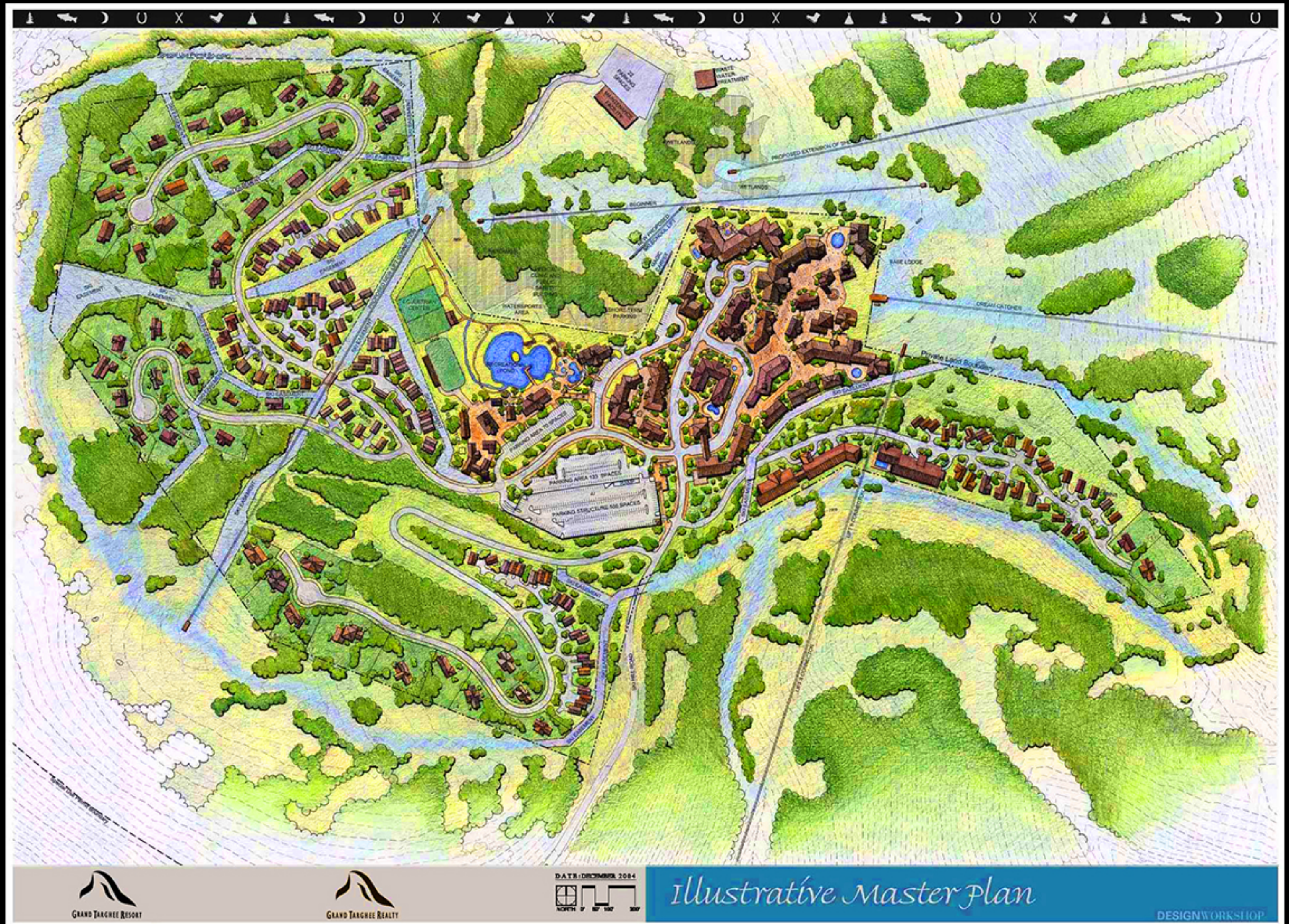


Bobsled tracks around the world



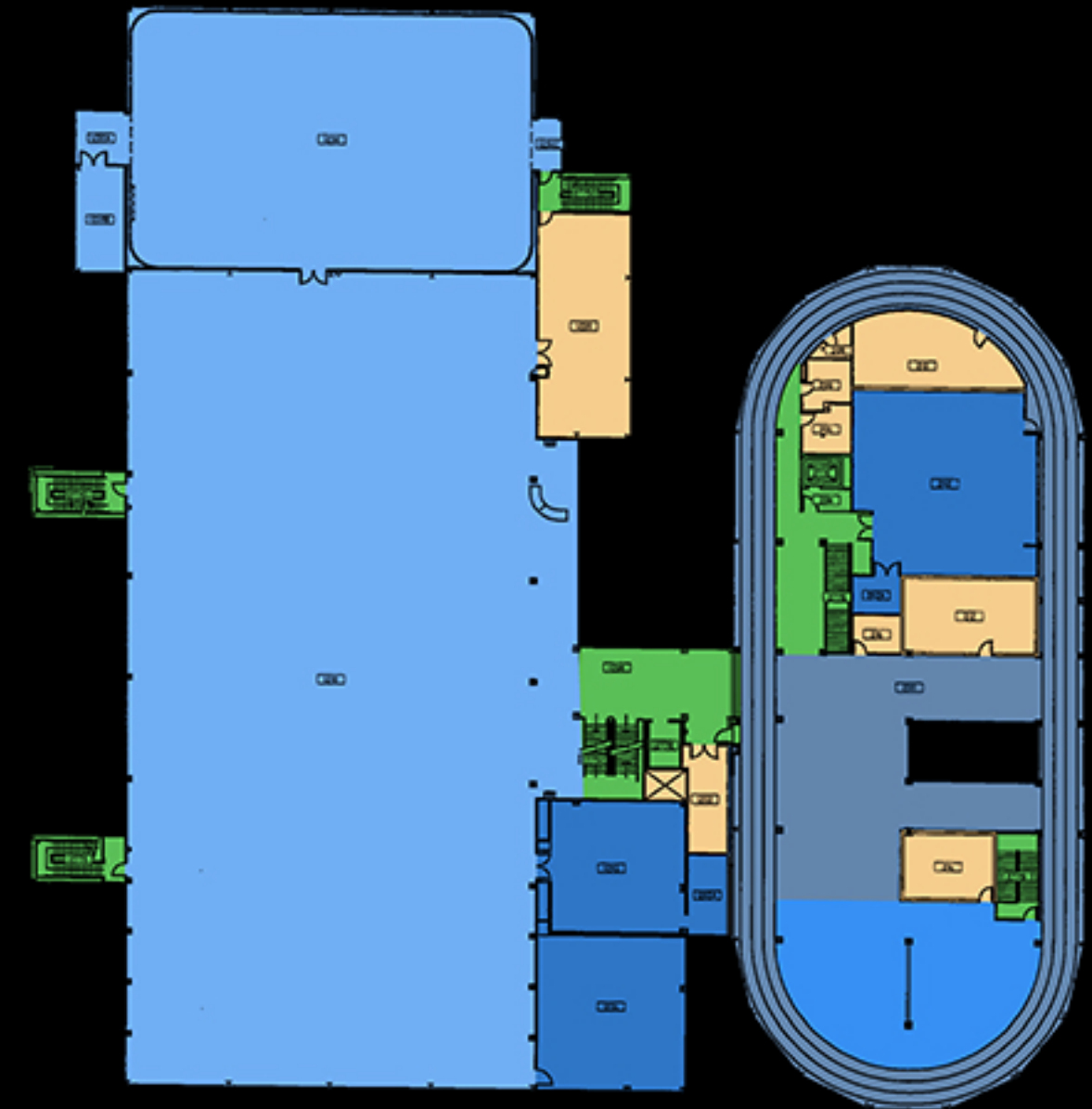
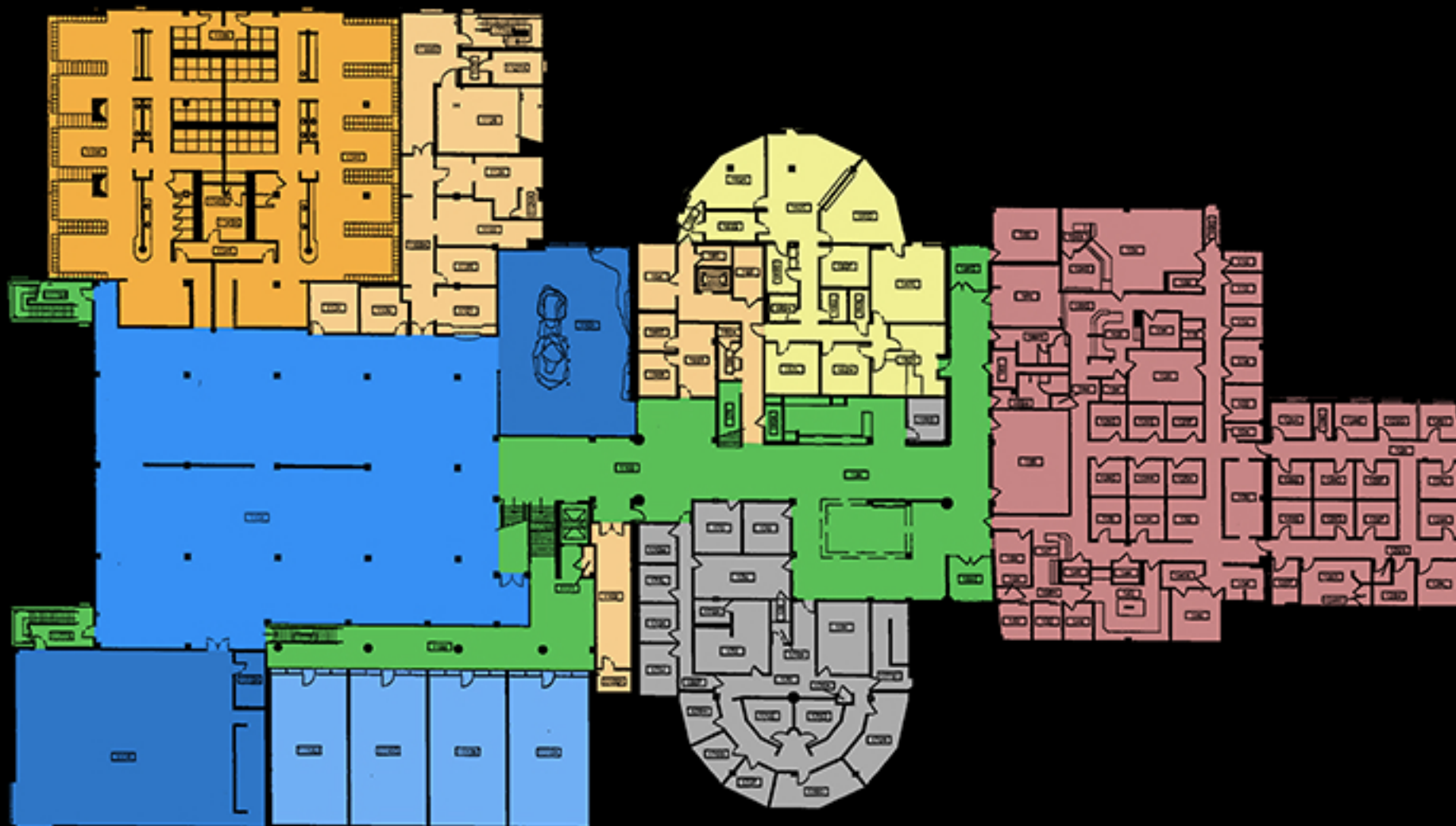
Case Studies

Grand Targhee Resort Master Plan



Case Studies

Wallman Wellness Center, NDSU



Existing Site



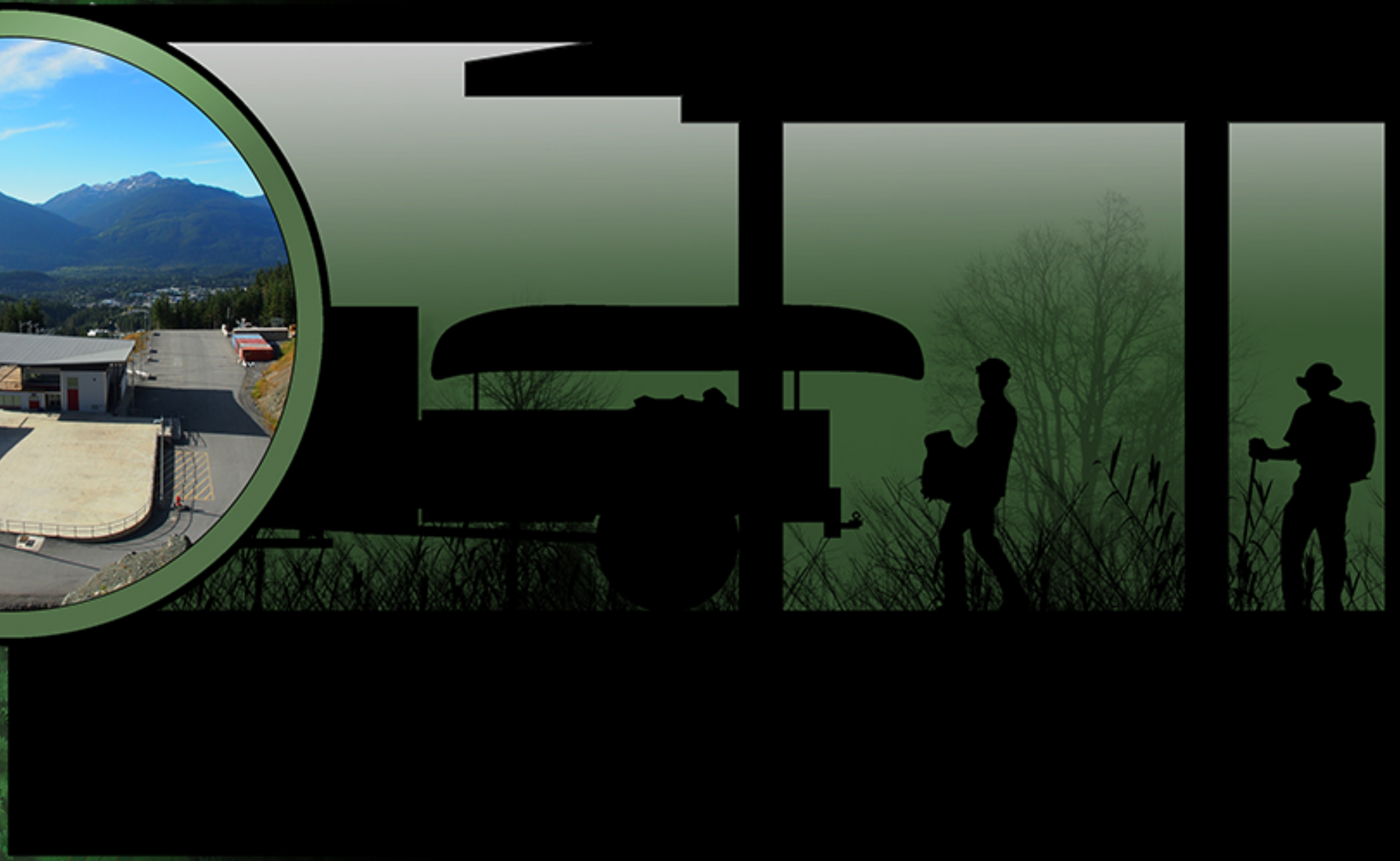
The Whistler Sliding Centre and its six main buildings were designed by Stantec Inc., which is an international multi-disciplinary design firm. The existing buildings will be transformed to facilitate new functions pertinent to a resort development.

Master Plan

Proposed Master Plan



Backcountry Adventure Centre



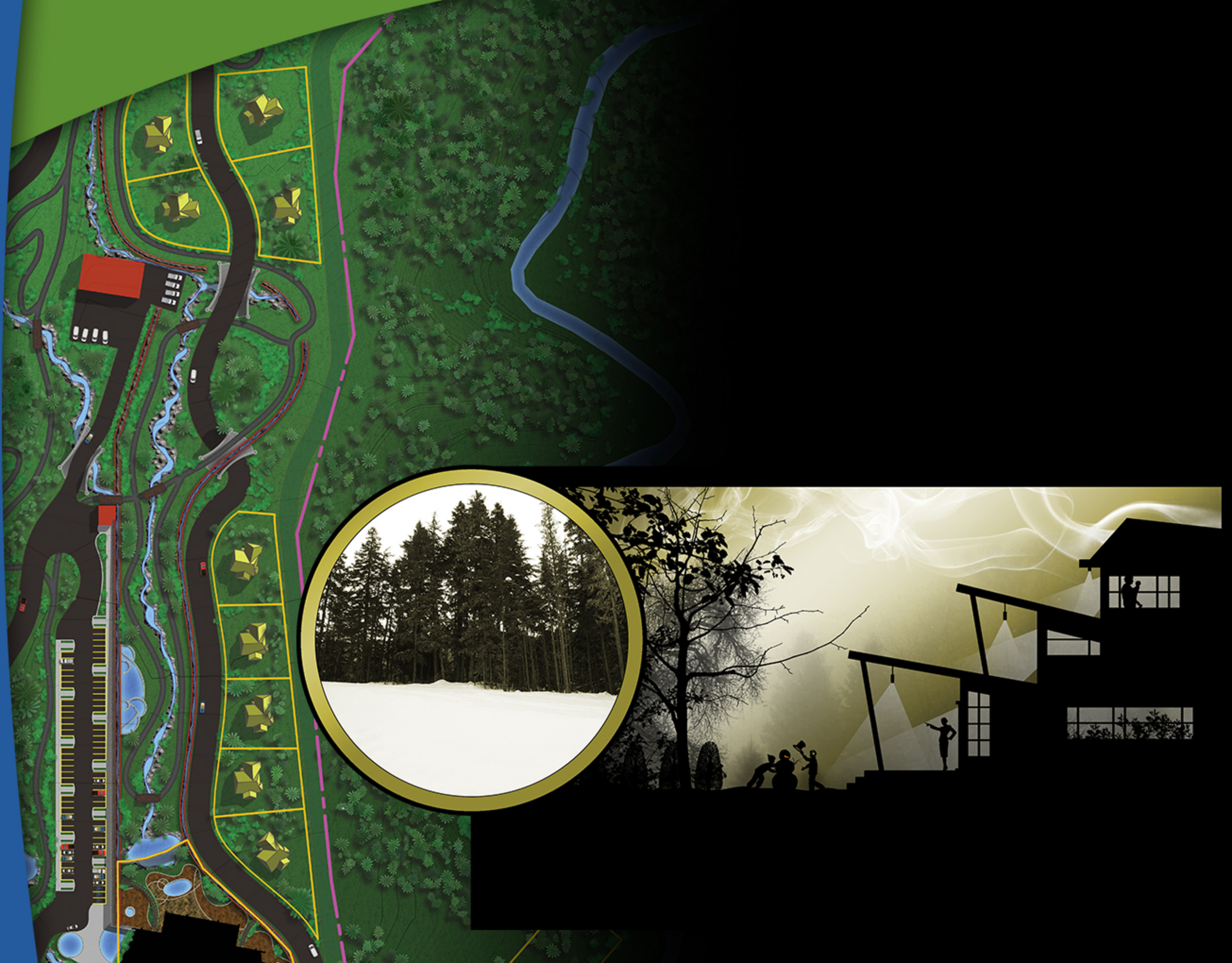
Resident's Hot House



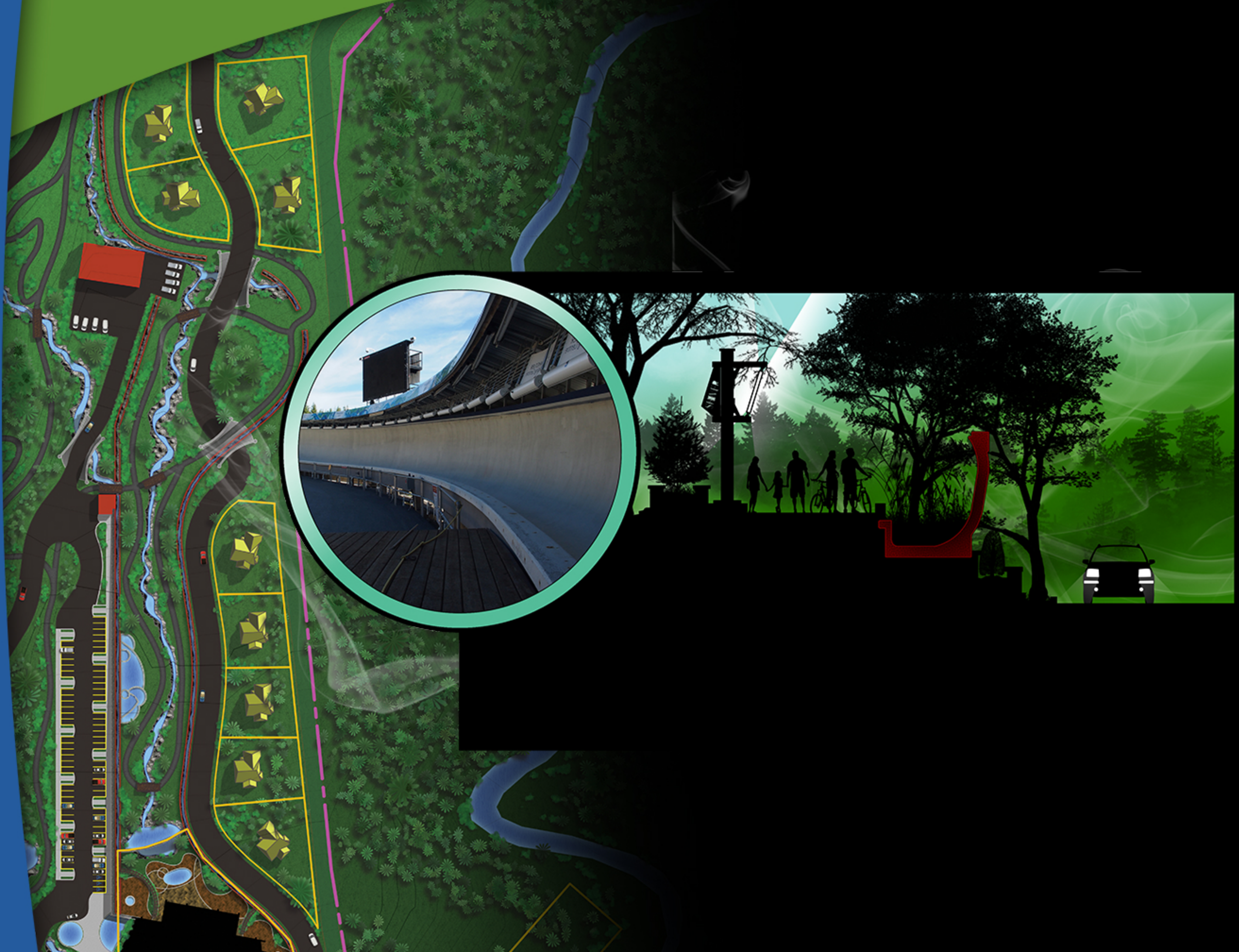
Youth Hostel



Permanent Residences



Sliding Track



Master Plan

Shiver Park



Welcome Centre



Arbouretum Event Centre



Master Plan

Thunderbird Fitness Centre

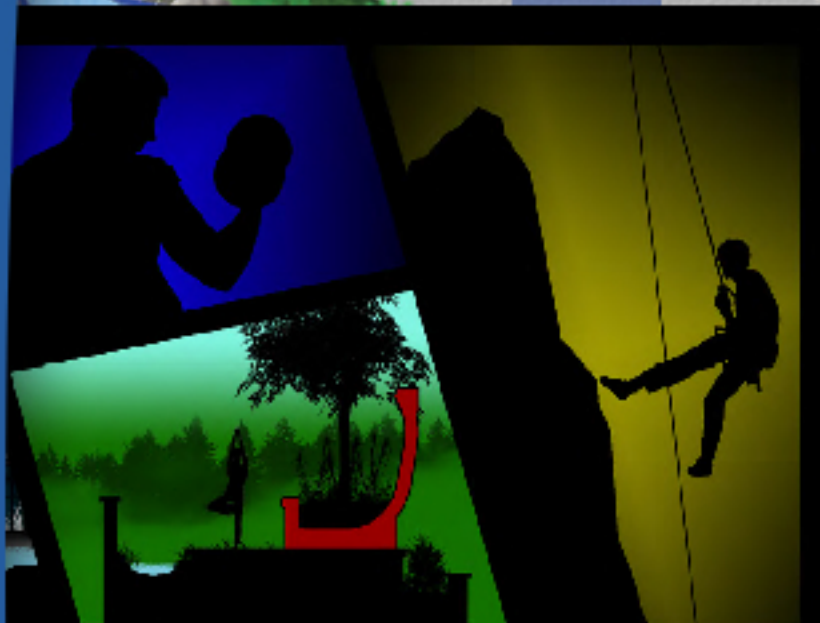


Fitness Centre

First Floor Plan



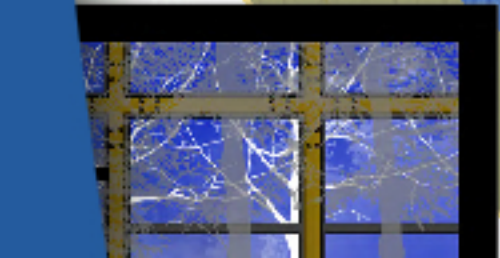
... complete
... sliding track, and an



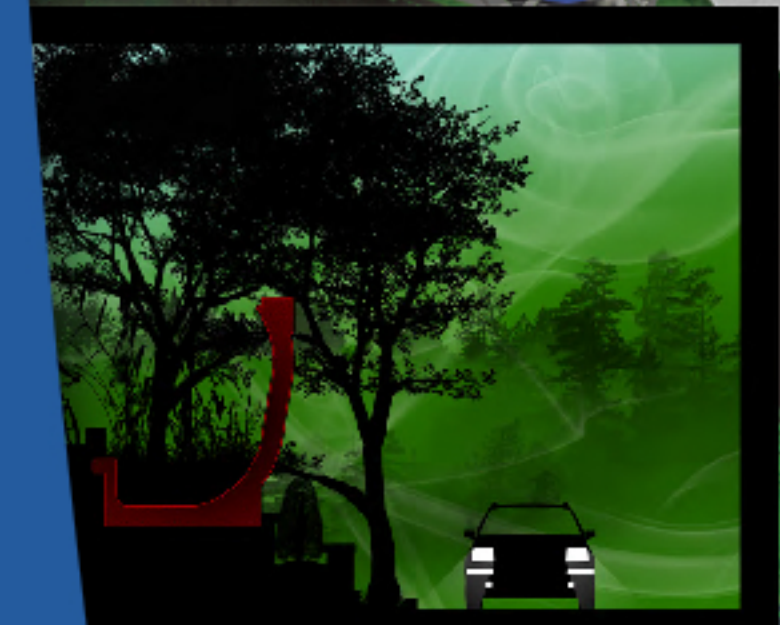
... track, this public fitness facility replaces the single
... activities that can be enjoyed by everyone, not just
... ority, placing the Thunderbird Fitness Centre at the
... lder.



... nue to welcome people to Thunderbird
... procedures will happen here. Additionally,
... ce in Whistler and Vancouver will help
... Olympics.



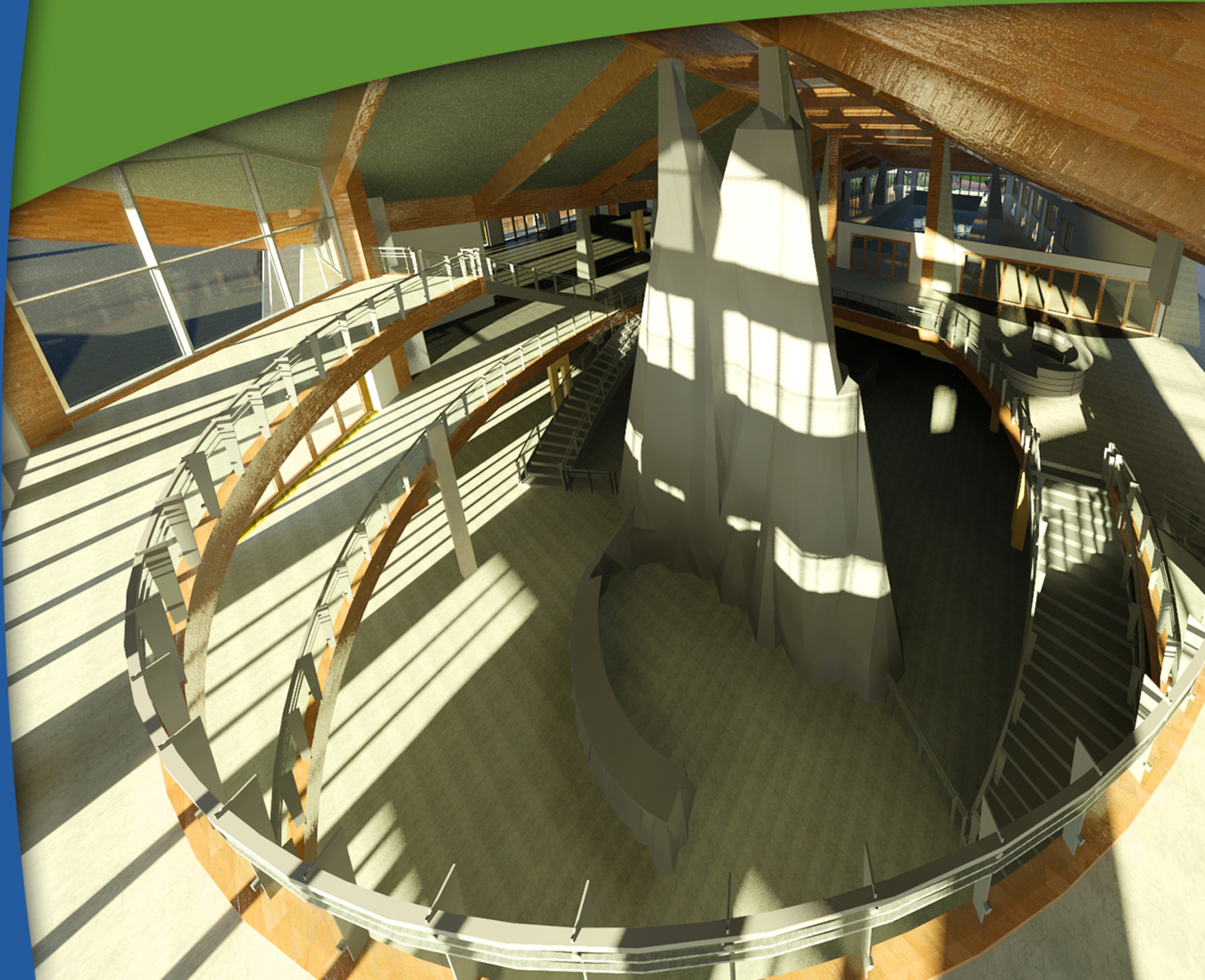
Second Floor Plan



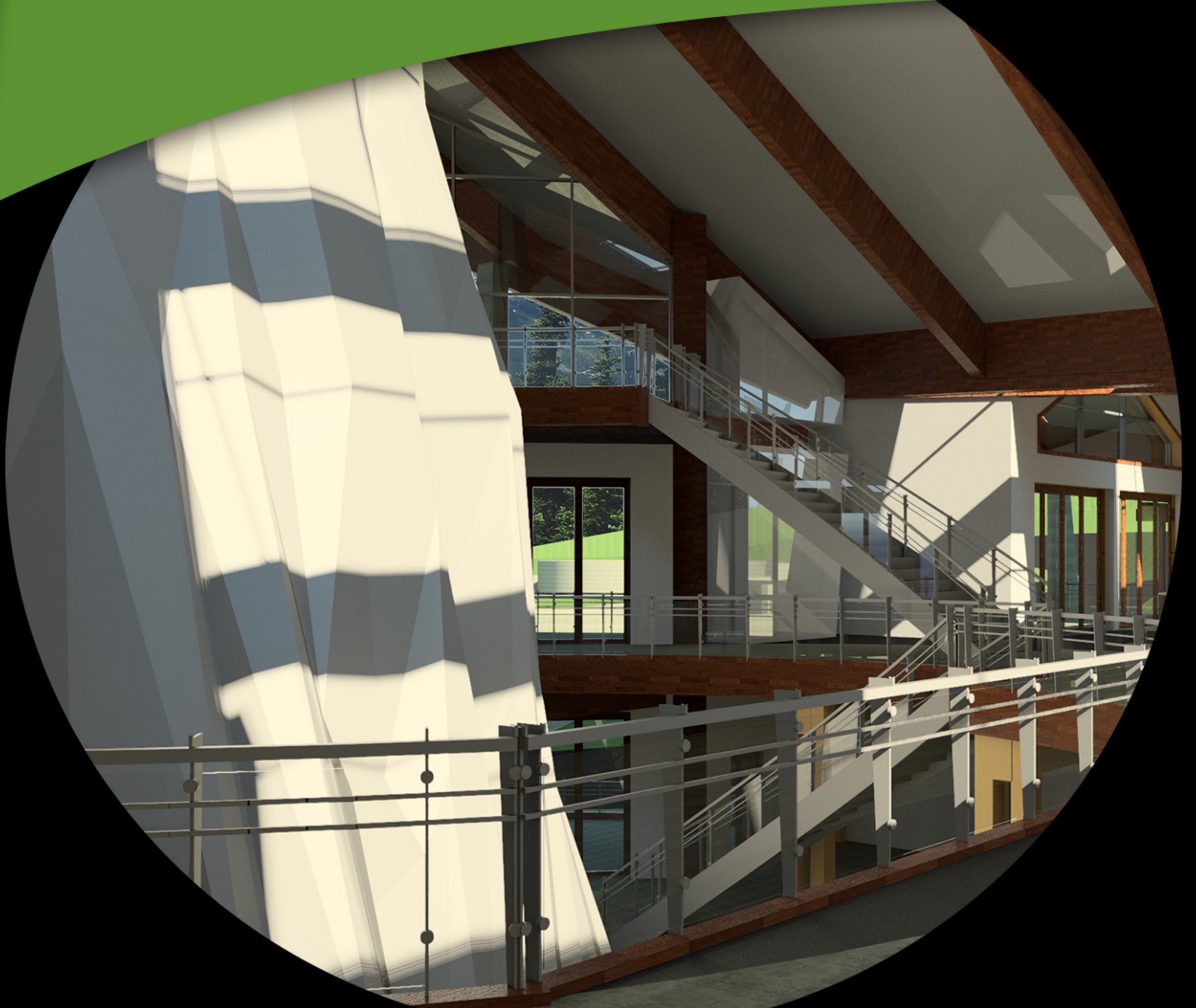
Reception/Entrance perspective



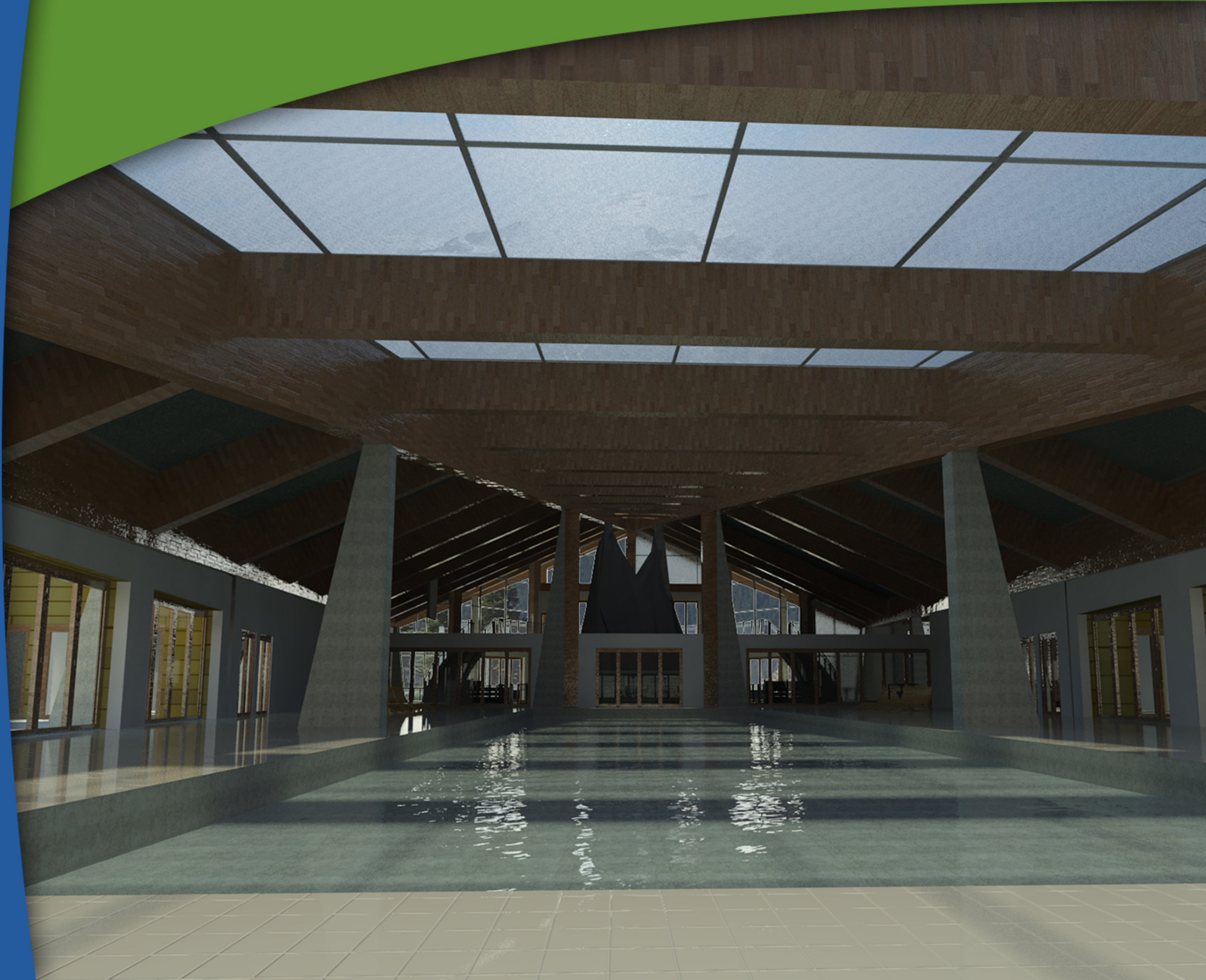
Mezzanine Perspective



Rock Wall Perspective



Olympic Short Course Pool



Garden Perspective



Aerial Perspective



Longitudinal Section cut

PERSPECTIVE

SECTION

DIRECTIONAL GLASS ALLOWS LOW WINTER SUN TO DIRECTLY PENETRATE THE BUILDING, WHILE HIGH SUMMER SUN IS REFLECTED AWAY OR DIFFUSED INTO THE BUILDING.

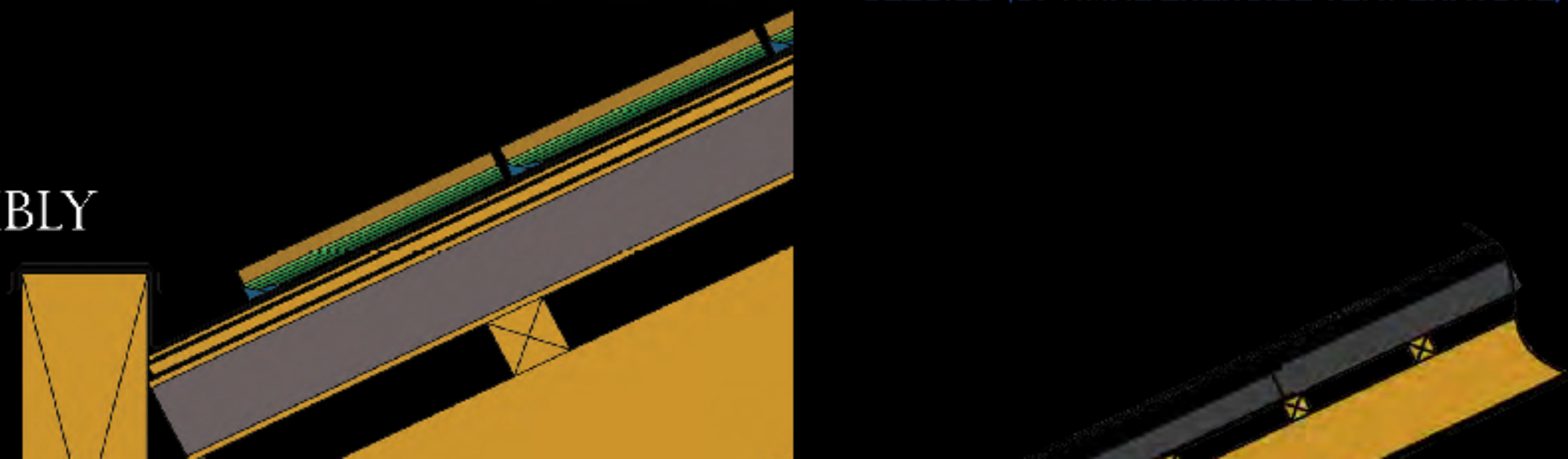
SOLAR ENERGY IS STORED IN THE CLIMBING WALL DURING THE DAY, AND RELEASED AT NIGHT.

OPERABLE GLASS PANELS ALLOW ANABATIC WINDS TO PASS THROUGH THE ENTIRE BUILDING, KEEPING IT COOL WITHOUT EXPENDING ENERGY.

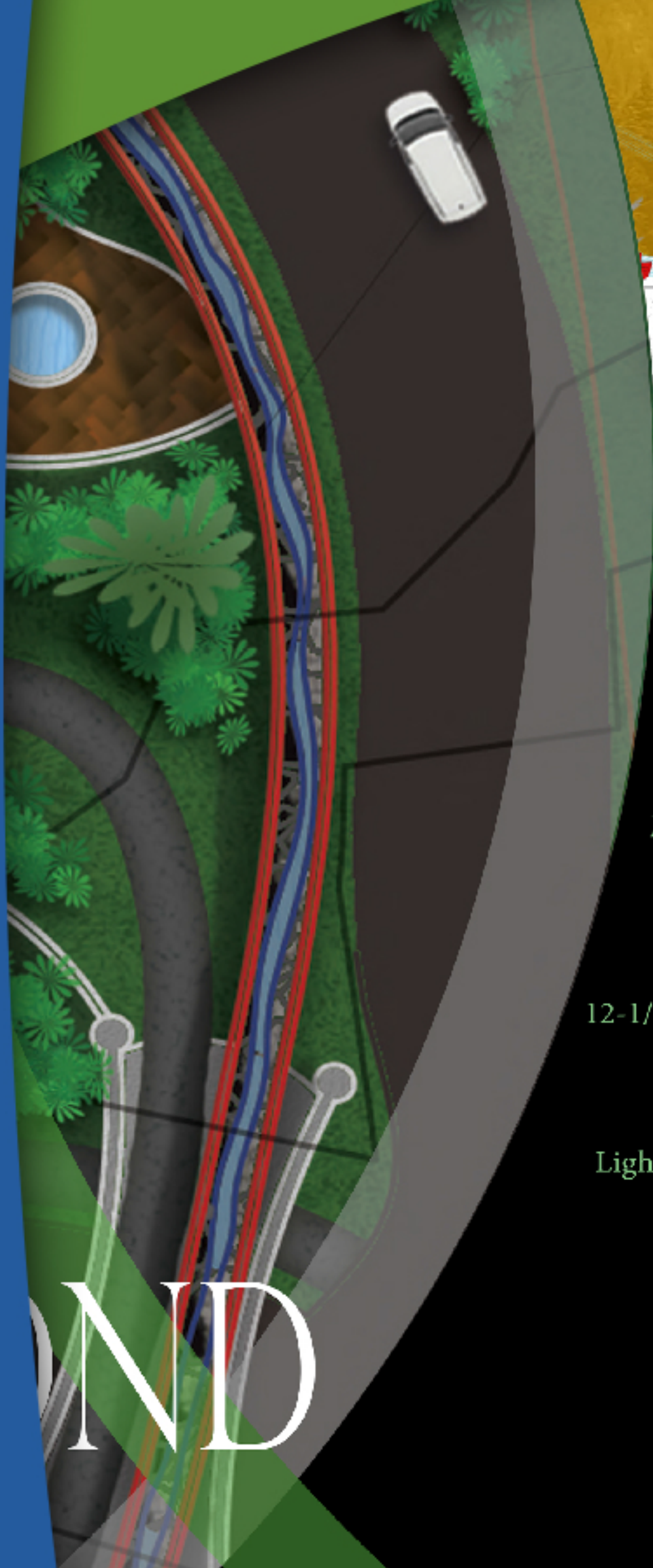
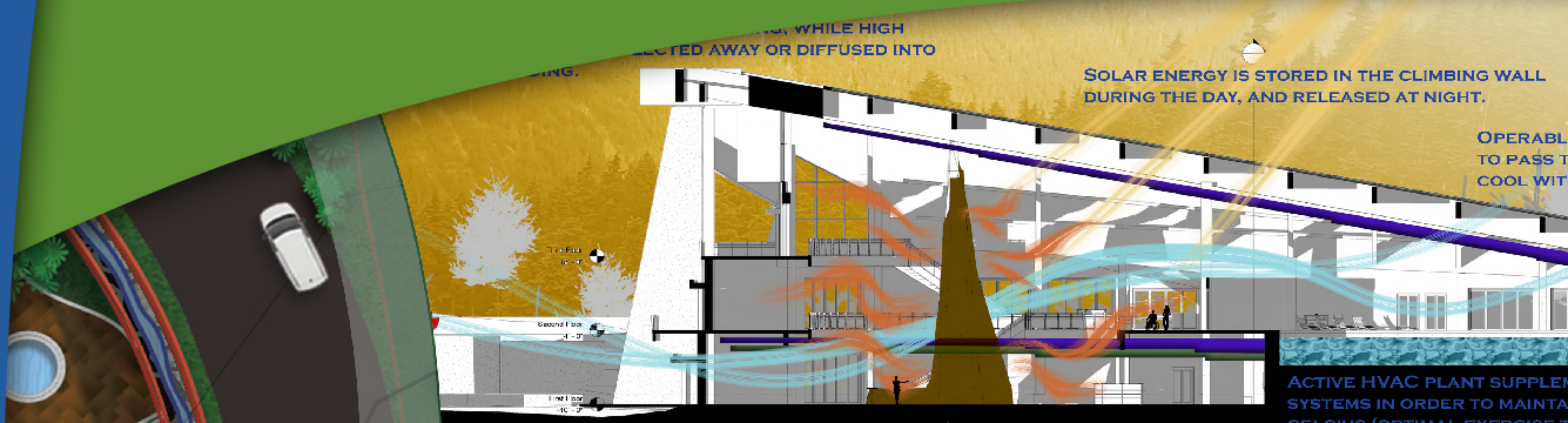
ACTIVE HVAC PLANT SUPPLEMENTS THE PASSIVE SYSTEMS IN ORDER TO MAINTAIN 18 DEGREES CELSIUS (OPTIMAL EXERCISE TEMPERATURE)

ROOF ASSEMBLY

- Plant Layer
- Growing Layer
- Filter Sheet
- Drainage Layer
- Moisture Retention/Protection Mat

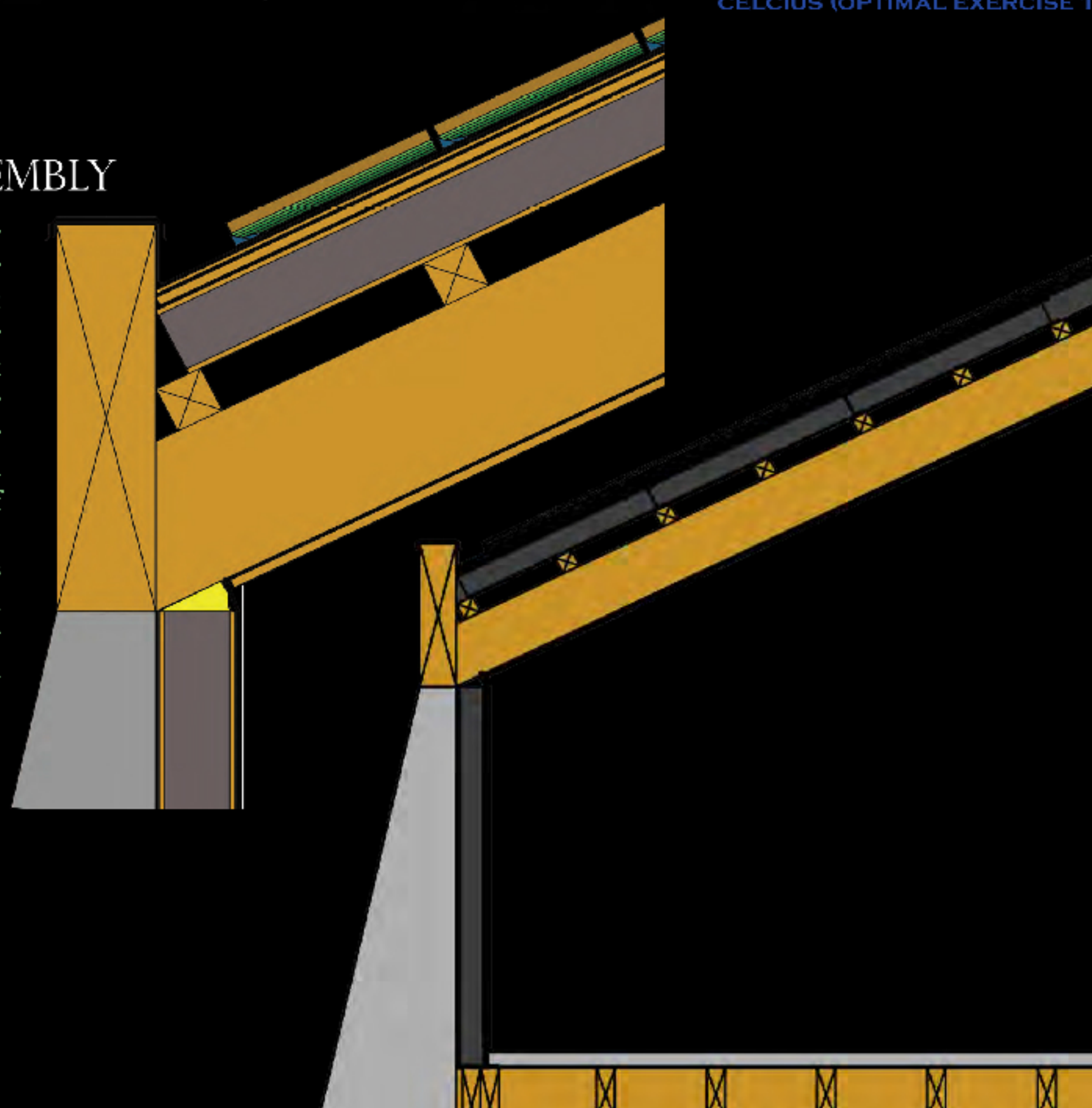


Roof Assembly



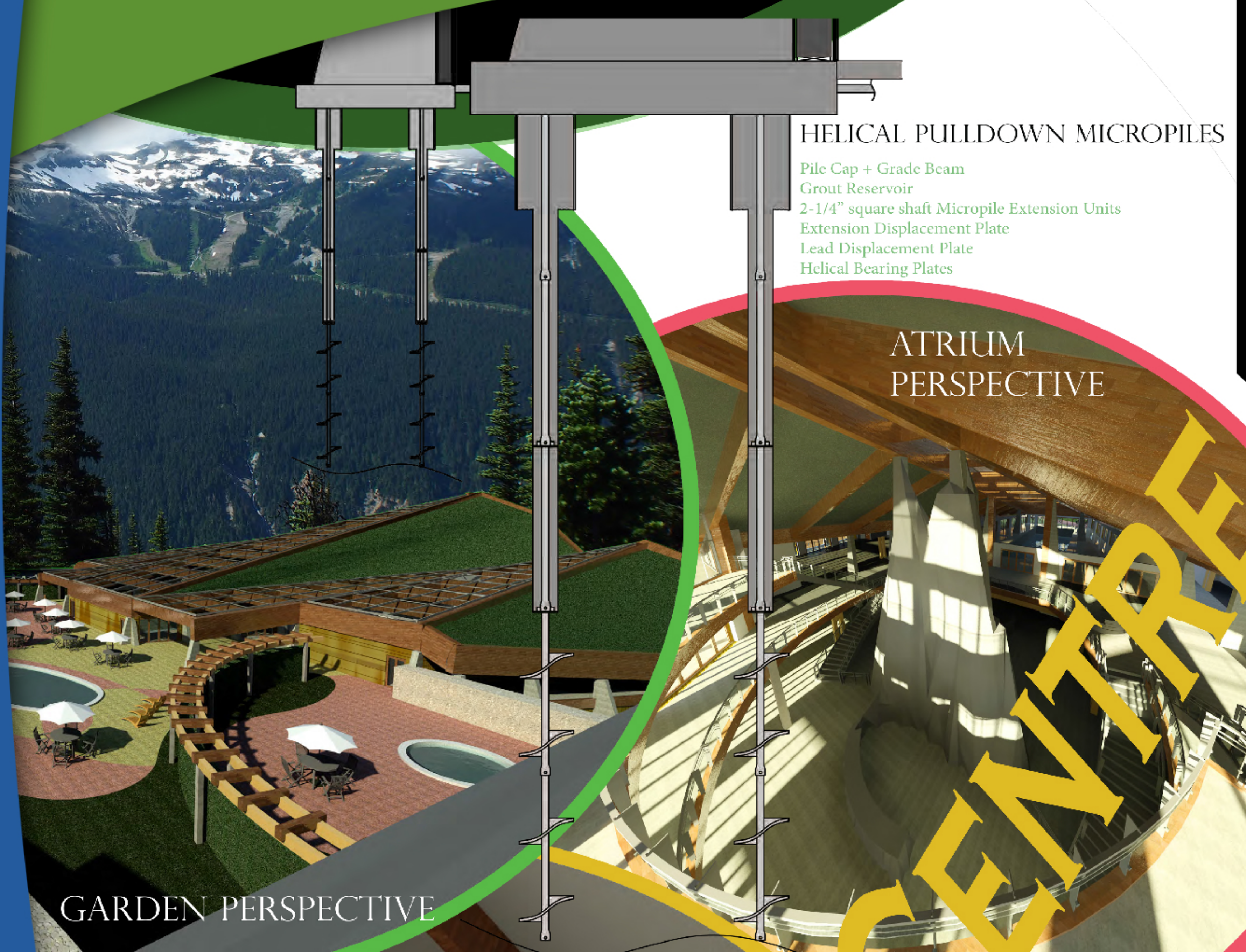
ROOF ASSEMBLY

- Plant Layer
- Growing Layer
- Filter Sheet
- Drainage Layer
- Moisture Retention/Protection Mat
- Root Barrier
- Moisture Barrier
- 5/8" Plywood
- 1-1/2" furring- Cold Roof
- 12-1/4" Structural Insulated Panel (R58)
- 8"x8" glulam joists
- 6"x36" Glulam Beam
- 12"x5'6" Glulam Girder
- Lightweight Concrete Buttress/Column



ND

Helical Pulldown Micropiles



HELICAL PULLDOWN MICROPILES

- Pile Cap + Grade Beam
- Grout Reservoir
- 2-1/4" square shaft Micropile Extension Units
- Extension Displacement Plate
- Lead Displacement Plate
- Helical Bearing Plates

ATRIUM
PERSPECTIVE

GARDEN PERSPECTIVE

FITNESS CENTRE

Recap

How can architecture transform obsolete sporting facilities into community assets in a post olympic environment?

Recap

Thank you!

Questions and Comments?