Town of Whitby
Staff Report

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Report Title: **Final Design Concept and Preliminary Budget Approval for the Whitby Sports Complex (WSC)**

Report to: **Council**

Date of meeting: March 7, 2022

Report Number: **CMS 05-22**

Department(s) Responsible:

Community Services Department

Submitted by:

John Romano, Commissioner, Community Services

Acknowledged by M. Gaskell, Chief Administrative Officer

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Steve Walo, Capital Projects Supervisor, 905.444.1807

1. Recommendation:

1. **That Council approve the proposed design concept for the Whitby Sports Complex, attached to this report as Attachment A;**
2. **That based on the proposed design concept the budget be increased by $28,000,000 (from $70,000,000 to $98,000,000) to accommodate for the expanded program;**
3. **That Staff be authorized to complete the detailed design and construction documentation for the building and park designs;**
4. **That the contract to Perkins & Will Architecture be increased by $625,000 (plus HST) for design fees for the expanded building program funded from the Whitby Sports Complex Capital Project; and,**
5. **That a sole source contract be awarded to Perkins & Will Architecture in the amount of $544,430 (plus HST), for the design of the park located on the Whitby Sports Complex property, funded from a new capital project for the park design.**

2. Highlights:

- Based on the feedback received through the extensive community engagement process, Staff were directed to explore options to expand the site to accommodate the desired amenities.

- The Project Team is recommending an expanded program for the Whitby Sports Complex (WSC). The proposed design includes the following indoor and outdoor amenities:

Indoor amenities

- Twin-pad arena with 85’ by 190’ ice pads
- Aquatics centre with a 10 lane, 25 metre pool, separate leisure pool and 2nd floor viewing areas which would be the largest pool in the Region
- Double gymnasium that can be divided and would include a suspended three lane indoor walking track
- Flexible community spaces

Outdoor amenities

- Full sized outdoor artificial turf sports field
- Outdoor pump track and skateboard park
- Two basketball courts
- Three tennis courts
- Twelve outdoor pickleball courts
- A playground and water play area
- Plaza space capable of hosting community events
- Dedicated area adjacent the WSC building to accommodate future interior program space

3. Background:

The need for a new recreation centre was formally identified in 2006 through the Culture, Parks, Recreation and Open Space Master Plan (CPROS). The report recommended a Sports Facility Strategy (SFS) be completed to plan for future growth within the Town.

The Sports Facility Strategy (SFS) was approved by Council in 2015 which highlighted the need for a new multi-use community recreation facility to be constructed in North Whitby to meet the needs of the growing community. The SFS involved considerable public, key stakeholder, community advisory groups, staff and Council consultation to develop the recommendations.

Based on recommendations in the SFS, the WSC was included in the Community Building category of the Town’s 2020 – 2022 Business Plan.

In May 2020, Council authorized Staff under CMS 03-20 to initiate the Request for Proposal (RFP) to retain an Architect to complete the overall design and layout of

the new multi-use community recreation facility. In this report, the project identified an estimated project budget of $45,000,000. The program included the following:

- A twin-pad arena with 85' by 190' ice pads encircled by a three-lane indoor walking/running track;
- Indoor aquatics centre with a 6 to 8 lane, 25 metre lap pool and separate leisure and therapeutic pools;
- Active Living/Wellness Studio/Multi-Purpose Space; and
- Meeting rooms, arts and cultural space and studios to create a multi-faceted hub of community services in one location.

In November 2020, Council authorized Staff under report CS 45-20 to retain Perkins & Will Architecture as the Prime Consultant (Architect) for the overall design and layout of the new multi-use community recreation facility that included the programming elements outlined above.

In March 2021, Council authorized Staff under report CMS 04-21 to begin the Whitby Sports Complex Community Engagement process and present three (3) Design Concepts for Council's consideration. This report indicated that the total project budget was increased from $45,000,000 to $70,000,000 as part of the 2021 Capital Budget process. The cost increases were attributed to the following:

- Additional design measures due to COVID-19 restrictions
- Increased costs related to achieving the Canadian Green Building Council (CaGBC) Leadership in Energy and Environmental Design (LEED) Gold and Zero Carbon Building (ZCB) Certifications; and
- Construction escalation to the year 2022

A multi-channel communications campaign was launched prior to starting the engagement process to inform the community on how to get involved. The outreach strategies included the Connect Whitby project website, mail-out cards to all Whitby residents, multiple social media platforms, local newspaper ads, digital advertising, Curbex and various facility signs.

The Town received an unprecedented volume of feedback through the community engagement process on the future sports complex based on the three (3) design concepts. The engagement included the following:

- 2,469 survey responses with 992 written comments;
- 4 public sessions attended by approximately 150 participants;
- Key stakeholder session with 12 organizations represented; and,
- Engagement session attended by 75 staff members.

Based on the results from the Online Survey and Community Engagement Sessions, the following programs were ranked as the highest priority.

- Outdoor Space
- Aquatics

- Gymnasium

These were highlighted to Council in May 31, 2021 through Report CMS 09-21.

The engagement process identified the demand for outdoor spaces including sports fields, playgrounds, program space, bike and skateboard tracks, trails and courts. Key indoor amenities were also requested that included a larger Aquatics space. Recognizing the future growth of the Town, an increase Aquatics space will assist in maintaining current service levels. The need for indoor program space continues to be requested with 21% of the community engagement feedback requesting a gymnasium to support the growing demand of the community for sports such as basketball, pickleball, badminton, volleyball and other indoor sporting events.

Based on the feedback received through the extensive community engagement process and subsequent analysis, Staff identified in Report CMS 09-21 that the expanded program would require a budget increase to $90,000,000 based on design cost estimates. The expanded amenities would include the following:

- Aquatics centre pool increase to 10 lanes
- Upper level pool viewing area
- Double Gymnasium with spectator viewing
- Expanded Support Spaces to accommodate the following:
    - Additional parking
    - Driveway drop-off area
    - Lobby space to host special events
    - Adequate sized change rooms for gymnasium and larger pool
    - Exterior community gathering space

The Report indicated that accommodating additional program amenities on the existing parcel footprint would be difficult and that an acquisition of land would be required.

Land acquisition was successfully completed and subsequently approved by Council through By-law # 7809-21 which was passed on November 29, 2021. Additionally, at the Special Council meeting on November 22, 2021, Staff were directed to report to Council with the recommended design of the WSC, including providing budgetary implications associated with the revised program expansion.

4. Discussion:

The new building concept is designed upon the foundational work presented from the preferred ‘Active Plaza’ and ‘Terraced Courts’ conceptual designs voted by the community as part of the Community Engagement Process. The current design reflects the community feedback which focuses on the following design aspirations:

- Create a sense of place by making the building visible and engaging;
- Design spaces that are natural, modern and dynamic;

- Provide dedicated spaces for sport that are balanced with informal use;
- Showcase activities and encourage participation from everyone;
- Strive for higher environmental sustainability;
- Provide a clear connection to the outdoor activity space;
- Create an inviting lobby to host various community events; and
- Provide a functional exterior community gathering space.

A project team, including staff from Community Services and Office of the Chief Administrative Officer, worked in concert with Perkins + Will to develop the preliminary site concept plan, design and building mass for the Whitby Sports Complex and Park. The plan successfully incorporates the significant feedback received by Council, the community and stakeholders.

Proposed Site Concept:

The new Whitby Sports Complex proposes a hub of recreational programming and parkland situated southwest of Highway 12 and the 407. The project draws inspiration from the nearby Heber Down Conservation Area and Whitby's network of trails and parks. As such, the building is conceived as a journey through the landscape, inviting the public to its network of interior trails, gathering spaces and recreational amenities.

Located at the "elbow" of the site, the building is rotated to provide a clear connection between the west and east. The spine of the building is widened to create generous space for entry and circulation. The gym and east arena are then rotated off-axis once more to create wedge-shaped clearings for gathering between programs.

Windows will bring in diffuse light and a natural material palette roots the building to the earth. A wood feature ramp with integrated seating acts as a beacon of accessibility while simultaneously drawing people between levels providing unique views of the site and the building. The projects' heightened approach to sustainability brings together both passive and active systems, eliminating its carbon footprint and setting the bar for a new level of efficiency for sports and recreation centres.

The proposed concept plan demonstrates integration between the facilities and park amenities. It depicts the connections within the site including the building, park, sports fields, parking, walkways and internal roadways. The preliminary site plan provides Council and the public with a conceptual understanding of these connections as well as a visual sense of the building location on the site.

Non-motorized transit to the site will be encouraged with the provision of walkways, bike racks and multi-use paths. A future transitway station is proposed on the adjacent property which will encourage public transportation to the WSC site. Vehicular traffic will be managed with a parking lot located between the park amenities and the community centre. Electric vehicle charging

stations will be provided. To manage traffic, the plan contemplates internal roadways and a second entrance; this will be further explored through the traffic impact study.

The plan incorporates CPTED (Crime Prevention Through Environmental Design) principles including appropriate lighting, locating the pump track and skate park in a highly visible area and establishing areas of control outside and inside the facility to ensure visitors feel safe and secure.

The orientation of the building, the preliminary exterior elevation and landscape plan give considerable attention to the presence the facility will have on the new Mid-Block Arterial Road (MBAR). The community centre itself will be set back 82 metres from the main road providing sufficient view of the landscape and park elements surrounding it while ensuring the building has prominence when viewed from the street.

The intent of the concept plan is to inform the scope and programming needs of the project, provide a conceptual site layout, establish the building massing, and define the access and circulation components of the project. With Councils approval of the recommendation, the project consultant will then proceed to the next step of developing the detailed architectural building plans, landscape & engineering drawings along with the requisite technical reports for such aspects as a traffic management plan and functional service report that addresses sanitary, water and storm water management components.

Based on the feedback received from the public engagement process, and projected future recreational needs of the growing community the Project Team identified the following amenities to be included in the expanded program:

Indoor amenities

- A twin-pad arena with 85’ by 190’ ice pads
- An aquatic centre with a 10 lane, 25 metre lap pool, separate leisure pool and 2nd floor viewing areas
- A double gymnasium that can be subdivided that would include a three lane indoor walking track
- Flexible community room spaces

Outdoor amenities

- Sports field
- Pump track and skateboard park
- Basketball courts
- Tennis courts
- Pickleball courts
- Playground
- Plaza space to host community events

While the concept design for the community centre is preliminary, it does consider the size of each building components necessary to inform user capacity, the overall building size, general layout and ultimately the capital project budget. There will likely be modifications made as detailed design commences in 2022 and various design efficiencies are found.

It is recommended that the contract for Perkins & Will Architecture be increased by $625,000 (plus HST) for design fees for the expanded building program. Perkins & Will has been involved with the design and public engagement process of the project since November 2020 and it is recommended that they continue with the detailed design of the expanded building. Further, based on public engagement, the design of the park (located on the WSC lands) should proceed concurrent with the design and layout of the WSC. Since Perkins & Will has been involved with all of the public engagement to-date and has already started on preliminary design of the park based on engagement feedback, it is recommended that Perkins and Will be awarded a sole source contract in the amount of $544,430 (plus HST) for park design.

Park Design:

The preliminary park development plan demonstrates the desired amenities that can be accommodated within the site to create a vibrant appealing park that is successfully integrated with the community centre. The Project Team envision a fully unified design that incorporates connecting walkways, quiet restful seating areas, shade structures, naturalized areas and open space capable of accommodating;

- A full sized illuminated artificial turf sports field; divisible into smaller mini fields
- Pump track and skateboard park
- 2 illuminated multi-use courts lined for ball hockey and basketball
- 3 illuminated tennis courts
- 12 illuminated pickleball courts
- A playground and water play area
- Programing spaces to accommodate Town day camp activities
- Public Art
- Extensive plaza Space to host a variety of programs and special events

The detailed design for the park will be developed by the Project Team. Further studies and technical reports associated with traffic, parking and storm water management will inform the final configuration of the park design.

Due to the size and configuration of the WSC site, the following amenities are not proposed to be included in this design:

- Cricket Field
- Artificial Outdoor Ice (trail, pad)

The Town has experienced a growing demand for cricket play in recent years. Currently there are no dedicated cricket fields in Whitby. Council passed a motion on September 20, 2021 to explore opportunities to provide a dedicated cricket field and report back to the community with the results and next steps. Staff are not recommending the WSC site as the preferred location for a cricket field as the width of the proposed lands is less than the minimum 130m width required to build a regulation size cricket field. Staff explored a number of locations on the site to accommodate this amenity, however, due to existing site topography and field orientation, this was not feasible. The Parks and Recreation, Master Plan study will investigate opportunities for a permanent cricket site within the Town.

The desire for outdoor ice skating facilities also received multiple requests during the community engagement process. Staff are not recommending the WSC site as a location for outdoor artificial ice skating due to the less complimentary adjacent land uses and limited available space. It is felt that outdoor ice skating would best be located in a Town park with more space and a pleasing natural setting such as Cullen Central Park or Brooklin Memorial Park. Opportunities for outdoor ice skating will be explored through future master plan studies.

Sports Field Redevelopment

The future redevelopment of Victoria Fields and adjacent waterfront will result in a shortfall of outdoor sports facilities within the Town of Whitby. There are currently three full sized and eight mini fields at the Victoria Fields site that will be displaced to enable the redevelopment. The WSC will accommodate one of the displaced full sized soccer fields. The new location for the remaining fields will be informed through the Parks and Recreation, Master Plan study. On WSC site staff are investigating developing the multi-use field with an artificial turf playing surface. This surface would accommodate more intensive use compared to a standard natural grass field and provide for all weather play not currently available in the Town. The financial implications, in terms of capital and operating costs, with installing an artificial turf field will be investigated through the detailed design process.

Sustainable Design:

The Whitby Sports Complex will achieve the Whitby Green Standard and target both Canada Green Building Council's Leadership in Energy and Environmental Design LEED Gold and Zero Carbon Building (ZCB Certifications. To achieve net zero operational carbon, the design will eliminate fossil fuel use for heating, use renewable energy and reduce the use of high global warming potential refrigerants. The building and site will support many of the social and

environmental goals identified by the Town in its Strategic Plan and Zero Carbon Whitby Plan.

The following represents a summary of the Environmental Sustainability initiatives that may be incorporated within the design of the community center building and park features:

- Zero Carbon Renewable Energy
- Energy Conservation
- Bird Friendly Design
- Offset of Urban Heat Island
- Tree Planting
- Stormwater Management and Low Impact Development
- Water Conservation
- Emergency Backup Generator
- Waste Management
- Use of materials which are regional, recycled, and low emitting.
- Enhanced Indoor Air Quality
- Active and Sustainable Transportation
- Education and Awareness

Many of these elements will be explored through the detailed design process of site development, building modelling with a focus on carbon and energy reduction.

District Energy System (DES):

Elexicon Group in partnership with the Town, is currently undertaking a feasibility study to introduce a zero carbon geo-exchange district energy system to support the WSC and adjacent properties. If approved, there are a number of benefits in the potential long-term emission and economies of scale through co-locating these amenities on one site.

If the DES does not proceed, the Town will be required to build an independent geothermal system as part of the WSC project in order to meet the Zero Carbon Building requirements. The estimated cost to implement an independent geothermal system is in the range of $4,000,000.

The DES Feasibility Study analysis and recommendation is expected to be presented to Council in March 2022.

Public Art and Culture:

The Culture Plan has identified specific actions related to public art and culture related to capital projects including:

- Consider incorporating public art and cultural experiences within municipally owned or operated natural areas, trail and parks (Direction 3, Goal 3, Action C);
- Identifying opportunities to incorporate placemaking and placekeeping initiatives into Whitby capital projects that support more walkable and pedestrian friendly spaces (Direction 3, Goal 4, Action A); and
- Recognize and commemorate Whitby's diverse stories, places and names across municipal assets (Direction 4, Goal 2, Action B).

There are plans to incorporate public art and cultural spaces within the exterior and interior of the new facility and as part of the design process, staff will engage with Community Groups including the Black, Indigenous and People of Colour (BIPOC) community, to integrate public art and cultural programming into the design of this new facility.

Cost Mitigation Strategies:

Potential Program Reductions:

Addressing the many needs within the available budget is always a challenge and requires difficult decisions in a project of this magnitude. As a result, Staff explored potential program reductions to mitigate cost impacts to the project. The identified program reductions and associated costs include the following:

- $9,700,000 Remove 2nd Arena
- $7,300,000 Remove Gymnasium

Although these reductions in programming space would mitigate costs, Staff are not recommending removing the program spaces for the following reasons:

- Rapid population growth over the next decade will result in increased demand for gymnasium, park and arena use
- Costs to retrofit recreational facilities are high due to the required changes in infrastructure and building rework
- Luther Vipond Memorial Arena (LVMA) would need to be maintained until the 2nd Arena at the WSC is constructed. This would defer the Brooklin Memorial Redevelopment project. It would also require higher annual maintenance costs for LVMA arena as it will have exceeded its end of life.
- Program reductions would require additional redesign fees
- Schedule would be delayed by approximately 3-4 months to complete the design revisions. The current estimated construction escalation impact is approximately $350,000 per month.

Through the detailed design process, Staff will explore revenue opportunities and potential cost mitigation strategies for the project that will include the following:

- Green and Inclusive Community Buildings Program (GICB) in the amount of $25 million
- Naming rights for the building and advertising and sponsorship opportunities
- Design efficiencies as the concept moves into the detailed design phase, each element will be reviewed to ensure all opportunities for savings are reviewed and if appropriate realized

Grant Funding Application:

Staff continue to pursue grant funding that may be available for this project. In July 2021, a funding application was submitted to Infrastructure Canada through the GICB in the amount of $25 million. The funding program is designed to support the incremental costs associated with achieving zero carbon emissions, and advanced climate resiliency.

Naming Rights:

Economic Development Staff will be undertaking a sponsorship and advertising asset strategy to be completed in mid-2023. This strategy will assist with assembling a complete advertising asset inventory and identify fair market value for both new and existing sponsorship and advertising assets, including the establishment of a revenue target for the new sports complex. Upon completion of this strategy, staff will begin consulting with a third party and securing a naming rights sponsor at a fair market value. Staff will report back if/when they secure a naming rights sponsorship. Any costs not funded by development charges, advertising or grant funding will require property tax-based funding to proceed.

Design Efficiencies:

Through the design development process, Staff will explore options for potential design efficiencies providing maximum value to the Town. These options may include the following:

- Interior building elements including flooring, ceiling and wall finishes
- Building envelope materials
- Building infrastructure alternates for mechanical and electrical components
- Exterior landscaping elements
- Ensure spaces are appropriately sized to accommodate community needs

These considerations will be factored into the final decisions as part of the design development process.

Estimated Annual Operating Impact for the WSC:

Based on comparable buildings offering similar services, programing and park spaces, staff estimate that the WSC will have annual operating expenditures of approximately $3,300,000 with user fee/programming revenues ranging from $2,550,000 to $2,650,000 per year. Accordingly, the anticipated net property tax impact of the WSC is expected to be $650,000 to $750,000 per year. The projected operating impacts will be refined as the project progresses and more information is confirmed related to programming, sustainable design, and DES.

Project Timelines:

Deliverable	Estimated Timeframe
Design Concept Presentation to Committed of the Whole (COW)	March 7, 2022
Design Concept Approval from Council	March 7, 2022
Detailed Design and Construction Documentation Period	March 2022 to February 2023
Final Design Approval from Council	January 2023
Construction Tender	March to April 2023
Council Approval on Construction Tender	May 2023
Construction Period	Spring 2023 to Fall 2025
Facility Opening	Fall 2025

5. Financial Considerations:

The current approved budget for the WSC is $70 million with funding planned over multiple years:

Project # Name	Year	Budget	Growth Reserve Fund	DC Parks & Rec	Debt
71201045 RFP-71-2020 Prime Consultant CS 45-20	2020	$3,021,343	$302,134	$2,719,209	

Project # Name	Year	Budget	Growth Reserve Fund	DC Parks & Rec	Debt
71201033 Design	2021	$4,100,000		$4,100,000	
71201033 Construction	2023	$62,878,658		$23,300,000	$39,578,658 (DC-related debt)
Total WSC Facility (not including Park		$70,000,000	$302,134	$30,119,209	39,578,658

Based on current design cost estimates, the estimated budget for the WSC (design & construction) is now $98,000,000. Final cost estimate and budget will be determined following detailed design and construction tendering. However, staff are seeking Council direction at this time to proceed with completing a detailed design for $98 million facility. It is anticipated that the incremental costs will be funded from future Development Charges. This will require additional long term DC-related debt where the annual debt servicing costs will be funded from Development Charges. Alternative options available at this time include reducing scope/phasing the project to stay within the $70 million budget. The rationale to design and construct the recommended concept is outlined earlier in this report.

The impacts of the pandemic on the construction industry, supply chain issues and resource shortages are currently difficult to predict and could cause a risk to the price and timing of this project. The project team has made a conscious effort to ensure many of the specified products are made in Canada and created an efficient design to help keep cost in control.

A new capital project will be established for the park design and appropriate adjustments will be made to the Whitby Sports Complex capital project so that there is proper segregation of WSC and park design and construction costs. In the Town's 10-year capital forecast, there is a $6.2 million capital project (#70250207) in 2025 for Sports Fields/Multiuse Fields/Turf. The project is to be funded $4.65 million from Parks & Recreation Development Charges and $1.55 million from the Growth Reserve Fund and a portion of the project relates to the park at the WSC location.

6. Communication and Public Engagement:

The development of the Sports Facility Strategy (SFS) included a significant Community Engagement Process. The engagement process informed the SFS recommendations and the amenities of the proposed WSC. The process involved

multiple deliverables including a public survey which received 653 respondents and targeted user group surveys with 12 groups participating. Additionally, three (3) public information center sessions were attended by over 70 individuals.

Using the recommendations in the SFS, staff developed initial concepts and held key stakeholder feedback sessions in March 2020. In total, 29 organizations were invited to participate in these key stakeholder feedback sessions. There were 14 key stakeholder groups that attended this session.

In December 2020 and January 2021, the Design Consultant completed Interviews and Visioning Sessions with Members of Council and Staff. Participants in these sessions shared their overall project vision, design aspirations and guiding principles for the project which informed the development of the three (3) design concepts.

In March & April 2021, Staff met with the community to complete the following engagement initiatives.

- The Connect Whitby website was launched for public information and feedback on the design concepts;
- A Community Online Survey was conducted to request input on the key aspects of the project and to inform the overall design;
- One (1) Key Stakeholder Session with 12 organizations represented was conducted to provide input on the design concepts; and
- Three (3) Community Engagement Sessions were conducted in March 2021 to present the three (3) design concepts and receive feedback.

The Town received an unprecedented amount of feedback from the community on the future sports complex. Staff recommended to increase the WSC program based on the input received from the community engagement and survey results.

Staff will continue to provide regular design and project status updates to the community utilizing the above communication platforms as the project progresses through the various stages of development.

7. Input from Departments/Sources:

In addition to Community Services, various departments were engaged at strategic times in the design process to provide input.

Strategic Initiatives, Planning, Legal Services, Public Works, Corporate Communications and Finance were included in the development of this report.

Community Services staff are working closely with Public Works staff on the development of the adjacent Mid-Block Arterial Road. The two projects will provide opportunities to connect with active transportation facilities.

The Town's Project Steering Committee (PSC) has provided executive direction and general oversight for the development of the WSC. The PSC will continue to provide leadership, guidance and direction for the planning and integration, design, construction and risk management of the project.

A Project User Committee (PUC) will be initiated during design development to provide detailed input on various aspects of the design. The internal committees will meet frequently during design and construction phases to ensure the design principles are delivered throughout the project.

8. Strategic Priorities:

The development of the NWSC is identified in the 2020 - 2022 Business Plan under the Community Building category. The project aligns with the Customer Corporate Strategic Priority as the project will help ensure there are facilities that can accommodate the growing community's demand for indoor and outdoor recreation opportunities.

The project supports multiple Council goals, including ensuring effective public engagement and consultation by continuing the public consultation and information sharing throughout the project. By involving staff from across the organization the project will engage staff to solve problems and deliver the best results to residents. This engagement of staff and rigorous oversight of the project will ensure sound financial management and respect for the residents. The project helps support building complete and walkable communities so that Whitby remains the community of choice for families and increases recreational opportunities for residents and tourists.

To align with Council's strategic vision for sustainability and climate change, several initiatives including Whitby's Green Standard, LEED Gold and Zero Carbon Building certification are incorporated into the project design. The WSC would also be Canada's first combined Zero Carbon certified arena and aquatics building.

The Town is also working in partnership with Elexicon Group to conduct a full feasibility study of a Net Zero Geothermal District Energy System to be located within the additional lands of the WSC site. The results and recommendations on the feasibility study will be presented to Council in the Spring 2022.

Accessibility has been considered throughout the project and consultation will continue to take place with the Town's Accessibility Advisory Committee. The project design in its entirety shall meet or exceed the requirements of the Ontario with Disabilities Act (AODA). The building design also features a fully accessible ramp included in the main lobby providing barrier free access to the upper level lobby and program spaces.

9. Attachments:

Attachment 1 – Whitby Sports Complex Design Concept - Presentation

Presentation to Council

7 March 2022

Agenda

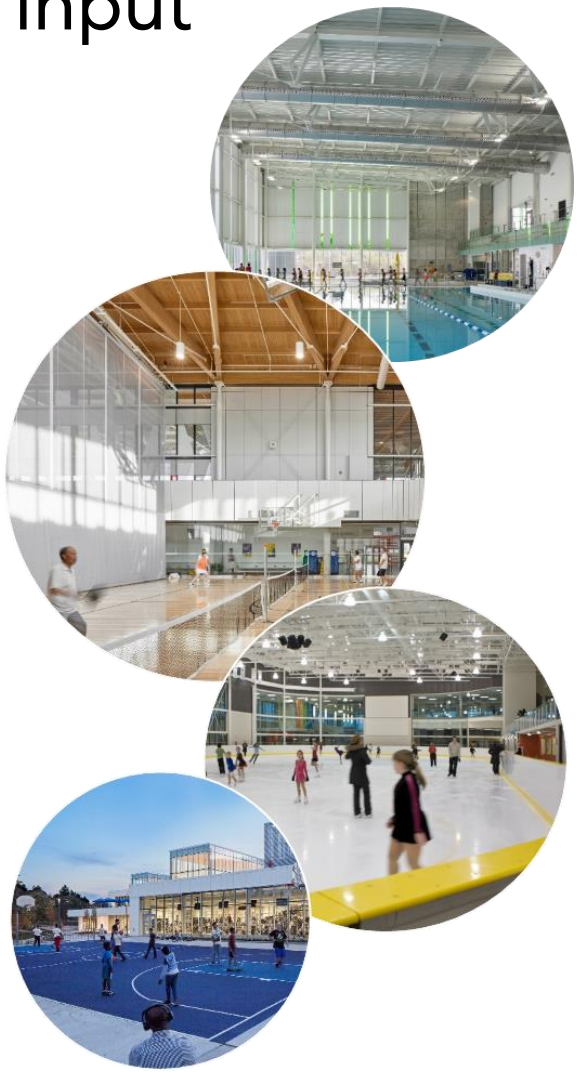
1. Listening to Council, Staff and Community Input
2. Design Concept
3. Sustainability Goals

Listening to Council, Staff and Community Input

Community Input

Current design incorporates community program input

- 115 request (32%) from the community engagement session identified outdoor amenities such as **outdoor sports fields, courts, gardens, playgrounds, bike/skate pump track, trails and plaza programming**
- 224 written requests (21%) for **indoor gymnasium space** [pickleball, badminton, volleyball, basketball, indoor fieldhouse activities and large meeting events]
- 125 written requests (12%) for aquatics amenities including **increased pool size, second floor viewing area and adequate change room facilities**
- **Future expansion potential for indoor program.** Numerous requests for an indoor fieldhouse, multi-purpose spaces and for additional ice surfaces

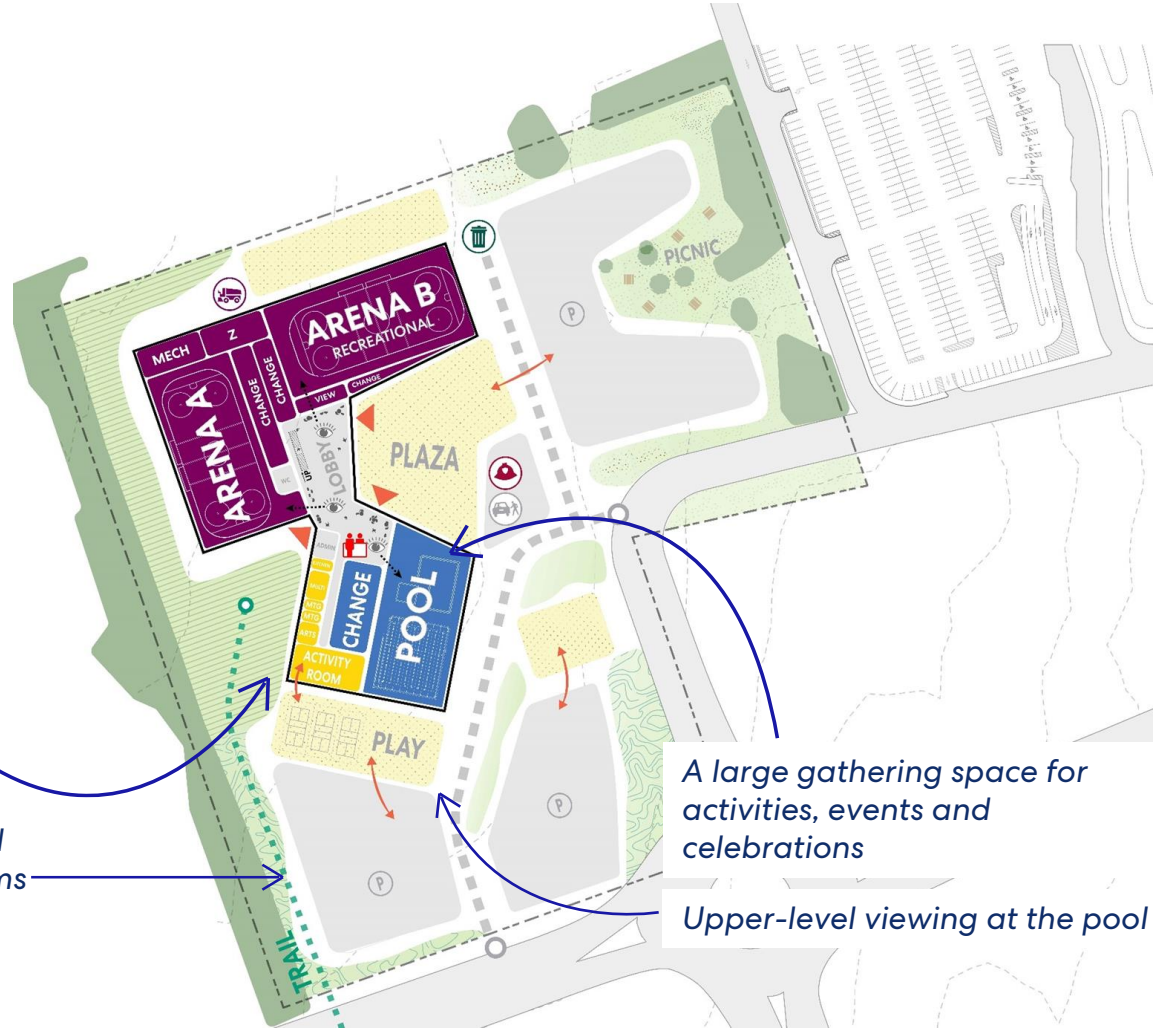


Community Input

Current design reflects community design aspirations

Active Plaza was the most popular

- Visible and Engaging
- Natural, modern and dynamic spaces
- Balance of dedicated and informal uses
- Large lobbies that can host events
- Connections to outdoor activities
- Large exterior gathering spaces



Community Input

Current design reflects community design aspirations

Terrace Courts was also popular

- Visible and Engaging
- Natural, modern and dynamic spaces
- Balance of dedicated and informal uses
- Large lobbies that can host events
- Connections to outdoor activities
- Large exterior gathering spaces

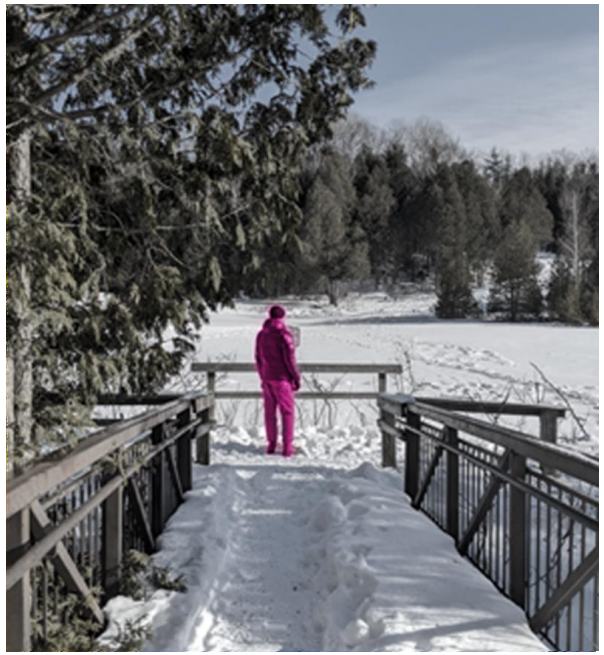
We were inspired by both!

Project Vision

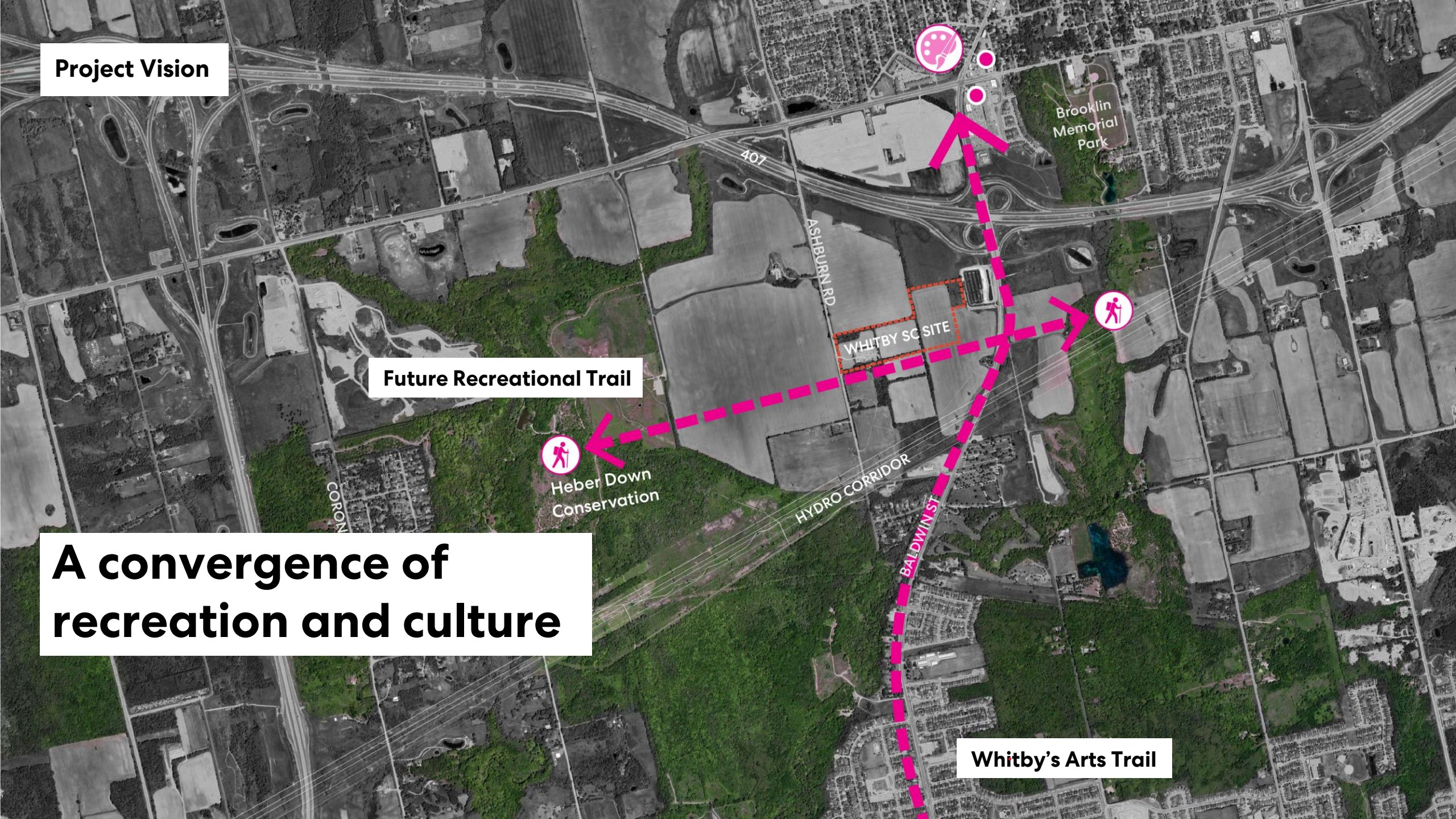
A design inspired by people & place

The WSC will embody Whitby's unique rural/urban identity and provide new opportunities for cultural and recreational activities

- *Indoor and outdoor gathering and performance spaces*
- *Meaningful integration of public art*
- *Outdoor amenities to support hikers and cyclists*



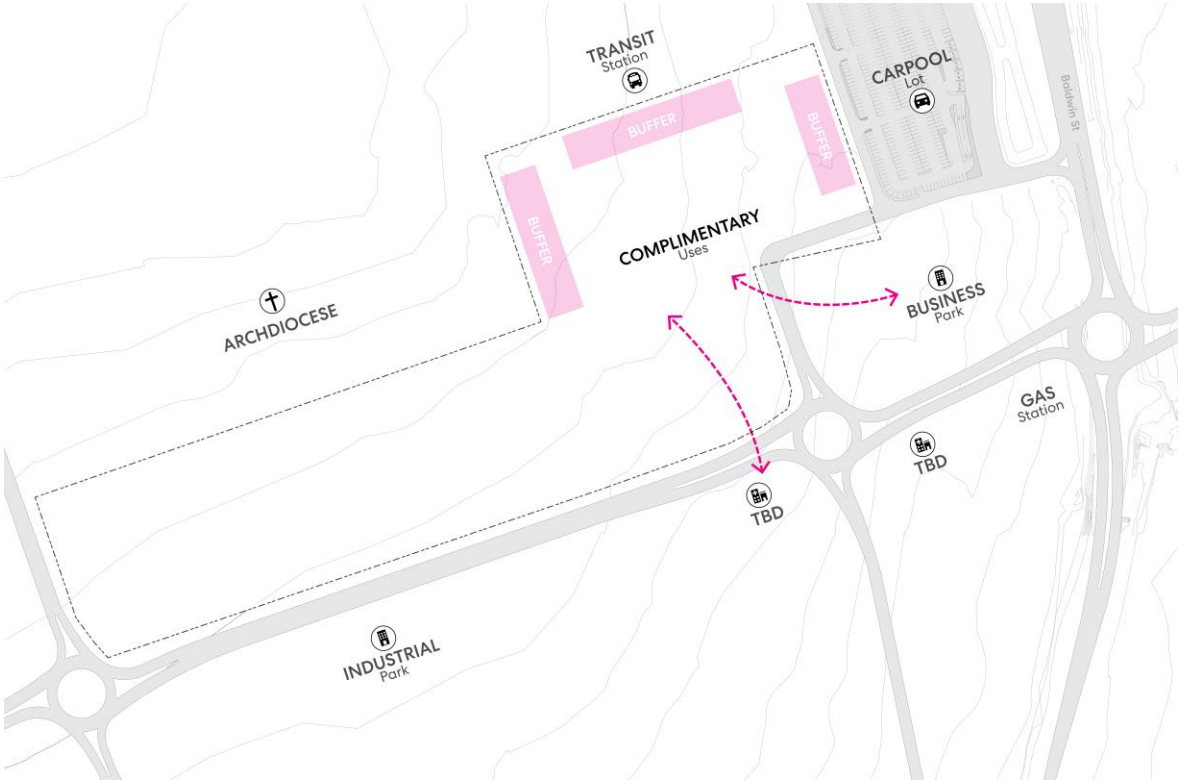
Design Concept



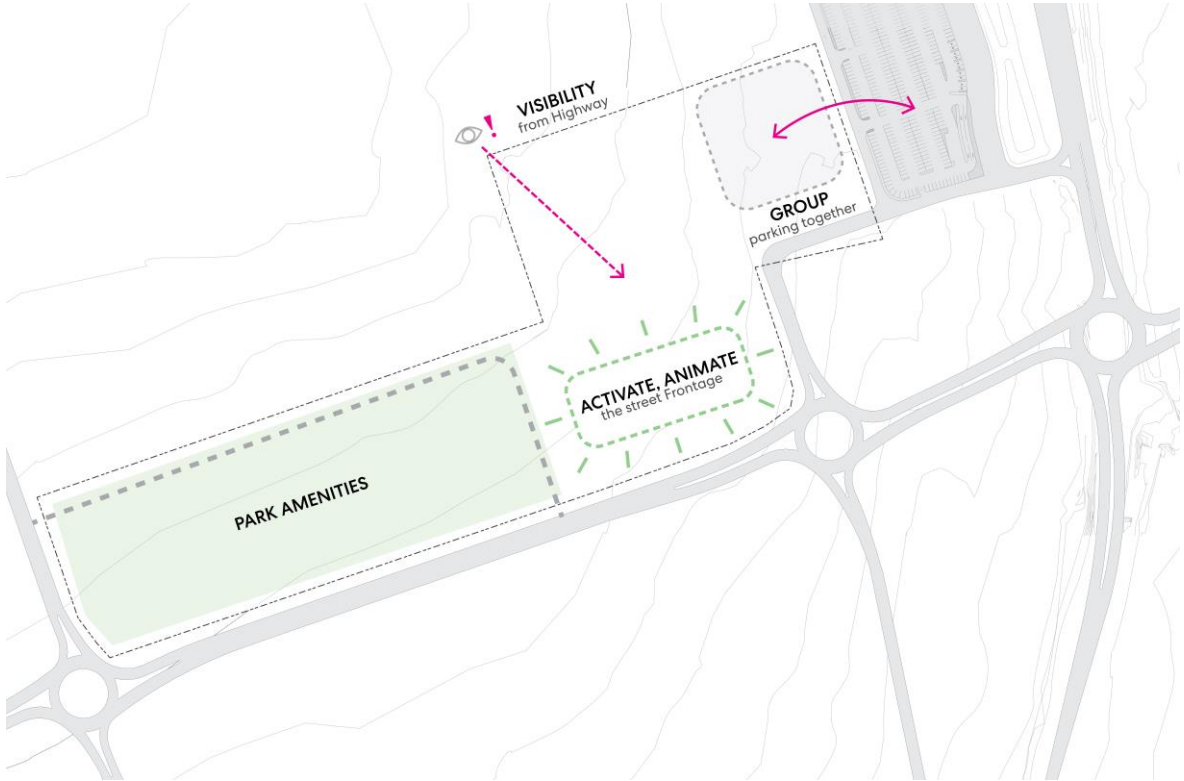
A convergence of recreation and culture

Put down roots

Site Analysis



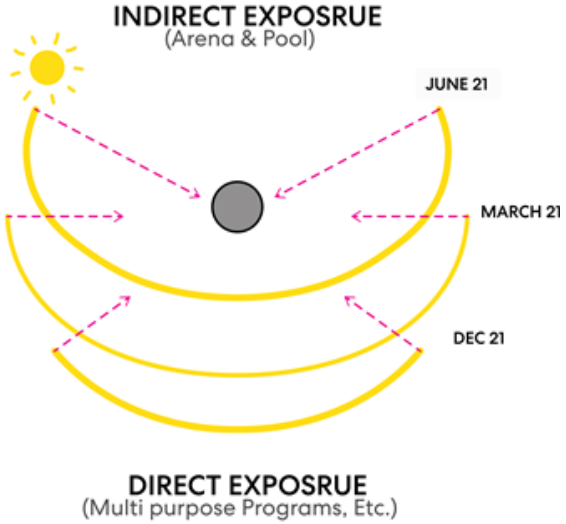
Future Neighbours

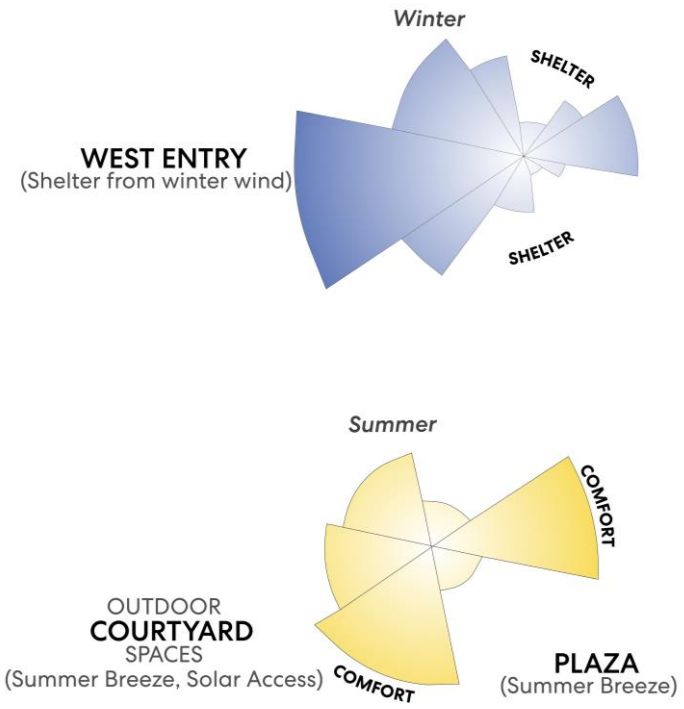


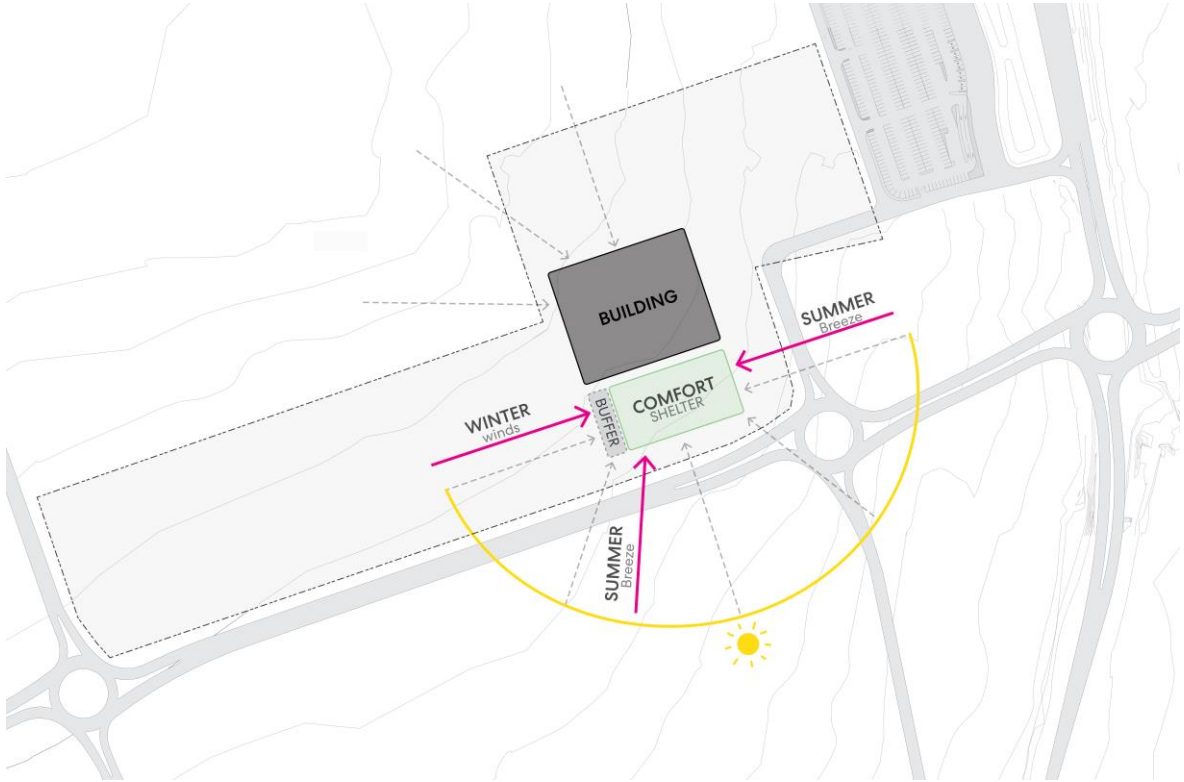
Street Frontage and Visibility

Put down roots

Site Analysis

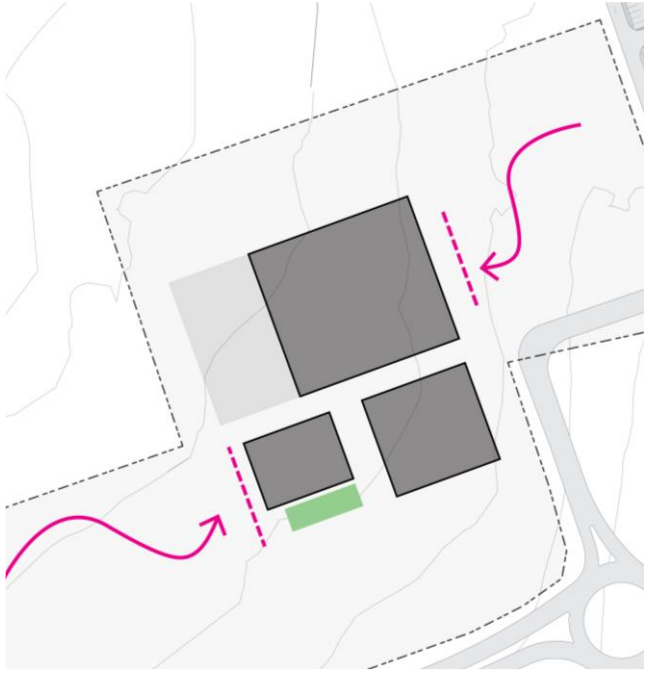






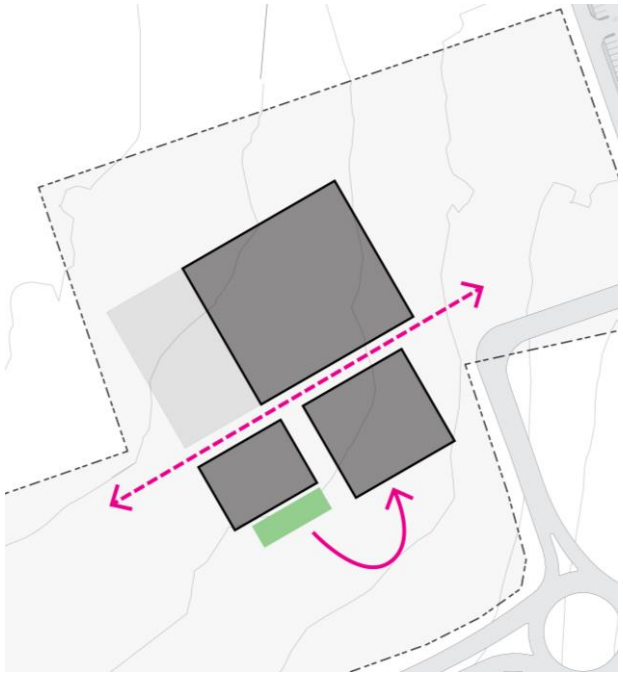
Environmental Comfort

Siting and Engaging the Expanded Property



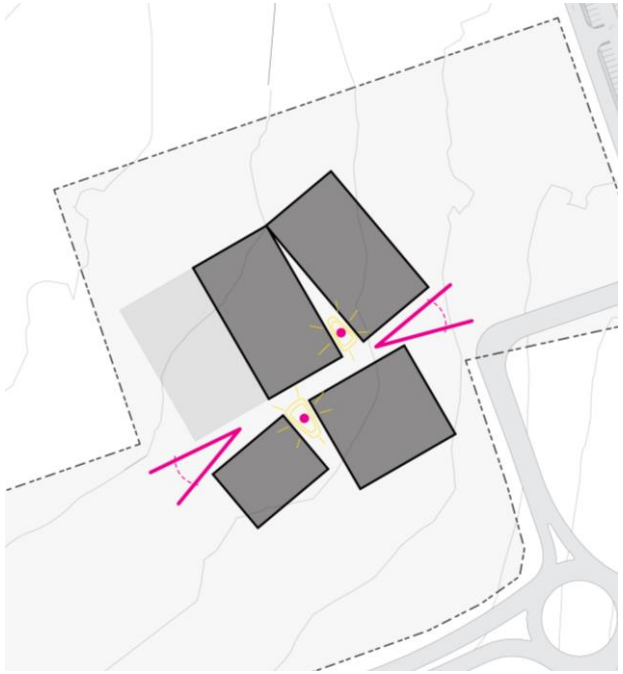
Position the Building

This is an optimal position, but it creates a barrier between the two sides of the site.



Rotate and Connect

By rotating the entire building we can create a clearer connection between the two sides of the site



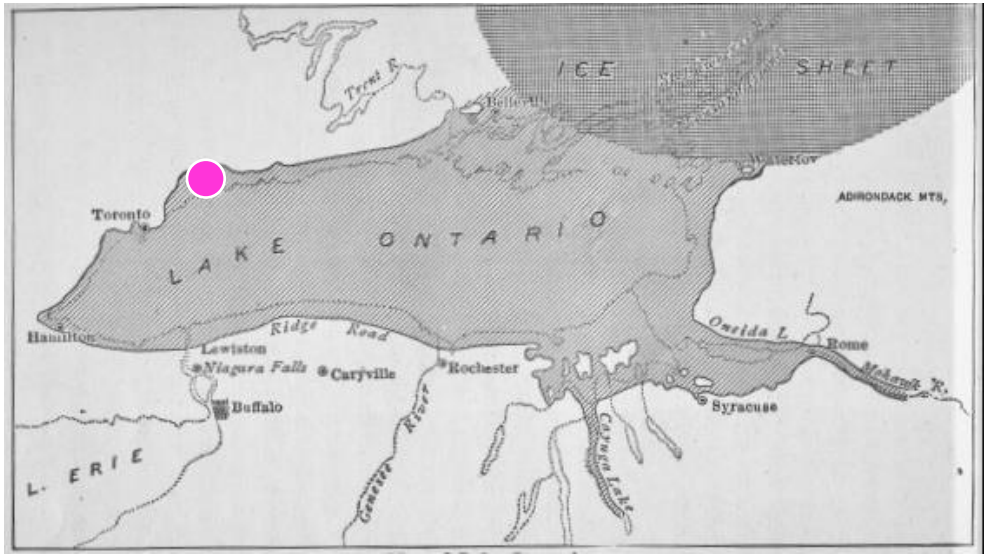
Expand the Entry

By rotating the gym and one arena we can create a more generous entry while also opening up more interior gathering space between program elements

Project Vision

Forces of nature

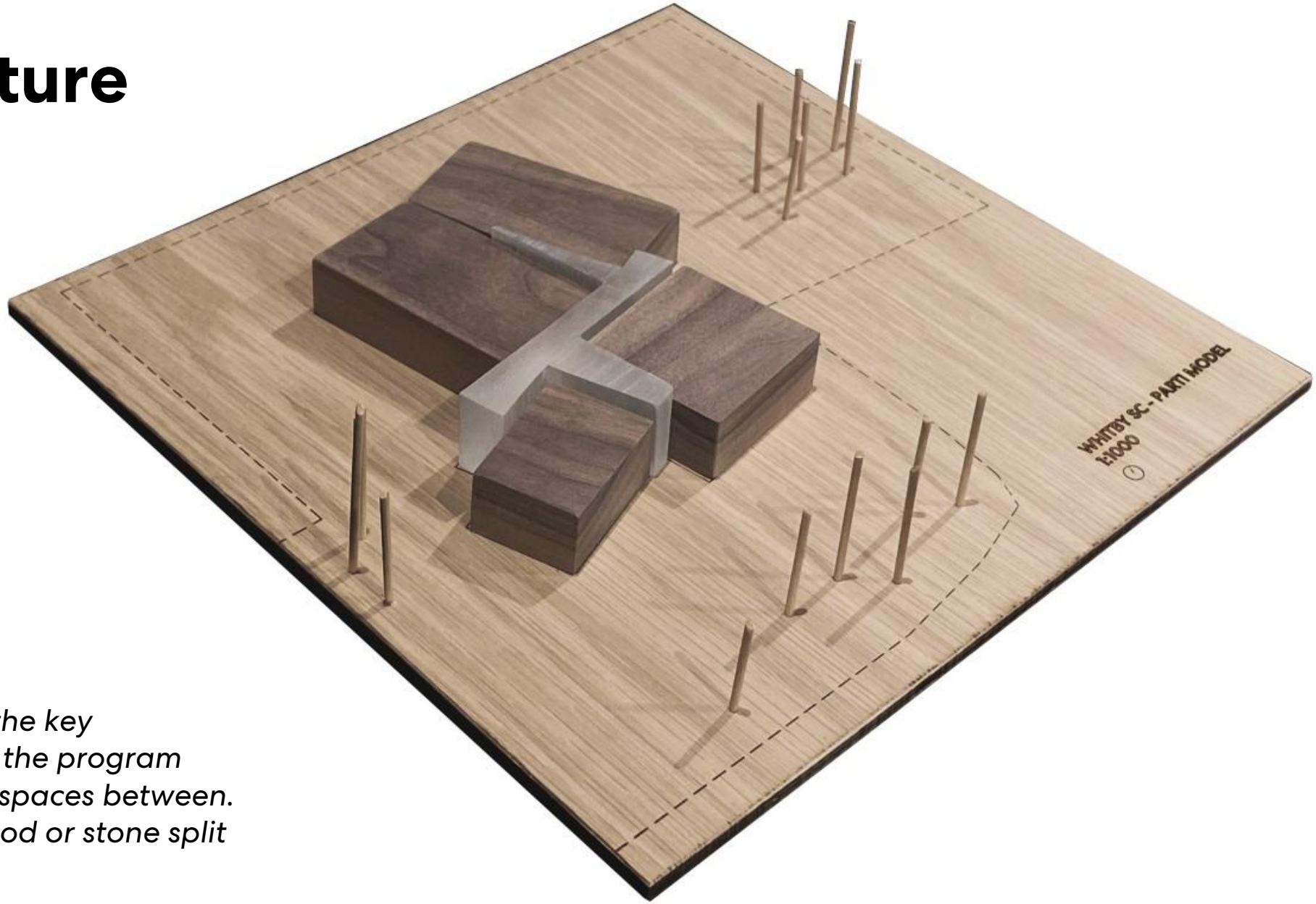
Ice shaped a landscape that we now move through.



Glacial Lake Iroquois

Project Vision

Forces of nature

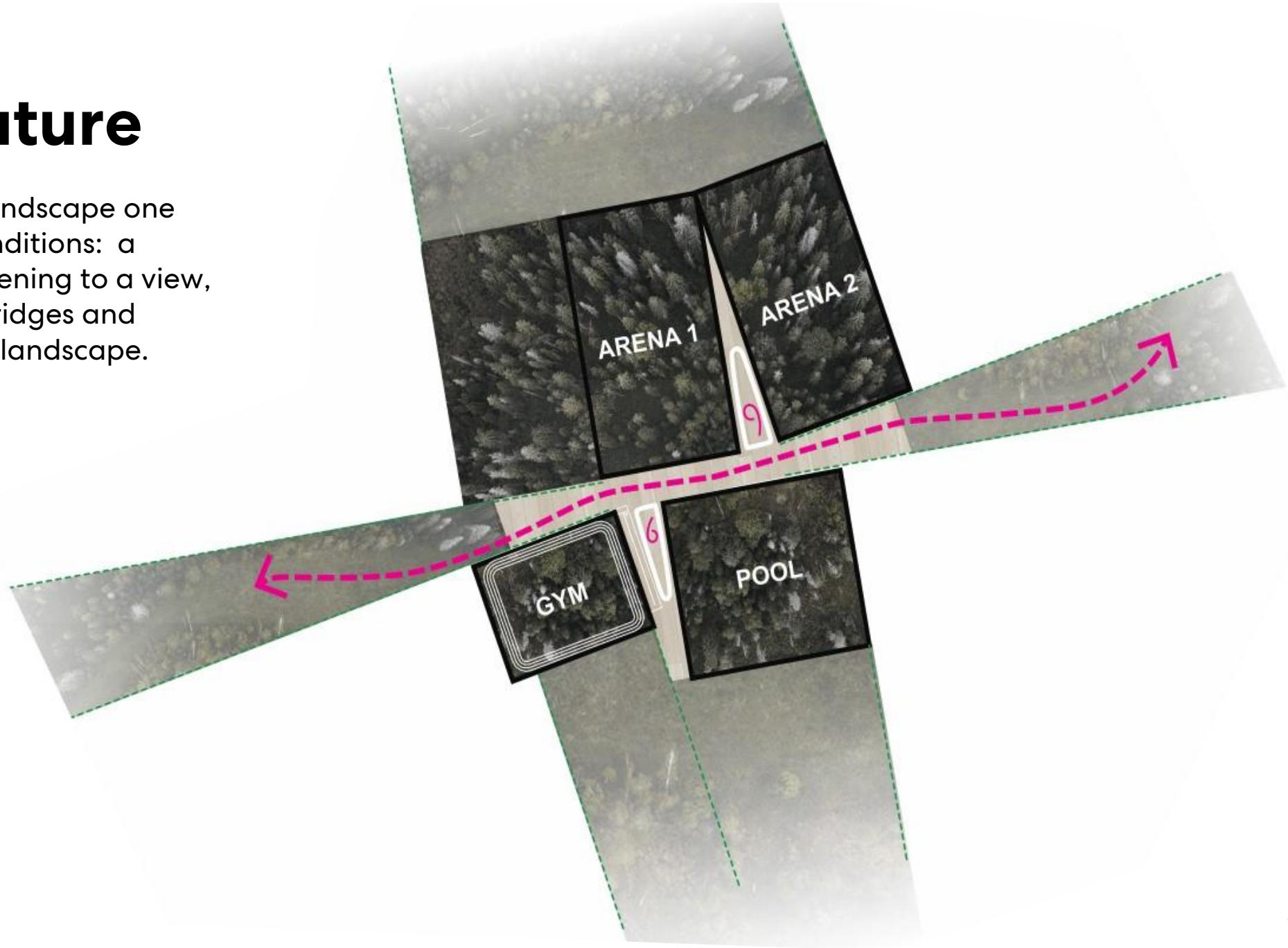


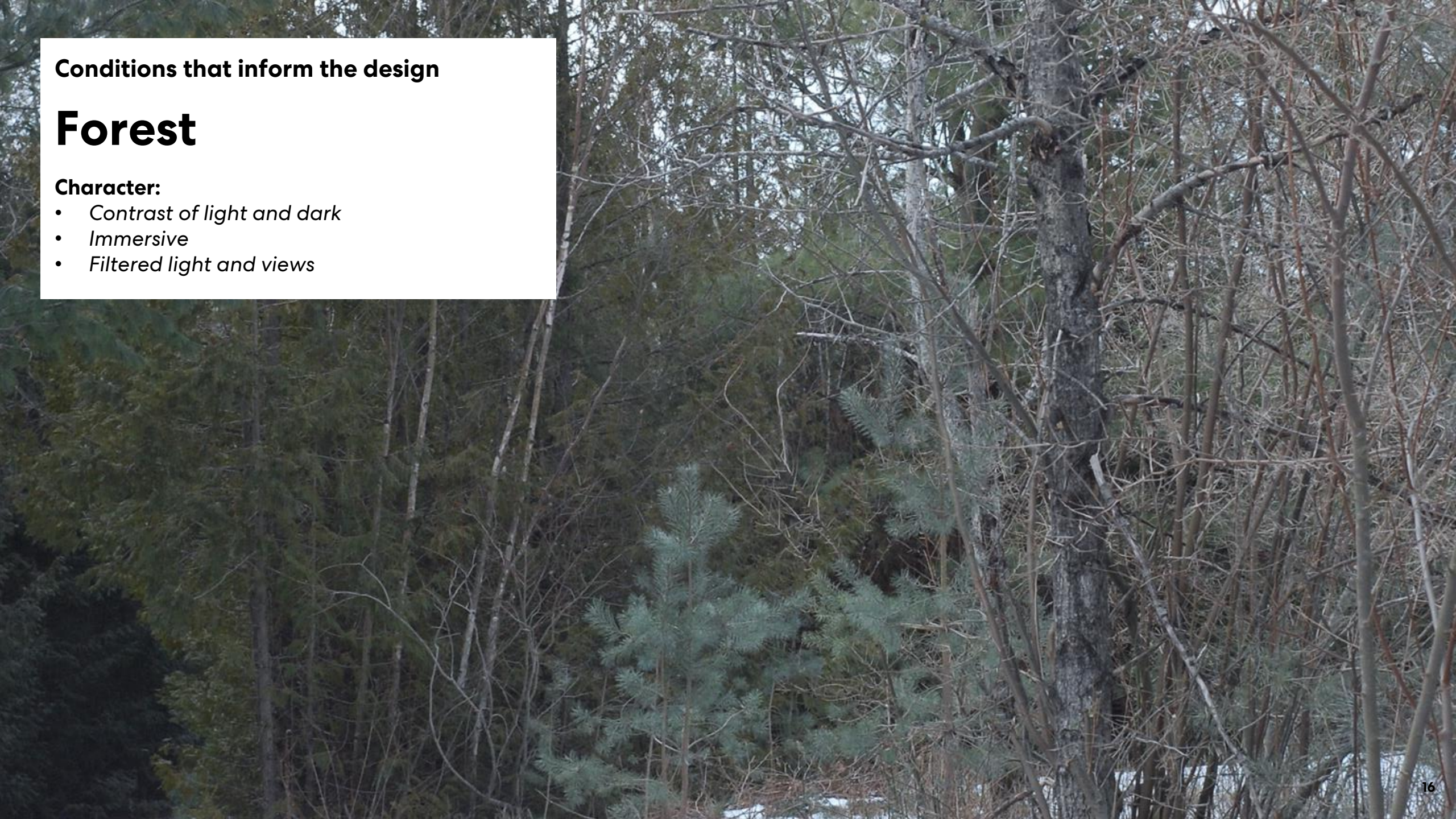
The physical model defines the key components of the concept: the program volumes and the circulation spaces between. It evokes a natural force: wood or stone split apart by ice.

Project Vision

Forces of nature

When moving through a landscape one encounters a variety of conditions: a widening or narrowing, opening to a view, changes in grade. Trails, bridges and markers help navigate the landscape.





Conditions that inform the design

Forest

Character:

- *Contrast of light and dark*
- *Immersive*
- *Filtered light and views*

Conditions that inform the design

Trail

Character:

- *Narrow*
- *Open to sky and continuous light from above*

Conditions that inform the design

Clearing

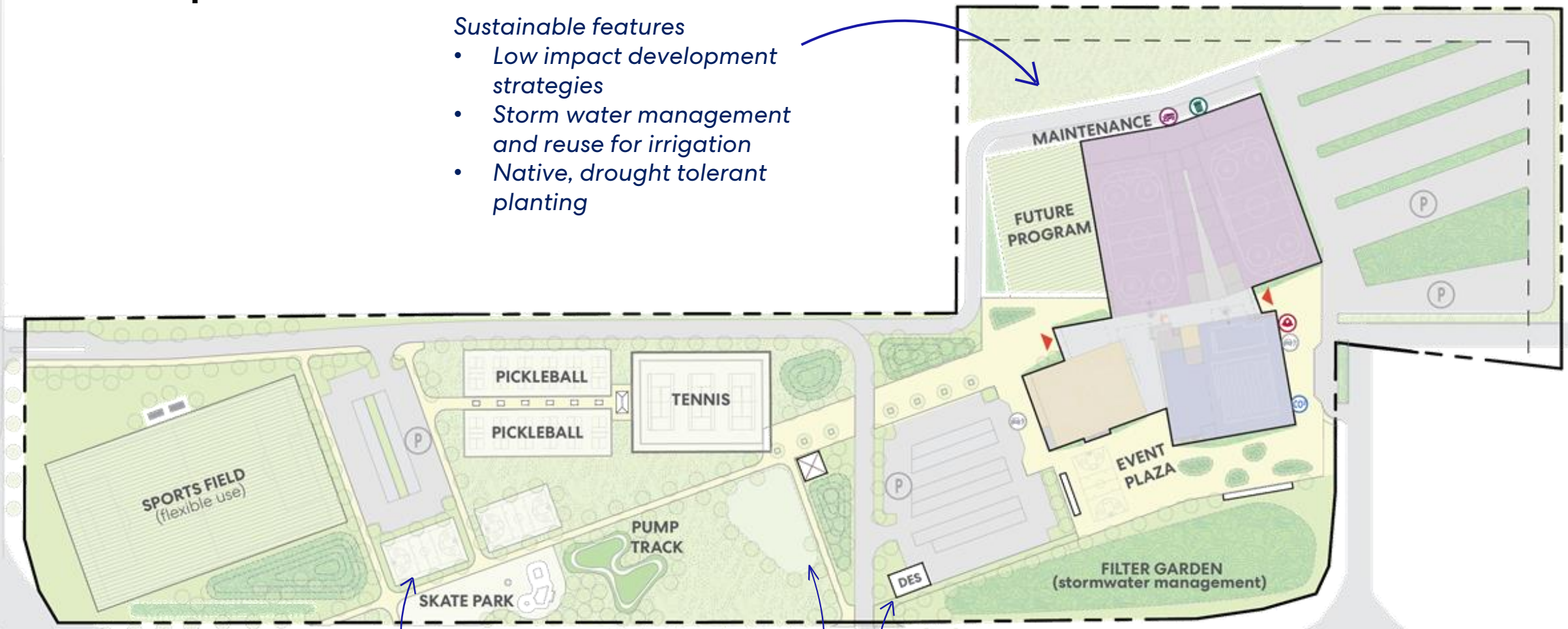
Character:

- *Vista*
- *Space for gathering*
- *Orientation*

Site Concept

Sustainable features

- *Low impact development strategies*
- *Storm water management and reuse for irrigation*
- *Native, drought tolerant planting*

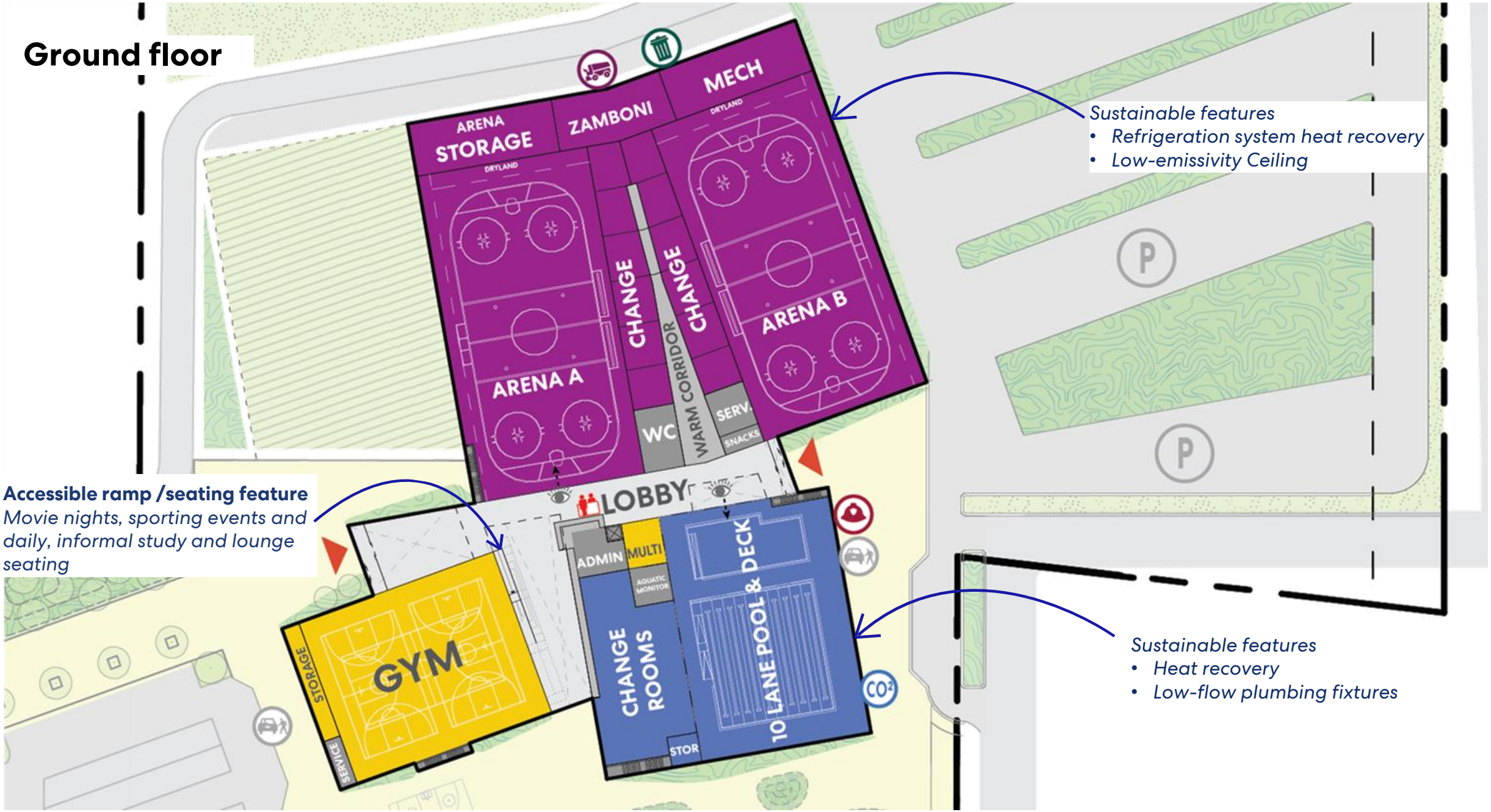


Playground & Splashpad

Basketball & Multi-use courts

Possible District Energy System, serving the building and surrounding development

Ground floor

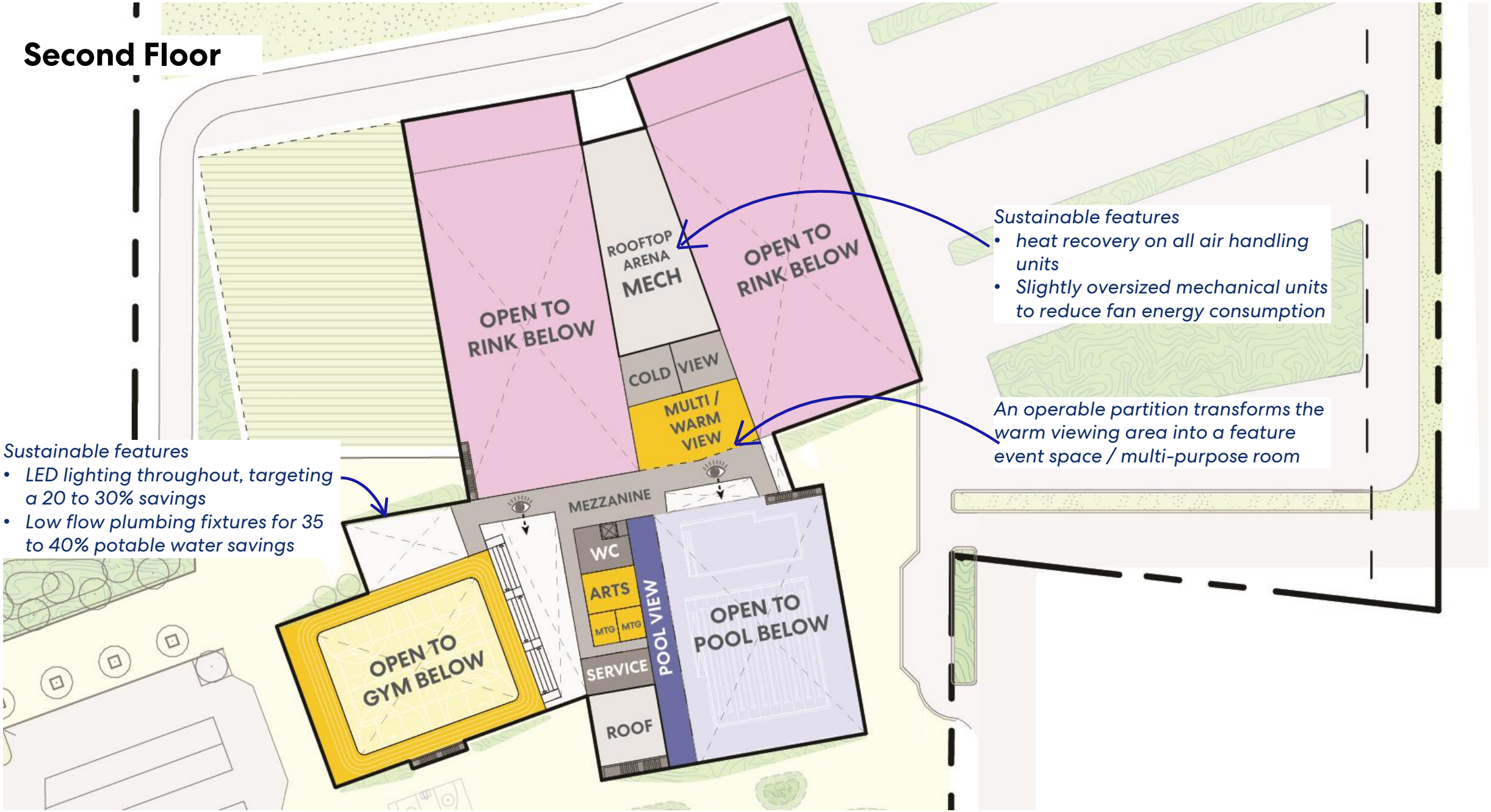


Sustainable features
- *Refrigeration system heat recovery*
- *Low-emissivity Ceiling*

Accessible ramp /seating feature
Movie nights, sporting events and daily, informal study and lounge seating

Sustainable features
- *Heat recovery*
- *Low-flow plumbing fixtures*

Second Floor



Sustainable features

- *heat recovery on all air handling units*
- *Slightly oversized mechanical units to reduce fan energy consumption*

An operable partition transforms the warm viewing area into a feature event space / multi-purpose room

Sustainable features

- *LED lighting throughout, targeting a 20 to 30% savings*
- *Low flow plumbing fixtures for 35 to 40% potable water savings*

Area and Program Summary

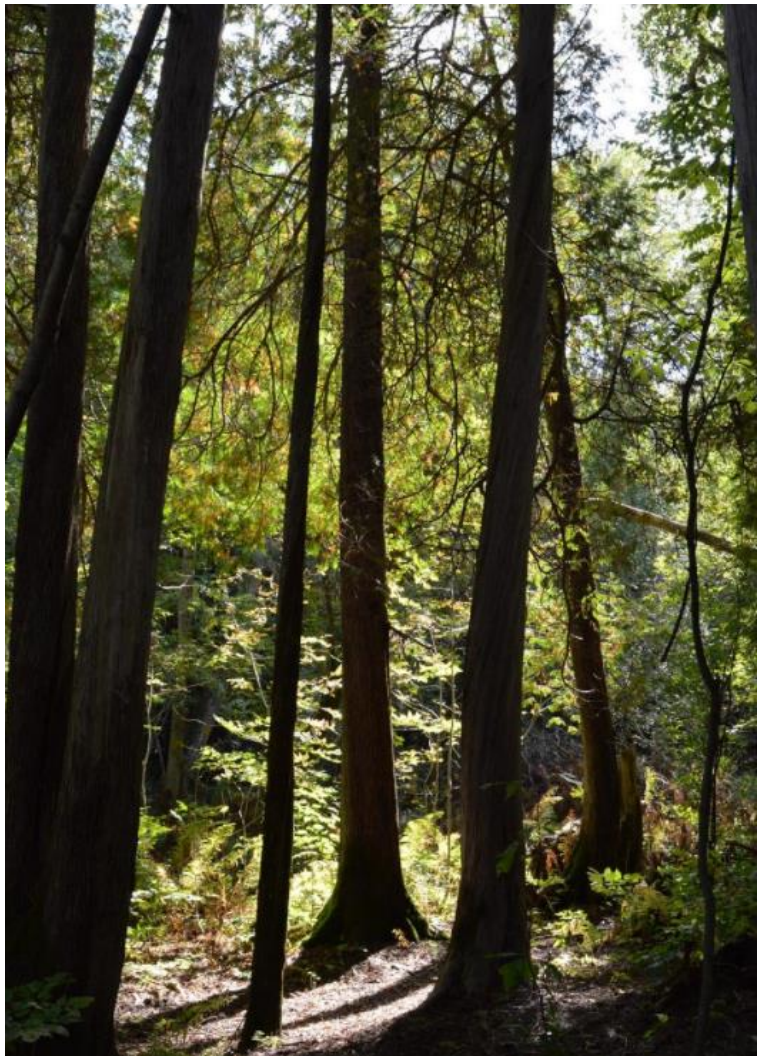
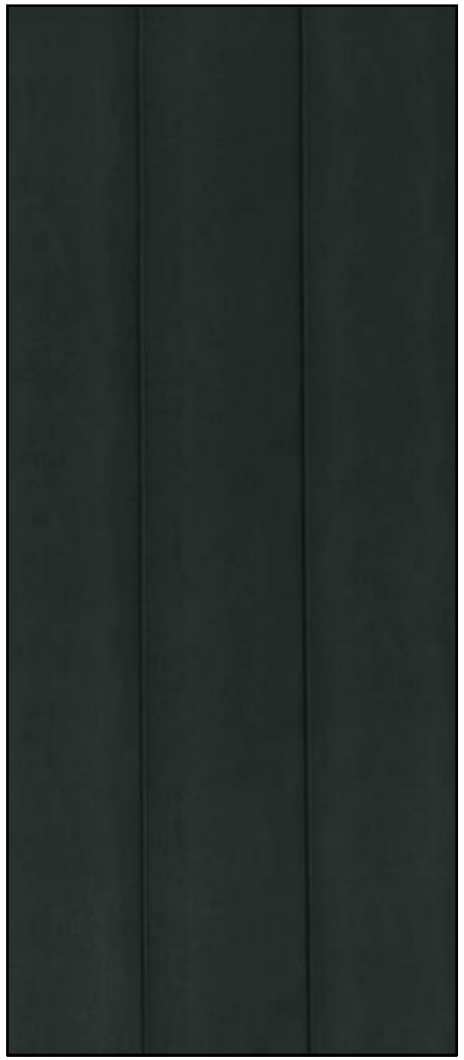
159,000 sq ft [14,800 m2] *(excludes outdoor mechanical areas; approximately size, for this stage of design)*

Program Components:

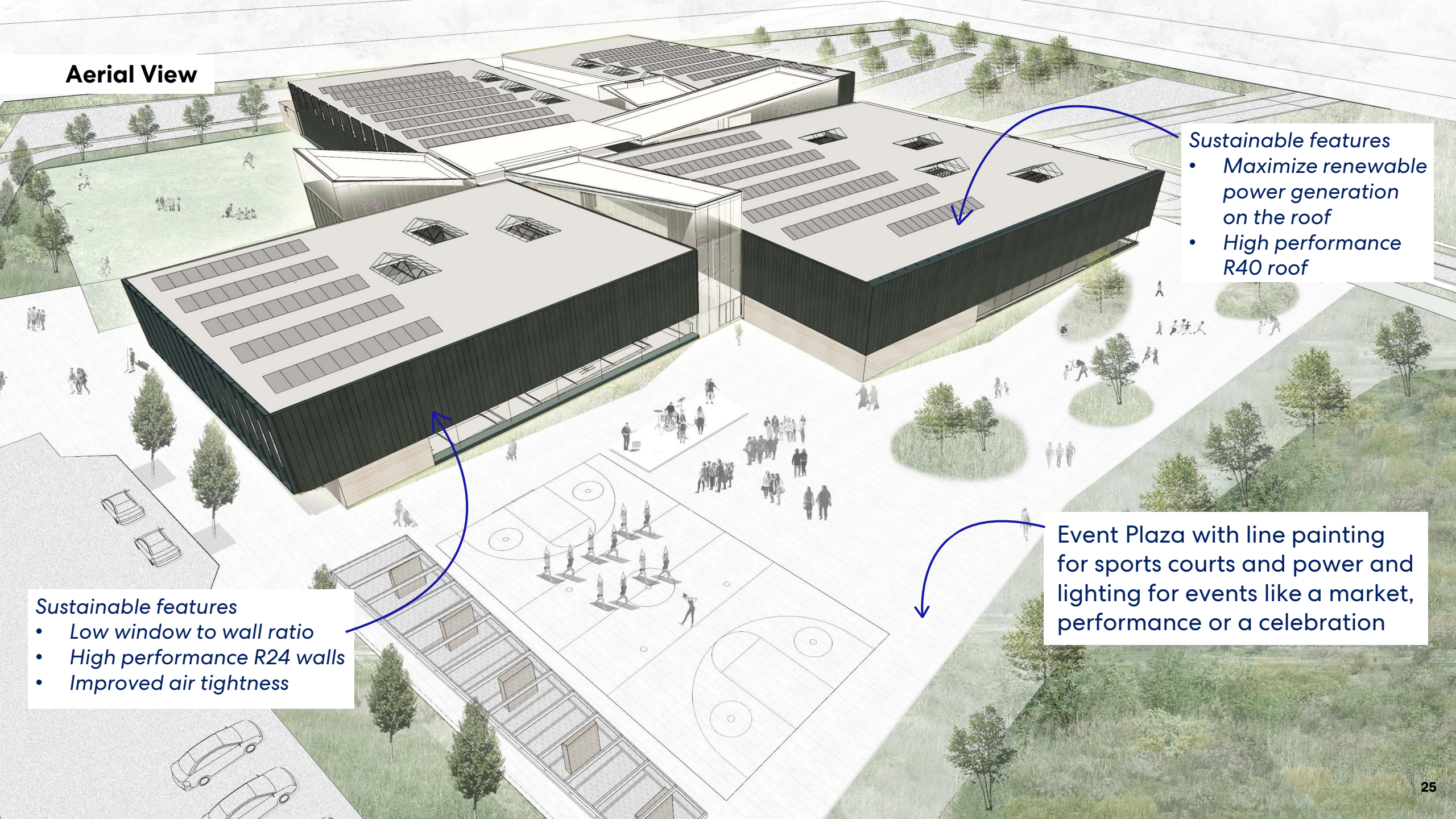
- Leisure pool and 25m, 10 lane lap pool with deck space for competitions / viewing
- Approximately 660 sq m change rooms accommodating family and gendered change rooms
- Second floor pool viewing for 300 people
- 2 Arenas with change facilities and arena viewing for 150 to 200 people, at ice level. Warm and cold viewing on level 2. Warm-up space in north portion of arena apron
- Gymnasium including...
    - One 94’ x 50’ college-size feature basketball court with bleacher seating for approximately 300 spectators
    - One feature volleyball court with bleacher seating for approximately 300 spectators
    - Two 84’ x 50 basketball cross courts
    - Two volleyball courts
    - Six pickleball / badminton courts
- Walking track above the gym
- Aquatics multi-purpose room, two meeting rooms, Arts & Culture Room, concession, warm viewing doubles as a multi-purpose room
- Accessible ramp to level 2

Materials

Natural, Rich and Elemental

Aerial View



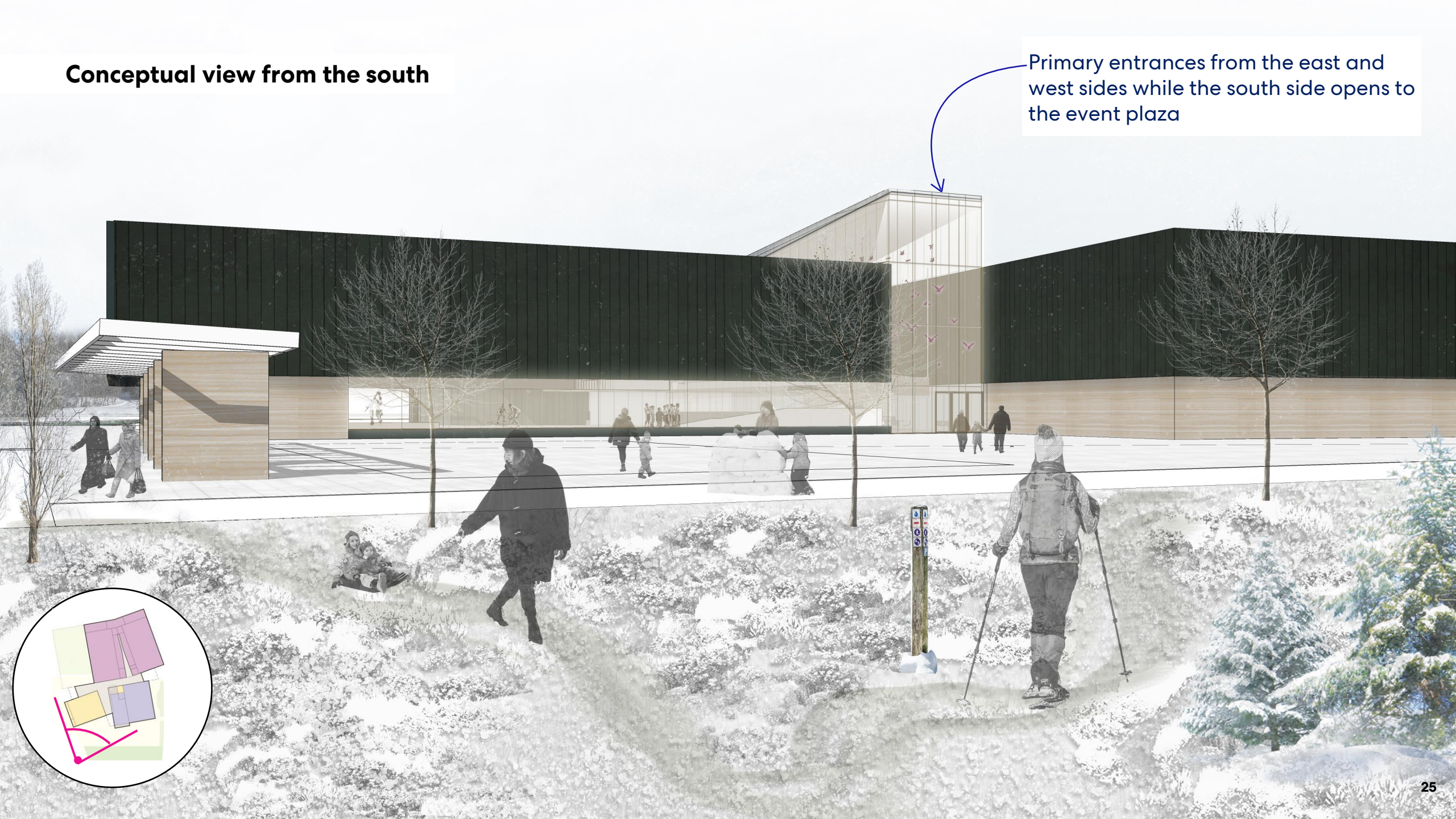
Sustainable features
- *Maximize renewable power generation on the roof*
- *High performance R40 roof*

Sustainable features
- *Low window to wall ratio*
- *High performance R24 walls*
- *Improved air tightness*

Event Plaza with line painting for sports courts and power and lighting for events like a market, performance or a celebration

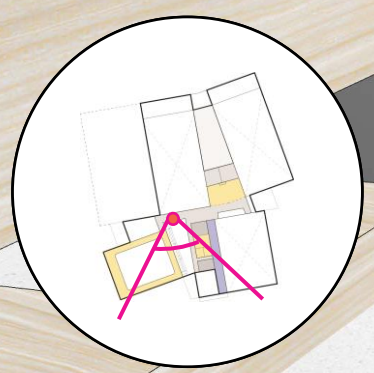
Conceptual view from the south

Primary entrances from the east and west sides while the south side opens to the event plaza



Conceptual view of the east entrance

Conceptual view of the Accessible Ramp

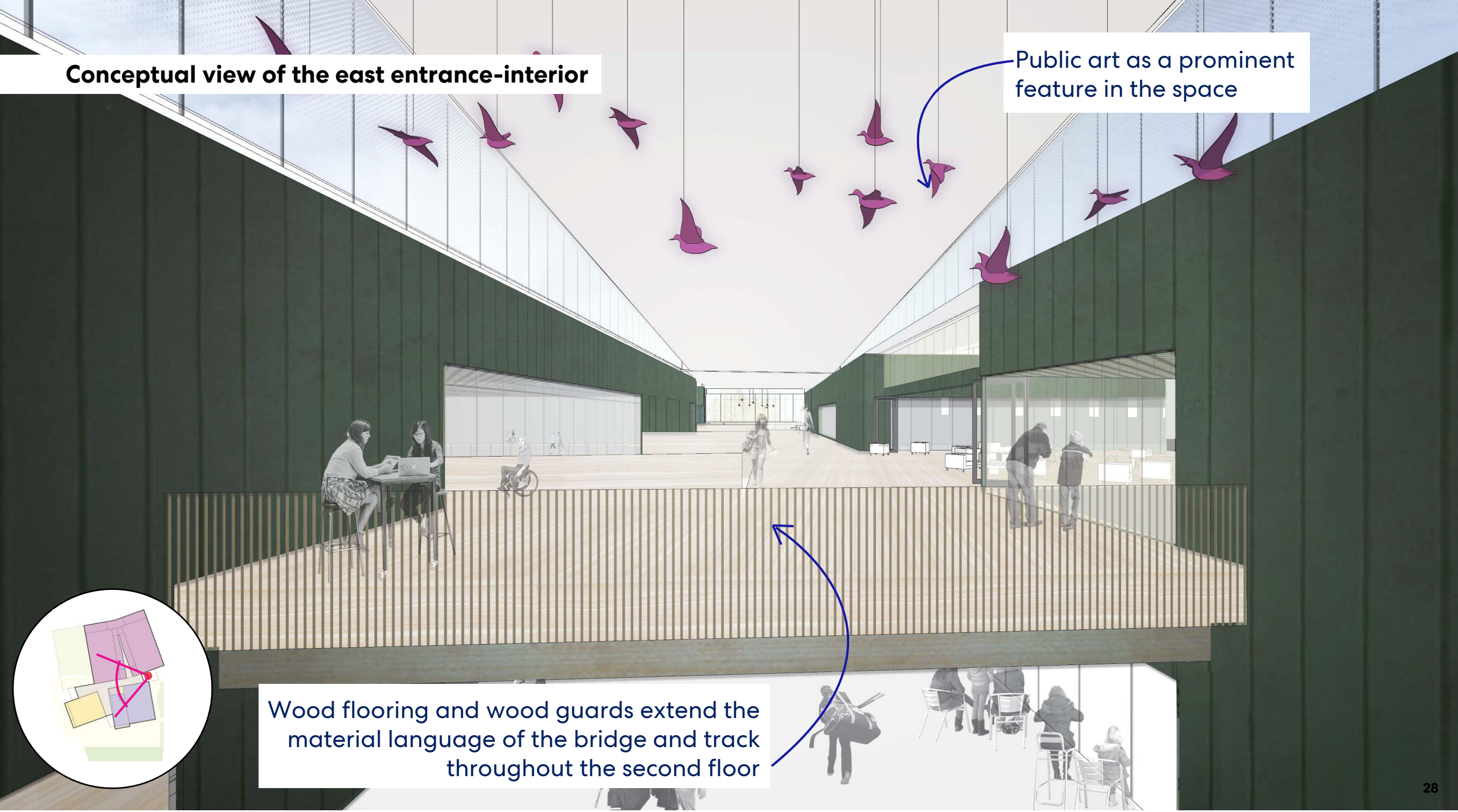


Gathering space for cultural events; movies; musical performances; a Raptors or Maple Leafs Fan Zone

Sustainable features

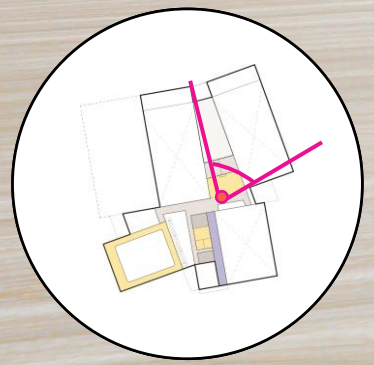
- *PW Precautionary list material screening*
- *FSC certified wood*
- *Robust and long-lasting materials*

Conceptual view of the east entrance-interior



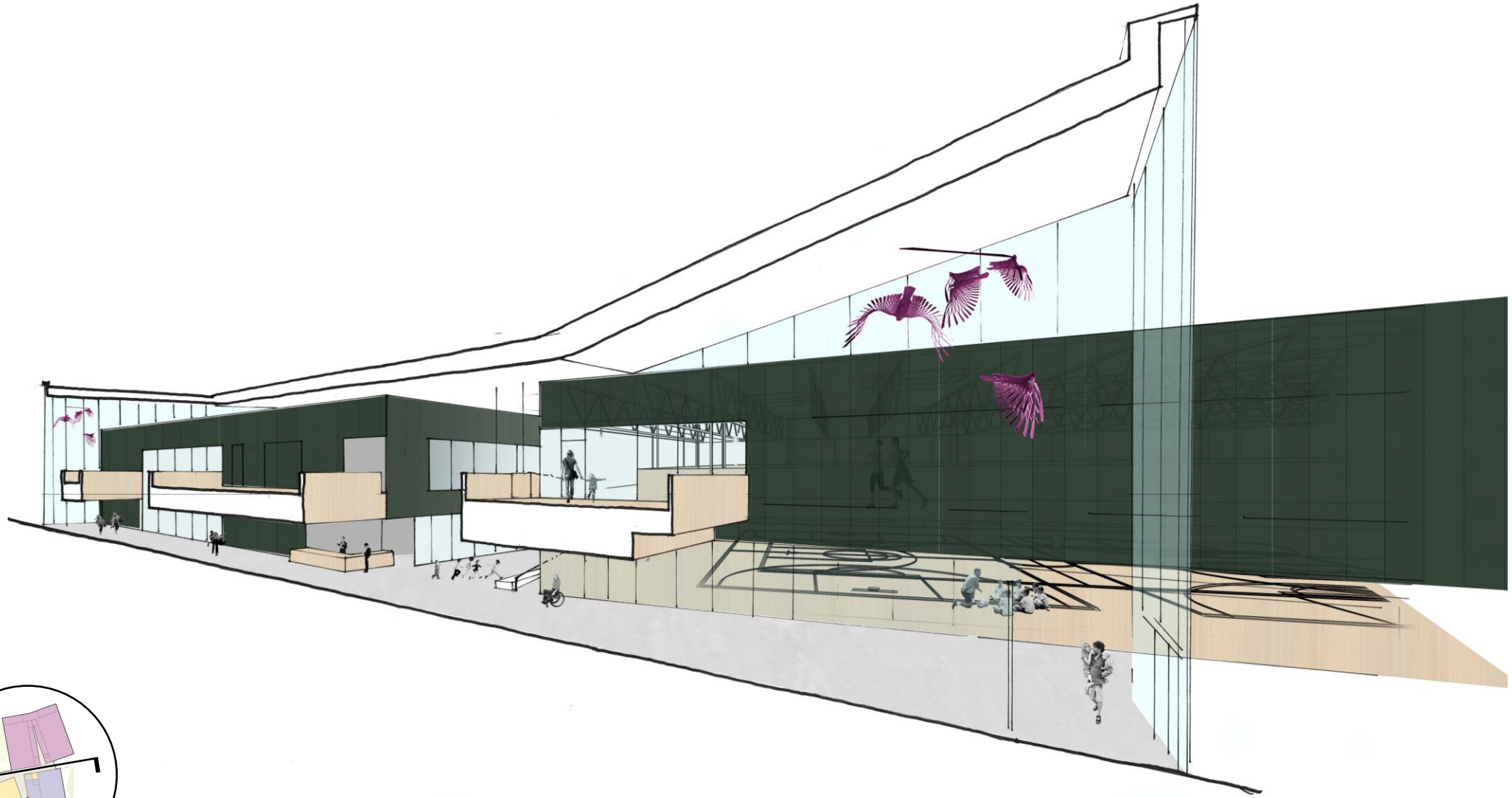
Conceptual view of the warm viewing/multi-purpose room

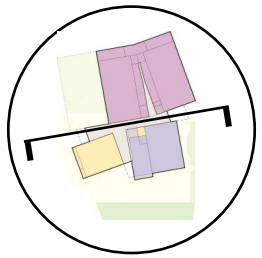
Public art as a prominent feature in the space



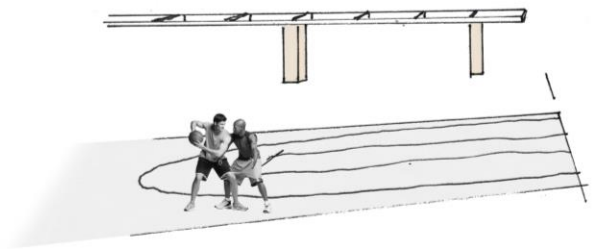
An operable partition transforms the warm viewing area into a feature event space / multi-purpose room

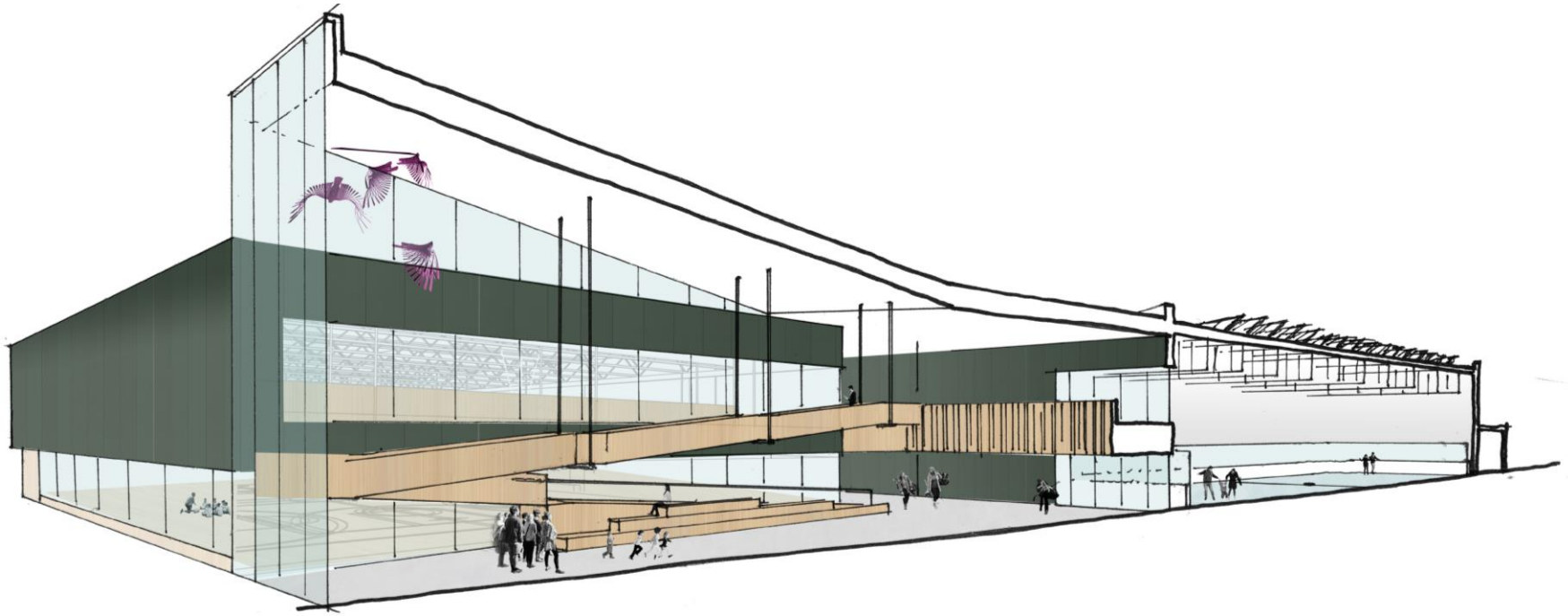
Sketch Building Section east - west

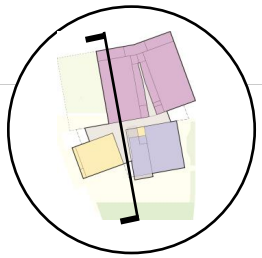




Sketch Building Section north - south







South Elevation

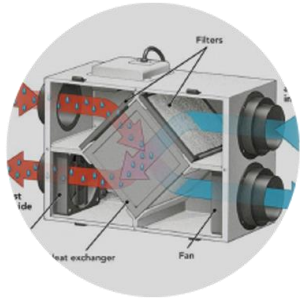
Sustainability Goals

LEED/Net Zero Carbon Sustainability Summary

Net Zero Carbon goals require additional Capital Cost investments

Investments are applied to Carbon and Energy Conservation and include Envelope Improvements, Mechanical and Renewable Systems

Passive



Mechanical

Renewable

LEED/Net Zero Carbon Sustainability Summary

Early analysis indicates this Net Zero Facility would have similar Operating Costs than conventional facilities.

Natural Gas vs. Electric Consumption:
Net Zero Facility requires disconnection from Natural Gas, an unclean fuel source, and using electricity as primary energy source.

Current Natural Gas rates are lower than Electrical energy rates. This will reverse in the foreseeable future as Carbon Taxes are introduced – best to fuel switch now.

Operating Costs are similar due to:

- Enhanced building envelope, reducing energy
- Use of geothermal heating and cooling to lower electricity usage
- Increasing heat recovery technology
- Synergy between ice rink (rejects heat) and pool (uses the heat)
- Producing energy on site with rooftop Photovoltaics

LEED/Net Zero Carbon Sustainability Summary

Supporting the Greater Purpose by:

Leading by example & sending a positive message

Helping reduce impact on climate change

Showing positive action that addresses the Whitby Climate Change Emergency

Helping reduce cost of innovative technologies by creating demand

Resilient facility through energy self sufficiency

Thank You