



George Brown College – Block 3

July 26, 2017

Project Description & Background

- Site was purchased by GBC in March 2017
- Will be the expansion of GBC's waterfront campus in Dockside
- Site located directly north of the existing health and sciences building
- Proposed primary academic school for Block 3 is the School of Computer Technology
- Programing compliments the innovation district vision of Dockside and East Bayfront
- This is the project's first time presenting at the DRP
- The team is presenting Issues Identification

Key Dates for GBC Block 3:

- Design competition Fall 2017
- Engage City Planning Aug 2017
- Start of construction Spring 2021

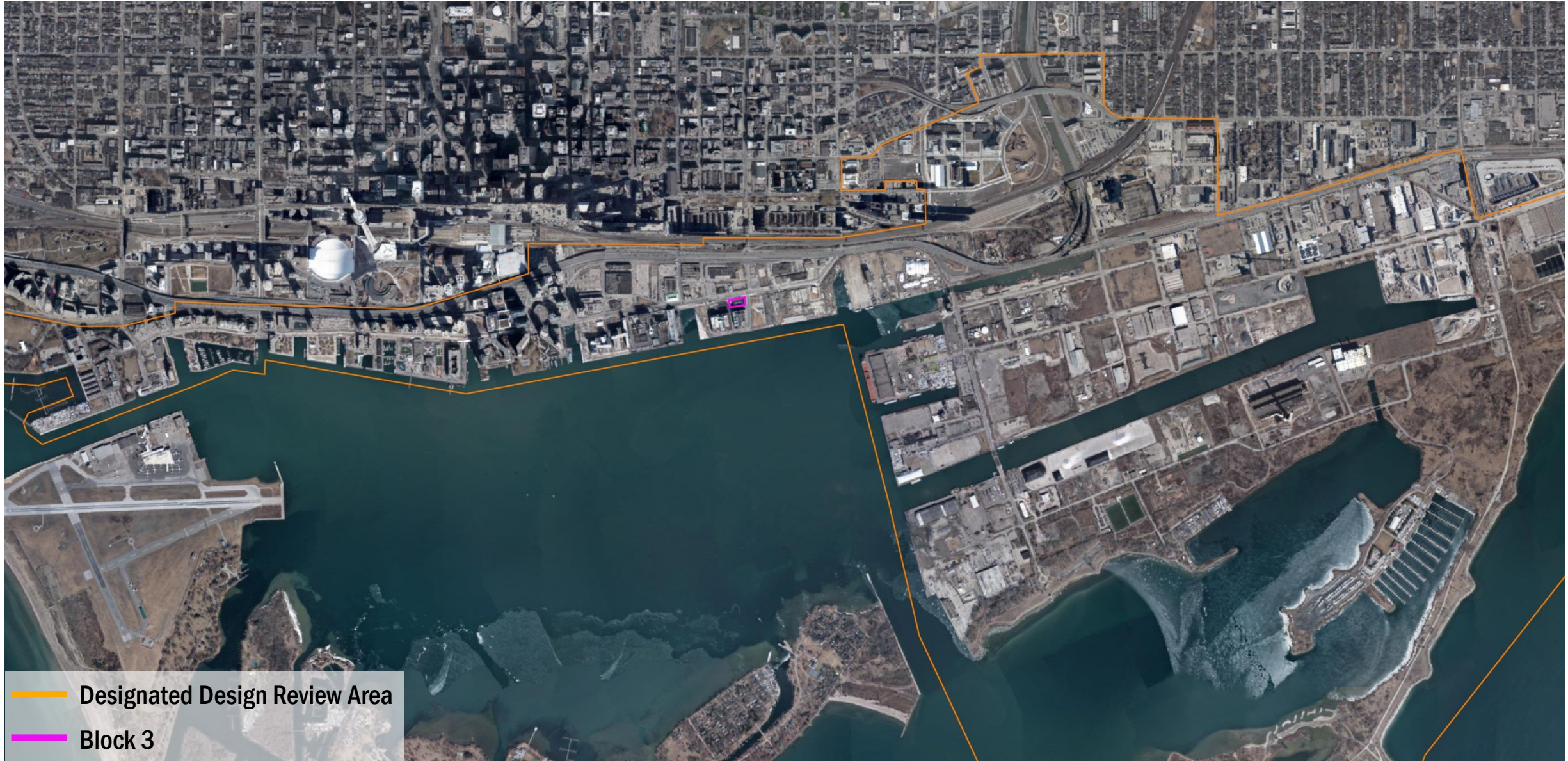
Site Context

GBC – Block 3, Dockside

Proponent: George Brown College

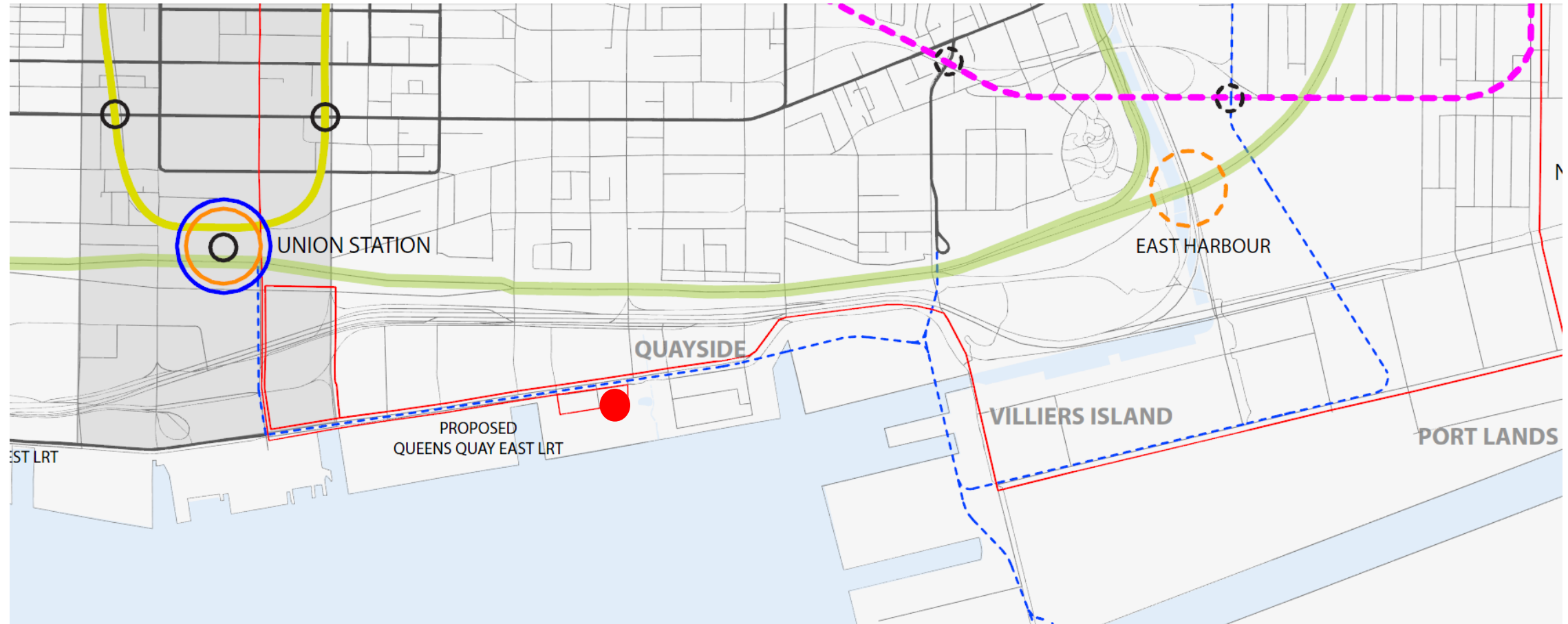
Design Team: tbd

Review Stage: Issues Identification



— Designated Design Review Area
— Block 3

Site Context - Transit



	SUBWAY - EXISTING - YONGE-UNIVERSITY		SUBWAY STATION - EXISTING		SUBWAY STATION - FUTURE
	SUBWAY - EXISTING - BLOOR		REGIONAL EXPRESS RAIL STATION - EXISTING		NATIONAL RAIL STATION
	SUBWAY - FUTURE - RELIEF LINE		REGIONAL EXPRESS RAIL STATION - PROPOSED		CENTRAL BUSINESS DISTRICT
	STREETCAR - EXISTING				
	STREETCAR - FUTURE				
	BUS ROUTES SERVICING EASTERN WATERFRONT				
	REGIONAL EXPRESS RAIL ROUTE				

Policy Context - Central Waterfront Secondary Plan

D24 - THE EAST BAYFRONT, A PROMINENT NEW NEIGHBOURHOOD

The East Bayfront will become a prominent waterfront address for working and living amid the energy and abundance of waterfront activities, including a new water's edge promenade and other public activities in the series of new East Bayfront public spaces. Development adjacent to the water's edge promenade shall consist of low and medium scale buildings that will reinforce the safety and usability of the public spaces.

(P32) New development will be **located, organized and massed to protect view corridors, frame and support the adjacent public realm** and discourage privatization of public spaces. Built form will result in **comfortable micro-climates** on streets, plazas and other parts of the public realm.

(P34) Schools and other **community services** and facilities will be **integral components of new waterfront communities** and will be provided in conjunction with new development.

Topics for Panel Consideration

- Ambition for a net positive building
- Ambition for a tall wood building
- Guidance / suggestions for approach to Ontario Building Code
- Massing and height
- Program and adjacencies with surrounding buildings and open space
- Design competition and approach to design brief



GEORGE BROWN COLLEGE

WATERFRONT DESIGN REVIEW PANEL

July 26, 2017




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PROJECT TIMELINE

Date	Key Milestones	Scope
Mar 31, 2017	● SECURING LAND	Land Acquisition & DA Execution
July 26, 2017	● DRP PRESENTATION #1	Issues Identification/Site Analysis/Program
Aug, 2017	● ENGAGE PLANNING DEPT	Testing & Feasibility
Dec, 2017	● SECURE PRIME CONSULTANT	Architect Notified
Apr, 2018	● DRP PRESENTATION #2	Schematic Design/Preliminary Draft Plan
Aug, 2018	● DRP PRESENTATION #3	Design Development/Final Draft Plan
Dec, 2018	● DRP PRESENTATION #4	Construction Documents/Recommendation of Approval to WT and City of Toronto
Mar, 2021	● CONSTRUCTION START DATE	Break Ground
Sept, 2024	● PROJECT COMPLETED	Building Operation

EAST BAYFRONT OVERVIEW



-  TTC Bus Routes & Stops
-  Future Waterfront LRT
-  GBC Waterfront Camps Expansion

GBC CAMPUS OVERVIEW



Capital Assets

3 Main Campuses
1.8 Million GSF

Full-time Enrolment

28,000 Full-Time Students
3,900 International Students

Full Credential Range

152 Full-Time Programs
7 Academic Centre
25 Academic Schools

GEORGE BROWN COLLEGE WATERFRONT EXPANSION

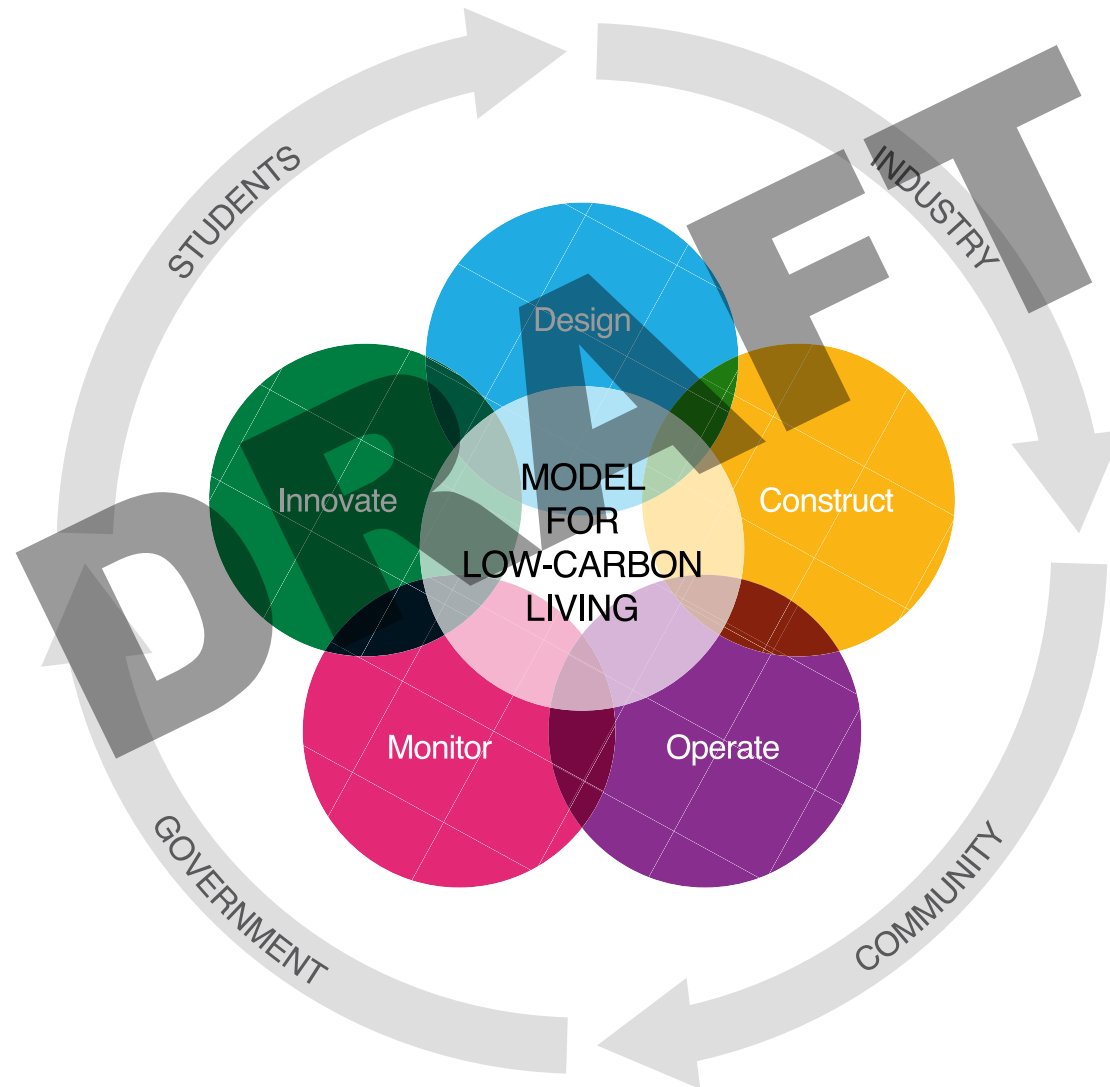
EXISTING
HEALTH SCIENCE
BUILDING

THE ARBOUR
(2024)

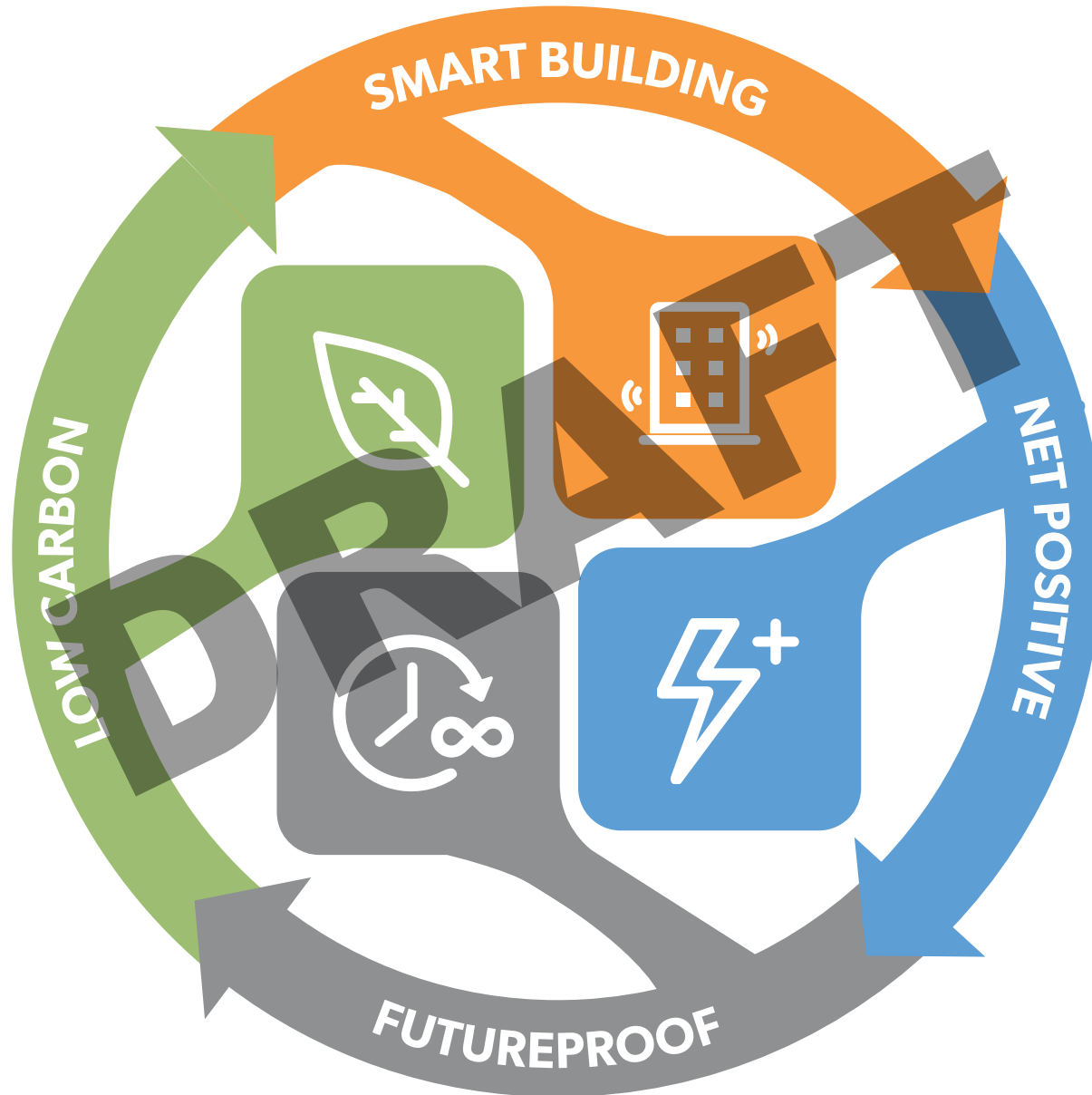
SCHOOL
OF DESIGN
(2019)

- Waterfront Campuses
- Main Pedestrian Path
- Cycling Paths
- TTC Bus Routes

ADVANCING KNOWLEDGE IN LOW-CARBON BUILDINGS



THE ARBOUR APPROACH



LOW CARBON



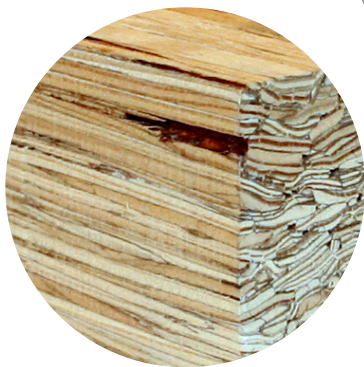
MASS TIMBER CONSTRUCTION

Tall wood structures allow for new and innovative products to be produced, pushing the limits of what can be done with wood.

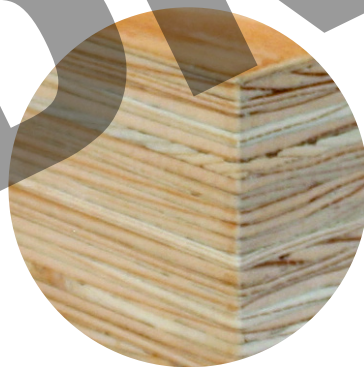
Reduced Carbon Footprint

Assembly & Production Efficiency

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PARALLEL STRAND
LUMBER
(PSL)



LAMINATED VENEER
LUMBER
(LVL)



LAMINATED STRAND
LUMBER
(LSL)



CROSS LAMINATED
TIMBER
(CLT)

LOW CARBON



LOW IMPACT CONSTRUCTION

The Arbour will utilize high efficiency technologies and processes in the constructed phase to lower embodied energy and overall environmental impact.

Material selection

Design considerations

Construction practices

Reduction through scale

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HEALTHY MATERIALS



INNOVATIVE DESIGN



EFFICIENT CONSTRUCTION

NET POSITIVE

ENERGY PERFORMANCE



The Arbour will be developed with net-positive energy performance:

Improve energy efficiency and reduce energy loads
Recovery and storage of energy and heat

On Site Energy generation
Active monitoring

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PASSIVE DESIGN



ENERGY
GENERATION



EFFICIENT LIGHTING



MECHANICAL
SYSTEMS

SMART BUILDINGS



SMART BUILDING SYSTEMS

With building automation at the forefront of design and development innovation, this project provides an opportunity to create a facility that can integrate, adapt, monitor and test latest technologies and share best practices with industry and students.

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AUTOMATED SYSTEMS



COMMUNICATION
NETWORKS



INTEGRATED
TECHNOLOGIES



REAL-TIME DATA
DISPLAYS

FUTURE PROOFING



BUILDING RESILIENCY & OPERATION

To ensure that the Arbour remains an effective and well utilized facility for George Brown College and the waterfront community, the building will be designed with the ability to adapt to changing academic uses and withstand potential environmental impacts associated with climate change.

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MODULAR LAYOUT



ADVANCED
CLASSROOM TECH



USER EXPERIENCE



FLOOD RESISTANT

FUTURE PROOFING



LABS AND TRAINING

The smartest parts of a building are the users within it. In addition to the increased academic space afforded by this project, the building itself stands as an opportunity to test, monitor and advance sustainable technologies, collecting and displaying information about the building's performance in real time.

Additionally, GBC will be developing Canada's first **Tall Wood Institute**. This unique academic and research initiative will act as a catalyst for the development of innovative solutions for carbon reduction to accelerate Ontario and Canada's leadership in the global marketplace for low-carbon, mass timber construction.



TECHNOLOGY



RESEARCH



LEARNING



COLLABORATION

BLOCK 3 INTENT

The Building

- Coordination Items w/ Waterfront Toronto
 - Overall Building GSF (Min 175,000 GSF Above Grade)
 - Building Height (38M)
 - Building Density
 - Zoning Requirements
- Increased allowances will enable GBC to expand academic offerings
- Waterfront Toronto will share in increased land value

Academic Programming

- **Applied Research Institute:** 15,000 GSF
 - Testing Labs
 - Research Facilities
 - Industry Space
- **School of Computer Technology & Other Programs:** 145,000 GSF
 - 3,000 Full-time Students
 - Classrooms
 - Computer Labs
 - Faculty, Staff & Administrative Offices

At Grade Programming

- **Child Care Centre:** 9,500 + 3,200 GSF
 - Indoor Day Care
 - Outdoor Playground
- **Fitness Facility:** 2,500 - 10,000 GSF
- **Learning Landscape:** 3,000 GSF
 - Student Study Space
 - Group Work Rooms
 - Event Space

PRELIMINARY PROGRAMMING

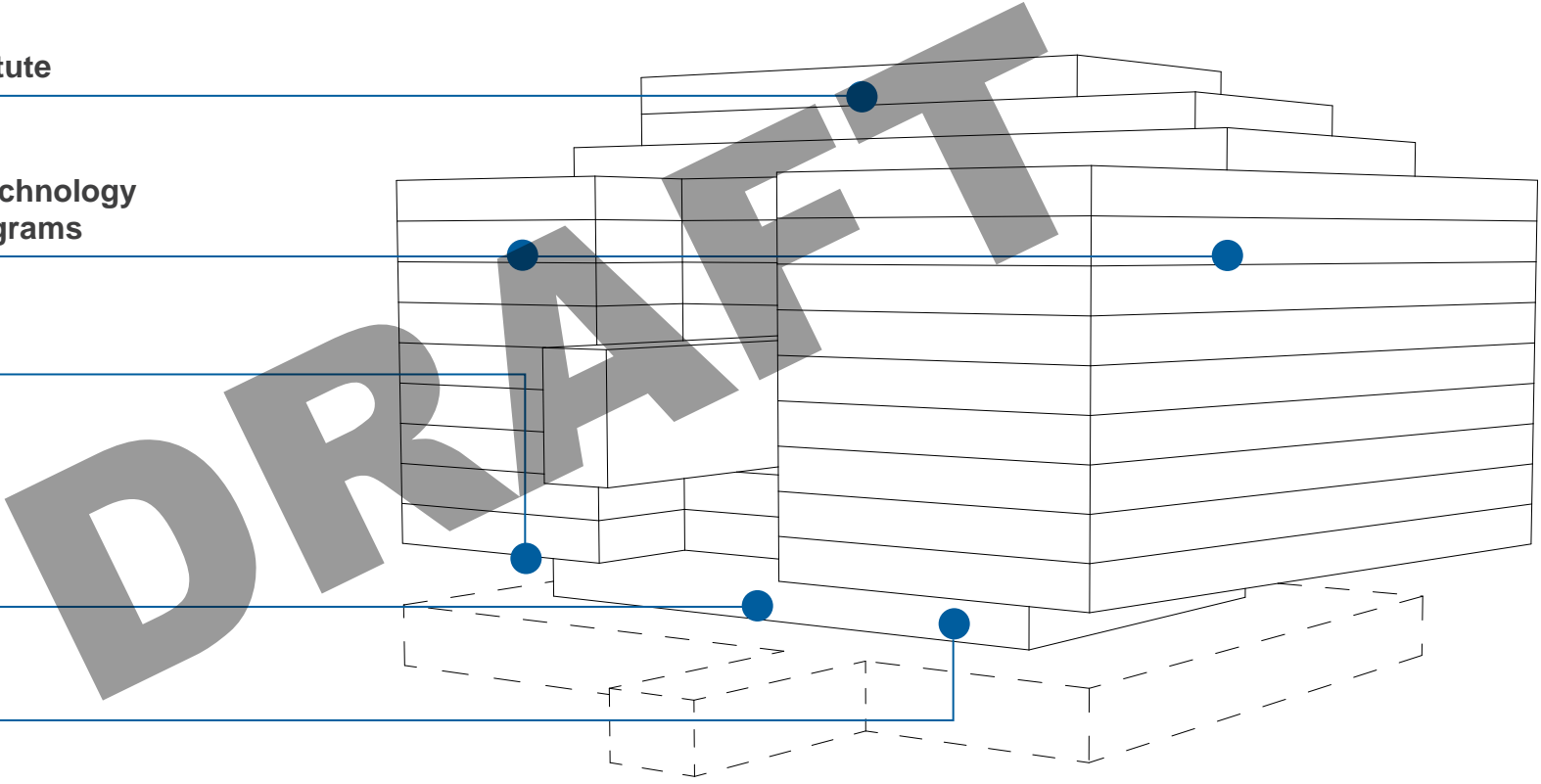
Applied Research Institute

School of Computer Technology
& Other Academic Programs

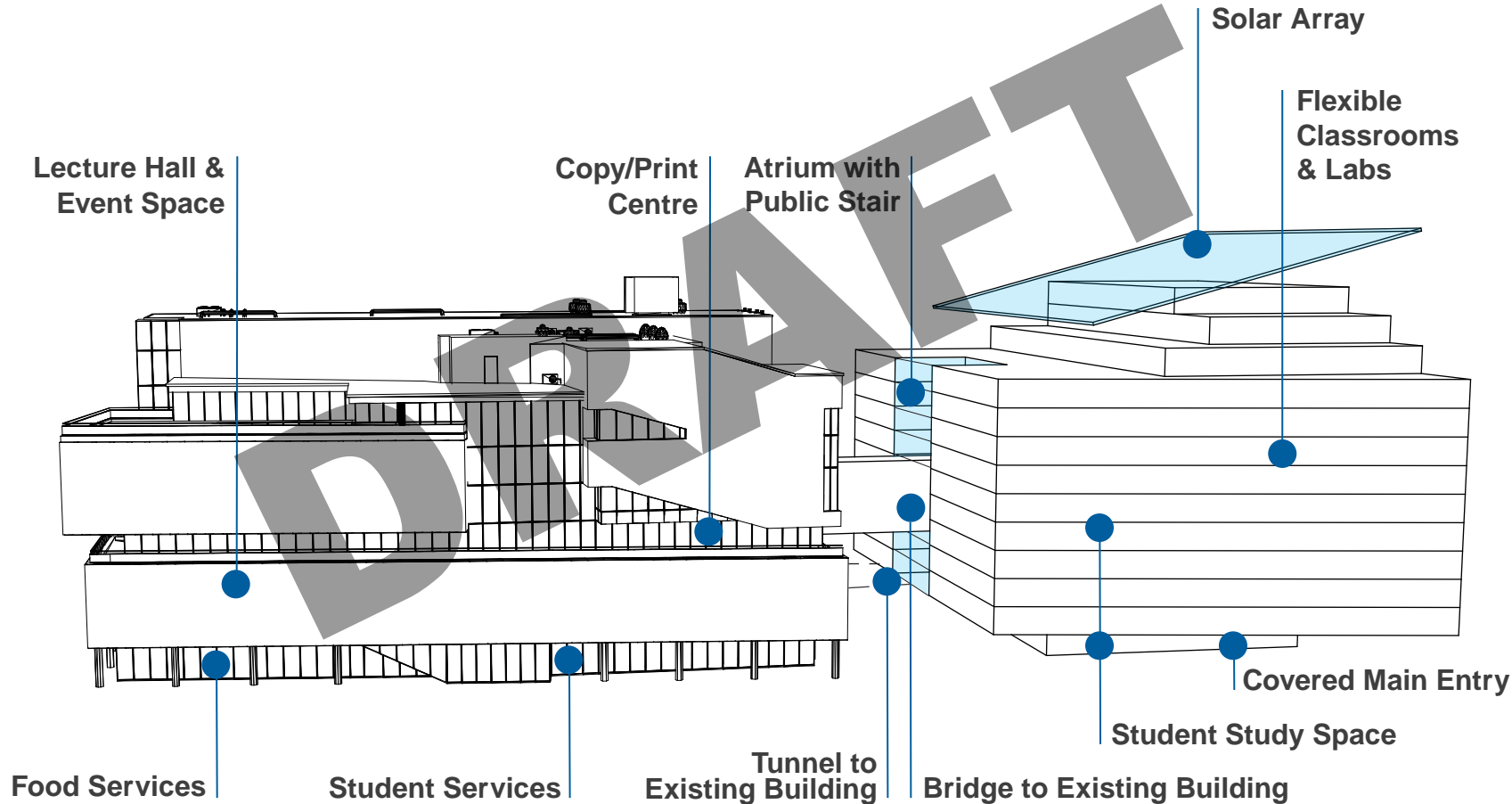
Child Care Centre

Fitness Facility

Learning Landscape

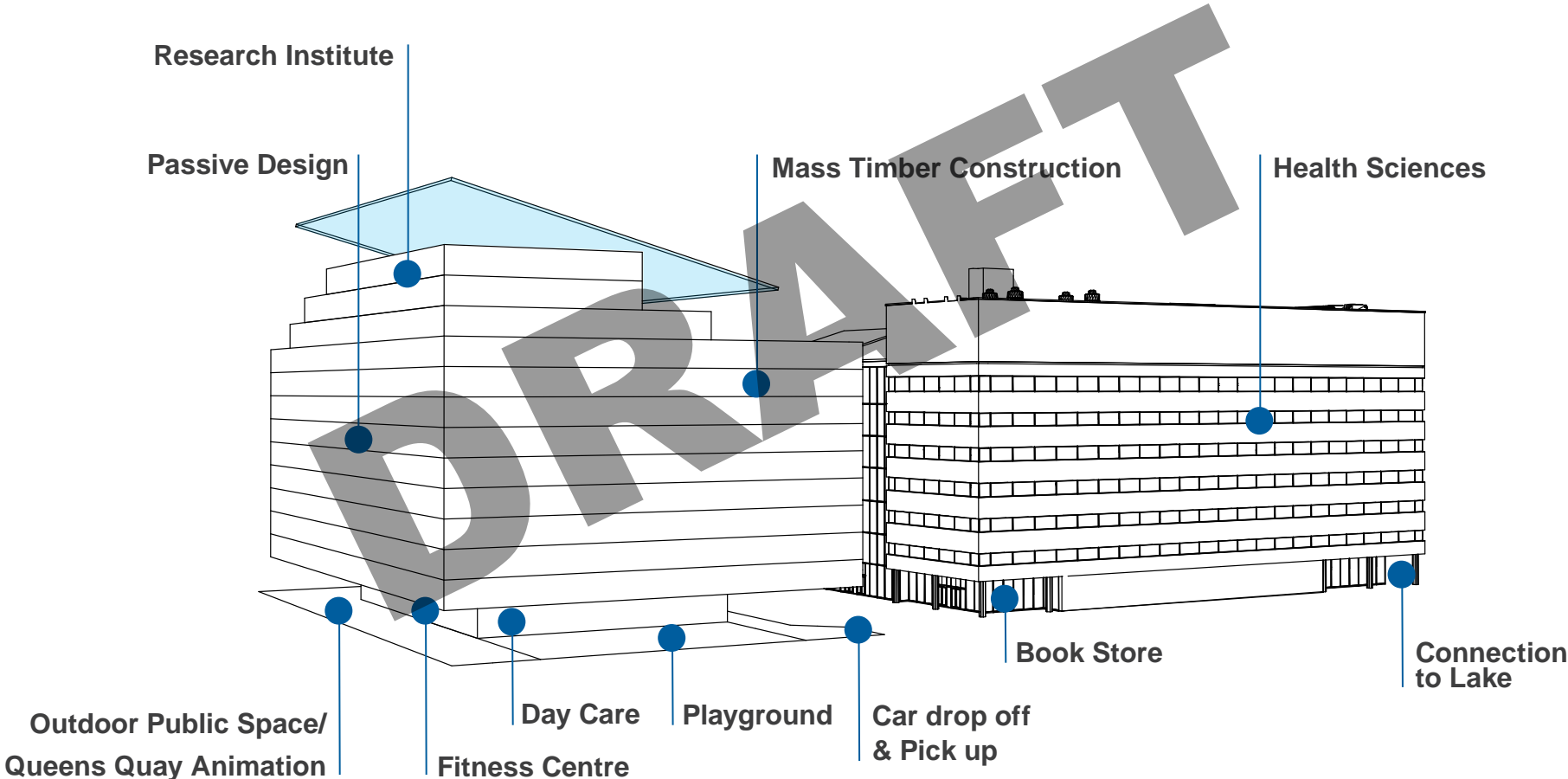


BUILDING FEATURES



East Elevation

BUILDING FEATURES



West Elevation

ACHIEVING ENERGY GOALS

Goals

- Projected GHG/energy goals to align with Ontario Climate Change Action Plan targets
- Low GHG construction
- Net-zero or better operation
- Leadership GHG footprint
- Provincial sector leadership
- Living lab for training workforce in Ontario's low-carbon future
- High value component of Innovation District

Challenges

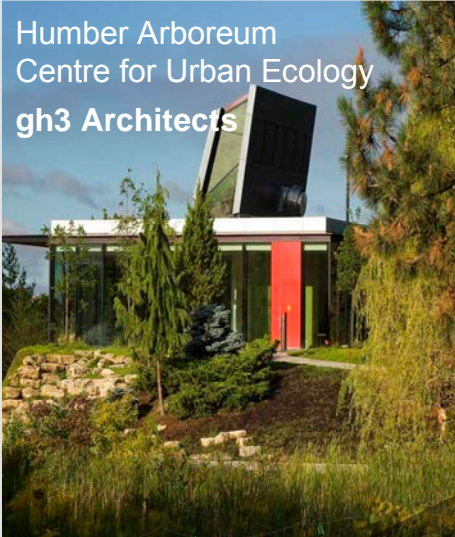
- Small floor plate
- Shadowing from Block 5
- Construction methods out in front of OBC
- Uncertain timing of district energy
- Managing project costs

Possible Features

- Tall wood/ Mass timber construction
- Passive House design
- Geothermal field below building
- District Energy integration (deep lake water cooling, Redpath cogeneration) as it becomes viable
- Energy capturing solar array - staggered on roof with additional panels on existing block 5.

PRECEDENT PROJECTS

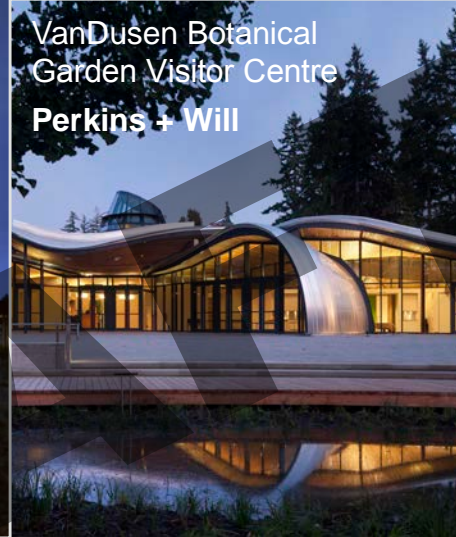
Humber Arboreum
Centre for Urban Ecology
gh3 Architects



Richard Ivey Building
Hariri Pontarini
Architects



VanDusen Botanical
Garden Visitor Centre
Perkins + Will



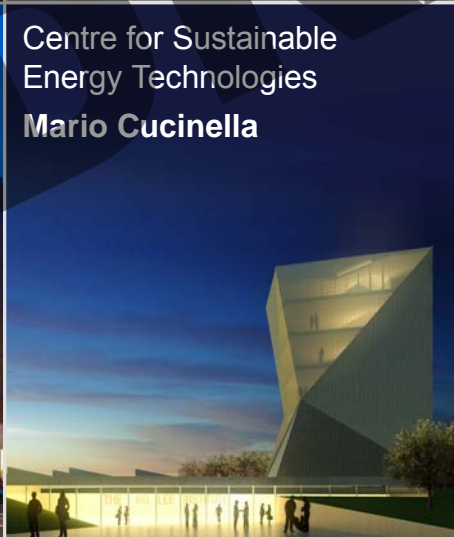
Normand Maurice
Building
Provencher Roy



Wood Innovation and
Design Centre
Michael Green
Architecture



Centre for Sustainable
Energy Technologies
Mario Cucinella



Centre Pompidou-Metz
Shigeru Ban



One Angel Square
3D Ried



A vertical bar on the left side of the slide, composed of several colored rectangular segments: orange, yellow, light purple, medium purple, light blue, medium blue, yellow, light green, and green.

DISCUSSIONS & NEXT STEPS

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