



Brookfield  
Sustainability  
Institute

# Charrette Handbook



## Brookfield Sustainability Charrette

Feb. 23<sup>th</sup> – Feb. 27<sup>th</sup>, 2023

PDF DOWNLOAD



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## What is Smart Sustainability?

Smart Sustainability is a term that has been coined to reflect an approach the Brookfield Sustainability Institute is adopting to reconciling and creating positive synergy between two key trends that have dominated our society from the midpoint of the last century to where we are now in the 21st century. During the 1960's the challenge of dealing with an environmental crisis generated by the acceleration of human industrial activity became increasing apparent as did the growth of the information technology and communication spheres where what is now known as digital transformation led to an acceleration of innovation in the technological, social and cultural spheres. In 1961, Marshall McLuhan described the world as a Global Village where satellite communication brought us all together and highlighted the need to better utilise our

finite planetary resources with the totality of peoples and species that inhabit our world. Martin Luther King in his Nobel address in 1967 described the phenomenon of the World House which called for the recognition of all peoples and religious faiths to share the world in a more just and equitable manner. By the early 80's it was clear that our world was being digitally dematerialized and that the benefit of that process could be harnessed to better rematerialize our industrial processes and bring resources to all and not just a select few. In 2002 as we started our work at the Institute without Boundaries we began to understand that combining a high level of knowledge about natural systems and designing to fully take advantage of passive climatic systems could be aligned and paired with a judicious use of digital technology to make solutions that were sustainable. →

Our projects such as the Canuhome reflected this combination of approaches reconciling the global with the local to create a global design expression. As we worked on sustainable design projects we realized that our buildings occupants were in a constant conversation with their built environment and that the built environment was similarly in a conversation with the natural environment that surrounded it. If we could enhance those interactions and conversations by taking advantage of traditional wisdom and judiciously use advanced sensing and information technology systems we could arrive at affordable solutions that would reduce our carbon footprint and enable a sustainable future. This approach was further developed and utilized for the brief of Limberlost Place that was designed to be mass timber, net zero carbon in operations, intelligent and future proofed.

It is our view that developing sustainable solutions can be served by an operative methodology that will result in better performing buildings, better occupant behaviours and renewed ecosystems. By combining wisdom and innovation we can chart a way forward for our society during the climate crisis. We can create a path forward to achieving sustainable development and leave behind the realm of intentionality by adopting a substantive method for reaching a more sustainable future. In this charrette we are fostering the exploration of smart sustainable solutions to solve the problems at hand in the challenges we are undertaking and at the same time, trying to improve the process so that we can share it with people around the world through these case study projects and help our partners be they companies, governments, non-profits and community groups to build a more sustainable world.



**Luigi Ferrara**

Chair and CEO – Brookfield Sustainability Institute,  
Dean, Centre for Arts Design and Information Technology,  
OAA, MRAIC, HON. ACIDO, ICSID SENATOR

# What is BSI?

The Brookfield Sustainability Institute is a research and innovation center focused on identifying, understanding and developing smart sustainable solutions to help fight climate change. With the help of students like you, the BSI aims connect creative and skilled individuals that are passionate about making a difference. We will link vibrant talent with industry leaders and create opportunities for your generation of students to influence the future.

[www.brookfieldsustainabilityinstitute.com](http://www.brookfieldsustainabilityinstitute.com)



# What is a Charrette?

A charrette is a collaborative and creative process that brings together diverse groups of students, professionals, and community stakeholders over an intense period of brainstorming. Design charrettes promote inclusive, co-creative environments that bring people together to imagine, plan, and implement a collective future.

## WHAT IS INVOLVED?

Participants are encouraged to tackle problems using design thinking methodologies and collaborative design practice, gaining new perspectives that can generate innovative concepts. Teams will develop concepts over the course of 5 days. The days are structured as follows.

- 1 Discover
- 2 Ideate
- 3 Develop
- 4 Prototype
- 5 Present

## INDUSTRY

Algonquins of Ontario  
 Armel Corporation  
 Catholic Crosscultural Services  
 Dunya Habitats  
 Global Tourism Resilience & Crisis Management Centre  
 Koru  
 LINE Architect Inc  
 The Chef's House  
 The Daniels Corporation  
 The Wooler and Area Community Organization

## INTERNATIONAL SCHOOLS

George Brown College (Canada)  
 KEA - Copenhagen School of Design and Technology (Denmark)  
 Politecnico di Milano (Italy)  
 Università Commerciale L. Bocconi (Italy)  
 University of Toronto (Canada)

## ADVISORS

Agnes Thomas	Jon Neuert	Riccardo Maria Balzarotti
Angela Gauthier	JP Carrillo	Rick Amaral
Anne Dibbern	Kevin Santus	Sister Evanne Hunter
Annie Tung	Kylie Butler	Stephanie Adams
Bill Ross	Loghman Azar	Sugeevan Shanmuganathan
Brock Stevenson	Lori Endes	Sumi Shanmuganathan
Dan Nelson	Luca Fabris	Susan Speigel
Daniel Garnier	Luigi Ferrara	Sylvia Tessier
Deo Paquette	Marco Grassi	Tom Arhontoudis
Devleen Narula	Matt Hexemer	Tye Farrow
Father McKenna Peter	Migs Topacio	Viktoria Buyuklyan
Graeme Kondruss	Milena Tasic	
Hanne Vang Hansen	Monica Contreras	
Hilary Van Welter	Mwarigha	
Jacob K	Nadia Pasqua	
Jason Burke	Nick Bowker	
Jason Innis	Paul De Freitas	
Jenna Storey	Phuong Diep	
Jennifer Mitsche	Rebecca Arshawski	

## TEAM 1

**ROOM: 350**

**FACILITATOR:**

Shree Shivrajnagesh

Ruslan Galimov

Aleah Pridham

Juliette Sandler

Diana Andrea  
Guzmán Valencia

Gaya Khiani

Inez Anna Borkowska

Giovanni Pacifico

Stefania Mariani

Maria Grazia Lamberti

Valeria Brambilla

Lorenzo Bussi

Kishika Mittal

Michael Yuen

Hilton Ma

Lindsey Nguyen

## TEAM 2

**ROOM: 351**

**FACILITATOR:**

Divyam Sanjivkumar  
Rami

Haylie Wong

Alexandra Babula

Seoyoung Lee

Yejin Yoo

Andrea Vukojević

Greta Rosana

Annalisa Fedrigo

Lara Maderna

Rossana Nigro

Cristian Bosetti

Kale Hofstetter

Mliete Fishatsion

janine oliveros

Ali forouzanpour

Christian Creman

## TEAM 3

**ROOM: 331 - FWOL LAB**

**FACILITATOR:**

Vrund Dakshesh  
Upadhyay

Kye Grimaldo

Danni Nguyen

Kyle Cayanan

Berk Ercan

Anna Juul  
konstantinowich

Giulia Criscuolo

Matteo Fiorentino

Rebecca Barboni

Anna Sammartin

Costanza Giacchino

Foojan Moniri

Noshin Alam

Marta Panek

Angelo Barletta

Erica Yiu

## TEAM 4

**ROOM: 261**

**FACILITATOR:**

Keith San Antonio

Tarnjit Dhillon

Ajeng Radianti

Liliana Tompkins

Tyler Brown

Nikki Policarpio

Giulia Maria Di Felice

Lutece Drysdale

Gabriele Luciani

Maria Luisa Gaetani

Nicole Cantarelli

Giovanni Campagna

Henita Patel

Olavo Silveira Barbosa

Anthony Pignatelli

Jason Boruta

## TEAM 5

**ROOM: 257**

**FACILITATOR:**

Manuella Da  
Cunha Martins

Dhruv Sheliya

Samyuktha Vasudevan

Livy Morden

Patrick Ingham

Daniel Pinto

Misa Jankovic

Pietro Augusto Falcinelli

Yingdong Liu

Simone Todaro

Elena Bragalini

Nassim Ravaee

Reiko Takaie

Carlos Manalo

Hope Elder



## TEAM 6

**ROOM: 352**

**FACILITATOR:**

Shagun Pandey

Sparsh Tiku  
 Aryn Morgan  
 Jerin Austin  
 Meleana Conquer  
 Andrew Mai  
 Julieana Moon  
 Kaya Lund Browning  
 Isha Shehzad  
 Mohadeseh Banaeialishah  
 Greta Mellaro  
 Marco Rampazzo  
 Ryan Gagnier  
 Robert Donnelly  
 Jason Salvanera  
 DerShuan Hwu

## TEAM 7

**ROOM: 225**

**FACILITATOR:**

Alexandra Gambaro  
Chaves E Santos

Tyana Van-Tang  
 Brissa Freires  
 Kylie Rezansoff  
 Erica Krawczyk  
 Lea Hanna Forrai  
 Tanya Haralampieva  
 Marta Gulisano  
 Martina Bergamin  
 Graziana Carrieri  
 Syed Maaz Arif Jafri  
 Samantha Lauren She  
 Chris Feitt  
 Christian Creman

## TEAM 8

**ROOM: 261,215**

**FACILITATOR:**

Monika Patel

Lakshya Verma  
 Ysabella Ocampo  
 Karlo Matt Rian Ong  
 Mohammad Rokhsefat  
 thanusha kanagendran  
 Armin Dehestani  
 Francesco Gottardi  
 Martina Rinascimento  
 Margherita Brun  
 Madeleine Caiazza  
 Jonathan Houston  
 Samira Jumshudova  
 Kinjal Chheda  
 Jasraj Singh Narula  
 Fuki Kobayashi

## TEAM 9

**ROOM: 227**

**FACILITATOR:**

Yasaman Musician

Mansi Bhojani  
 Shanaeh Reid  
 Tiffany Nguyen  
 Torry Tough  
 Daria Fartadi-Scurtu  
 Ting Li  
 Dario Biagio Torrisi  
 Margherita Balia  
 Huchenyao  
 Tian-Yuan Zhao  
 Sinyoung Park  
 Kirti Khurana  
 Sehun Choi  
 Jiaqi (Kevin) Zang

**3 LOWER JARVIS ST.  
2ND FLOOR**

**TEAM 4:** ROOM 261

**TEAM 5:** ROOM 257

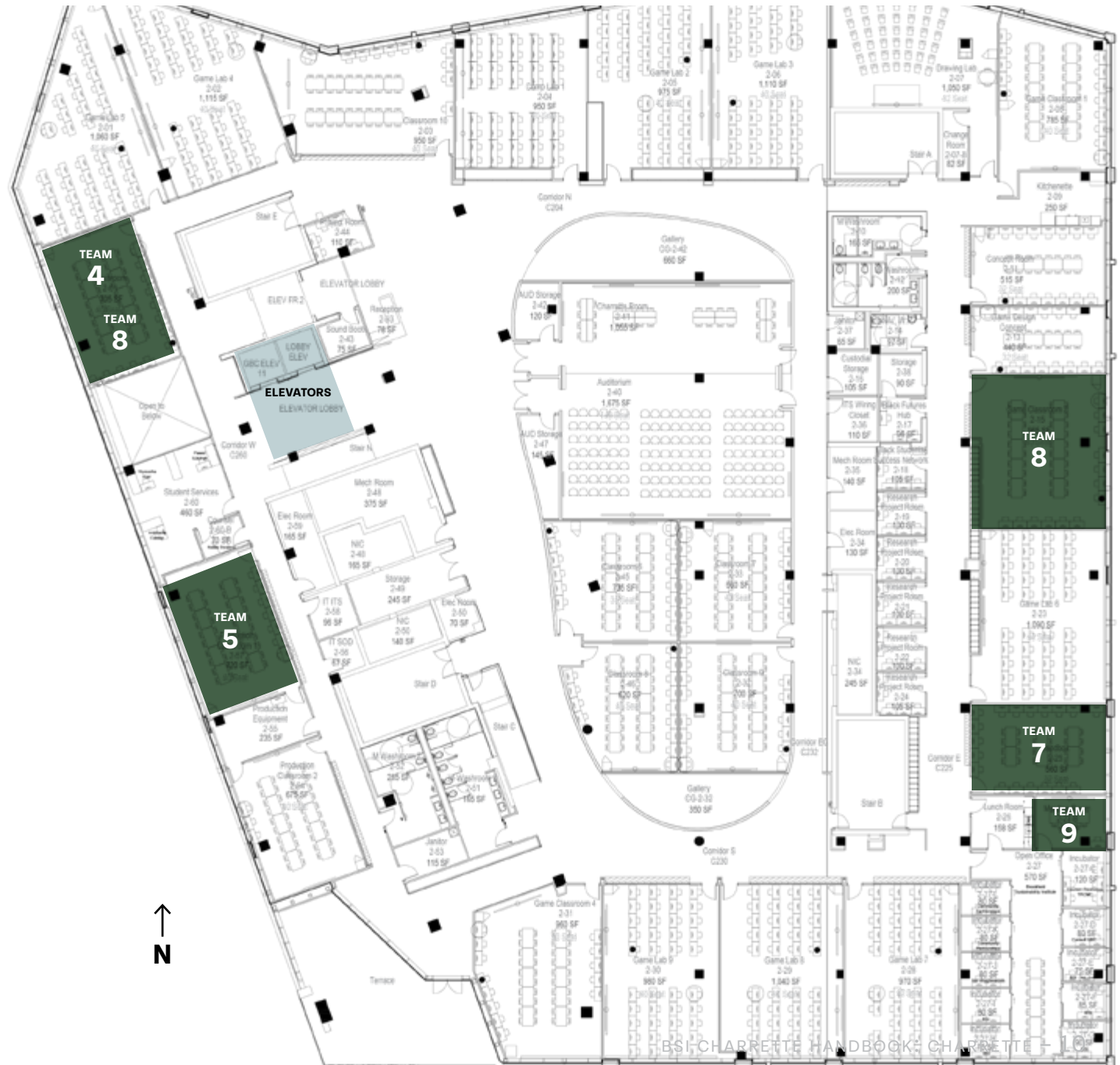
**TEAM 7:** ROOM 225

**TEAM 8:**

Fri-ROOM 261

Sat-Mon ROOM 215

**TEAM 9:** ROOM 227



# Teams Map 3rd Floor

**3 LOWER JARVIS ST.  
3RD FLOOR**

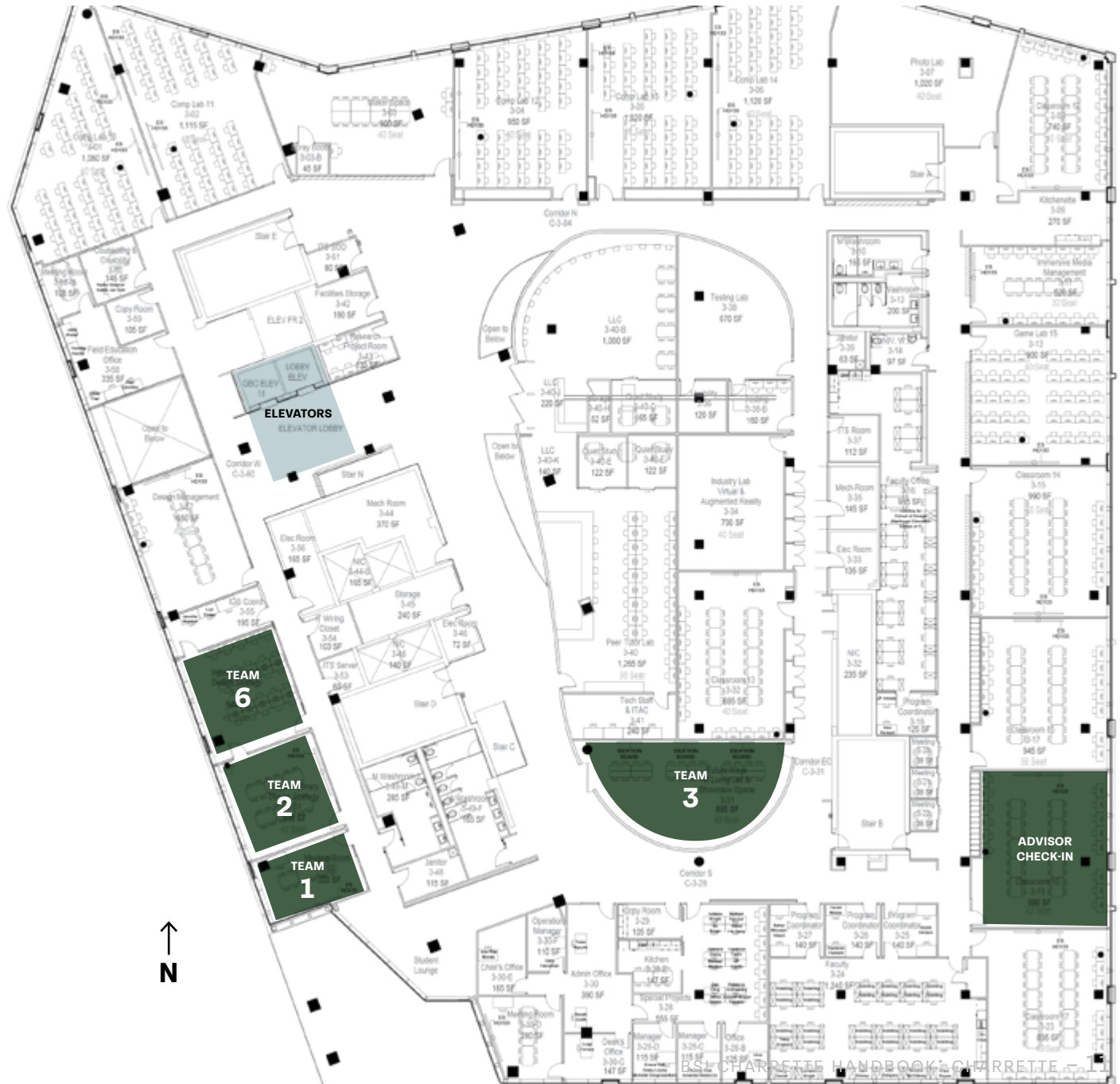
**ADVISOR CHECK-IN:  
ROOM 319**

**TEAM 1: ROOM 350**

**TEAM 2: ROOM 351**

**TEAM 3: ROOM 331 - FWOL Lab**

**TEAM 6: ROOM 352**



## The Future of Food in Toronto and George Brown College

How might we create a sustainable food system that promotes increased food security in local communities while improving the health of consumers and decreasing environmental impacts?

# The Short Food Supply Chain

### PROJECT DESCRIPTION:

*“For most of human agricultural history, the food system was simple, a very localized production-consumption-recycle system”* (York U).

Our current food system is dominated by decision-makers that prioritize unsustainable agricultural practices, prioritizing high yields and global exports, regardless of their environmental costs. “Canada is the fifth largest exporter of agricultural and agri-food products in the world...[We] exports \$82.2 billion a year in agriculture and agri-food products and approximately half of everything we produce is exported as either primary commodities or processed food and beverage products” (CAFTA). These actions prove counterintuitive as 15.9% of households in Canada faced food insecurity in 2021, among them 1.4 million children (UofT).

Food insecurity is even higher in Toronto, as almost one in five (18.6%) Torontonians live in food insecure households. The risk of food insecurity is higher for people with low income and/or receive social assistance, racialized individuals, especially those who identify as Black or Indigenous, people who

rent, as opposed to owning their home, and single parents (especially female lone parents) (Toronto). There is also an issue with land use, as major urban centers prioritize high density housing with little space to grow one’s own food, forcing consumers to purchase through local food retailers.

George Brown College students may also face food insecurity as the cost of living increases and the ability to find flexible employment is limited while students participate in school activities. Even after graduation, students might lack the career experience needed to secure a high wage job, leading to a challenging transition period where they no longer have access to student services but need support to provide essentials like food.

What if there was a modular product/system that allowed users to grow their own nutritious, high yield crops in small spaces, such as balconies, rooftops, and terraces?

## The Short Food Supply Chain

### WHAT YOU WILL DO:

You will create a sustainable urban agriculture model to pilot through George Brown College's Culinary Program. This solution must be scalable, providing additional opportunities to other institutions and residential customers. You must consider the location of physical test beds, where you will prototype precision smart technology to increase the health and yield of crops. You must also incorporate the needs of all stakeholders involved, including program coordinators and investors, student chefs, gardeners, consumers, and local animal and plant life. The concept must also include a digital application that includes instructional videos and recipes focused on the outputs from the sustainable urban agriculture model you are proposing.

### SITE:

George Brown Culinary School is the largest of its kind in Canada. It offers a blend of theoretical and experiential education to prepare students for successful careers in the food industry (GBC). The Schools of Hospitality & Culinary Arts is part of George Brown College's St. James Campus that houses the School of Business, Media & Performing Arts, Centre for Community Services & Early Childhood, Preparatory & Liberal Studies, and Continuing Education. St. James is located within a 15-minute walk from Waterfront Campus which includes Centre for Health Sciences and the School of Design.

The St. James Campus is in Toronto's central neighbourhood of Moss Park. Just over 35% of residents in Moss Park are immigrants, while over 42% identify as being a visible minority. The median household income is 53k a year, and 66% of residents are renters, with almost 40% of that considered unaffordable rent, 3.5% higher than the city average (Toronto).

There is currently a medicine garden on the terrace of 200 King St., part of the St. James Campus. The building suffered extensive water and smoke damage from an electrical fire in August 2021 and has been under renovation. Classes are scheduled to resume in Fall of 2023. Although we cannot currently access this site, it could be an opportunity for an innovative design proposal. There are also several parks and community gardens in the area, including Fred Victor Community Garden, that service low-income community members and could be an opportunity to expand the program and create community engagement.



## The Short Food Supply Chain

### OBJECTIVES

- To create opportunities to grow multi-season, locally produced ingredients for the culinary school, chef's house restaurant, and GBC meal outreach programs through a modular product that can be used by GBC stakeholders and function for the larger community.
- To utilize innovative smart technologies to increase crop yields, use less resources, and recycle food waste to fuel future crops.
- To devise digital educational programming that will teach participants the importance of healthy, local ingredients and how to create culturally relevant recipes for their own community.
- To create food systems that are supportive of natural ecology and limit the disruption to natural ecosystem functions that support life on this planet.
- To increase healthy eating for users and increase exposure to natural processes such as soil and plant species to for the improvement mental health.
- To design a micro-agricultural tool that is considerate of sustainable materials, modular design, and scalable to many settings and climates.
- To identify partners, test sites, and funding opportunities for further development

### CONSIDERATIONS

- Sustainable Cuisine is a diet based on food products that support natural ecology, require less resources to produce, limit packaging and transport, are nutrient dense (requiring less overall consumption), and prepared with relative ease.
- Food education is needed to understand the value of sustainable cuisine and should encourage sustainable cuisine as part of an overall healthy and sustainable lifestyle.
- Regenerative agriculture (RA) is an outcome-based food production system that nurtures and restores soil health, protects the climate and water resources and biodiversity, and enhances farms' productivity and profitability (Syngenta).
- Permaculture is an approach to land management and settlement design that adopts arrangements observed in flourishing natural ecosystems. It includes a set of design principles derived using whole systems thinking. (Wikipedia)



## The Short Food Supply Chain

### KEY DELIVERABLES:

1. Project Description (500 words)
2. Stakeholder Empathy Journey Analysis and Summary
3. Design Visuals (product/service maps, diagrams and renderings, blueprints, storyboards)
4. Site Plans (mockups, implementation strategy)
5. Digital App Design to compliment the product and service (include recipes based on crops)
6. Pitch Presentation (incorporating all the above)

### TERMS

**Short food supply chain** involves a limited number of economic actors, and generally are “committed to cooperation, local economic development, and close geographical and social relations between food producers, processors, and consumers” (SmartChain).

**Right to repair** means users should have the right to choose who repairs their own devices, whether it be themselves, an independent technician, or the manufacturer. The movement is based on the desire to bring about increased transparency and accessibility (McGill).

**Precision agriculture (PA)** is the science of improving crop yields and assisting management decisions using high technology sensor and analysis tools. PA is a new concept adopted throughout the world to increase production, reduce labor time, and ensure the effective management of fertilizers and irrigation processes (Science Direct)

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### RESOURCES:

<https://farm.bot/>

<https://www.ola.org/en/legislative-business/bills/parliament-42/session-1/bill-72>

[https://www.georgebrown.ca/sites/default/files/contact\\_us/documents/sja.pdf](https://www.georgebrown.ca/sites/default/files/contact_us/documents/sja.pdf)

<https://www.toronto.ca/explore-enjoy/parks-gardens-beaches/gardens-and-horticulture/urban-agriculture/community-gardens/>

<https://green-connect.com.au/heres-your-guide-to-the-12-principles-of-permaculture/>

<https://www.trinity.utoronto.ca/lawson-centre-for-sustainability/>

**Using Systemateks as an approach to design modest sustainable suburban dwellings that reflect a complete and simple living lifestyle.**

How might we build low-rise and more dense and affordable housing to infill our suburbs and make them more sustainable while maintaining their green and natural character?

# A Climate Positive Housing Development for Guelph

**PROJECT DESCRIPTION:**

Urban sprawl, also called sprawl or suburban sprawl, the rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation...Urban sprawl has been correlated with increased energy use, pollution, and traffic congestion and a decline in community distinctiveness and cohesiveness. In addition, by increasing the physical and environmental “footprints” of metropolitan areas, the phenomenon leads to the destruction of wildlife habitat and to the fragmentation of remaining natural areas. (Britannica)

Toronto is no exception. “The population growth rate from 2016 to 2021 of the distant suburbs in the Toronto census metropolitan area is +9.4%.” (StatsCan) “Topping the list of the fastest-growing municipalities in Canada in 2022 was four municipalities on the outskirts of the Toronto CMA, evidence of the ongoing urban spread in the Toronto area

(StatsCan). Policy makers have taken some steps to limit sprawl, like the introduction of the Greenbelt in the Greater Golden Horseshoe area, however unstable growth continues on unregulated land. Toronto satellite cities, such as Guelph, Ontario often follow similar patterns as unaffordable or unavailable housing, or access to work, education, and services motivates people to move to seek alternatives.





## A Climate Positive Housing Development for Guelph

### WHAT YOU WILL DO:

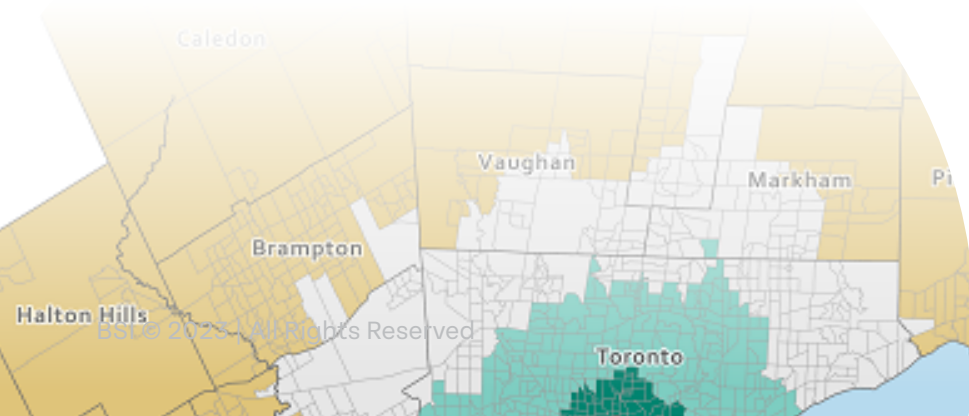
Design a climate positive residential neighbourhood that will provide a model for 21st century suburban development based on simple living values with a seriously reduced carbon footprint. The current suburbs are dotted with small sites that can be redeveloped to a new suburban standard with between 22-36 units per acre, with units varying in size from 250-750 square feet, offering 1-, 2-, and 3-bedroom units. These new developments could change the complexion of current suburban neighbourhoods raising densities to permit public transportation and enabling new forms of mixed-use such as live work and fostering suburban agriculture for food security. Design this development to have a mixed-use character including co-housing, common spaces, live/work facilities, and food growing functionality. Ensure that 50% of the site remains common open space, and plan for a zero carbon, future-proofed, smart design, and net positive development. The neighbourhood should reflect the philosophies of simple living and its units should reflect tiny house standards that grow from this philosophy. The intention is also to foster an intergenerational community which is inclusive.

### SITE:

The site is on the periphery of a greater Toronto satellite city, is just larger than one acre, and is nestled at the edge of an existing suburban neighbourhood, next to a church. The site sits between the existing suburbs and farmland, at the edge of a developed city. The site offers the opportunity to develop a new, denser, model of suburban development. More information to be provided.

### OBJECTIVES

- To design a modular, sustainable housing unit that can be replicated in other urban and suburban areas.
- To create a model pedestrian neighbourhood that increases usability by following Pedestrian Pocket Principles (see Terms).
- To integrate passive and active systems for the neighbourhood energy usage and incorporate Climate Design (see Terms) into plans and schematics.
- Develop a digital lifestyle app or manual for Simple Living (see Terms) to be used and promoted by community members.



## A Climate Positive Housing Development for Guelph

### KEY DELIVERABLES:

1. Project Description (500 words)
2. Stakeholder Empathy Journey Analysis and Summary
3. Map or Diagram of Design Strategy for a pedestrian-focused community
4. Designs (1 concept with all components) including site plan, exploded axonometric or unit's interior, floor plans, sections, elevations, and 3D renderings.
5. Engaging video or animation of the project and renderings in a format compatible with TikTok
6. Storyboards or wireframes of the Simple Living digital app and/or manual.
7. Pitch Presentation (incorporating all the above).

### TERMS

**Systemateks** - A scalable, interactive, and module system for construction of the project that will let it evolve over time

**Net Positive** - When a structure or community generates more energy than it consumes

**Zero Carbon** - a design standard that ensures building operations reduce carbon emissions to near zero.

**Future Proofed** - Spaces that can change use and evolve over time to remain relevant

**Simple Living** - A philosophy of reducing one's lifestyle to essential needs, eradicating excessive consumption, resulting in a balanced, healthy, and happy life.

**Climate Design** - a method that reduces building energy demand for heating and cooling and uses natural and renewable energy sources

**Pedestrian Pocket** - The Pedestrian Pocket is a model for suburban development that seeks to modify settlement patterns in urban fringe areas, from blanketing low-density sprawl to networks of villages. Pedestrian Pockets are dense, interactive, walkable communities that provide a range of community service and employment and that are interconnected by public transit (JSTOR).

### RESOURCES:

<http://courses.washington.edu/gmforum/Readings/Calthorpe.pdf>

<https://www150.statcan.gc.ca/n1/daily-quotidien/220209/mc-b001-eng.htm>

See Report from Luigi Ferrara

## Heritage, Sustainability, and Rural Community

How might we restore a century old schoolhouse with significant heritage value in a sustainable and accessible way to become a landmark community centre in rural Ontario?

# The Old Wooler Schoolhouse

### PROJECT DESCRIPTION:

The Wooler Schoolhouse was built in the Prairie Style of architecture and is a rare example of this type of building in Ontario. It is listed by the City of Quinte West as a building of heritage interest. A 2022 Heritage Evaluation Report recommended that it be provided with provincial heritage protection. The Schoolhouse is the only existing potential community space in Wooler, following the closure of the Wooler Town Hall in 2012. Like many small rural communities, Wooler faces challenges in providing affordable community services to a smaller population located some distance from larger population centres where many such services are often located. Without public transit residents, especially youth, must rely on rides to other areas or find local opportunities for activities. The area has lacked access to local space for community activities since the Wooler Town Hall was demolished in 2012. In the absence of public transportation, this is particularly difficult for youth in the Wooler area.

Historically, the Wooler Schoolhouse helped bridge this gap by providing access to youth programs that were within walking or biking distance. Saving the historic Wooler Schoolhouse and ensuring it is sustainable and accessible for community use will provide the Wooler and area community with an iconic heritage community resource well into the future.

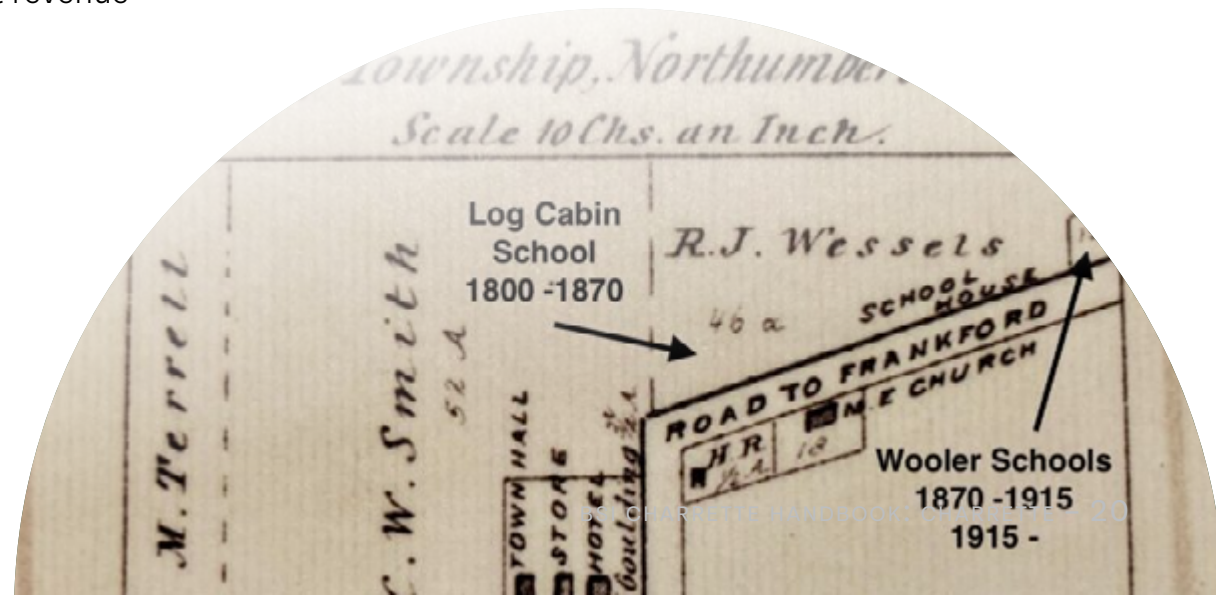


## The Old Wooler Schoolhouse

### WHAT YOU WILL DO:

The Wooler Schoolhouse has been unused for 3-4 years and requires significant renovations, including new utilities to bring it up to modern standards for a community centre. These renovations should respect the Prairie School features of the building, including its distinct exterior features and unchanged interior features such as wood wainscotting, pocket doors, and intricately designed tin ceilings. The renovations should include steps to ensure the building is environmentally sustainable and fully accessible as an operating community centre. This will also reduce the operating costs of the community centre, helping to provide affordable programs and access to family events spaces for the community. The Schoolhouse's 6,000 square feet (about the area of a basketball court) of interior space and three-acres of land would potentially support a range of recreational programs and community events that will deliver desperately needed services to the community while generating a modest revenue stream to support the building's ongoing operations.

The surrounding land could accommodate 10-14 units of sustainable housing. Consider a senior's community, which requires specialized units, access to community services, and social programs to prevent isolation. The wooded areas and wetland on the property provide exciting potential for outdoor recreational spaces and historical and nature interpretation trails. Community services and programs could include space rentals for family and community activities such as weddings, birthdays, celebrations of life, and meetings of clubs and community groups. It could support recreational programs including physical and cultural activities as well as local and regional music events. It could also host events that support local vendors such as Wood Shows, Artisan Markets, Christmas Markets, and Farmer's Markets. Consistent with its historic uses, it could also support a Wooler Youth Centre and children's summer camps.



## The Old Wooler Schoolhouse

### SITE:

The Wooler Schoolhouse, a three-story 28-by-76-foot structure built in 1915 at 62 County Road 5 in Quinte West, Ontario. The Wooler Schoolhouse sits on the south-east corner of a 2.83-acre lot with 90.4 meters of frontage and is zoned for community use. A small village surrounded by mostly farmland - Wooler is typical of many rural Ontario communities. Area residents travel to access commercial and community services clustered in the village. Wooler is located within the growing community of Quinte West (population 46,560 in 2021, up 6.8% from 2016 compared to provincial average of 5.8% and national average of 5.2%). Wooler is 15-20 mins from other small communities such as Stockdale, Frankford, Codrington, Batawa, and Orland that have historically shared community resources. Wooler is 20-40 mins from Belleville, Brighton, Campbellford, Picton, Trenton, and Wellington – areas where tourism, cultural, and recreational activities have flourished in recent years.

In 1800 a 27-by-37-foot Log Cabin school was built west of the current school and for 70 years was also the location for many community activities. In 1870, a new one-story 24-by-

36-foot Wooler Public School, known as the Little Red School House, was built on the location of the current school. The school initially featured two large basement areas and two large first floor classrooms. By 1928 a second story with two large classrooms was added to host the Wooler Continuation School (grades 9-12). With the school's closure in 1968, it operated as the Wooler Scout Hall until 2021. Wooler Scout Hall (1968-2021) provided a unique space for generations of Wooler area youth and a focus for many community activities. The large property behind the building was used as a playground and baseball diamond for many years.



## The Old Wooler Schoolhouse

### OBJECTIVES

- To honor the historical value of the existing Wooler schoolhouse and surrounding ecosystem while offering innovative, sustainable solutions to improve usability
- To increase accessibility of the schoolhouse for all people, including those that require physical and mental accommodations, as well as diverse cultural and age groups, including youth.
- To increase community culture and services in an underserved community and develop a model that could be replicated in other rural communities.
- To design an efficient building restoration that respects the existing natural ecosystems including the wetlands and wooded areas.
- To provide digital tools to a community to increase the productivity of the community centre and increase efficiency in utilities such as heat, hydro, and water consumption and waste.

### CONSIDERATIONS

- The centre will need to support events with up to 100 people, as well as a range of smaller activities, supported by a community kitchen and fully accessible bathroom facilities.
- The previous kitchen was on the main floor, which hosted large events like community banquets. The second-floor spaces will be allocated to smaller activities. A large basement with lofty ceilings provides an opportunity for a Youth (recreation) Centre.
- Renovations should respect the Prairie School features of the building, including its distinct exterior features and unchanged interior features such as wood wainscotting, pocket doors, and intricately designed tin ceilings.
- The renovations should also ensure the building is fully accessible, environmentally sustainable - reducing the operating costs of the centre and helping to keep programs affordable for the community.

### KEY DELIVERABLES:

1. Project Description (500 words)
2. Stakeholder Empathy Journey Analysis and Summary
3. Designs (1 concept with all components) including site plan, floor plans, sections, elevations, and 3D renderings.
4. Schedule & Implementation Business Plan including funding opportunities and partnerships
5. Map or diagram of how the design will feature smart technologies to improve accessibility, sustainability, and programming.
6. Pitch Presentation (incorporating all the above)



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### RESOURCES:

\*See Wooler Presentation

**A design concept for a self-sustaining city to prosper, produce food and energy, withstand natural perils, and create places to live, learn, work and play.**

How might we reimagine the existing city model to better accommodate human physical and mental health needs, while also building a sustainable model that minimizes climate risks?

# The Linear City Project

## PROJECT DESCRIPTION:

Cities have become larger, consuming the natural environment, and casting ecological footprint many times more than they should. Urban sprawl requires commuters to spend 2-3 hours daily in traffic jams; it is not good for our health but may be spent with family members if we did not have to drive individual cars from home to work. The urban infrastructure is failing unless repaired continually at great costs. Architectural innovations in designing sustainable buildings are at the pinnacle now, but not as widespread as we would hope. Regardless of many good buildings, they are still depending

on an ailing infrastructure that is not sustainable, too costly, and not prepared for the unpredictable climate of the future. The emotional cost of losing homes after each hurricane, flood, or tornado is beyond measure. The economic costs of repairs and replacement are enormous and cannot be afforded repeatedly. We have witnessed throughout the world how cities have failed, not only against major climate shocks, but also the more gradual effects of climate change, like more extreme temperatures, more frequent flooding, erosion, etc. Where will we live when cities no longer become habitable due to climate change? What do resilient cities look like?





### WHAT YOU WILL DO:

The vision for the project is to design a new, multifaceted Linear City model. Imagine a new city model that both adapts and mitigates climate change. What elements should a climate-ready community have? This challenge by necessity shall address many imperatives, such as:

- Economic growth
- The urban form and land use
- Circular infrastructure and renewable energy
- Sustainable food and water supply
- Movement systems (pedestrian, shared, and private)
- Responsive architecture and sustainable building materials

### CONCEPTUAL FRAMEWORK for A LINEAR CITY

Historically linear cities have evolved over time along the trade routes often in winding and bending shape mostly due to natural features and land ownership pattern. Ancient Greek Hippodamian plan adopted a grid iron morphology in modern cities since the 19th century that have grown vast in area coverage. Nevertheless, the linear form has been pervasive in creating prominent urban corridors such as Fifth Ave in New York, Champs Elysees in Paris, Oxford Street London, etc. In this design exploration we will see the advantages of a linear urban form, over urban sprawl. Here are few examples:

- Efficiency in the movement system from point A to B in a Linear City.
- Commercial and cultural centers often gravitate to locations along major urban corridors and avenues.
- A linear form is more conducive to incremental growth and urban intensification.



### SITE:

The Port Lands, City of Toronto

*“From stormwater management and flood protection to digital connectivity and affordable housing, Waterfront Toronto is creating next-generation environmental and social infrastructure that adds value by future-proofing the city while optimizing form and function to serve multiple uses.” (Waterfront Toronto)*

The city of Toronto is currently in the process of rejuvenating its waterfront communities, including an area known as the Port Lands, an area that extends southeast of Toronto’s downtown core into Lake Ontario and includes over 715 acres (about the area of Central Park in New York City) of land along the waterfront.

Villiers Island, part of the Port Lands, is planned as Toronto’s first climate positive precinct. (City of Toronto). Building off the city’s existing plans, reimagine the land mass that exists south of the Villiers Island development, which includes Polson Street, Unwin Ave, Cherry Beach, Hanlan Boat Club, etc., as a pilot for a Linear City model.



### OBJECTIVES

- To consider how Linear City Models can be more economically viable than existing urban models to facilitate the investment in more sustainable cities.
- To reimagine the urban form to accommodate more sustainable land use policy and a more equitable human and nature occupation of the planet.
- To develop prototypical designs for circular infrastructure and renewable energy resulting in net zero communities.
- To propose strategies for sustainable food and water supply, including regenerative practices and a reduction of waste.
- To design pedestrian-priority spaces for the betterment of human mental and physical health while considering other movement systems including public transit, private vehicles, shipping, and logistics.
- To include responsive architecture, including digital augmentation, and sustainable building materials in the design plans.



### KEY DELIVERABLES:

1. Project Description (500 words)
2. Stakeholder Empathy Journey Analysis and Summary
3. Design Strategy for a bio-climatic, smart city, including architecture
4. Design visuals including site plan, site axonometric, typical site section, building massing, and 3D renderings
5. Pitch Presentation (incorporating all the above)

### TERMS:

**Bucolic** means the pleasantry of the countryside. What does a bucolic city look like?

**Short food supply chains** are supply chains with as few links as possible between producer and consumer.

**Circular Economy** is an economic system based on the reuse and regeneration of materials or products, especially as a means of continuing production in a sustainable way.

**Pedestrianization** is the process of converting a street or area to pedestrian-only use. Designing pedestrian-priority spaces means offering opportunities for social interaction, active recreation, healthy living, and an improved quality of life.

**Responsive Architecture** measures actual environmental conditions (via sensors) to enable buildings to adapt their form, shape, colour, or character responsively.

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### RESOURCES:

\*See Wooler Presentation

## Reconciliation, Rehabilitation, and a Sustainable Future

How might we restore a historical landmark cabin in rural Canada while honouring the history of the Algonquins and settlers, novel technologies from past and present, and the future cultural and environmental resiliency of the site?

# Finding Their Voices: The Deep River Interpretative Centre

### PROJECT DESCRIPTION:

Deep River has a unique and rich history that includes Canada's first nuclear complex and is home to one of Canada's oldest Algonquin villages and possibly the only remaining Algonquin log cabin. The opportunity to re-imagine an Indigenous lost history and reconcile a future that preserves and protects the landmark cabin, Algonquin culture and artifacts yet establishes a path for a sustainable future presents a unique

opportunity. The team will learn the cultural and historical significance of the area and identify the restoration and interpretative materials - both physical and digital - needed to preserve the existing log cabin and lost village and investigate opportunities for highlighting both past, present, and future conditions. The project will produce a symbolic rebuild of the lost village and create a viable opportunity to display Canadian nuclear heritage, Algonquin heritage and the history of the river that ties them together.



## Finding Their Voices: The Deep River Interpretative Centre

### WHAT YOU WILL DO:

We want you to work in teams to develop a long-term strategy that addresses the existing schematic Revitalization Plans for the Town of Deep River and includes a new sustainable future for the Algonquin log cabin and entire Indigenous site. Teams will create an interpretative centre to promote, complement and enhance the long-standing cultural past and celebrate the legacy of the original families in their designs. Team designs to include the following elements:

1. Heritage
2. Reconciliation and Healing
3. Storytelling

(See Considerations)



## Finding Their Voices: The Deep River Interpretative Centre

### SITE:

The log cabin is located at the center of central Canada in a historically significant area in the relationship between First Nations and European Settlers. The cabin sits on the shores of the Ottawa River that provided access to and from the western interior for travel and trade. Descendants of the fur trade, logging and early Voyageur tourism and travel have been discovered in this area. The log cabin is in a Town called Deep River, Ontario and surrounded by the Town's Yacht and Tennis Club. The Indigenous group of this Village and their ancestors traversed the river between Wanapitei First Nation near Sudbury, Ontario and Lake of Two Mountains in Quebec and their village sat on traditional lands and territory of the Algonquins of Ontario.

The Town of Deep River was created in 1944 by the Federal Government as part of the Manhattan Project and relocation of the nuclear research at the Montreal Laboratory. The nuclear age had begun, and a new type of nuclear reactor was being constructed along the banks of the Ottawa River, within sight of 500-foot granite cliffs and a remarkable 24-mile straight stretch of river, known to the voyageurs as "la riviere creuse" (deep river). where prehistoric Indians once camped.

"The key siting requirements for the reactor were isolation (for security and safety concerns), and a plentiful supply of reactor cooling water. Here again, the Ottawa was ideal: "la riviere creuse" is a mile wide in places and over 200 feet deep, passing between two well-isolated, largely uninhabited shorelines

(but close enough to the major military base at Petawawa for disguise during the war-time construction phase). By this period railway access was available to the village of Chalk River.

To operate the expansive supporting laboratory, hundreds of families were housed nearby in a secretive townsite, later named Deep River in honour of its historic location. In time a handful of other research reactors were built and in 1962 the world's first CANDU power reactor went into operation near Rolphton at the head of "la Reviere Creuse".

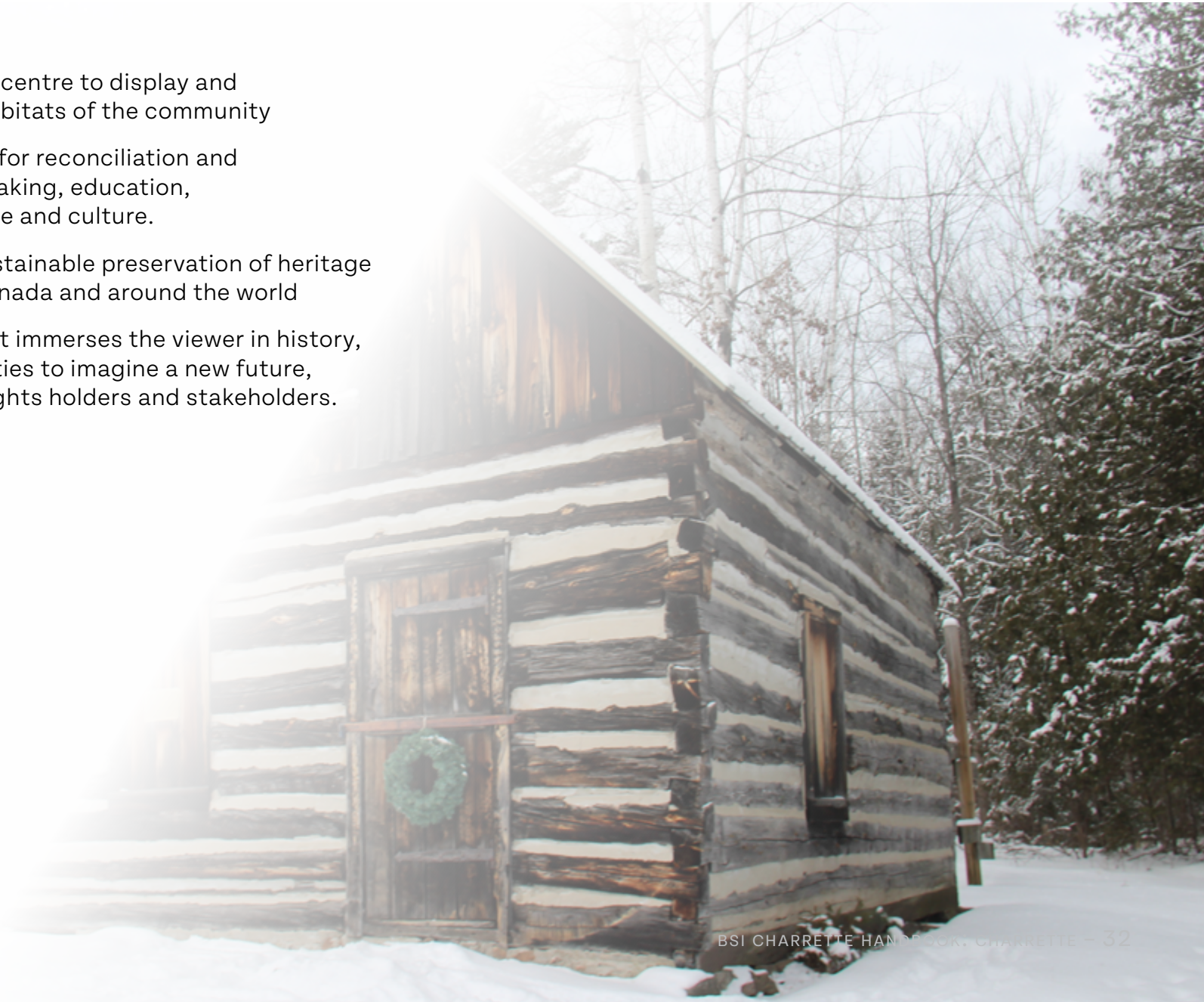
And so, the CANDU reactor, born among the ghosts of ancient and historic indigenous civilizations, the European explorers, the voyageurs, the loggers, and lumbermen, went on to world admiration and leadership. The legacy of the Ottawa River transcends a linear re-telling. Today, when a nuclear scientist paddles a canoe across a lake above a hydro dam, dodging half-submerged logs decades old, visiting billion-year-old rock cliffs where voyageurs "baptized" their rookies, time stands still and history collapses into one."

The Town of Deep River is currently undergoing a Revitalization Master Plan to determine its future success. Reconciliation is key to their future and celebrating / sharing and educating all layers of its past - pre and post 1944 will be fundamental to their plans.

## Finding Their Voices: The Deep River Interpretative Centre

### OBJECTIVES

- To design an interpretive centre to display and promote the original inhabitants of the community
- To provide opportunities for reconciliation and healing through space making, education, and protection of heritage and culture.
- To develop a model of sustainable preservation of heritage site to be emulated in Canada and around the world
- To define programming that immerses the viewer in history, while creating opportunities to imagine a new future, that is equitable for all rights holders and stakeholders.





## Finding Their Voices: The Deep River Interpretative Centre

### CONSIDERATIONS:

#### 1. HERITAGE

The site is complex and layered with history. This is an opportunity to capture the palimpsest of heritage and forge a new sustainable future. This future requires an understanding of the Heritage of the site. There are 3 key heritage elements to understand and document.

##### a. Natural Heritage

- Topography/natural features: land, trees, climate, and habitation.
- Hydrology - How has the Ottawa River impacted history? The river is a connector, catalyst, and sustainer.

##### b. Cultural Heritage

- Genius Loci / Spirit of Place: what is the intangible quality of space belonging to Deep River by the log cabin.
- Social: Development of the community of the area known as Deep River and the Town's growth and progression
- Indigenous: Algonquins have a long history and a tangible connection to the Ottawa River (Kichi Sibi). Teams will ideally be a receiving element, in a level setting, removing the typical colonial approach of starting without learning, and replacing history with current colonial options. Protect, recognize, and educate archeological digs and Algonquin Beliefs.

**c. Industrial Culture:** What are the industries that have been vital to the heritage of this site: economic mode of travel, fur trade, logging, nuclear development, and hydroelectricity.

#### 2. RECONCILE HISTORY TO ENABLE HEALING

- A place for healing, gathering & protecting (how could this be interpreted tangibly (cultural markers)
- A symbolic rebuild that includes all cabins to educate the current and future community of the descendant legacy of the demolished Village (1 existing cabin and 8 destroyed cabins). Healing includes the people, ownership, and history.

#### 3. STORYTELLING A SUSTAINABLE CONTINUUM (FOR A NEW FUTURE)

Drive sustainable solutions - identify clean energy and the future this area can provide. Sustainable solutions should be considered for each of the following elements:

- the river and natural ecosystems
- the log cabin and symbolic rebuild of the village
- heritage conservation and building materials
- energy and waste
- public space to display Algonquin and industrial history alongside the future of both economical and sustainable plans.

## Finding Their Voices: The Deep River Interpretative Centre

### KEY DELIVERABLES:

1. Project Description (500 words)
2. Timeline Heritage graphics: Natural, Cultural, and Industrial
3. Map or Diagram of Design Strategy for an Interpretive Centre (including physical and digital programming)
4. Site Plan (including a symbolic rebuild of the demolished village and waterfront)
5. Mockup of the cabin's interior, including floor plans, sections, elevations, and 3D renderings.
6. Pitch Presentation (incorporating all the above).

### TERMS

**Reconciliation:** Reconciliation is a dynamic process and objective. Like all living systems, reconciliation is a nonlinear process that is progressive and cyclical. It is an ongoing process through which Indigenous peoples and the Crown work cooperatively to establish and maintain a mutually respectful framework for living together, with a view to fostering strong, healthy, and sustainable Indigenous nations within a strong Canada. (Government of Canada)

**Rehabilitation:** Rehabilitation, a conservation method that makes contemporary use of historic places through repair, carefully protects vital aspects of the structure while preserving those portions or features which convey its historical, cultural, or architectural values. (Historicplaces.ca)

**Sustainability:** Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs. In addition to natural resources, we also need social and economic resources. Sustainability is not just environmentalism. Embedded in most definitions of sustainability we also find concerns for social equity and economic development. (University of Alberta)

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### RESOURCES:

<https://www.tanakiwin.com/algonquins-of-ontario/our-proud-history/>

<http://www.thealgonquinway.ca/index-e.php>

<https://www.aecl.ca/category/chalk-river/https://histoire-du-quebec.ca/rapides-des-joachims/>

**How might we expand medical tourism in Barbados' North Shore to support the expansion of sustainable and resilient tourism choices?**

# Sustainable & Resilient Tourism in Barbados

## PROJECT DESCRIPTION:

Barbados has a reputation of being “one of the best family-friendly destinations in the Caribbean.” (Google facts). Before COVID, Barbados hosted 2.4 million tourists per year. The total revenue from tourism is approx. \$1.12 bn (2018), with a 68% occupancy rate for the 6,573 rooms available (data from the Barbados Tourism Investment Inc). The Tourism sector represents approximately 22.96% of Barbados gross domestic product (WorldData.info). The Barbados government is focused on the Growth of Tourism, including their continuing transformation to establish the island as a Wellness Destination, particularly along its north coast. The possibility of sustainable and resilient growth with diversity in tourist accommodations also need to consider the design of flexible and multi-purpose venues that can support Barbados in times of crisis, such as the Harrison Point Isolation Facility.

The Harrison Point Isolation Facility, in St. Lucy, is a Medical Facility retrofitted to manage COVID-19. A former US Navy base (once used as a temporary prison) was renovated in 2021 by the Barbados Government to manage and contain

the pandemic by specially trained medical staff. It is equipped as an isolation building for infected patients as well as quarantine for those that are waiting to test negative. The government is considering medical tourism as its potential future; however, the location and features of the existing facility are not optimum. There is a need to develop new model building solutions that can support medical tourism, with a system of sustainable facilities that can encompass the “pre-op,” “op,” and “post-op” accommodations to support the best healing and wellness. Medical procedures can extend from fertility, cosmetics, eye surgeries and others that have a long convalescent period. The facilities need to extend to comprehensive accommodation for the doctors, nurses, and the required supporting staff.

A Medical tourism model would need to consider the sensitivities of the site selected and find the most sustainable solution. In addition, the strategic nature of a site that can respond to any event that may need the use of the facilities to increase the resilience of the island communities.

## Sustainable & Resilient Tourism in Barbados

### WHAT YOU WILL DO:

You will design systemic tourist destinations solutions that are both sustainable and resilient for island communities that are experiencing climate change impacts and emergencies.



## Sustainable & Resilient Tourism in Barbados

### SITE:

Barbados

Sites may be considered in Speightstown, near Almond Beach Resort or Heywoods Beach.

Barbados is an island country, on the eastern section of the Caribbean Ocean, approximately 430 km<sup>2</sup> in size (It takes less than one hour to transverse the island by car from south to north). The population of the country is 287,371 (2020 World Bank). The climate is moderately tropical in Barbados consists of a dry season (December to May) and a wet/rainy season (June to November) (info from BTMI).

Barbados gained independence on November 30, 1966. On the Anniversary of its independence, Barbados transitioned to a Republic Status on November 30, 2021. Barbados has its own currency (Barbadian dollar) and maintains a membership to the Commonwealth of Nations. The capital city, Bridgetown, is in Saint Michael Parish along the island's southern coast, the country's largest port and city. Barbados has 11 Parishes and 4 Towns. The Towns are Bridgetown, Speightstown, Holetown and Oistins. Please refer to the attached map.

It was originally populated by the Arawak's (settlers) and Kalinago (nomadic) indigenous peoples, prior to European invasion in by the Portuguese Pedro Campos in 1536. Barbados endured further colonized by the Portuguese to 1620 and a British colony between 1625 (Simon Gordon 1620 and John

Powell's arrival in 1625) to 1966. It became a Commonwealth constitutional monarchy between 1966 to 2021.

It is estimated that indigenous people became extinct 30 years post-conquest. Currently much of the Barbados population is of Black descent with small minority populations. (Gov. BB)

The slave industry created a mono-crop culture of sugar and destroyed the balance of food production. Barbados has a complex history with slavery connected with their economic development, including emancipation of slavery in 1833 (Slavery Abolition Act).

The country has a "duty-free" tax status for tourists.

Barbados now a Republic will experience consequential changes that may affect the Tourism sector.

Currently the major tourism development is on the South and West Coast of the island. Those two coasts are where tourists find a large concentration of facilities (e.g., hotels/ resorts/villas, apartments etc.), restaurants and activities.



## Sustainable & Resilient Tourism in Barbados

### OBJECTIVES

- To design a new, sustainable, and resilient model for Medical Tourist Accommodation(s).
- To consideration of a system of existing support facilities and activities for entertainment, and tourist amenities that enhance the recovery and promote wellness.
- To design a Tourist Embedded Digital Experience (information system) that supports the accommodations. (See Terms)

### Barbados Tourism Profile:

- South Coast (The parishes of Christ Church and St. Michael) is where you find hotels like Marriott, Hilton, Sandals Resort etc. The popular areas on the South Coast Tourist Belt are Dover, Worthing, St. Lawrence Gap, Rockley, Hastings. These are where many hotels, restaurants, car rentals and tourist facilities are located.
- Cruise facility is located at the Bridgetown Port (Deep Water Harbour) is in the parish of St. Michael.
- West Coast (is often referred to as the Platinum Coast) because this is where you find lots of very upscale accommodation and villas like the most prestigious hotel on the island called Sandy Lane Hotel (Tiger Woods was married at Sandy Lane). The South Coast has luxury facilities as well, but you find a great mixture of luxury and budget.
- Along the West Coast the popular areas are Sunset Crest and Holetown which are in the parish of St. James. Other popular areas on the West Coast are Mullins and Speightstown which are in the parish of St. Peter. These are where many accommodations, restaurants and tourist facilities are located.
- East Coast: is extremely popular for surfing. It is rugged and is lashed by the Atlantic Ocean with magnificent views. This area is wonderful for nature lovers and people who enjoy wellness experiences, those that want a romantic escape, with many natural rock formations and unique landscapes. There are lot of beach house rentals in this area, which Barbadians rent for long weekends and short holidays.



## Sustainable & Resilient Tourism in Barbados

### KEY DELIVERABLES:

1. Project Description (500 words)
2. Stakeholder Empathy Journey Analysis and Summary
3. Map or Diagram of Design Strategy for medical tourism
4. Designs (1 concept with all components) including site plan, floor plans, sections, elevations, and 3D renderings.
5. Schedule & Implementation Business Plan
6. Storyboards or wireframes of the Tourist Embedded Digital Experience
7. Pitch Presentation (incorporating all the above)

### TERMS

**Tourist Embedded Digital Experience:** this theme will include the communication assets of an accommodation and products developed by the Project Team of a pervasive embedded digital experience for tourists for a general tourist focus or for a specific physical site, adhering to the priorities, meeting the expectations of the BTMI, and meeting the challenges proposed by the GTRCMC (Global Tourism Resilience & Crisis Management Centre). The pervasive embedded digital experience must indicate how the proposed solution will integrate with existing solutions and validate its need.

**Tourist Accommodations (hoteling or alternatives):** this theme will include the design of new and innovative design developed by the Project Team for an accommodation for medical tourists for a specific physical site, adhering to the priorities and meeting the growth and diversity of accommodation wanted by the BTMI and meeting the challenges proposed by the GTRCMC. The design solution must verify its need and should include a business model to ensure that it is validated.

### RESOURCES:

[www.surgeryinparis.com](http://www.surgeryinparis.com)

<https://meridamedtours.com/> PG 7

<https://myorthopedicvacations.com/> <https://www.medicaltourismco.com/medical-tourism-in-india/>

<https://www.medego.com/en/blog/8376> <https://www.health-tourism.com/medical-tourism-turkey/>

## Design a new innovative, sustainable residential complex for refugees to Canada.

How might we design an innovative and sustainable residential housing development for newcomers to Canada, while increasing access to immigration services and affordable transportation?

### PROJECT DESCRIPTION:

Lack of affordable housing is Toronto's most pressing problem. There is approximately one affordable unit for every four low-income households in the private rental market. Newcomers are impacted disproportionately by this situation. Research shows that the inability to access housing is related to, and reinforces, broader patterns of social exclusion experienced by newcomers. Newcomers who experience substandard and unstable housing also experience inequalities in access to education and employment, social service deficits, disconnection from civil society, increased health risks, discrimination in the criminal justice system, stigmatization, and isolation (Francis, 2010). In 2019 Canada received more than 64,000 refugee claimants, the highest number ever. Toronto receives over 40% of Canada's refugee claimants annually but a lack of refugee-specific shelters/housing leaves many vulnerable to homelessness. In 2018, on average, refugees comprised 40.8% of 8,000 shelter system users - four times the proportion in 2016. Since COVID, the City of Toronto is currently spending \$4 million more per week than is budgeted on homelessness shelters and hotels.

(Information obtained from the Feasibility Study: Gathering Place Draft Report August 2020 commissioned by Catholic Crosscultural Services)

# The Gathering Place, a Project of the Catholic Crosscultural Services

Similarly, government assisted refugees (GARs) and privately sponsored refugees (PSRs) experience challenges. According to the Migration Policy Institute (2019) many refugees who arrived from 2015 to 2016 received little pre-departure training on life in Canada and were unprepared for the extremely high rents and limited housing choices they would face. In their first year, government-assisted refugees receive funds to cover their most basic shelter and food costs, and private sponsors provide refugees with similar support.

In Ontario, a couple with two children would receive \$1,250 a month and would be eligible for a bonus housing supplement of \$200. The average rent in the Greater Toronto Area for recently leased and unoccupied units at the end of 2019's third quarter was \$2,515, according to real estate consulting firm Urbanation. Studies have shown that GARs with low literacy, little formal education, low prospects for employment and large families experience the greatest challenges with respect to housing and income security, particularly in the context of extensive housing affordability.



## The Gathering Place, a Project of the Catholic Crosscultural Services

### WHAT YOU WILL DO:

Alternative and appropriate housing solutions to prevent the emergence of a refugee underclass in our city are critically needed. What are the services and spaces needed for refugee housing in Scarborough?

### SITE:

Choice/Daniel's Corp  
1880-1890 Eglinton Ave

Part of the Golden Mile redevelopment

The team should focus on Block D (refer to diagram), buildings D1 or D2 of the development. Both complexes consist of a podium building structure and two condominium towers (market units) each. The Developer is considering providing a podium building for affordable community housing that can be designed to accommodate refugees.

The Golden Mile shopping centre will be gradually transformed into a complex with an estimated population of 40,000 inhabitants, into 11 new buildings of mixed-use, mixed-income community with transit connectivity. The initial phase is to include a pair of condominium towers as well as a purpose-built market rental building and an innovation hub, rising on the northeast corner of Victoria Park and Eglinton. In the site's southwest corner, these buildings will be directly opposite an Eglinton LRT stop, and connected to convergent bus lines and in proximity to the Don Valley highway.

In addition, both the University of Toronto, Scarborough and Centennial College have partnered and committed to Phase 1 of the development to create a "Communiversity". This new post-secondary institution aims to allow improved access to education, co-learning opportunities, and the co-creation of sustainable and inclusive communities.

The Innovation District is also to include a 9,000 ft<sup>2</sup> BMO branch, which is being touted as capable of making a meaningful impact through financial advice and service offerings.



## The Gathering Place, a Project of the Catholic Crosscultural Services

### OBJECTIVES

- Design a residential and community model for housing refugees within the proposed massing of the Golden Mile redevelopment (podium structure)
- Be able to accommodate at minimum 80 single, couple and family units
- Design and Integrate settlement and social services in the residential complex
- Collaborate with newcomers and social services on the design (if information or individual are available)

### CONSIDERATIONS

- Affordable housing for welcoming refugee
- Integrated settlement services (existing and proposed)
- Community building and strengthening
- Sustainable design solutions for both the accommodations and the settlement services
- Participatory and Co-created operations (refugees helping each other)



## The Gathering Place, a Project of the Catholic Crosscultural Services

### KEY DELIVERABLES:

1. Project Description (500 words)
2. Stakeholder Empathy Journey Analysis and Summary
3. Design Strategy for Refugee Accommodation and Services (including digital programming and welcome/tool kits)
4. Designs (1 concept with all components) including site plan, unit plans, floor plans, sections, elevations, and 3D renderings.
5. Pitch Presentation (incorporating all the above)

### TERMS

**Newcomer:** An individual, couple or family that have been displaced from their home due to an unexpected event such as persecution, war, famine, climate change or political strife, and has arrived in Canada as a refugee.

**Settlement services:** support services for newcomers to help integrate and build a new life in Canada. The services may encompass support with language skills, health care, education, retraining, mental health & wellness, financial, legal and others

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### RESOURCES:

\*See report

## An integrated remodeling of the Chefs' House interior space, programming options and engagement strategy.

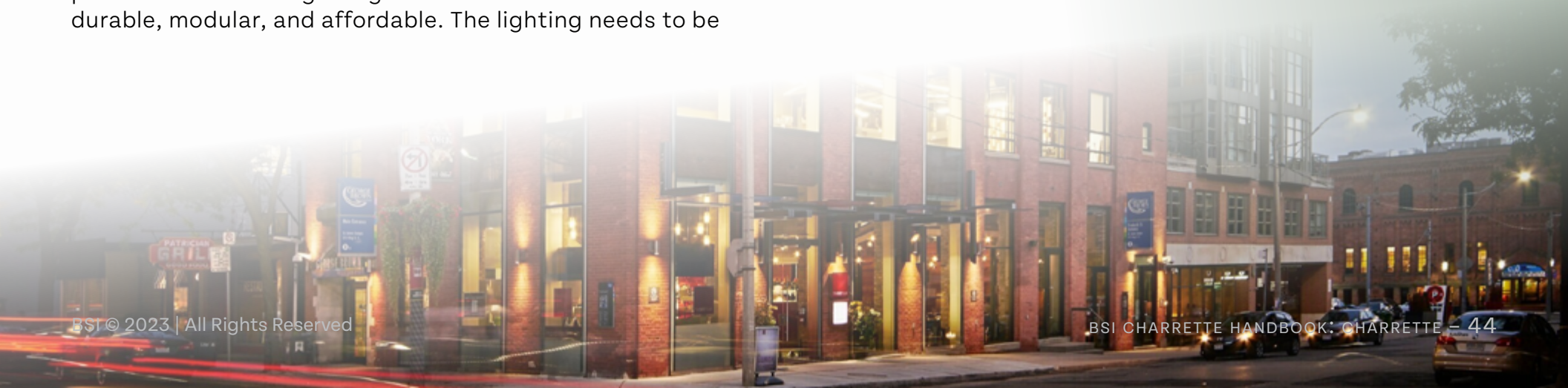
How might we reimagine a student run restaurant model to include sustainable design and service practices while providing an engaging physical and digital space for clientele?

# The Chefs' House Experience

### PROJECT DESCRIPTION:

The Chefs' House is seeking to refresh its existing interior design and patio space to improve on the overall experience and celebrate the unique student led learning and dining model. The challenge is to create a more contemporary, minimal, and modular design scheme that will carry into various related elements such as social media, menus, products, uniforms, and digital assets. The current space is a mix of unconnected materials in need of a design concept that embraces sustainability and best practices for a lasting design. The furniture needs to be durable, modular, and affordable. The lighting needs to be

adjusted for better ambience or focused task lighting. The restaurant is only open Monday through Friday and would like to have a way to communicate with its community and clients when they are not in the building. A key consideration is how to implement the renovation in short stages so that the restaurant does not have to close for more than a week or two at a time. Other considerations are the flow of the space; allowing for maximum seating capacity; possible new revenue streams; and developing meaningful ways to gain interest and new customers.



## The Chefs' House Experience

### WHAT YOU WILL DO:

Imagine how to tell the story of Toronto's only student-led fine dining restaurant while adapting it to become a flexible, sustainably driven dining and event space. Redesign the system of elements connected to culinary and hospitality experience such as the furniture, lighting, use of technology and communication strategies. Develop a proposal for a unique learning and dining experience.



### SITE:

As the only student-run, fine dining restaurant in downtown Toronto, students from the GBC (George Brown College) hospitality and culinary arts programs work in tandem to create, prepare and serve gourmet meals. The restaurant is in a prime location at 215 King Street East, which attracts both locals and tourists.

The building, built in 1914, is a well-maintained red brick structure with outdoor space not leveraged. There are windows on two sides bringing in plenty of light and the kitchen is open concept with existing cameras and monitors so that clients can see their food being prepared.

The property lies in a historically industrialized District developed in the early 20th century and is in the Original 10 Blocks of the Town of York. The structure also contributes to the district's physical character through its uniform elevation with repetitive windows and bays. The red brickwork and large building footprint are also characteristic of industrial buildings of the time.

### OBJECTIVES

- To design an innovative sustainable restaurant experience for the guests, students, and staff.
- To highlight the talents of George Brown College students.
- To tell a story of the Chefs' House integrated work and learning model for fine dining.
- To enhance the unique fine dining experience by integrating ethical and sustainable materials and practices.
- To reduce the environmental footprint of the restaurant and create a model for others.
- To explore additional revenue streams for the Chefs' House.



## The Chefs' House Experience

### KEY DELIVERABLES:

1. Project Description (500 words).
2. Architectural Drawings (floor plans, elevations, sections, renderings, and appropriate details such as sustainable materials).
3. A design for digital customer experience, including interactive restaurant features (lighting, menus, reservations, etc.).
4. A communications, marketing, and social media engagement strategy that supports the Chefs' House new sustainable restaurant identity and attracts new clients (consider a video or another digital platform for communicating the Chefs' house story).
5. Implementation plan (consider phases: 1-2-week intervals when the restaurant is closed and budget for each phase).
6. Outline for a business model for new and improved revenue streams.
7. Pitch Presentation (incorporating all the above)

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### RESOURCES:

\*See report

### TERMS

**Sustainability:** For society, the environment, and the economy. Sustainability that fulfills the needs of current generations without compromising the needs of future generations. Sustainable qualities include equity, diversity, inclusion, and endurance.

**Experience Design:** The process design teams use to create products, systems and services that provide meaningful and relevant experiences to the users.

**Storytelling and Engagement:** What mediums and messages can we use to tell the story of the CHCA (Center for Hospitality and Culinary Arts) students and the Chefs' House and engage with local and food loving communities.

**Empathetic Design** - Design to facilitate a positive and meaningful experience for the guests, students, and staff

## 21st Century Productivity Spaces

How might we redesign physical office spaces, contract furniture, and other office products to promote flexibility for workers and employers while creating viable, sustainable, long-term solutions?

# The Future of Work

### PROJECT DESCRIPTION:

Innovative technologies, new industries, new patterns of behaviour – the past few decades have seen remarkable changes in the workplace, the home, and public social spaces. The pandemic accelerated many of these trends, with the most visible being remote work. But in parallel with this shift is the emergence of new types of artificial intelligence, virtual spaces, and smart environments, all of which can support even more significant paradigm shifts when it comes to the future of work.

The idea of a central office where everyone gathers daily to do their work has already become less relevant, thanks to ubiquitous internet access, affordable yet powerful portable work devices, and a workforce that is increasingly comfortable working from, well, anywhere. Without the need for employees

to have dedicated desks and offices, many organizations may choose to reexamine what kind of office spaces they really need to do business. Adaptive, flexible spaces will be the future of commercial real-estate. The Future of Work is a transformational project that brings together students & faculty from design, technology & business to explore what the future of work looks like and to propose new spatial designs that respond to this new employment landscape.





### WHAT YOU WILL DO:

You will redesign the proposed office space to address the core challenges listed below. Consider adaptability over time, including existing and potential innovative technologies that will impact the office ecosystem.

### Core challenges:

Increased turnover & retention challenges as remote workers feel lower connection to colleagues & supervisors

Creative impact of this loss of shared culture

Generational barriers between Gen Z, Millennial, Gen X and Baby Boomer employees: all of whom have diverse sources of motivations and work patterns and expectations

Challenges of managing hybrid workers

DEI (Diversity, Equity & Inclusion)

Automation & AI (Artificial Intelligence)

Adjust performance & metrics of workers when managers do not necessarily have the “face time” they had in the past

### SITE:

Koru Offices

Spadina Ave, Toronto, Ontario

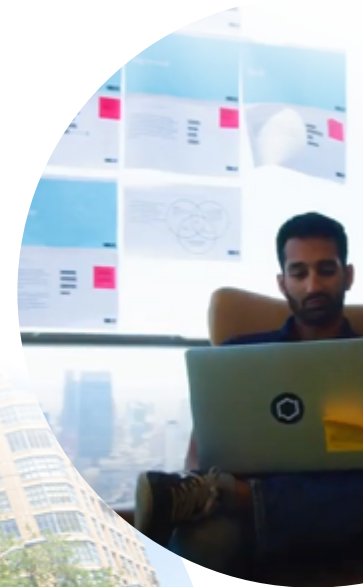
Neighbourhoods:

Chinatown

Queen West

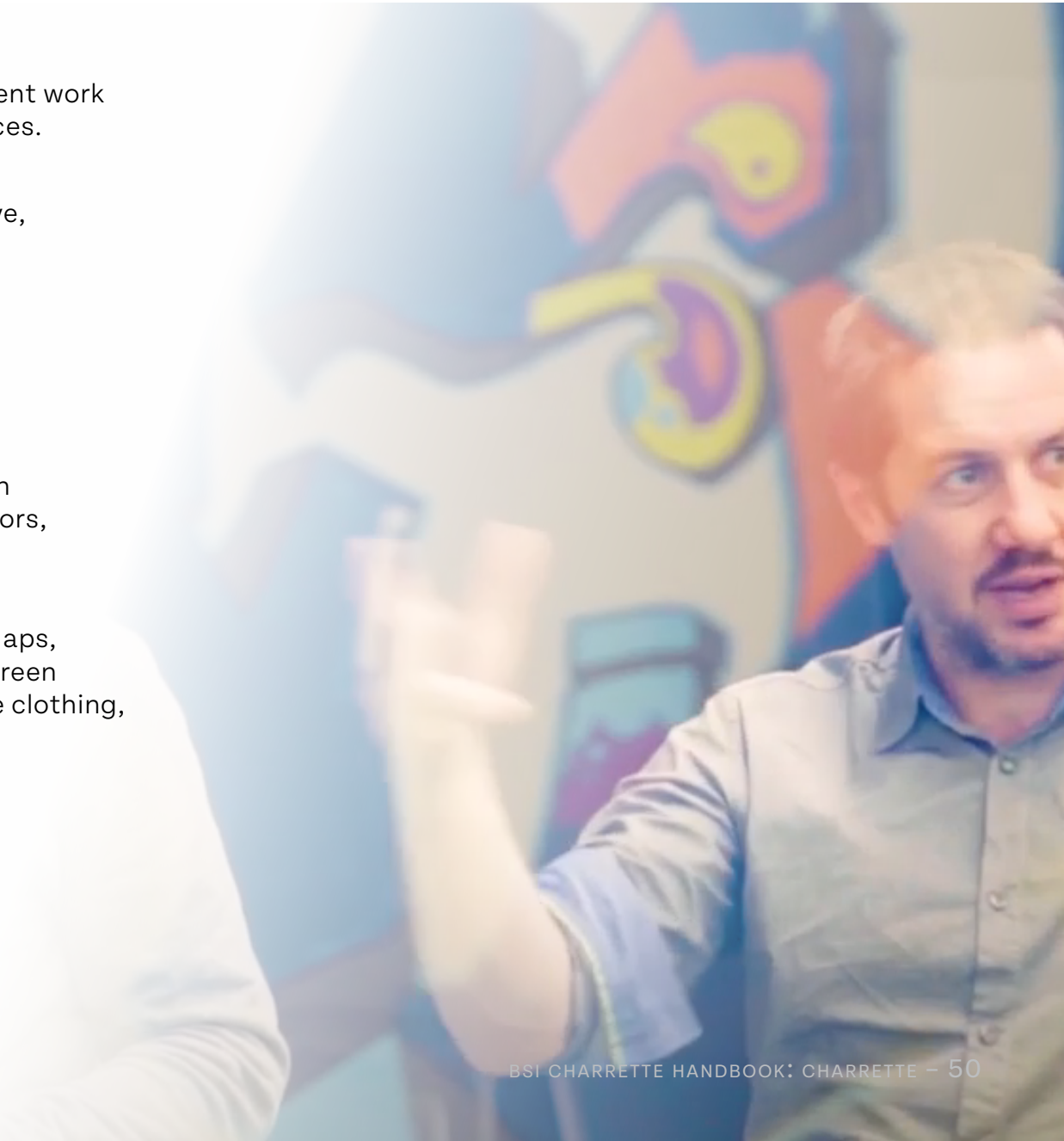
Fashion District

\*See Floor Plans in Resource Folder



### OBJECTIVES

- To propose spatial designs that respond to different work modalities such as hybrid or flexible working spaces.
- To establish a typology of workspaces and the design approach for each (individual, collaborative, flexible online/hybrid workspaces), and how a workspace might accommodate all types.
- To understand employer/employee influences, expectations, and motivations and how they impact the design of workspaces.
- To map existing and future office technology, including online collaboration and communication tools and their potential to influence work behaviors, office schedules, IT (Information Technology) and digital security, and special office designs.
- To address office culture including generational gaps, isolation, and sedentary lifestyles, in-person v. screen time, distractions, commuting, appropriate office clothing, lack of personalization and personal storage, etc.



### KEY DELIVERABLES:

1. Project Description
2. Timeline including the future forecasting of office spaces and influential technologies
3. Stakeholder Empathy Journey Analysis and Summary
4. Scalable design strategy and business marking plan
5. Floor plans & programming diagrams (sketches or renderings of spatial design solutions)
6. Pitch presentation (incorporation all the above)



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### RESOURCES:

\*See report

## DAY 1 LAUNCH EVENT

Thursday, February 23 2023

**5:30pm - 8pm**

The event will begin with introductions with organizers, review of the core challenge and itinerary.

Launch! (Auditorium, Room 240)

Meet Your Team! Teams will have time to meet and to discuss topic ideas.

## DAY 2 INVESTIGATION & IDEATION

Friday, February 24 2023

**9am - 12pm**

### Working Session (Defining the Challenge)

Teams will conduct research to better understand the problem area and the experiences of their potential user and other stakeholders. This should be a mix of primary and secondary research. Don't be afraid to send emails, make phone calls, and reach out to experts in the field. Based on the knowledge gained from the mornings research, students will define the challenge by create insight statements and questions that will guide the ideation process in the afternoon.

12pm - 1pm LUNCH

**1pm - 4pm**

### Working Session (Idea Generation & Evaluation)

Students will rapidly ideate and cluster solutions based on the problem uncovered in their research. Teams will rate their top ideas based on desirability, feasibility, viability, and sustainability and create sketches and mockups to communicate their ideas.

**4pm - 5pm**

### Advisor Check-in

Teams will review initial research and present their top 3 concepts with a group of assigned advisors. Teams will use advisor feedback to narrow concepts down to 1 idea to develop and prototype for the remainder of the charrette.

### End-of-Day Check-in

- Meet with your Academic Lead to evaluate feedback from Advisor sessions and address any unresolved questions
- Select one idea to develop for the rest of the Charrette
- Discuss Next Steps

### Daily Aims

- Research Insights & Guiding Questions
- Stakeholder Map
- 3 Concepts for presentations
- Narrow to 1 concept

## DAY 3 CONCEPT DEVELOPMENT

Saturday, February 25 2023

### 9am - 10:30am

#### Working Session (Inspiration)

Teams will build out their design using feedback from the Advisor sessions. Teams will develop a 500 word Project Description and utilize generative AI web platforms, such as ChatGPT and DALL-E to produce images and text to inspire design development. The results of this process should be uploaded to the google drive review for the future development of the project.

### 10:30am - 12pm

#### Working Session (Evaluation)

The images/text generated by AI will not be used in substitution of original ideas, but to open the team to imaginative approaches. Teams will evaluate the results of the generative AI and review key qualities and features that they will use to inspire their own designs. Teams should begin to sketch their own version of the designs before lunch.

12pm - 1pm LUNCH

### 1pm - 4pm

#### Working Session (Development)

Teams will expand on their single concept to present to advisors at the end of the day. Teams should reference the list of key deliverables to ensure that a well rounded concept is being presented and all criteria is being met.

Teams need understand how the solution is delivered to the users through a user journey map and storyboards.

Concepts should be tested to ensure originality, competitiveness, and a unique value for the intended users.

Team members should start to consider brand guidelines and visual assets for the final presentation.

### 4pm - 5pm

#### Advisor Check-in

Teams will present their top concept to Advisors in the form of a 10 min elevator pitch. You can present your idea in the form of the concept poster or a pitch deck. Teams will use feedback to build out and refine their concepts on Day 4.

### End-of-Day Debrief

- Meet with your Academic Lead to evaluate feedback from Advisor sessions and address any unresolved questions
- Ensure designs addressed challenge areas
- Discuss tweaks, homework and next steps

### Daily Aims

- Single Concept
- 10 Pitch Presentation
- Building assets for final presentation

## DAY 4 **PROTOTYPING & ASSET DEVELOPMENT**

**Sunday, February 26 2023**

### 9am - 12pm

#### Working Session (Build & Validate)

Teams will produce physical and digital prototypes to be included in the final presentation.

Consider validating research and claims through real- world sources. Make phone calls, talk to potential users, find out about costs, bylaws, and time considerations that impact the feasibility of your designs.

12pm - 1pm LUNCH

### 1pm - End of Day

#### Working Session (Refine)

Teams will develop the visual assets that will help communicate their concepts, including sketches, renderings, brand identity and marketing strategy.

Teams should consider an implementation strategy for their concept. How will it role out and what kind of social, environmental, economical and political shifts are you trying to create over time?

Teams will develop a 10 min final pitch presentation that captures challenge, proposed solution, and implementation strategy.

### Daily Aims

- Physical and Digital Prototypes
- Branding / Marketing
- Final Pitch Presentations

## DAY 5 FINAL PRESENTATIONS

Monday, February 27 2023

### 9am - 12pm

#### Final Presentations Duel!

Teams will have all pitch decks submitted to the google drive by 12pm.

Please also submit Google Drive Folder of all your process work, digital assets, and documentation of the Charrette process.

12pm - 1pm LUNCH

### 1pm - 5:30pm

Pitch!  
Opening Remarks (5 minutes)

Presentations (10 min presentations followed by 10 min of Q&A)

**1:05pm-1:25pm** Short Food Supply Chains

**1:25pm-1:45pm** Linear City Project

**1:45pm-2:05pm** The Chefs' House Remodelling

**2:05pm-2:25pm** Wooler Area Community Organization Project

**2:25pm-2:45pm** Climate Positive Housing Development

**Break! (10 minutes)**

**2:55pm-3:15pm** The Silent Community (formerly Deep River)

**3:15pm-3:35pm** Sustainable Tourism Barbados

**3:35pm-3:55pm** The Gathering Place

**3:55pm-4:05pm** The Future of Office Space

**4:05pm-4:25pm**

**Closed Judging**

- Advisory panel will deliberate and rank the top

3 concepts. (20 mins)

**Break! (10 minutes)**

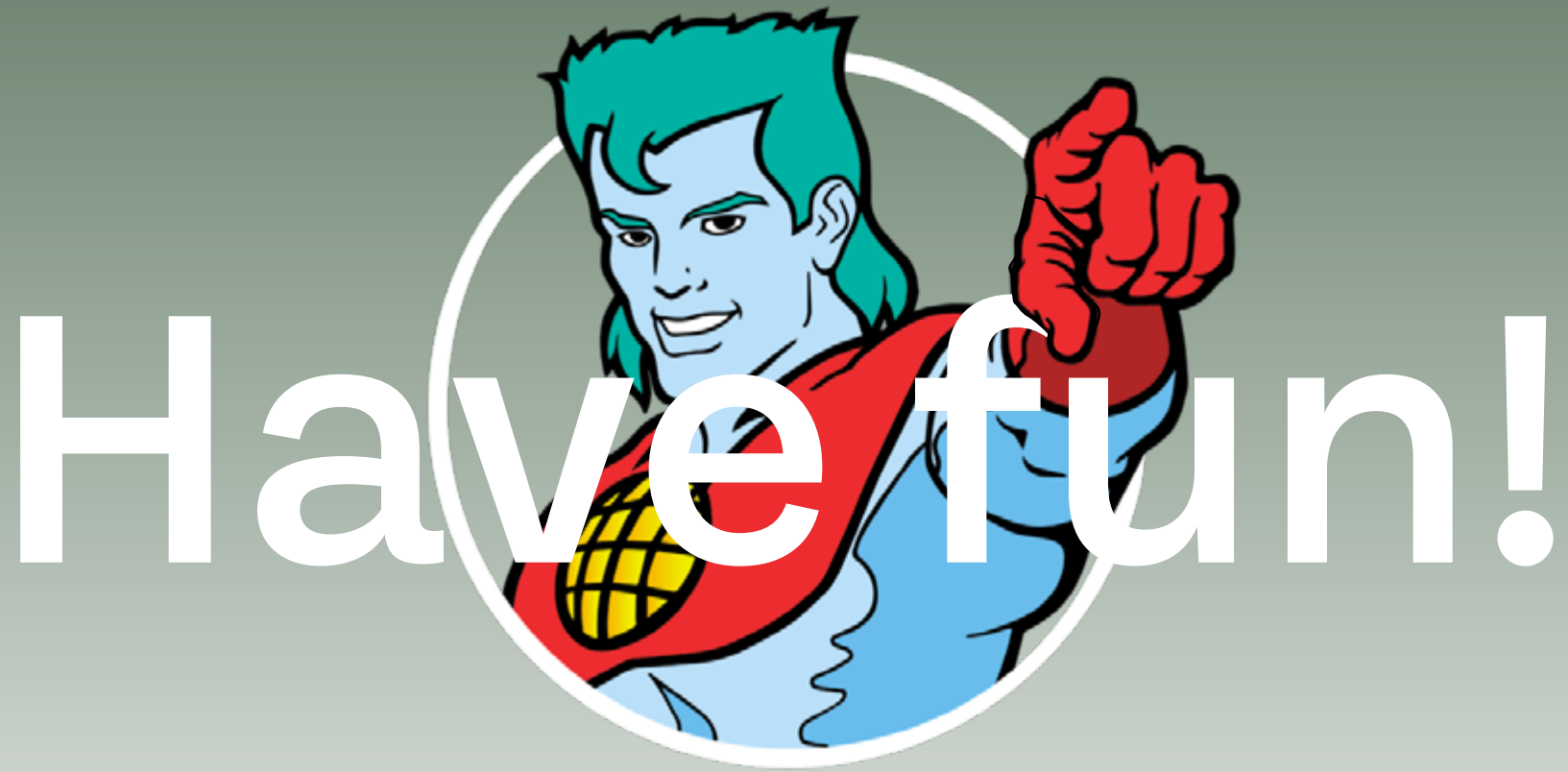
**4:35pm-5:05pm**

- Presentations will be followed by awards, virtual certificate ceremony and closing remarks. (30 mins)

### 6pm

#### Celebrate!

Participants can head to the GLB Brewpub for snacks and celebrations after the Charrette is concluded. Snacks will be provided but guests are asked to purchase their own beverages.



PDF DOWNLOAD

