ADAM COHEN

ADVENTURES IN DESIGN 2023



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Hi there! If you have questions about me or my work, please feel free to get in touch. I'd love to hear from you.

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PROFESSIONAL EXPERIENCE

Being part of a co-op university program has made it possible to pack a ton into the first few years of my design career.

Since starting my degree, I've joined studios in, London, Toronto, New York, and Vancouver.

I've spent time in big firms, little firms, and others in between. Some offices have been startups while others have been long-established.

My first design job in high school exposed me to architectural interiors. Since then I've worked on projects in healthcare, mechanical infrastructure, residential high-rises, art installations, research, education, and more.

You can find my complete resume on the last page of this package, but a few of the offices I've worked at include Bjarke Ingles Group, ZGF, and Terreform ONE.

Prior to university, I worked as a summer camp counsellor, nature instructor, and canoe trip leader in Canada's Algonquin Park.

01









HERE'S WHAT I BELIEVE

I believe that design is about finding ways to make the world work better. It can happen at large scales or small.

I believe good design begins with an understanding of where we are, and outlines a big-picture vision of where we'd like to go.

I believe the designer's job is to find opportunities to build the tomorrow we imagine, while embracing constraints imposed by the world we live in today.

02

HERE'S HOW I THINK

My process begins with trying to figure out what part of the built or non-built environment can work better to suit stakeholders' needs.

I believe that clarifying why a design was commissioned is the most important step in developing a compelling vision for how it should be resolved.

As I explore possible directions a project could take, I look for solutions that mutually benefit both the client, and everyone else the project will touch.

It's my conviction that protecting our planet, and contributing to local context must always be part of what we aim to achieve.

When solving problems, I believe in challenging conventional thinking, using constraints as drivers of design, and finding ways of turning obstacles into opportunities.

HERE'S WHAT I ENVISION

A future where our designed environment improves quality of life, and has the capacity to sustainably care for everyone.

This is what I'm working towards.

AND HERE'S WHAT I'VE BEEN UP TO LATELY...

THE NEST

How might building for longevity enable true affordability?

Rethinking affordability

The conventional model for publicly funded affordable housing centres on building quickly and cheaply. It's widely adopted because it alleviates the symptoms of housing scarcity, but it's shortsighted in that it produces buildings that aren't designed to last. Examples abound in most major cities, and the inevitable consequence appears to be demolition and reconstruction after a minimal duration of service — a pattern that costs us fiscally, socially, and environmentally. In the long run, this approach to affordability seems to prove anything but!

The Nest is a proposal for an affordable housing development that follows a different strategy. It's conceived around the belief that genuine and lasting affordability (across all dimensions) requires investing slowly and steadily in buildings designed with multi-generational service lives in mind.

The Nest is therefore conceptually anchored by four pillars of architectural longevity. I've selected these pillars based on research into both long-lived precedents and the macro trends that seem likely to affect the needs of future occupants.

These pillars are:
Adaptability + Repair, Climate Resilience, Emissions Mitigation, and Love.

The building's massing, program, and character are designed to align with a transit-oriented densification masterplan that I developed earlier in the term in collaboration with a group.

Working with artificial intelligence

The whole project was created with the help of artificial intelligence. I used GPT-4, Midjourney, Adobe Firefly, and more to assist with concept brainstorming, visualization + graphics, specification, Grasshopper scripting, and written description. It even wrote some of the text you're reading now!

03



South facade viewed from Water Street



South facade and parking structure with accessible roof viewed from Ainslie Street

The transit-oriented masterplan

Tasked with envisioning a 10x densification of downtown Galt Ontario, the masterplan design team I worked with created a neighbourhood plan focused on sustainable transportation, protecting the town centre's historic charm, creating a sense of safety through Jane Jacobs inspired development, and promoting equity. The scheme centres on Ainslie Street Station — the terminal stop on a planned LRT line that will connect Galt to surrounding municipalities.



Map of the neighbourhood masterplan

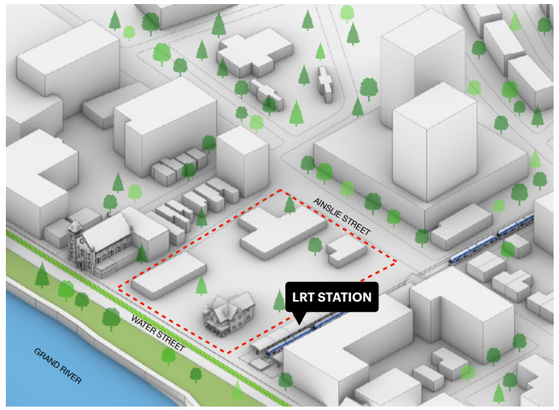


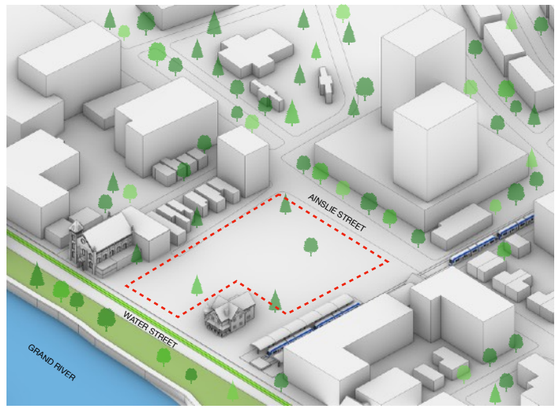
Conceptual vignette of the neighbourhood masterplan.

Summary of the design brief

With this project, our class was asked to design affordable housing for 150 people on a transit-oriented site. We were required to provide accessible units, units designed for families, bike parking, and amenity space of our choosing. As dictated by the masterplan, my building's site was also required to have 30% of its area set aside for public use.

Massing development



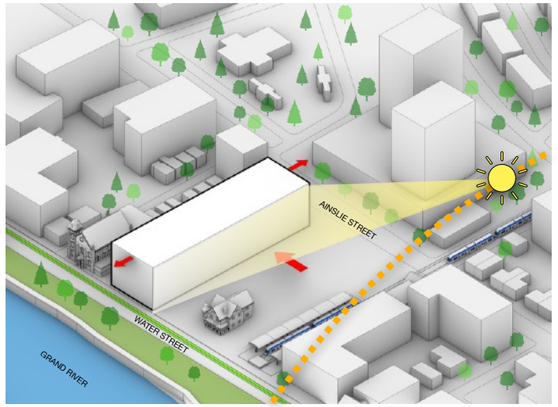


The site

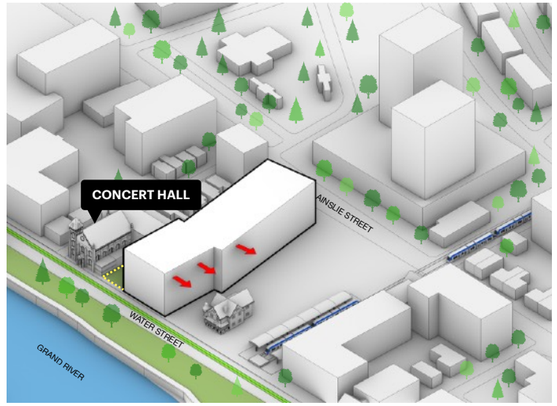
The Nest's site is located on the East bank of the Grand River, adjacent to the new Ainslie Street LRT Station. It's flanked by a pedestrian and cyclist oriented street to the West, and a commercial/ motor vehicle oriented street to the East. A historic church (turned concert hall) and a Victorian country house (turned community facility) lie to the North and South. The entire site sits within the Grand River floodplain.

Remove crumbling buildings

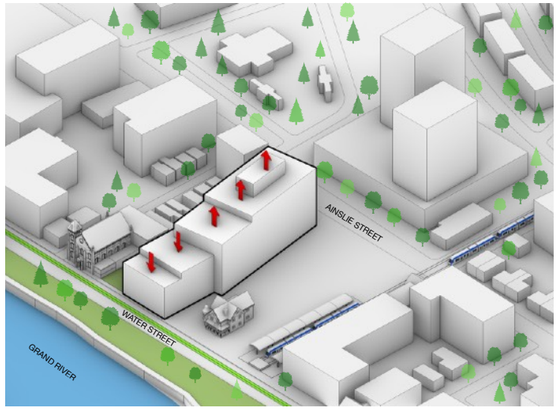
The first development step is to remove the single-storey crumbling commercial buildings scattered across the site while retaining the historic structures.



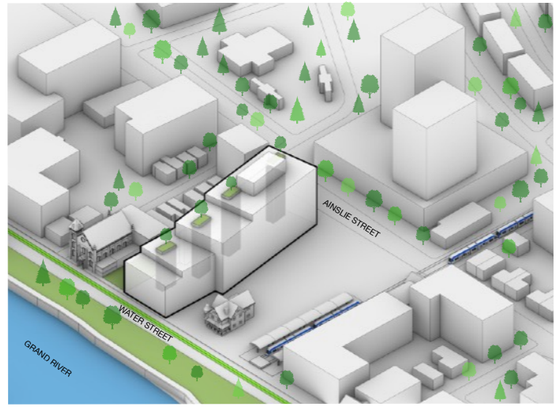
Maximize on sunlight
The mass of the new building is pushed to the South side of the site and stretched to maximize sun exposure both across its facade and in the new public space that will occupy the rest of the lot. This also moves residents away from LRT station noise.



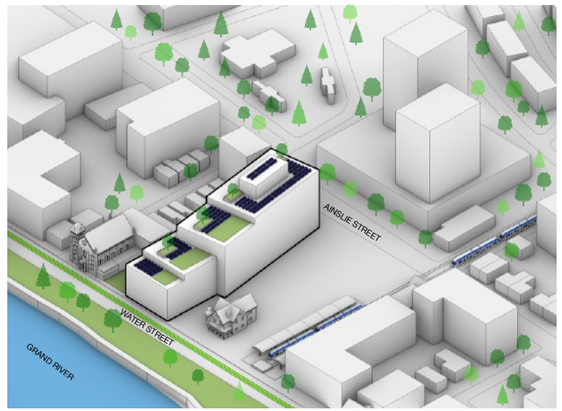
Expand the concert hall courtyard
The building's West side is nudged forward to create a more generous courtyard and gathering space beside the concert hall, while the rest of the mass is pivoted slightly to afford better views of the nearby historic urban fabric.



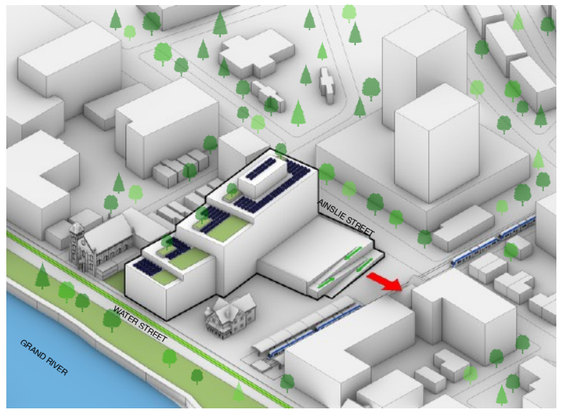
Modulate height to match the context
The building's height is toggled up and down to match the surrounding context. As required by the masterplan, the building becomes low near the historic structures and grows taller toward the large buildings located on the West side of Ainslie Street.



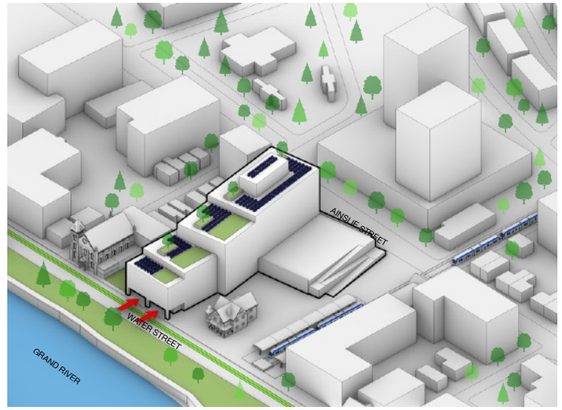
Use fire stairs to support trees
Additional fire stairs necessitated by the building's stepping form provide a free support structure for mid-size rooftop trees.



Add terraces and PV
The roof steps create space for river-facing public terraces and solar PV angled for southern exposure.



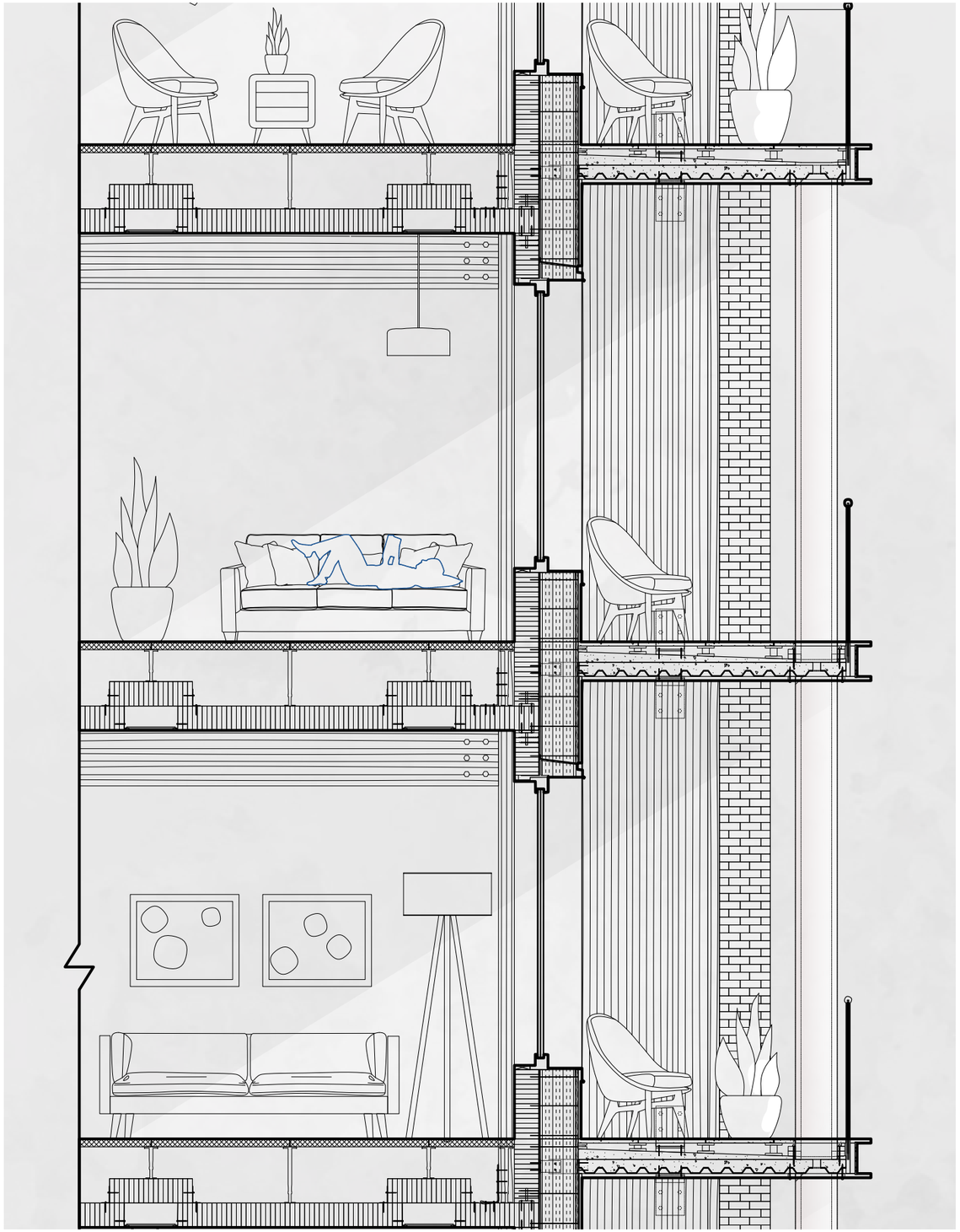
Use parking structure as public space
Since the site is located on a floodplain, the parking garage is constructed at surface level and becomes a dynamic feature in the public landscape.



Carve a sheltered patio
A sheltered patio is created by carving out a human scale notch in the front of the building. This forms a connection with the pedestrian-focused street.



Add balconies and landscaping
Structurally independent balconies and dynamic landscaping animate the public realm and provide quality outdoor space. The raised terrace above the parking garage offers a safe spot for a children's playground — far away from the open LRT platform.

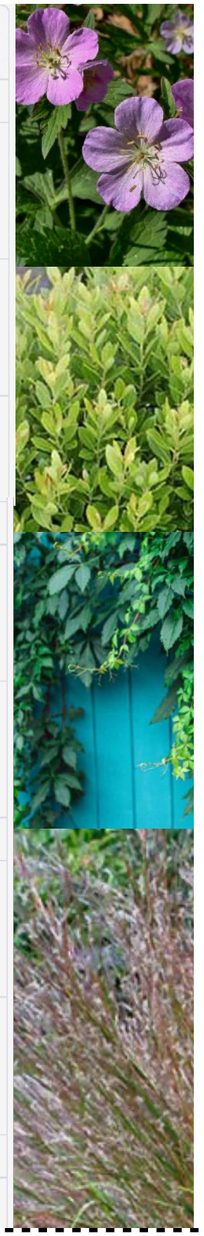


1:50 wall section detail

AI-powered product and species specification

This table of plant species is a sample of the specification sheets created for my project using GPT-4. In this case, I asked it to produce a table featuring plants of different types that would do well in different lighting conditions, look good in different seasons, and succeed at ground level and on the roof. I requested that all species be indigenous to Ontario to promote local ecology and biodiversity.

Type	Full Sun	Partial Shade	Full Shade	Native	Rooftop-Friendly	Evergreen
Trees						
	Sugar Maple (Acer saccharum)	Eastern Hemlock (Tsuga canadensis)	Eastern White Pine (Pinus strobus)	Yes	No	No (except Eastern Hemlock)
	Serviceberry (Amelanchier canadensis)	Red Maple (Acer rubrum)	American Hornbeam (Carpinus caroliniana)	Yes	No	No
	Black Gum (Nyssa sylvatica)			Yes	Yes	No
Bushes						
	Red-osier Dogwood (Cornus sericea)	Highbush Blueberry (Vaccinium corymbosum)	Leatherleaf (Chamaedaphne calyculata)	Yes	Yes	Yes (Leatherleaf)
	Smooth Sumac (Rhus glabra)	Mountain Laurel (Kalmia latifolia)	Inkberry (Ilex glabra)	Yes	Yes	Yes (Mountain Laurel, Inkberry)
Grasses						
	Little Bluestem (Schizachyrium scoparium)	Bottlebrush Grass (Elymus hystrix)	Sedges (Carex spp.)	Yes	Yes	No
	Switchgrass (Panicum virgatum)	Tufted Hairgrass (Deschampsia cespitosa)	Northern Oatgrass (Danthonia spicata)	Yes	Yes	No
Flowers						
	Butterfly	Black-eyed	Wild Columbine	Yes	Yes	No



GPT generated landscaping specification table (images are a few examples of the species it selected)

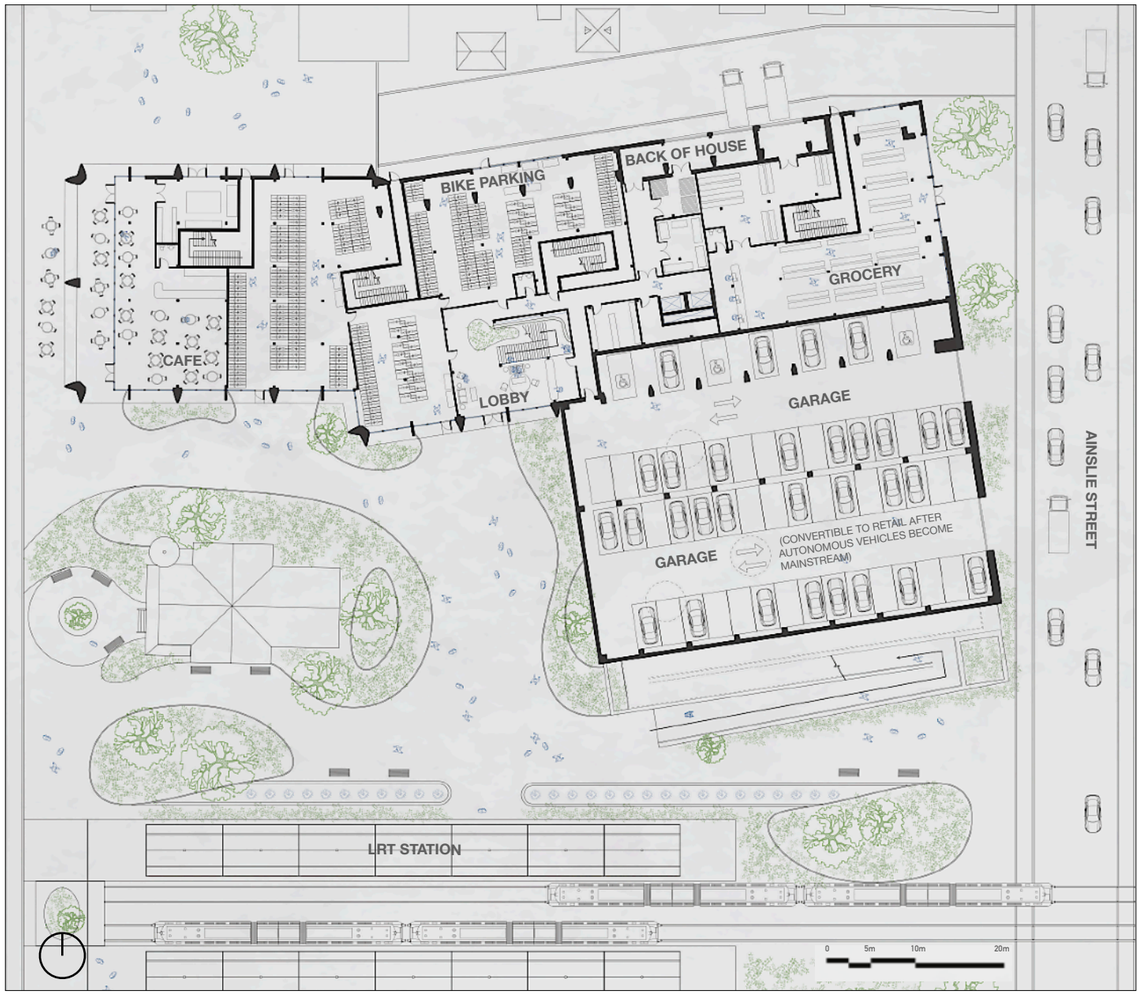
Retaining Galt's character

The area around Ainslie Street Station known as historic Galt has an architectural character defined by a combination of buildings that appear sturdy and industrial, and those that look delicate and domestic.

The articulation of The Nest's facade is intended to evoke both of these qualities while remaining completely contemporary — an approach that aligns with the masterplan vision. A system of structurally independent balconies weaves between visually solid brick frames that playfully adjust in height as the building's massing shifts across the site.



Historic Galt: sturdy + delicate



Ground floor and context plan. A cafe and patio face Water Street, and affordable grocery faces Ainslie Street. The middle of the building contains the lobby, back-of-house space, and a mix of private and public bike parking that allows people to secure their bikes for the day before boarding the LRT. This combination satisfies the masterplan's requirement for mixed-use programming.

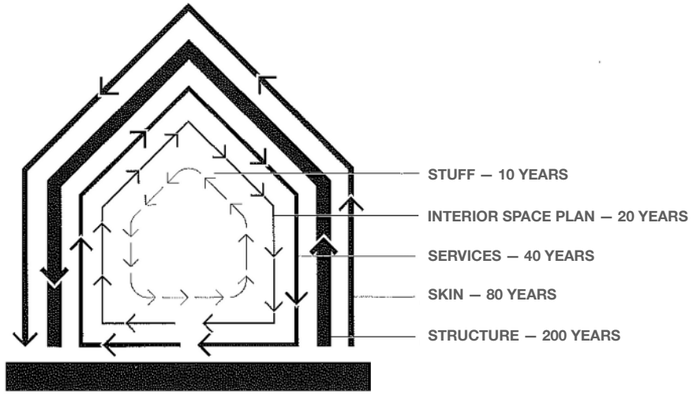


Primary building entrance, as seen when exiting the Ainslie Street LRT Station

Longevity Pillar 1: Adaptability + Repair

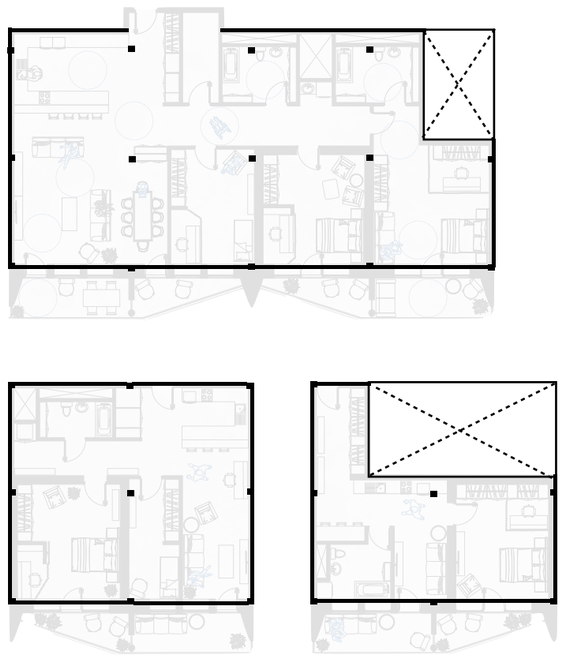
Long-lasting buildings must be designed to change along with the needs of their users. They must also be easy and cost-effective to repair.

The structural assembly of The Nest is therefore organized around Stewart Brand's concept of shearing layers which supports this intent. As Brand describes, different components of a building have different life spans, and so must be assembled in ways that allow replacement and change without damage to adjacent parts. In a nutshell, don't fuse things together or combine functions with different service lives.

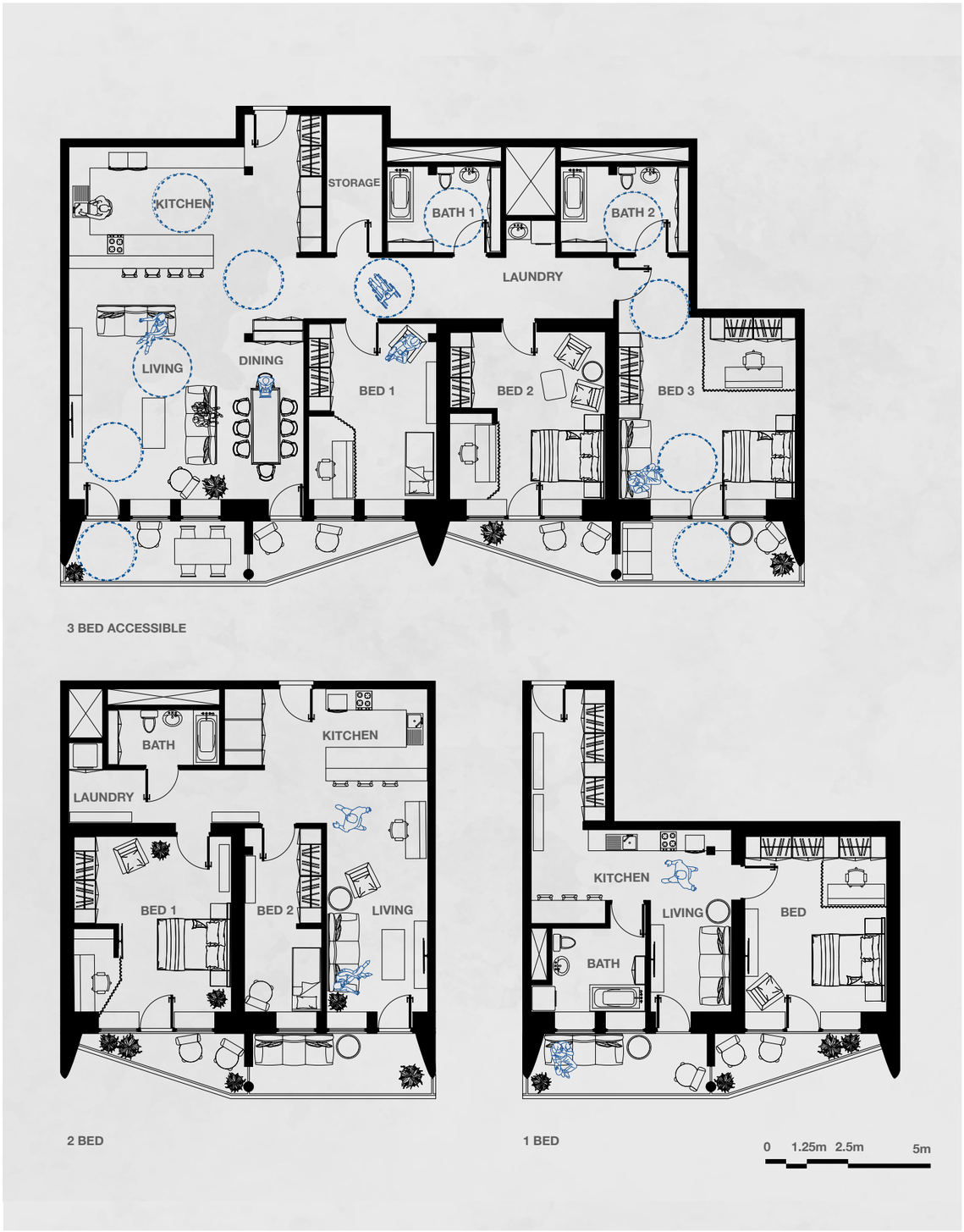


Stewart Brand's shearing layers diagram

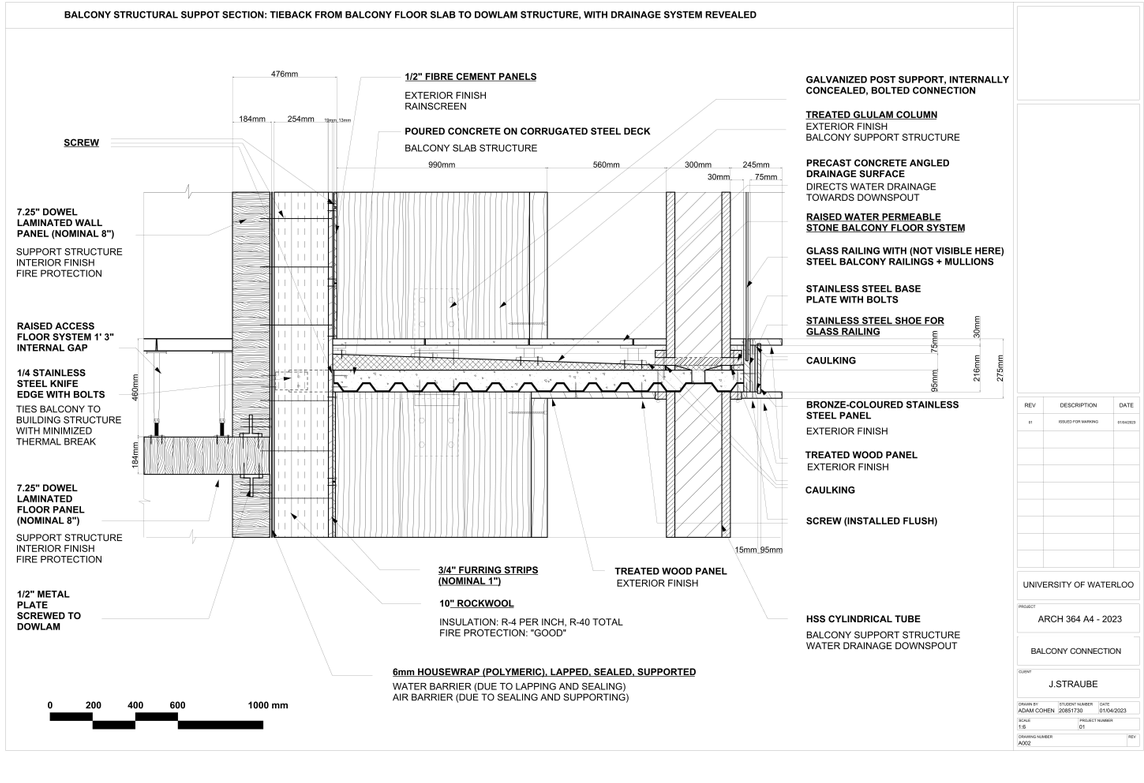
This framework impacts the architectural strategy in several ways. Firstly, the building has no built-in furniture. Everything is free to move. Second, the interior space plan is flexible, with no structural walls bisecting units. Lateral support happens at unit borders and in the stair and elevator cores. Third, as visible in the 1:50 wall section detail shown on Chapter 3 - Page 7, the services are all accessible through raised access floors and MEP ceiling cavities. Finally, the skin is deliberately separated from the structure such that the bones of the building can remain protected and in great shape for hundreds of years.



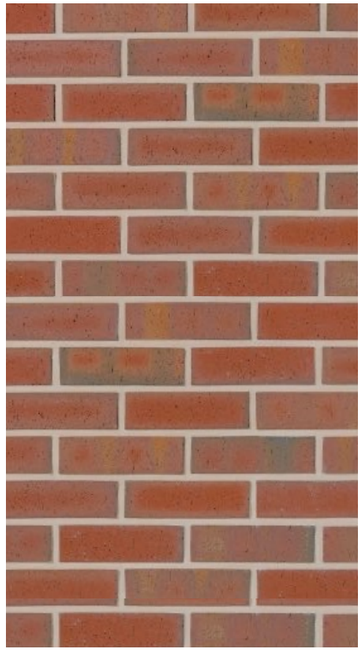
Load-bearing-wall-free unit layouts



Typical unit layouts



The building is also designed from the outset for disassembly at the end of its life. Visible bolted connections and screws will allow components to be removed and sorted efficiently without damage (visible in the 1:50 wall section detail shown on Chapter 3 - Page 7). The building also features brick and Dowel-Laminated Timber panels which can be easily repurposed at the end of their lives and have a minimal chemical impact on the environment as they degrade.





Samples of brick cladding, dowel laminated timber



North facade and entrance to concert hall courtyard viewed from the Water Street Sculpture Park



Outdoor play terrace on top of the parking structure

Longevity Pillar 2: Climate Resilience

Buildings that remain useful and livable in the future will need to help their occupants withstand the kind the climate change driven instability ahead. Conversations with GPT-4 inspired a number of features in this section, especially in terms of community resilience and disaster preparedness.

Since the site lies on a flood plain, the ground floor is designed accordingly with steel columns and water-resistant assembly details in contrast to the rest of the mass timber structure. The program is also arranged such that all residential, social, and mechanical equipment spaces are located on or above the second floor.



Building section cut along North-South axis

Inspired by GPT-4 and Michelle Xuereb's innovation team at BDPQ, the building includes a space called "the neighbourhood nest" which is designed to foster strong community bonds and social resiliency. Although its location on the second floor keeps it safely away from the flood line, it remains directly accessible to the public through the play space located above the parking garage (also a flood-proof community gathering point). This room includes access to critical goods and services such as backup power, refrigeration, satellite communication systems, active HVAC, and much more.

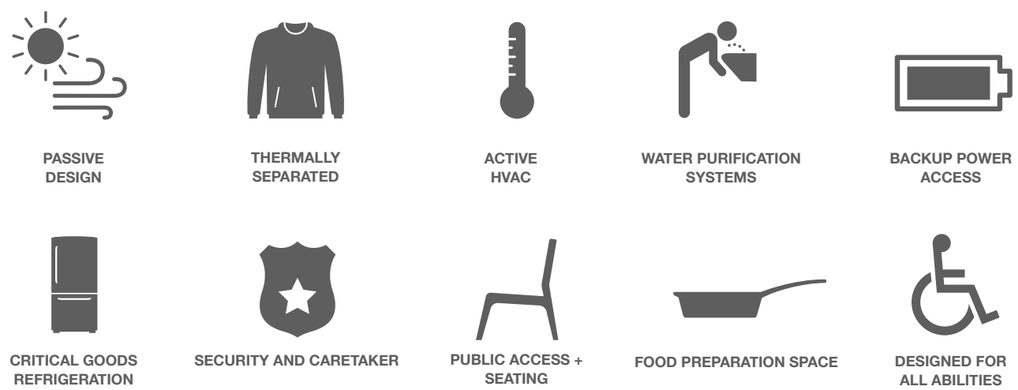
I turned to the AI image generator Midjourney for assistance imagining what the neighbourhood nest might look like. Several of the images it produced influenced my final design.



Midjourney pre-visualization of the neighbourhood nest space. Some are a little fantastical for affordable housing!



Neighbourhood nest interior (as actually designed by me)



Neighbourhood nest features and resiliency elements

Two other major features visible in the plan contribute to resiliency and disaster preparedness.

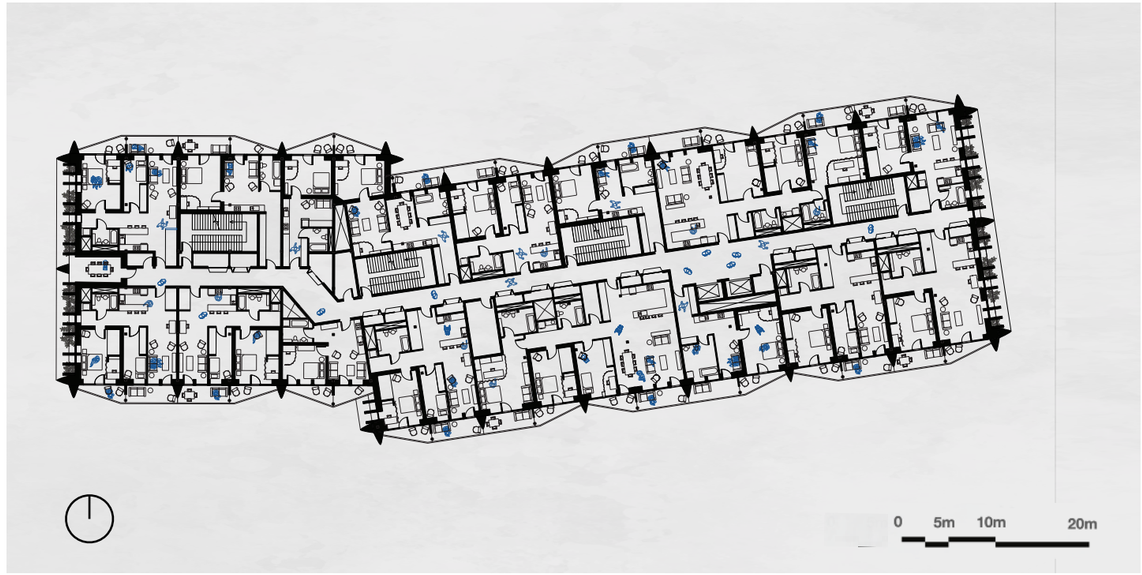
The hallways are lined with lockers (1 per unit) where residents can store non-perishable food and emergency supplies in preparation to better withstand climate or geopolitics-driven shocks to global supply chains.



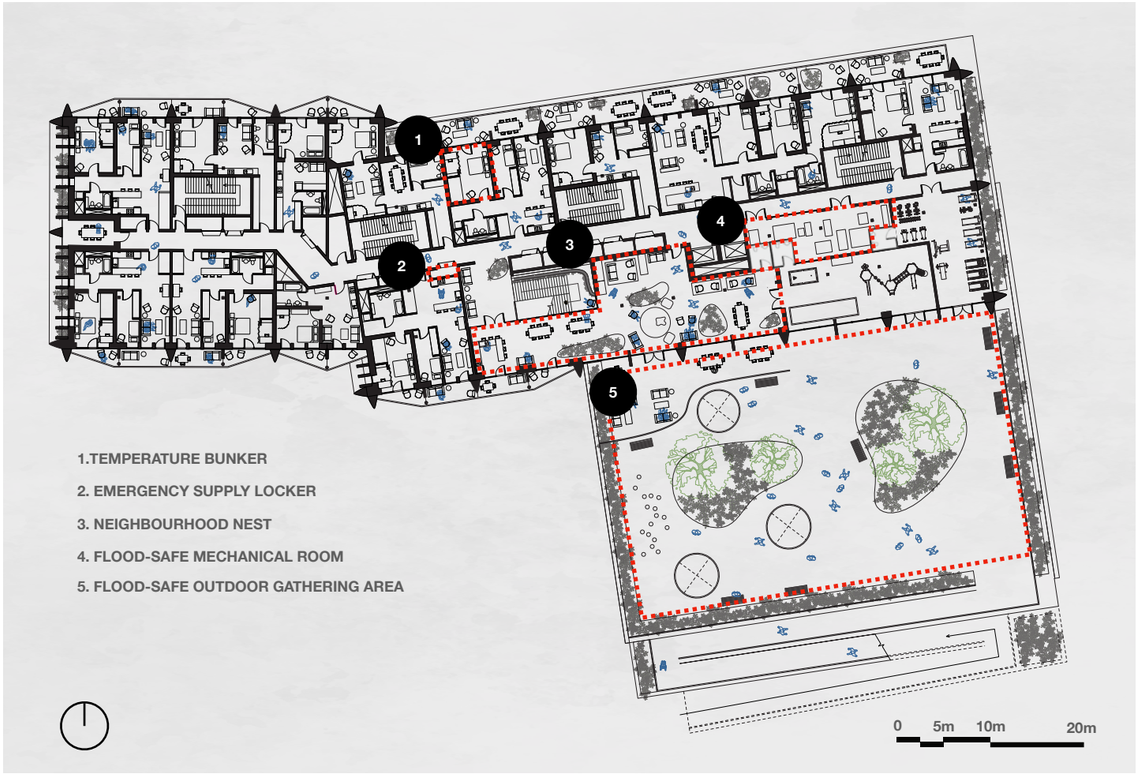
AI generated pre-visualization of emergency supply lockers (Adobe Firefly this time)

Each unit is also equipped with something I call a temperature bunker. It's a special room surrounded on all sides with exterior-grade insulation that can be heated and cooled independently from the rest of the unit and shared spaces. In the event of a grid failure during an extreme weather situation when everybody has their AC cranked up, these rooms would make it possible for the building to offer comfort to its residents exclusively using energy generated on-site by substantially reducing demand per unit. I wrote a whole essay about this feature. Please scan the QR code to read more.

Temperature bunker essay. Scan to read.



4th floor plan



2nd floor plan with highlighted resiliency features.

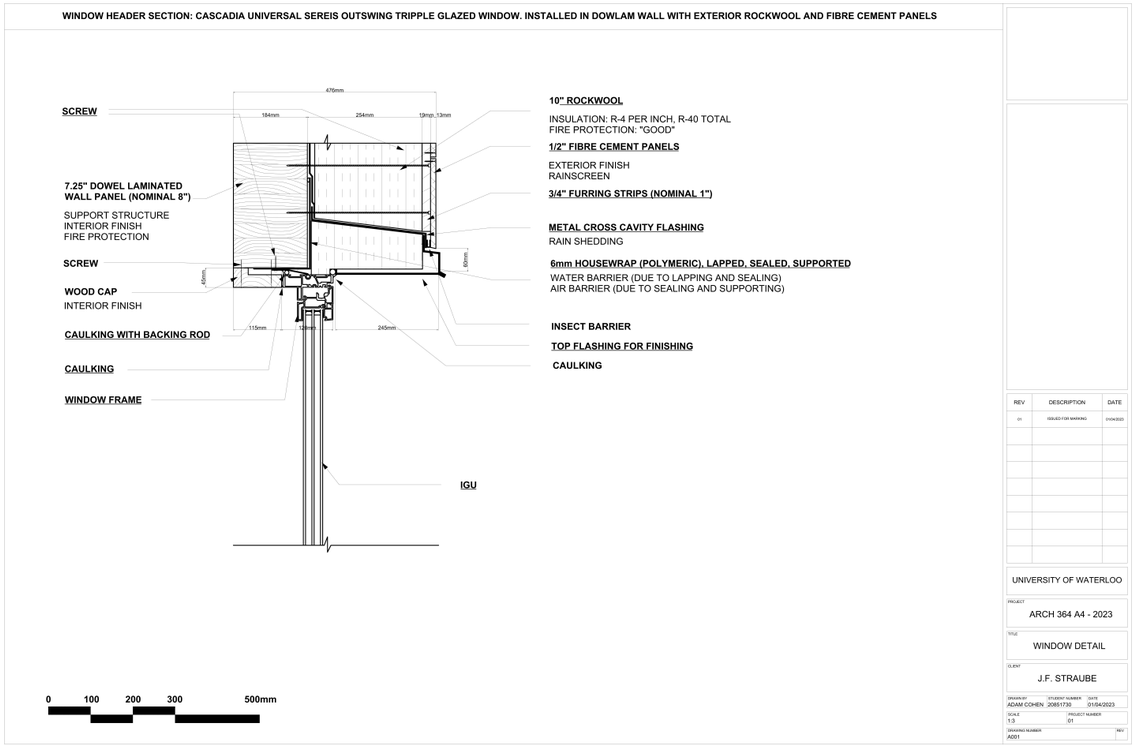
Longevity Pillar 3: Emissions Mitigation

Just as high-emissions cars are increasingly losing desirability (and may even lose legality in future decades), the next generation of buildings will only be of value if they're able to operate on an extremely low carbon budget, or better yet none at all. For this reason, The Nest contains several features that aim to dramatically reduce its total emissions footprint (both operational and embodied).

With the exception of the flood-proof ground floor and stair cores, the entire structure will be made from mass timber. Columns and beams will use Glulam, while shear walls and floors will use Dowel-Laminated Timber panels (as visible in the neighbourhood nest render on Chapter 3 - Page 16). This means the building will actually act as a carbon sink for the duration of its lifespan. Wood will be harvested from sustainably managed Ontario forests with short travel distances to the site.

As visible in the renders on the right, the window-to-wall ratio is optimized to maximize on natural internal daylighting without needlessly sacrificing thermal efficiency. No glass curtain-walls!

Operable triple-glazed windows in each unit allow for passive unit ventilation and excellent U-Value (connection detailed below). As shown in the 1:50 wall section detail on Chapter 3 - Page 7, the walls are designed with enough room to accommodate R-40 insulation.



Operable triple-glazed window connection detail

The balconies and vertical fins (fins visible in the render on Chapter 3, Page 23) are sized to provide optimal summer shading without impeding views, while at the same time allowing the sun to passively heat the building during winter months. The two renders below show a comparison between mid-day in June and mid-day in January. Static (non mechanical) shading reduces future maintenance costs.





Screenshot renders from an animated sun-study demonstrating how the building's shading system interacts with sunlight at different times of the year

The balcony system is independently structurally supported so that thermal bridging is dramatically reduced. A connection is made between the balconies and the internal structural system (visible in the 1:50 wall section detail on Chapter 3 - Page 7) using a 1/4” stainless steel knife-edge plate. A layer of continuous insulation punctured only by high-performance windows runs behind the balconies and wraps the entire building from foundation to roof. This system is visible in the diagram below.



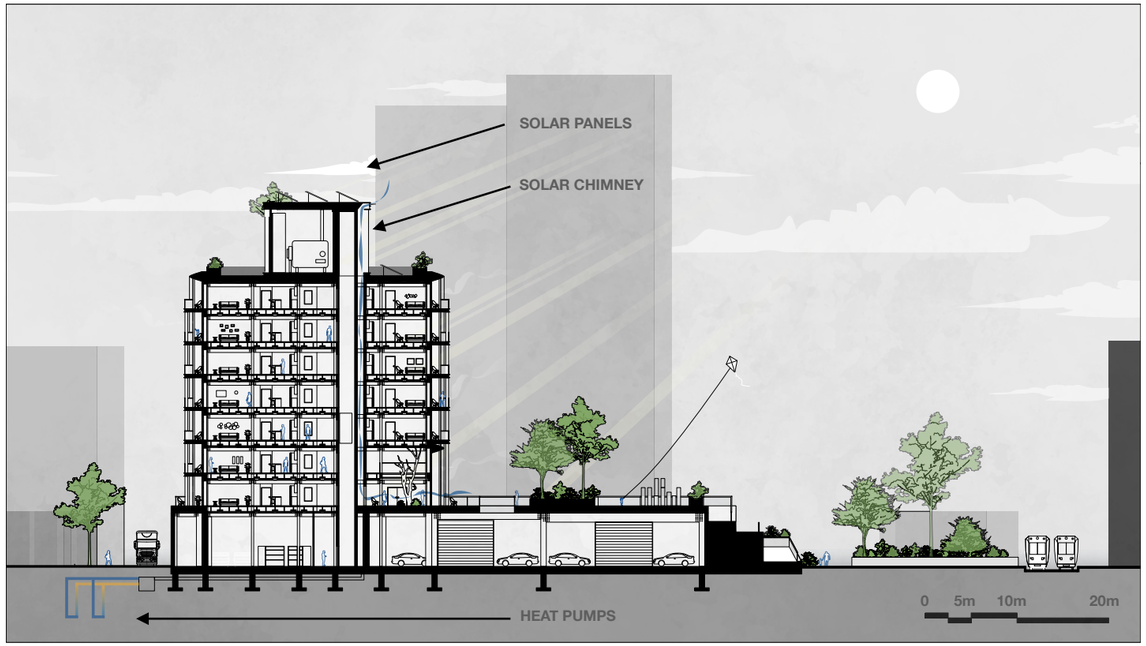
Diagram showing structurally independent balconies over continuous insulation and the concrete transfer slab-free column grid.

An additional cost-savings and environmental benefit of locating the parking garage beside the rest of the building is that the structure’s narrow and efficient column grid can extend all the way down to ground level (as visible in the diagram above) without the need for a typical high-carbon concrete transfer slab.

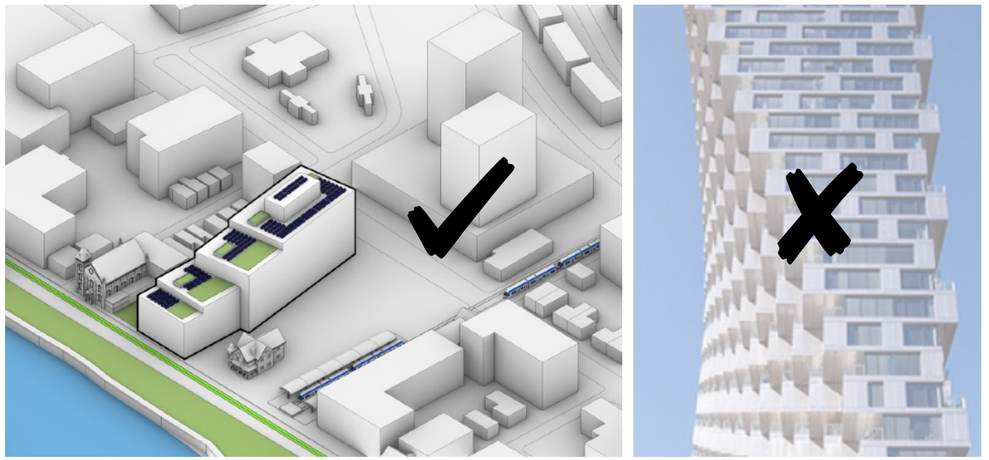
Beneath the balconies and parking garage lies a simple and compact massing that minimizes surface area and corners — a design decision that improves the odds of strong performance in every control layer.

The Nest is powered using an extensive array of roof-mounted solar panels and a ground-source heat pump system. Energy Recovery Ventilators (ERVs) will maximize efficiency, and light-coloured roofing will reduce unwanted summer heat gain.

As seen in the section below, a large solar chimney is integrated into the South side of the building’s mechanical penthouse. It's connected through a vertical shaft to the neighbourhood nest room, enabling passive heating, cooling, and ventilation in the building’s most critical community space.



Building section cut along the North-South axis



A simple and compact overall massing with minimized surface area and corners lies beneath the balconies and parking structure

Longevity Pillar 4: Love

Buildings tend to last much longer when the residents they house and the communities they belong to care about their preservation and maintenance. The Nest therefore has several design features intended to promote adoration from the people who live in and around it.

As visible in the plans and exterior renderings, every single unit, and most of the bedrooms have access to balconies. As visible in the unit plans on Chapter 3 - Page 12, the building's bedrooms are sized generously and provide room for future reconfiguration to accommodate growing families, inter-generational living, and dynamic work/life situations.

The building also features generous amenity spaces including several rooftop terraces overlooking the river, the neighbourhood nest, a private indoor playroom, a public play terrace, and a small gym.

As visible in the neighbourhood nest render on Chapter 3 - Page 16, the mass-timber interiors of the building provide a biophilic environment — a design approach that's been demonstrated to keep people calmer and happier. Not a bad feature in a building intended to help residents withstand tumultuous periods!



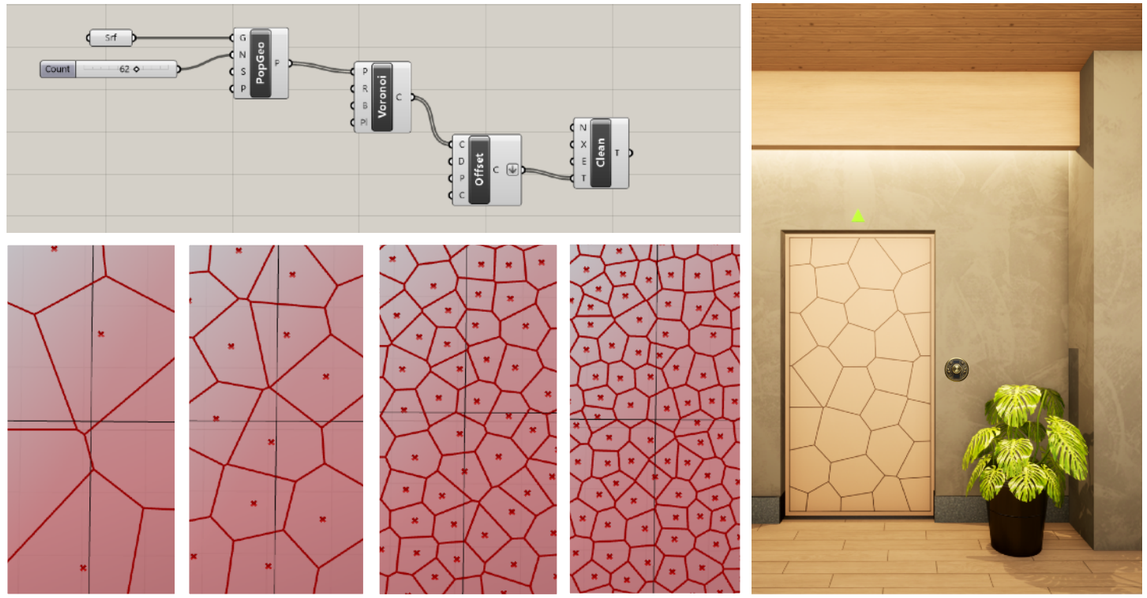
Exterior render showing The Nest playfully peaking out between the existing historic structures.

The building also comes equipped with a number of charming details in high-traffic places that are intended to communicate to residents that they live in a special place that's been designed and built with care.

Custom elevator buttons and kitchen light fixtures (pre-visualized by Midjourney) combine The Nest's biophilic and industrial interior style. Midjourney-designed wallpaper (pictured on the next page) will decorate the interior of public washrooms with patterns that evoke the Ontario forests from which the building's primary materials were harvested.

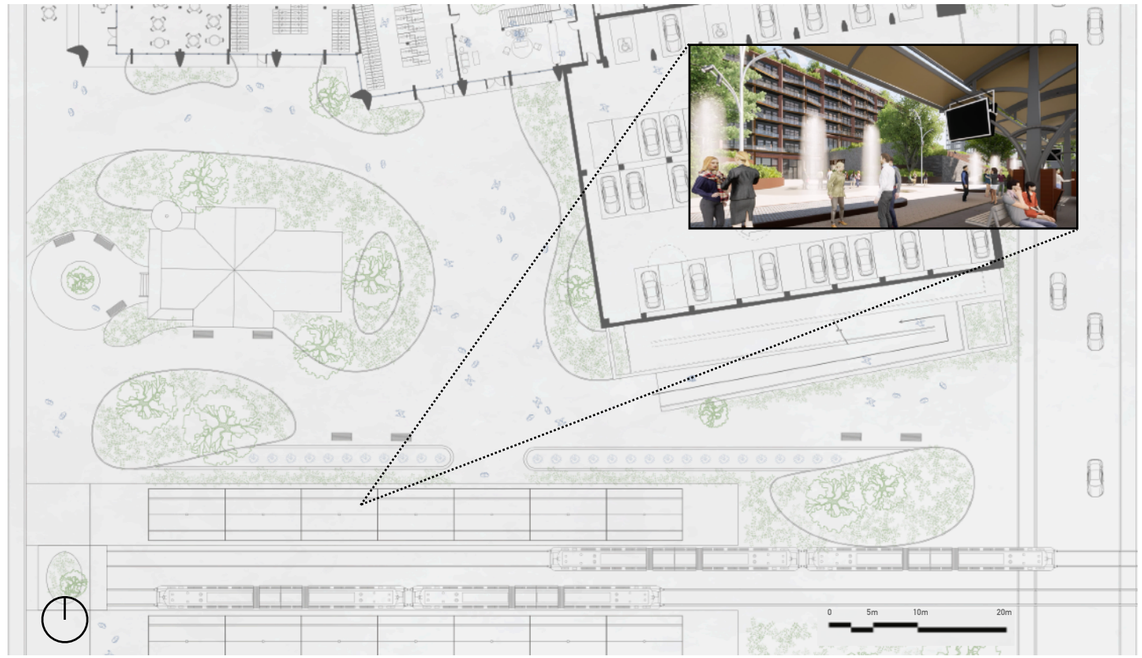


Midjourney pre-visualization of elevator buttons and a custom lighting fixture



The elevator doors feature a Voronoi pattern that will shrink in density with every floor. The pattern was generated using Grasshopper with an elegant little script that GPT-4 wrote for me. The Voronoi pattern was GPT-4's suggestion based on my instruction to come up with something aligned with a biophilic interior theme.

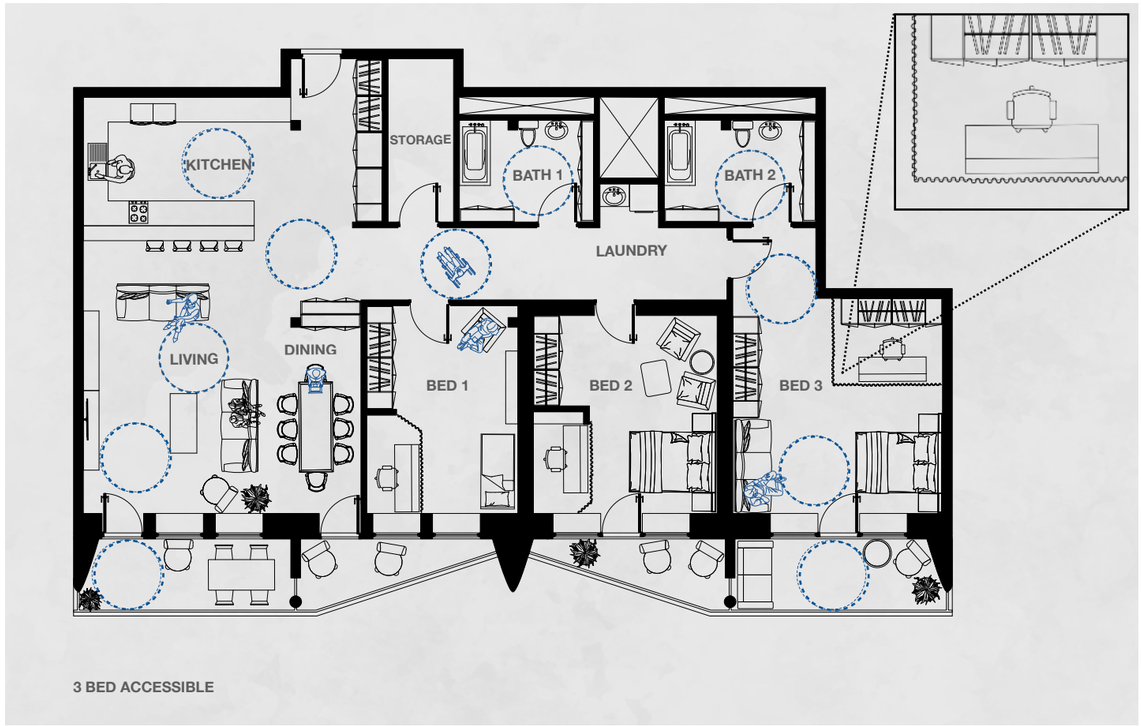
Since the LRT platform runs right along the edge of the public space, a strip of micro-climate-generating water jets will play with the train as it rolls in and out of the station, giving a cheerful vertical burst of water just as the train doors open. It'll be a delightful welcome both to The Nest and to historic Galt.



Plan and render showing the fountain system that lines the edge of the LRT station platform (funded by the municipal parks system)



A screenshot render of an animation created to show the potential for an LED-based installation behind the perforated garage wall



Typical unit layouts with an expanded view of the workspace curtain system

To promote healthy work-from-home situations in the event of future pandemics, each bedroom comes with space for a desk positioned with a view out a window. A simple curtain system will allow residents to create visual separation between their workspace and their bedroom at the end of the day.

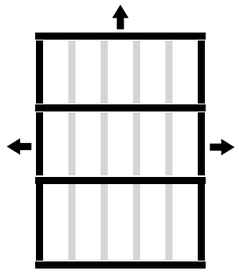
At night, the perforated screen on the parking garage which abuts the primary entrance will be illuminated from behind using an LED system that will be programmed to pulse and move in calming rhythms that will be attuned to local climatic variations.



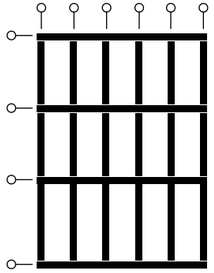
A Midjourney-designed wallpaper pattern inspired by Ontario forests to be used in The Nest's public washrooms

Cost saving design choices

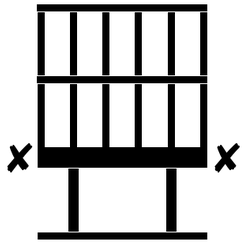
The focus of The Nest's design has been placed on redefining affordability as a long-term issue, but regardless, the building still factors in a number of strategies for directly and immediately reducing costs of construction and operation. Nailing these basic but high-leverage choices considerably improves the feasibility of the proposal's more aspirational elements.



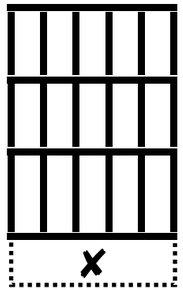
The building volume is maximized within the bounds of masterplan constraints.



An efficient, standardized, short-span structural grid is used with few exceptions.



The construction of an external parking garage eliminates the need for a concrete transfer slab.



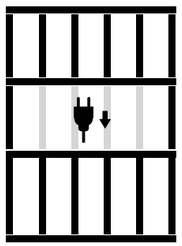
The absence of a basement (due to flooding risk) means less excavation.



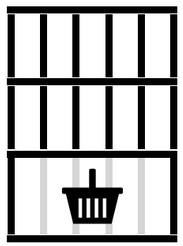
The building plan uses a square-footage maximizing double-loaded corridor design.



Fancy high-maintenance amenities like swimming facilities are left out of the building's program.



Passive strategies for ventilation, cooling, heating, and lighting reduce operational energy costs.



The construction of an external parking garage frees space for revenue-generating retail.

In summary

The Nest outlines a new model for affordable housing — one that replaces short-term thinking with an emphasis on longevity in order to enable fiscal, environmental, and social savings over time. This is achieved through design choices that promote adaptability + repair, climate resilience, emissions mitigation and love, as well as some foundational cost-saving decisions diagramed above. The building fits aesthetically, programmatically, and morphologically into a transit-oriented masterplan, and the proposal was developed from start to finish with AI tools integrated into the design process.



The Nest as viewed by someone who's climbed a nearby tree

POSITIVE OUTLOOK

Can a building support a program for people while also bolstering ecosystem regeneration?

Architecture's irony

Architecture was invented to make the planet a more hospitable place to live, but ironically, today ranks among the leading causes of environmental destruction.

The way forward? Regenerative buildings

What if architecture could support a program designed for people while also bolstering ecosystem regeneration? This is the question I aimed to answer with my response to an open-ended brief for an all-steel observation tower.

Steel: the recyclable wonder

Steel is a miracle material because, in addition to its structural properties and aesthetic potential, it's also infinitely recyclable. This means designing and building with recycled steel can have a very low environmental impact — provided emissions associated with its reshaping are responsibly avoided and offset.

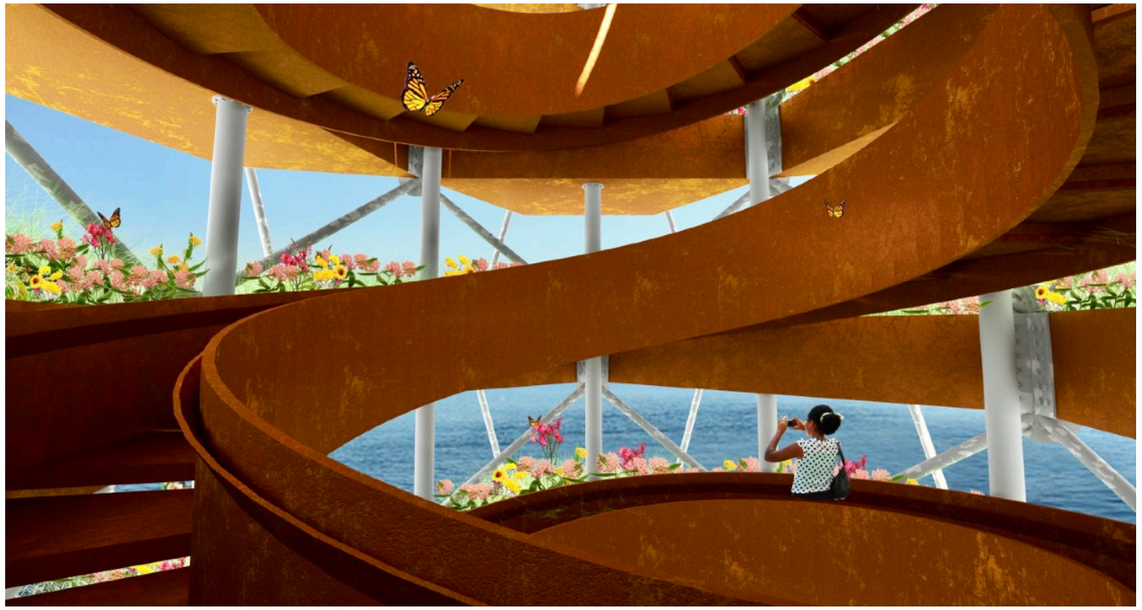
Host to indigenous species

The tower, conceived as a public destination experience, will play host to a range of pollinator-friendly indigenous plant species that need reintroduction to an area. Although this concept could be deployed anywhere, I imagined this particular project for Toronto's Marylin Bell Park.

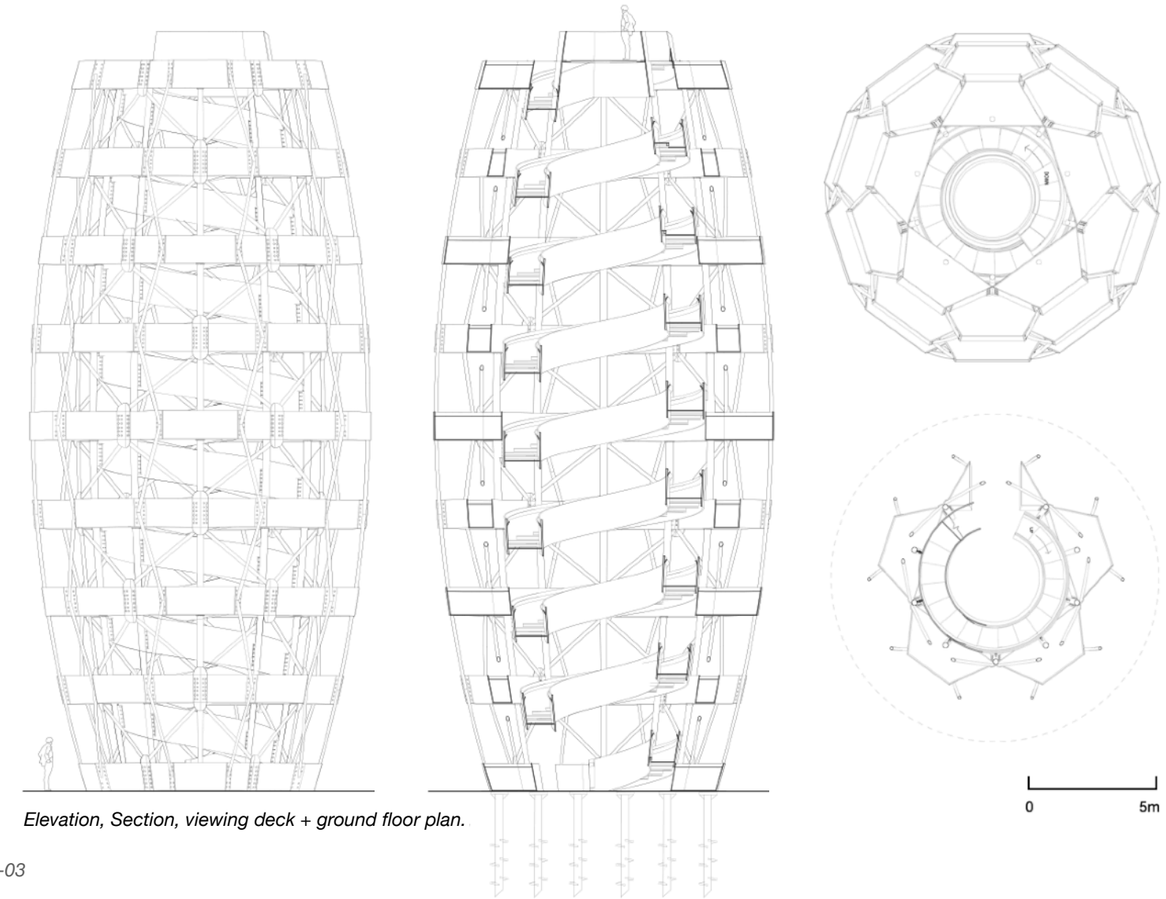
04



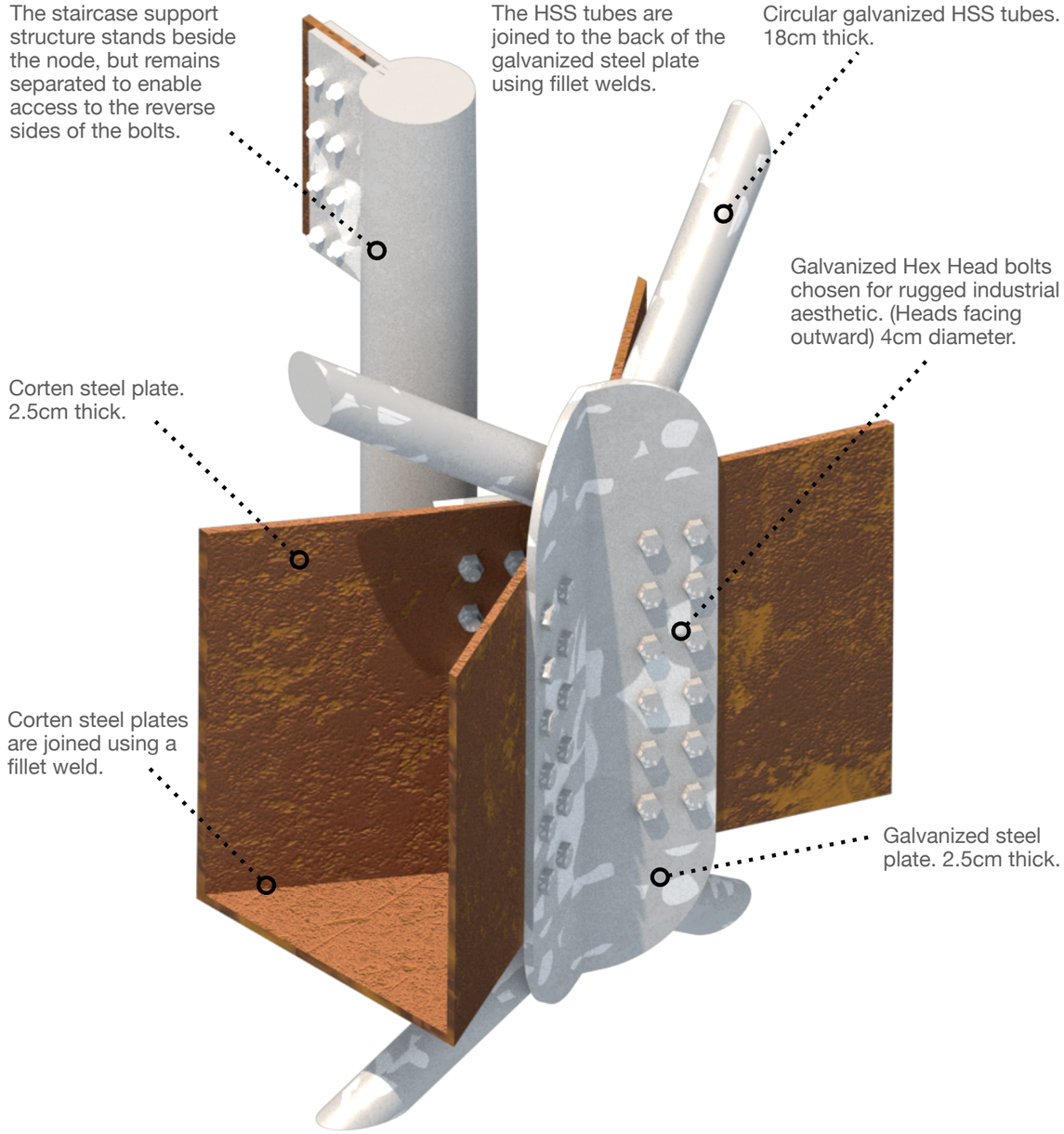
Exterior view



Interior staircase view

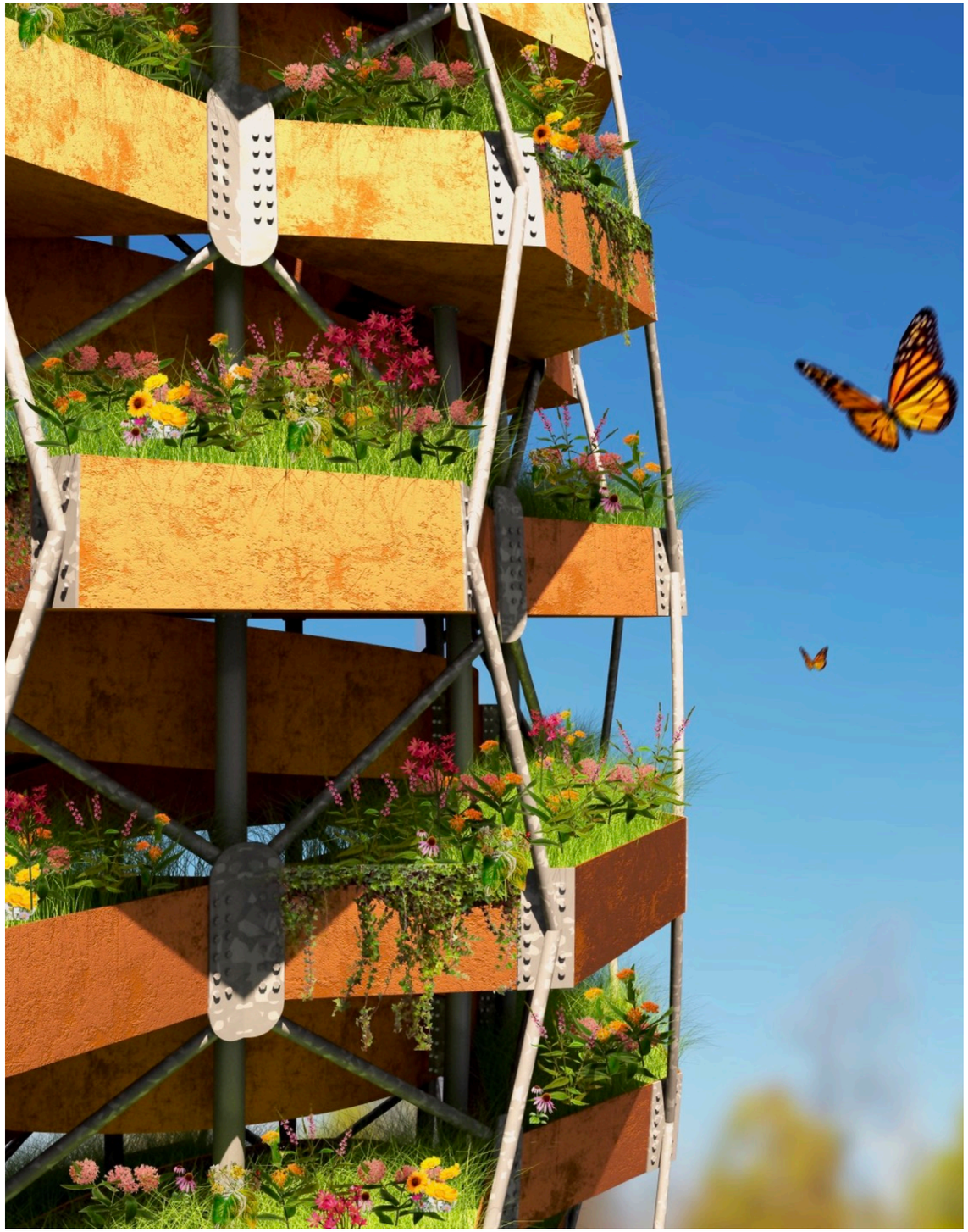


Elevation, Section, viewing deck + ground floor plan.



Connection detail

This connection detail resolves the challenge of joining parts with different finishes at unusual angles, by specifying bolts at intersections where finishes differ, and welds where they are the same. Both finishes are chosen for their durability in an outdoor context. Corten is used where plate material makes the most sense for manufacturing while galvanized is used in parts of the design requiring HHS, which isn't readily available in corten. The combination creates an attractive contrast.



Tower exterior close-up

Assisting seed dispersal

The structure's height will assist species like *milkweed* (known for helping monarch butterflies) that rely on wind-based seed dispersal to spread farther and wider than might otherwise be possible.

Educating visitors

The tower's biggest impact however will be its ability to attract and inspire visitors to learn about ecosystem regeneration, and ways they can make this happen in their own communities. Visitors are asked not to despair in the face of global challenges, but to rejoice in their ability to contribute to a better future – by taking local action.

Instagram ready

A dramatic interior spiral staircase creates an engaging and social media-worthy experience that will draw visitors from around the city.

Observing big views and small

As visitors climb the tower, extra deep stair treads encourage slow movement and attentive exploration of their surroundings. This observation tower is about looking with wonder at both the macro and micro scales.

Along the journey, visitors walk beside dozens of miniature planter gardens filled with indigenous plant species and the pollinators they attract.

Listening and learning

A voice narrates the experience, encouraging visitors to actively watch for different species and ecosystem relationships. It also helps build understanding about why human success depends so heavily on the health of other living systems, and what we can do to help them thrive.

A moment of reflection

At the top observation deck**,** visitors discover a deliberately small space intended to promote a moment of private reflection as they look towards the lake, and the Toronto skyline beyond. They might consider, "What role have I played in the degradation of our hospitable world? What role could I play in helping my city become a place where both people and natural systems can thrive together?"

An ever-improving view

With any luck, over time, the view from the observation deck will become ever more optimistic. The seeds of knowledge planted during the experience, and the seeds that will spread from the planters beneath the viewer's feet, will gradually transform the surrounding parkland – and it'll be a positive outlook indeed.



Interior view from ground level

REVITALIZING GALT ONTARIO

How might an increase in density make Galt's best qualities better?

Designed in partnership with Morgan Jacobson, Hannah Jaglarz, and Alexandra Young

The decision to place a terminal station for a new regional LRT line in the centre of Galt Ontario has presented an opportunity to revitalize and densify the city's heart.

Tasked with adding capacity for 7,500 people within a 1 km radius of the planned Ainslie Street stop, our design team focused on using this new density to strengthen the existing urban fabric, architectural character, connection to nature, and small-town quality of life that makes Galt Ontario such a special location.

The core of our strategy was inspired by Jane Jacobs' approach to urban planning and development with a focus on safety, walkability, and sense of place.







Photos of Galt Ontario as it exists today

05





View from the West bank of the Grand River facing the existing pedestrian bridge and new urban core



Site model

Filling gaps

By far the biggest opportunity for improving Galt was to address the many parking lots and underused brownfield sites surrounding the Ainslie Street corridor on the East side of the Grand River. Our proposed scheme works to create streetscape continuity and frame deliberate public space in vibrant mixed-use development. The north end of the project is anchored by a new School of Design facility for the University of Waterloo that will expand its existing campus across the river.



Ainslie Street revitalization and new bus stops



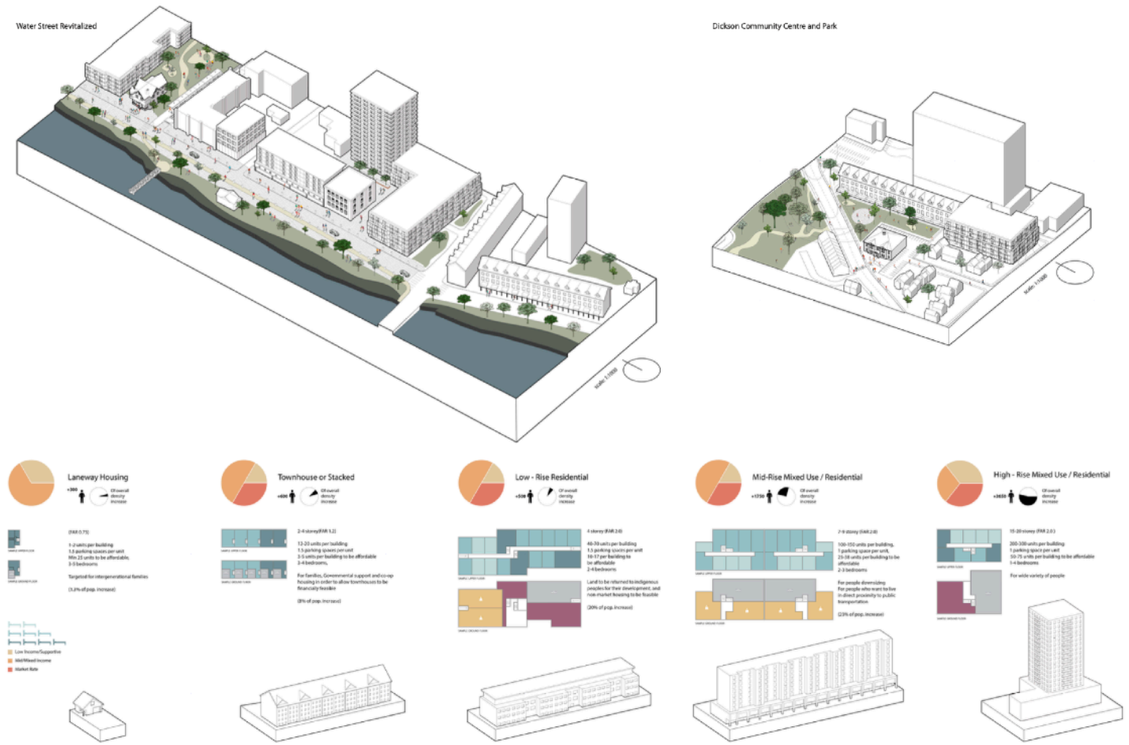
Existing and proposed density maps

Maintaining Galt's charm

A combination of mid-rise and high-rise buildings will retain the town's human-scale qualities without sacrificing density requirements or overwhelming existing landmarks. A curated material pallet and restoration of existing historic buildings will ensure Galt's urban identity is embraced and improved upon through new construction.



New regional LRT station, proposed Water Street bike lane, and restored historic mansion



Detailed site axonometric and typology studies with demographic context



View of new development area facing north from the Cedar Street Bridge



MTSA axonometric showing proposed development and programming

Transforming Water Street

While Ainslie Street will remain a primary traffic artery, Water Street, which abuts the river will be transformed into a pedestrian and cyclist-friendly space. The West side of the street will feature new retail and community amenities at ground level while the East side will host an expansion of the town's treasured sculpture park. We hope that the connection between this new condition on Water Street and the Ainslie Street LRT station will enable many residents to live car-free while enjoying a higher quality of urban experience.

HOUSE FOR AN INSECT COLLECTOR

Can a house be a habitat?

A residence for one

House For an Insect Collector is a live/work residence designed to accommodate a single occupant.

The program includes a small kitchen, dining/ living area, one bathroom, one bedroom, a small office space, and a large storage cabinet to accommodate the owner's collected specimens.

Picturesque surroundings

The house is envisioned on an inclined site that borders River Bluffs Park in Cambridge Ontario.

Coexisting — with people and the planet

The focus of the project was creating a design that would serve the needs of the owner while harmoniously coexisting with the human and natural rhythms that flow around the site. In order to minimize impact on the forest, the house is condensed into a 50-square-metre footprint. Sinking the volume into the hillside reduces its visual presence from the pedestrian path below, while also making way for more seamless regrowth of the tree canopy.

The pollinator preserve — a buzzing neighbourhood

On a research trip to the site, I discovered that the area of the park directly beside the property has been designated a pollinator preserve in an effort to protect the fragile local ecosystem. While most architecture tends to create gaps in natural habitats, it was my ambition that the house would become a positive contributor to the ecosystem's success.

06



South-facing facade



View from the second-floor office

The solitary bee — your new best friend

While reading about Ontario pollinators, I learned that the vast majority of pollinating bees we depend on are actually solitary. This means they don't live in hives, and without communities to protect, they rarely sting humans if unprovoked.

Facade as a natural habitat

While the South facade is entirely glazed, the North facade is covered with containers of stacked flower stems which provide the perfect place for solitary bees to live and lay their eggs — dramatically increasing the housing stock for a recovering pollinator population. (Visible on the next page).

Roof as a food source

A green roof featuring a deliberately planted indigenous pollinator-friendly garden will offset the land area occupied by the house.

Glazing strategy

Because the site foliage is so dense, the glazing strategy focuses exclusively on prioritizing the southern winter sunlight while solar shading will be taken care of by tree cover during the year's warmer months.

Smaller operable windows on the North side of the house enable passive ventilation, while a vertical sliding door on the South facade makes it possible to open the living room to the outdoors.

A grand display

Internally, the house is organized around a double-height showcase wall that allows the entire insect collection to be viewed at once from any room.

Easy storage access

The house's staircases are tucked behind the specimen wall, which allows easy access to individual pieces at every level.

Layout

The living room, which is located just in front of the specimen wall, benefits from the best lighting conditions, and a dramatic vertical view. The kitchen area faces onto the living room from the East, while the washroom, laundry, and mechanical spaces are buried into the hill. The second floor holds the bedroom, office, and the entrance to the rooftop access stairs.



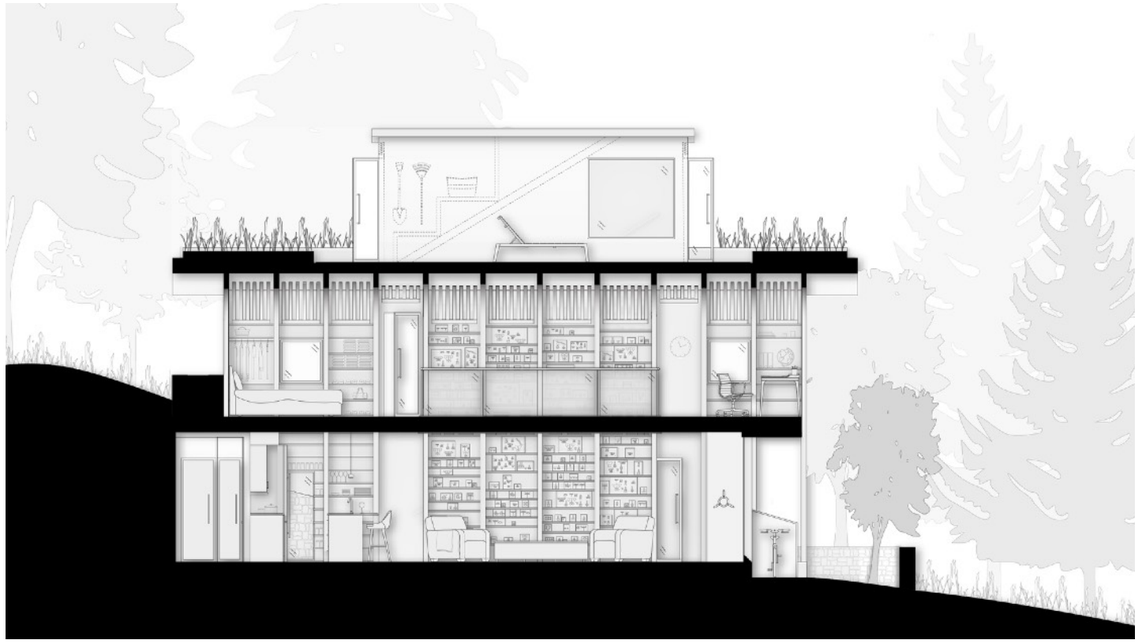
Bee-friendly plant stems (used on the North facade)



View from the kitchen towards the living room



Bedroom



East/ West section



North facade

Solar Chimney

The roof access staircase doubles as a solar chimney that will assist in passively heating and cooling the dwelling.

Sustainable structure

The foundation will be made from locally sourced stone — a material with an inherently low carbon footprint, and an aesthetic that suits the context well. The house's structure is envisioned as a series of glulam fins that will be separated from the facade to aid thermal performance, and double as support for an integrated shelving system.

Nearly natural lighting

As the glulam fins approach the ceiling, they create cavities that fill with defuse light emitted by hidden LEDs. This lighting approach aims to mimic the feeling of standing beneath the tree canopy when dappled sunlight filters through the branches on a sunny afternoon.



Kitchen and view of display wall

REIMAGINING AVENUE OF THE ISLANDS

How can Toronto's island park serve people and ecology?

Solving problems with a dramatic gesture

Tasked with reimagining the central avenue of Toronto's island park system, I choose to unravel and re-weave the site's existing boardwalk in a way that creates a dramatic and lively visitor experience while allowing pedestrians, cyclists, and local ecology to more easily coexist.



Photos from a site visit

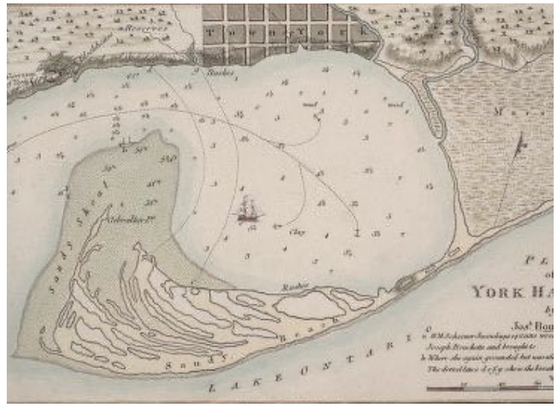
07



South-facing pier and protected bathing area



Aerial site view



A shape-shifting site
Since their initial formation about 4000 years ago, the Toronto Islands have existed in a state of constant geographical change. Comparing the present landform with maps from only 200 years ago (above), it's easy to see how dramatically the site's contours have evolved.



Created through erosion
The Islands are largely made from eroded rock and sand that originated a few kilometres east of the city at the Scarborough Bluffs. This geological history explains why the shoreline has been so easily and regularly reshaped by water currents and human intervention.



At first, a natural paradise
Prior to colonization, the Toronto Islands were a pristine and ecologically diverse space, known to indigenous people as a place of rest and relaxation.



Later, a bustling main street
As the city of Toronto grew, the Islands became increasingly environmentally degraded, but gained a thriving community of full-time residents and a booming tourism presence. Life on the island was centred around a lively car-free main street known as Manitou Road, where locals and visitors alike delighted in fine dining, theatres, and dance halls.



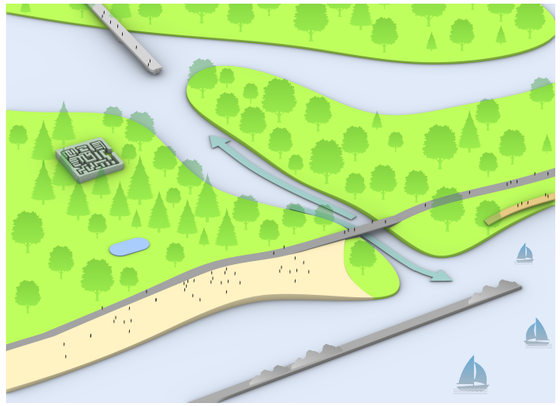
Next, a 1960s formal plaza
In the 1960s, Toronto voted to demolish Manitou Road in order to make way for a new island park with a concrete plaza at its centre — a decision that would effectively strip the island of its bustling heart for the next 60 years.



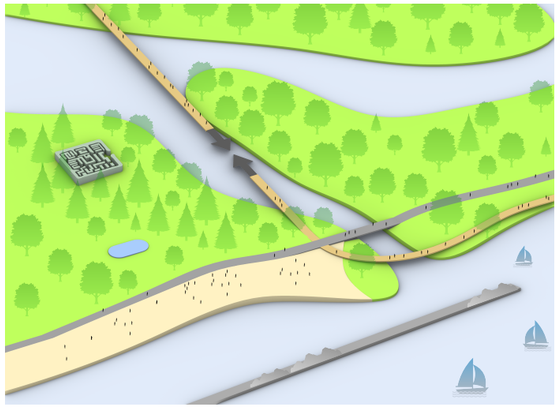
What might happen now?
Tasked with reimagining the park's central plaza for a new generation of residents and visitors, I began by examining possibilities for reviving programmatic vibrancy while enhancing landscape conditions for local ecology.



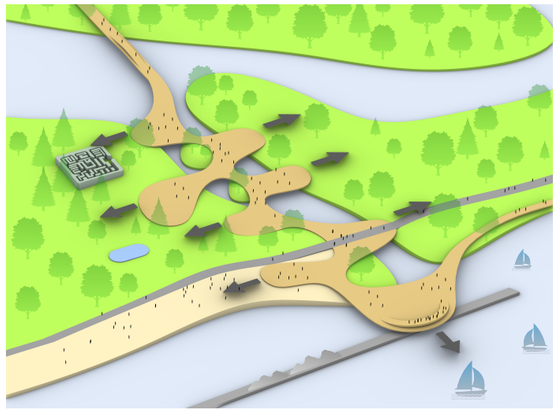
South-facing pier



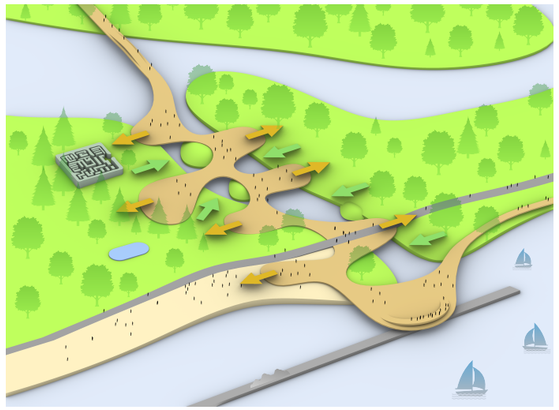
Carve a connection
Continuing the island's tradition of creation through erosion, the proposal starts by carving a channel directly through the site that will allow small watercraft to pass from one side of the main island to the other. This first big move also creates new shoreline for indigenous flora and fauna to thrive.



Link key areas
The new pedestrian avenue is created by extending the existing island boardwalk through the site, forming a continuous path between the ferry dock, the plaza, and the islands' main residential neighbourhood.

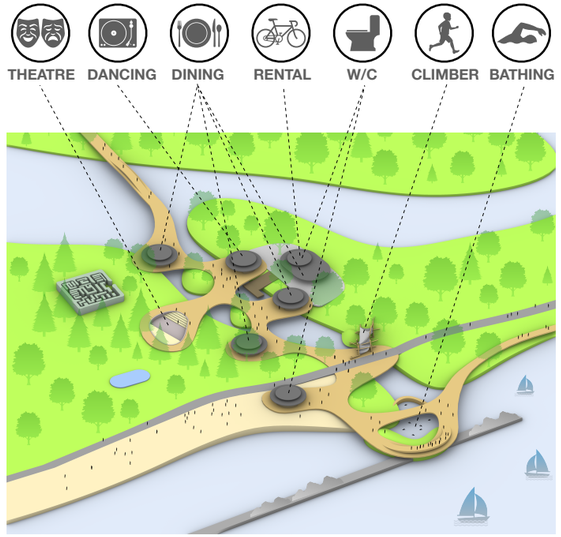


Stretch toward existing program
The new boardwalk bulges out strategically toward existing program elements like the splash-pad, hedge maze, beach, main road, and panoramic lake views.

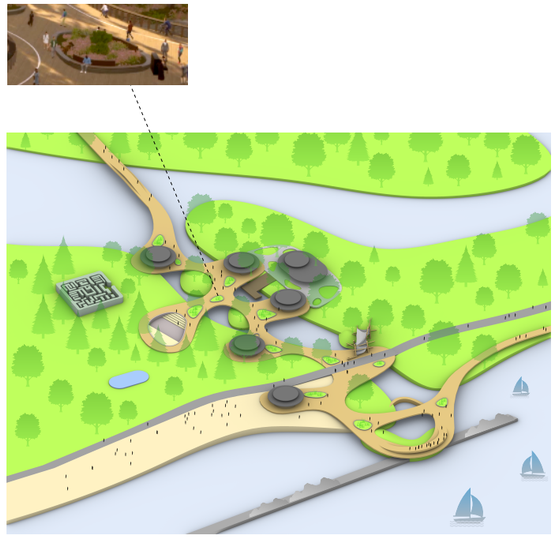


Integrate with nature
While the boardwalk connects people to the landscape on either side of the site, large gaps allow island wildlife to access the naturalized shoreline.





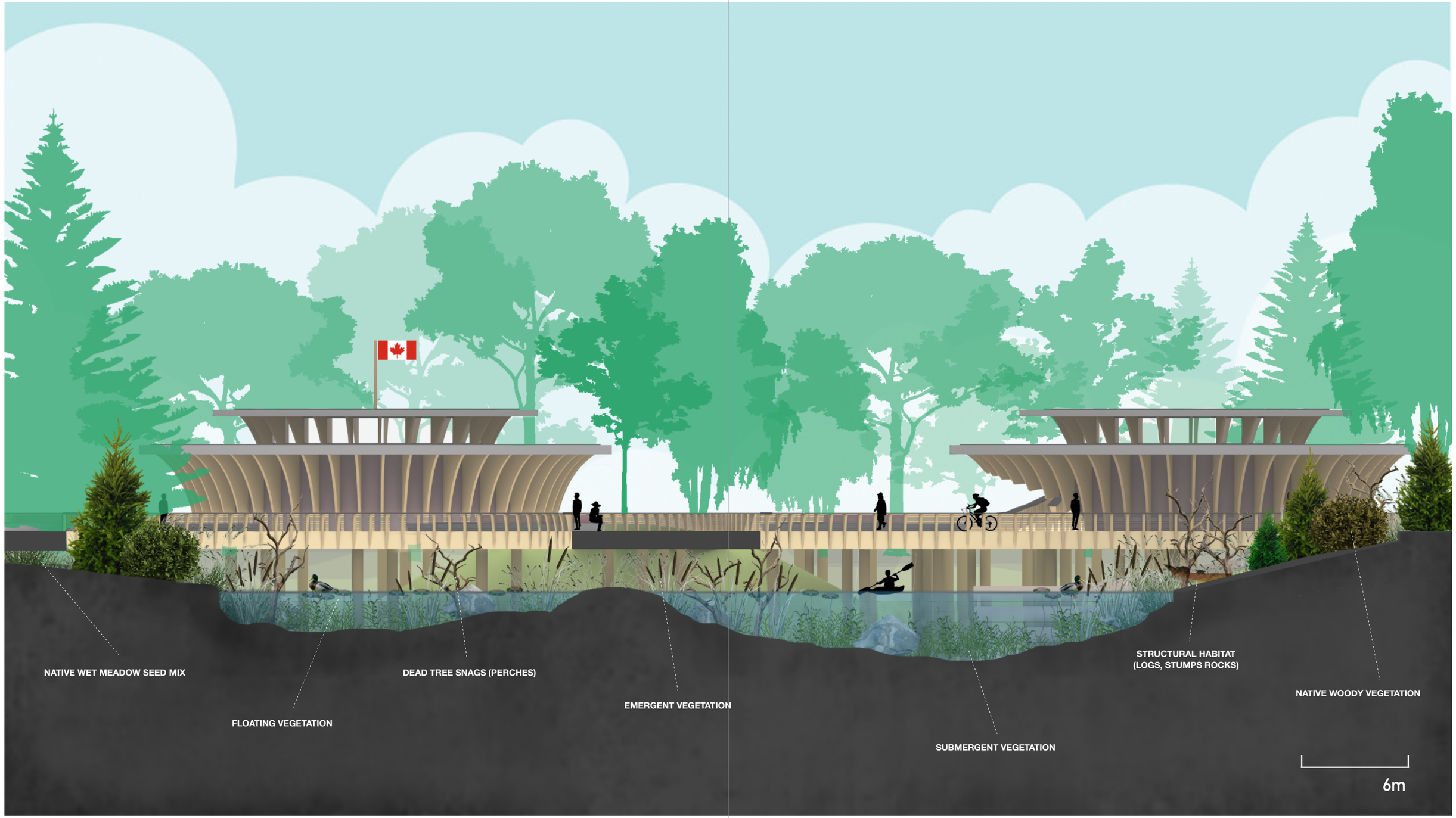
Revive main street charm
In contrast to the existing site plan dominated by formal flower beds and ridged pathways, the proposed scheme features distributed program that enlivens the entire plaza space — gifting the islands with a bustling main street once again.



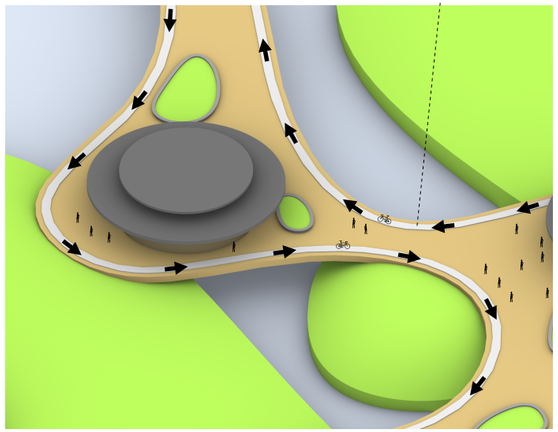
Expand public seating
Flowerbed planters with integrated benches create ample public seating across the site.



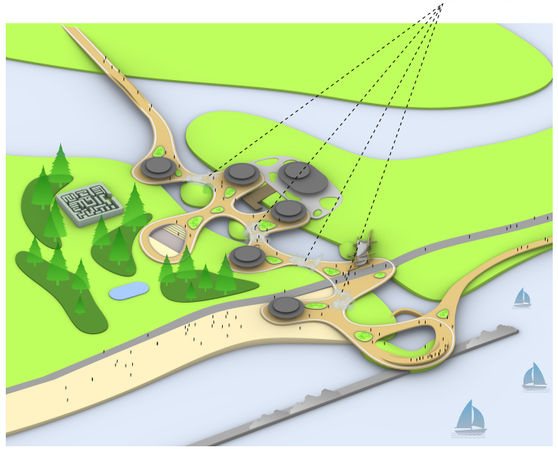
Cafe pavilion and bench seating



Wetland ecosystem section



Weave cyclists through the plan
Bike paths following the perimeter of the boardwalk, allow cyclists to navigate the site without interrupting pedestrian traffic, main building entrances, or patios.



Generate thermal comfort
Deep building overhangs ensure shade is only ever a few steps away, and man-made clouds fill the boardwalk with refreshing misty air on the hottest days of the year.

During winter, a layer of coniferous trees shield the site from prevailing winds, and expanded indoor space gives people somewhere to warm up after enjoying the islands' cold weather activities.

The central channel is highly protected from both strong breezes and powerful water currents, making it an ideal space to enjoy skating in winter, or learn to canoe in gentle seasons.



Protected bathing area



Video fly-through animation click here to open on YouTube. I promise it's worth the extra click.



Entrance bridge connecting Avenue of the Islands towards the ferry terminal

PC NOURISH, A CASH TRANSFER SYSTEM FOR PEOPLE IN NEED

How might we update individual-to-individual cash donations to enable a better experience for all parties?

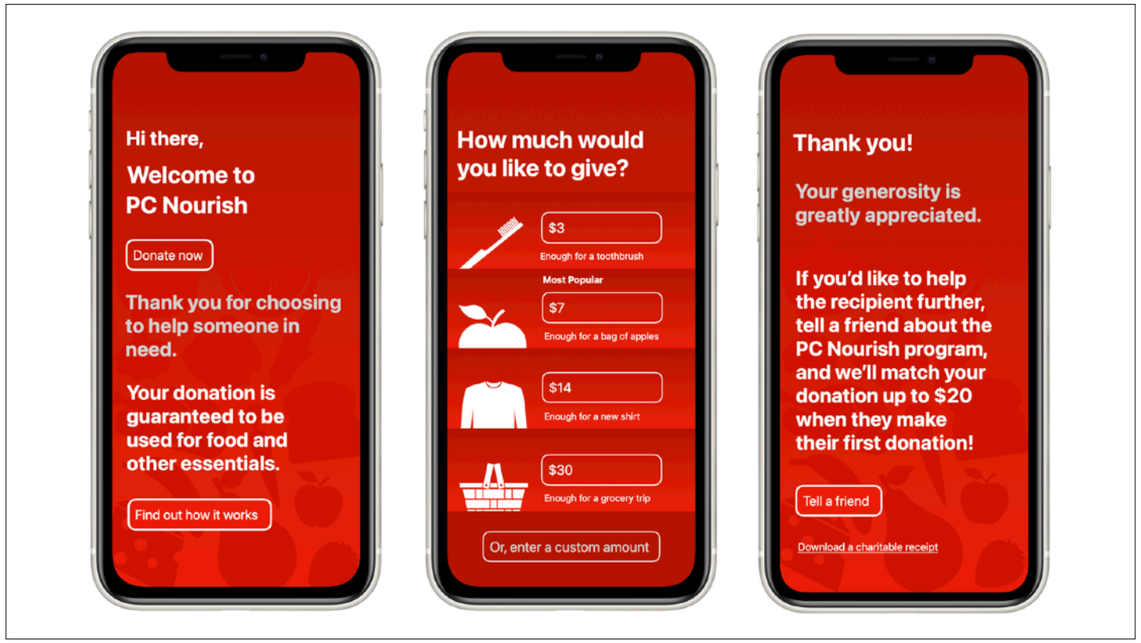
Truly solving the homelessness and food insecurity crises will require systems-based solutions. The challenge is that such things take years to approve and implement — and people experiencing these heartbreaking situations need help right away.

PC Nourish is a concept I prototyped for something I believe could make a big difference in the immediate future while our society works to address the complex underlying issues. It's a digital system that enables individual-to-individual cash donations in a way that aligns with our emerging cashless world, creates peace of mind about responsible use for people making donations, and enhances the privacy, dignity, and autonomy of people receiving funds.

I refined this concept through interviews with non-profits working in this space, potential corporate partners, people who might be in a position to make donations, and people who would be interested in receiving this kind of support.

The PDF linked here is a comprehensive presentation deck that I used to pitch this concept to a major grocery store chain in Canada that I thought would make a fantastic implementation partner. In the presentation, I show prototype designs, an analysis of the required technologies, and a case for business feasibility. Although the project did not move ahead, I learned a tremendous amount from the process about iteration, user experience, and human-centred design. The presenter notes included on each page of the PDF will walk you through each step of my thinking.

08



App interface mockup (to be used by the person making donations)



Sticker sheet mockup (to be used by the donation recipient)

DESIGNABLE.BLOG

Building a community

I started Designable.blog in January 2023 to publish my ideas and lay the foundations for a community with a common understanding of what design is all about.

From the blog's introduction page:

This is a blog about what design means, and what it means to design.
I publish for people who believe that the world works better when we make better work.
Most design blogs are built around pictures and headlines, but this one is different. It's a collection of ideas — ideas written to help you rethink what you do, whether you're a self-described designer or not.

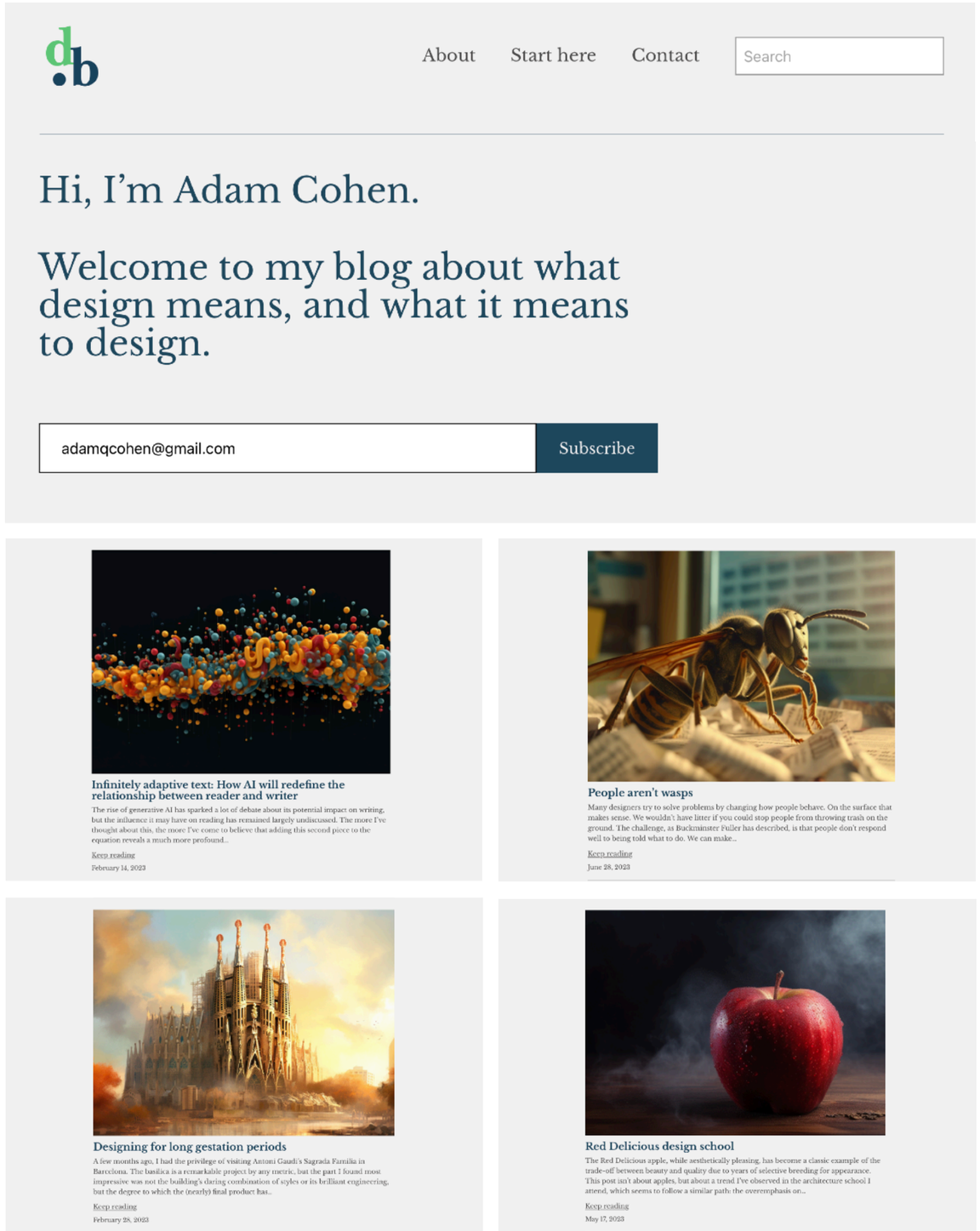
My favourite post to date:

It's a post describing the possible implications of generative AI on the way we consume written content as well as how we produce it. The post includes some predictions about ways this may transform the format and utility of the interfaces we use to read. You can check it out here.

My 2023 non-fiction reading list.

Every year I publish a non-fiction suggested reading list targeted at designers. You can view this year's edition here.

09



Sample posts from the site

ADAM COHEN



HELLO!

I'm a passionate designer and architecture student from the University of Waterloo.

I have experience working with award-winning studios in Canada, America, and England.

I believe deeply in the power of design thinking, and I'm convinced we can build a better future through human-centred work that adopts a systems point of view.

My career mission is to organize communities of designers around high-leverage opportunities.

LET'S CHAT

+1 647-542-5756

acohen@uwaterloo.ca

AS A MEMBER OF YOUR DESIGN TEAM, I WILL:

- Bring commitment and energy to the process of project development.
- Contribute my talent for conceptual thinking and pragmatism.
- Offer my skills in digital modelling, research, and design communication.

KEY SKILLS

Technical

- Rhino 3D
- SketchUp
- Revit
- Enscape & Twinmotion
- Adobe Creative
- Cutting-edge AI tools

Personal

- "T-shaped" education and background
- Big picture thinking
- Creative problem solving
- Strong verbal and written communication
- Team collaboration
- Enthusiasm!

WORK EXPERIENCE

Architecture co-op student, ZGF Architects

Vancouver, BC — May - August 2023

At ZGF, I worked on a range of exciting and innovative projects including Canada's first all-electric hospital, a restaurant expansion for a company exploring a novel business concept, and a research project on the future of architectural experience in the age of Augmented Reality. The latter culminated in a live talk that was streamed to the firm's studios across North America. ZGF awarded a rating of "outstanding" on my work-term report; the highest recognition available through our university's assessment system.

- Produced construction drawings with Revit that enabled contractors to correctly and efficiently install a randomized panel pattern on site.
- Worked closely with project leaders to develop designs for architectural interiors using Rhino, SketchUp, Indesign, and Twinmotion, and solved challenging spatial and product specification problems.
- Conducted a multi-week research project on Augmented Reality and its implications on the future of our company's work. I presented this research and my conclusions to ZGF's offices across the continent, aiding the company in pursuing its ambition to remain at the technological forefront.

SPECIAL INTERESTS

Activities I love

Canoe tripping, cooking, scuba-diving, biking, and international travel.

Designable.blog

I write a weekly blog about what design means and what it means to design.
Click here to visit!

Mentorship

This fall I'm coordinating our school's Peer Mentorship Program.

Things I read

Practically everything interests me.

Lately I've been reading books about marketing, synthetic biology, regenerative economics, design thinking, rock music, artificial intelligence, leadership, storytelling, systems thinking, agile project management, education, theme parks, restaurant hospitality, and climate change.

EDUCATION

University of Waterloo

Bachelor of Architectural Studies, Honours Co-Op (2019 - Present)

Design Assistant, BIG - Bjarke Ingles Group

London, UK — August - December 2022

At Bjarke Ingles Group, I collaborated with a small team of architects and engineers on the conceptual design for a new infrastructural building in the Middle East. Towards the end of my placement, I also helped lead an initiative that aimed to bring the company up to speed on Artificial Intelligence. The AI project resulted in a 60-minute talk that live-streamed to several of BIG's offices around the world, during which I helped introduce a roadmap for integrating this new technology into BIG's culture and process.

- Created conceptual massing models, diagrams, and site studies using Rhino, Illustrator, Photoshop, and Indesign, enabling project stakeholders to make sense of proposed building options.
- Produced renderings using Rhino, Midjourney AI, and Enscape, which helped studio partners and clients evaluate design possibilities.
- Developed a strategy for AI integration in BIG's culture and creative process, and used agile project management principles to adapt quickly in a period of rapid technological change.

Architectural Assistant, BDP Quadrangle

Toronto, ON — September - December 2021

At BDP Quadrangle, I contributed to design development and documentation for several high-profile Toronto projects including residential skyscrapers and urban masterplans.

- Created renderings, plans, and elevations, using Rhino, Twinmotion, Enscape, And Adobe Creative, helping clients to evaluate and win zoning approval for various design options.
- Proposed environmentally focused design changes that helped a major project towards meeting the studio's ambitious climate goals.

Architecture + Business Development Intern, Terreform ONE

Brooklyn, NY — January - April 2021

At Terreform ONE, I worked with studio leaders to develop and visually communicate architectural design concepts, launch a summer program for high-school students, and enter a design-research partnership with NASA focused on regenerative food systems.

- Invented thoughtful solutions for architectural challenges by thoroughly reviewing project objectives and core values of the client and studio.
- Prepared the studio's high school program website on a tight timeline.

Intern Designer, DesignAgency

Toronto, ON — February - June 2019

Senior Counsellor and Nature Instructor, Camp Arowhon

Algonquin Park, ON — June 2018 - August 2019

THANKS FOR TAKING THE TIME TO REVIEW MY WORK

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