

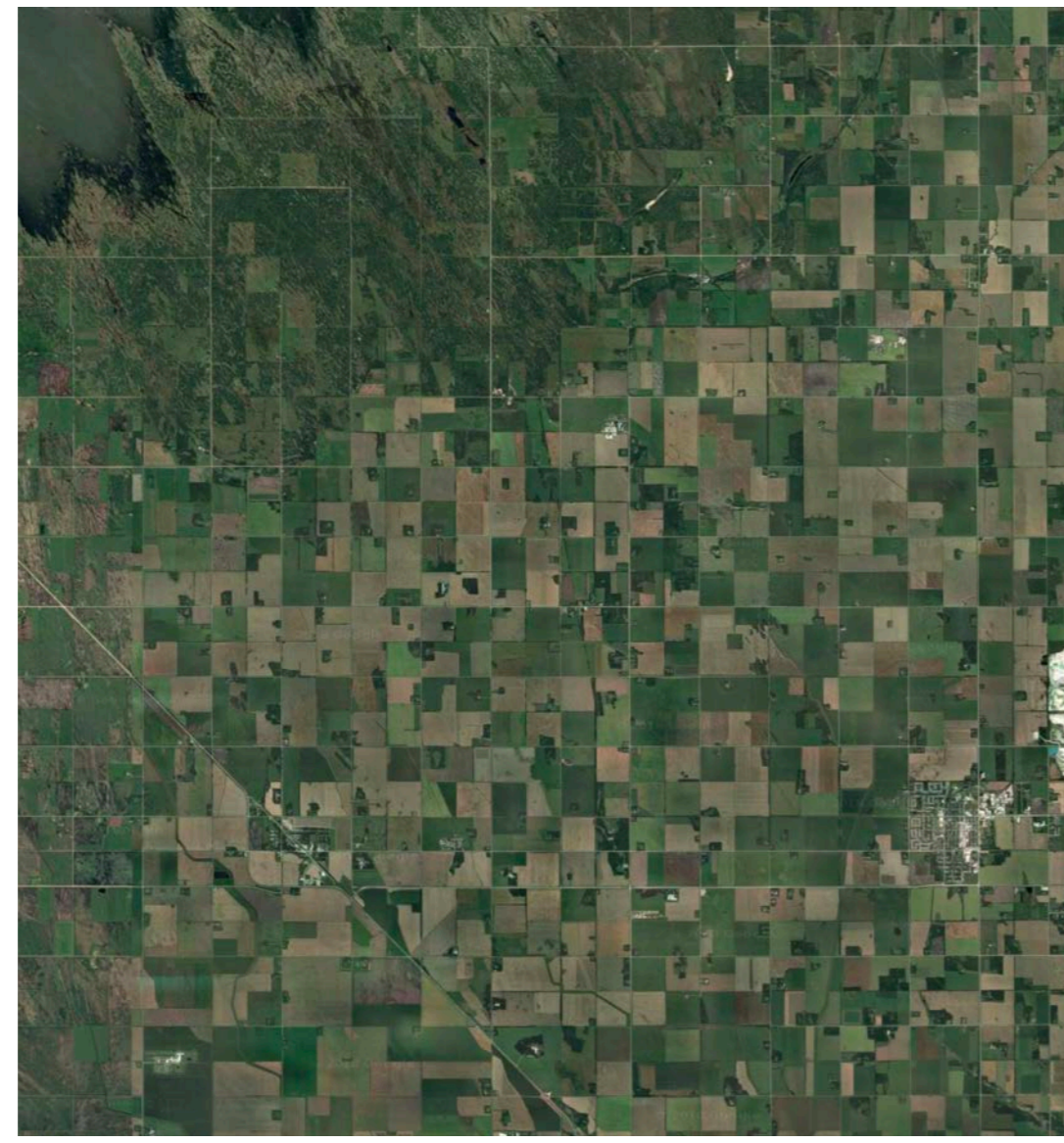
Aabijjinan

The Site

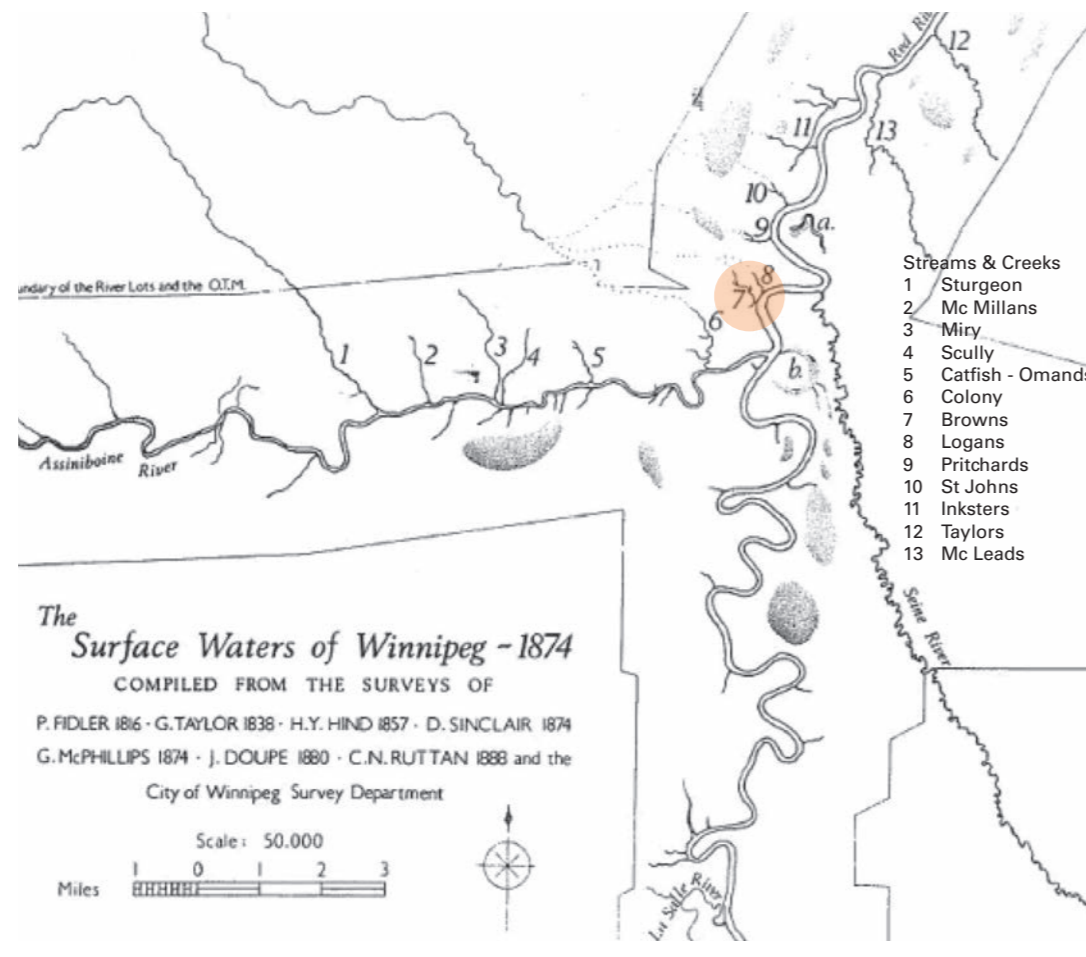
Our approach to the site layout recognizes the inhabited ghost creek that cut through the site long before Winnipeg's First Nations Settler and Modern Communities. Inspired by these rich histories, we've created an 'eroded soft grid' layout with buildings and spaces that encourage the process of movement and change; key themes encapsulated in the ancient word 'Aabijjinan'. We have extended Albert Street through Old Market Square diagonally to true north; the ancient route carved by Browns Creek. Former flowing water is here symbolically exchanged with footfall.

The Plaza is a place of transformation: in summer, it hosts extended market, gallery and gathering spaces offering services, seating, shade and water; in winter, a realm of fun and games with snow and ice. Year round, the Plaza provides activity with pedestrian access from every direction. The Plaza retains mature trees in the south-west corner but is largely open, with shifts in paving to incorporate furniture, lighting, planting, water, and sound/light installations within a recycled and new Tyndall stone surface.

Market Lands Plaza is a destination and a site of social and commercial exchange.



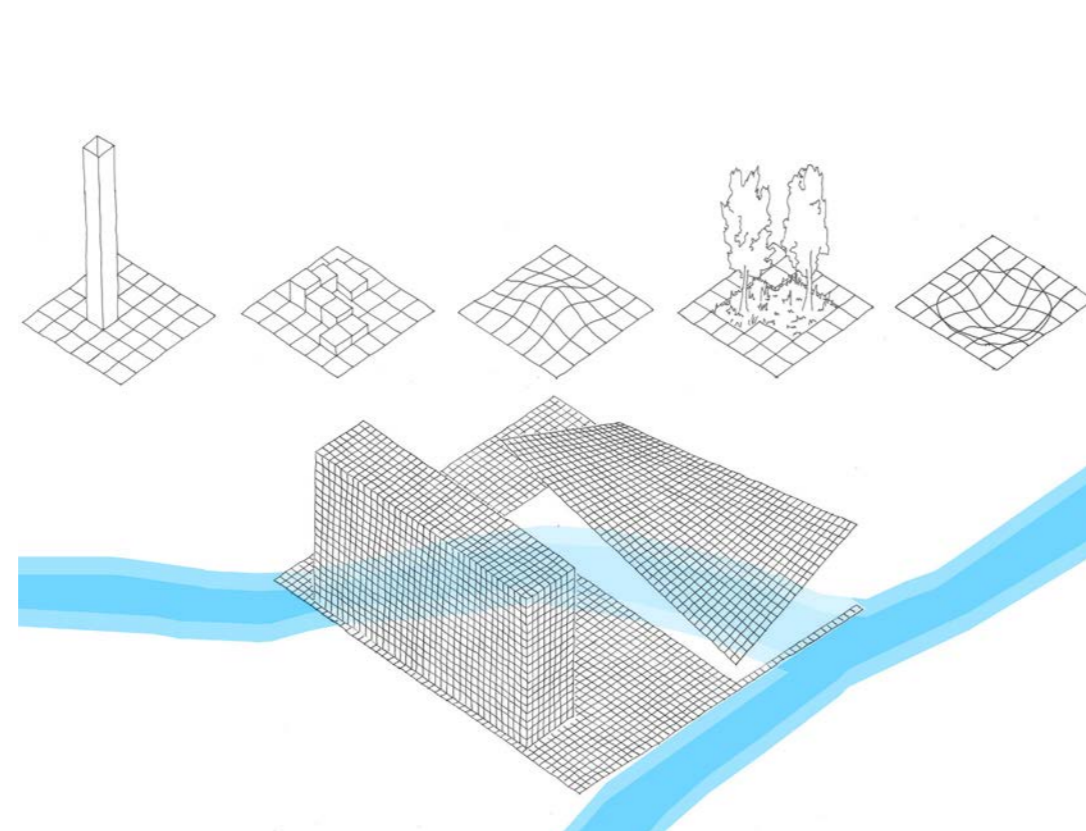
Landscape



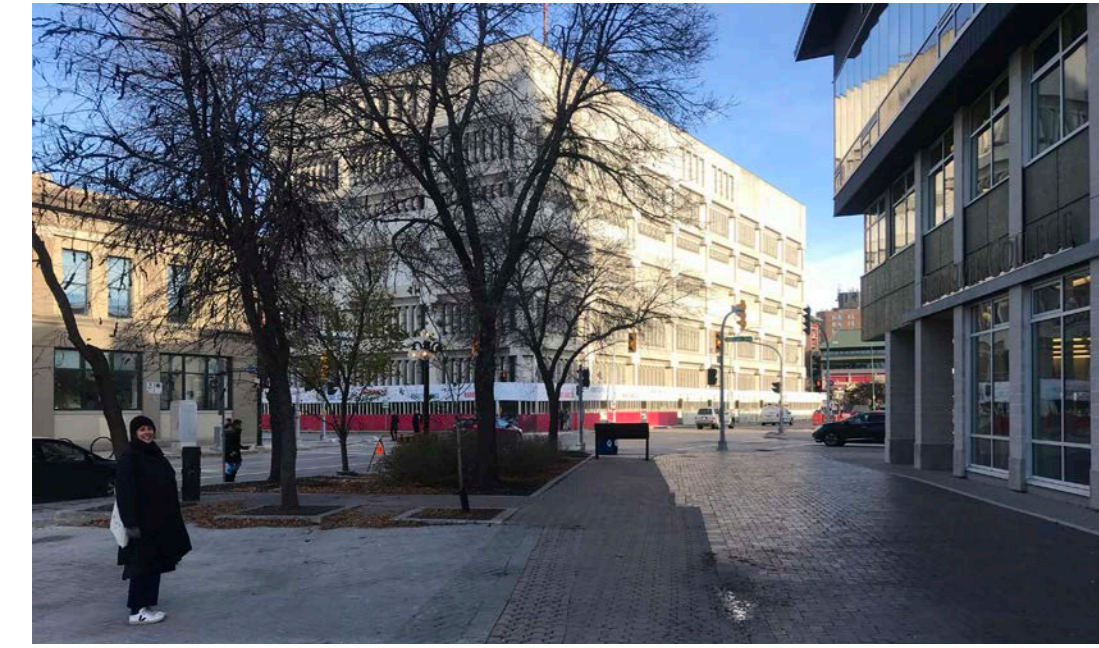
River



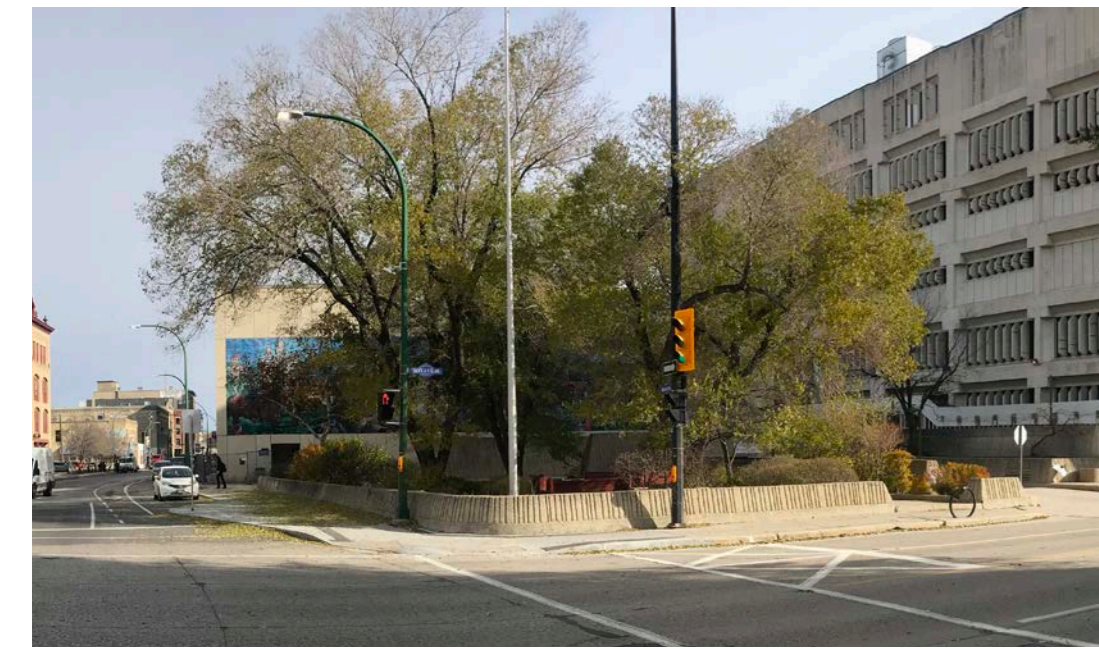
City



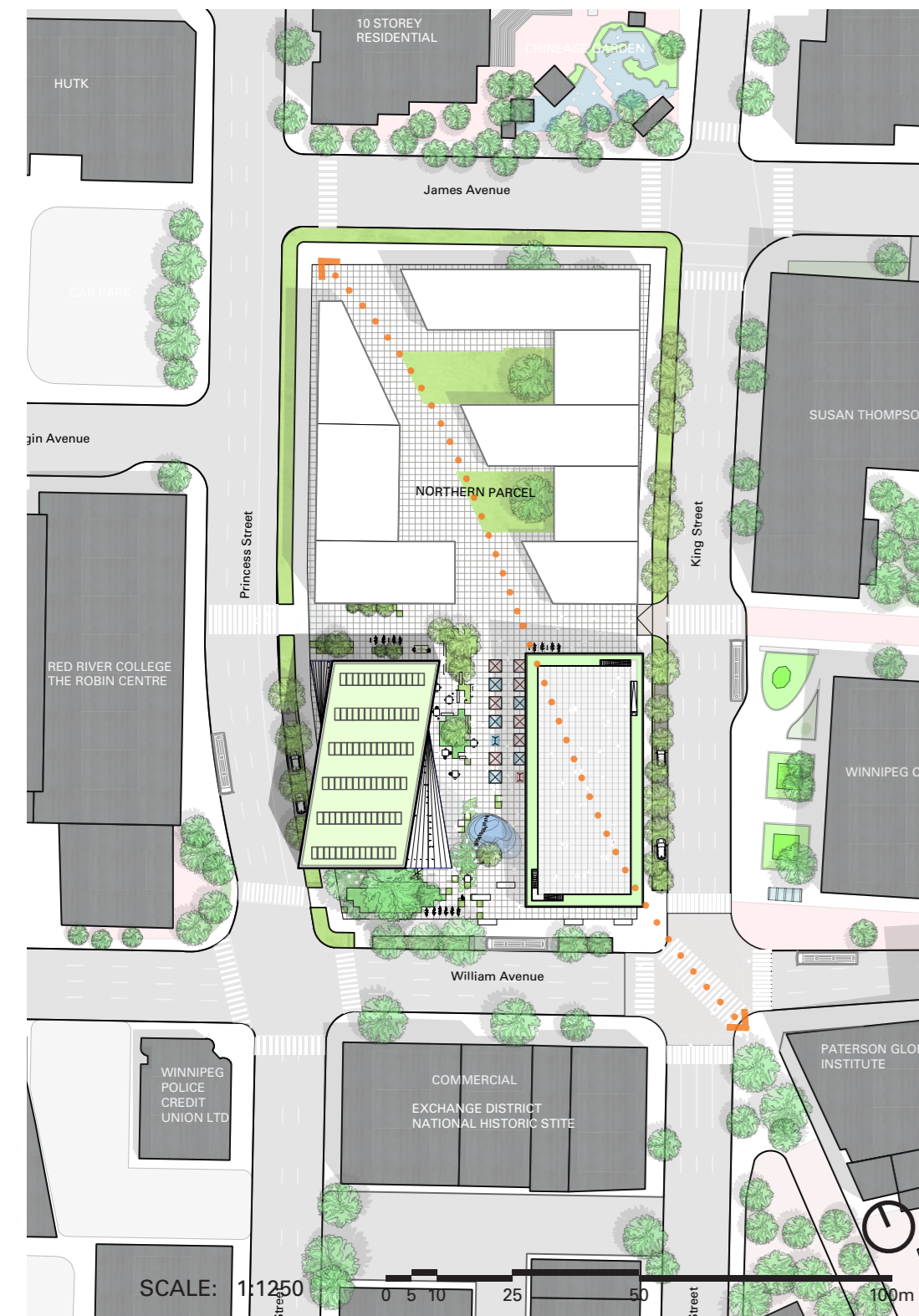
Plaza



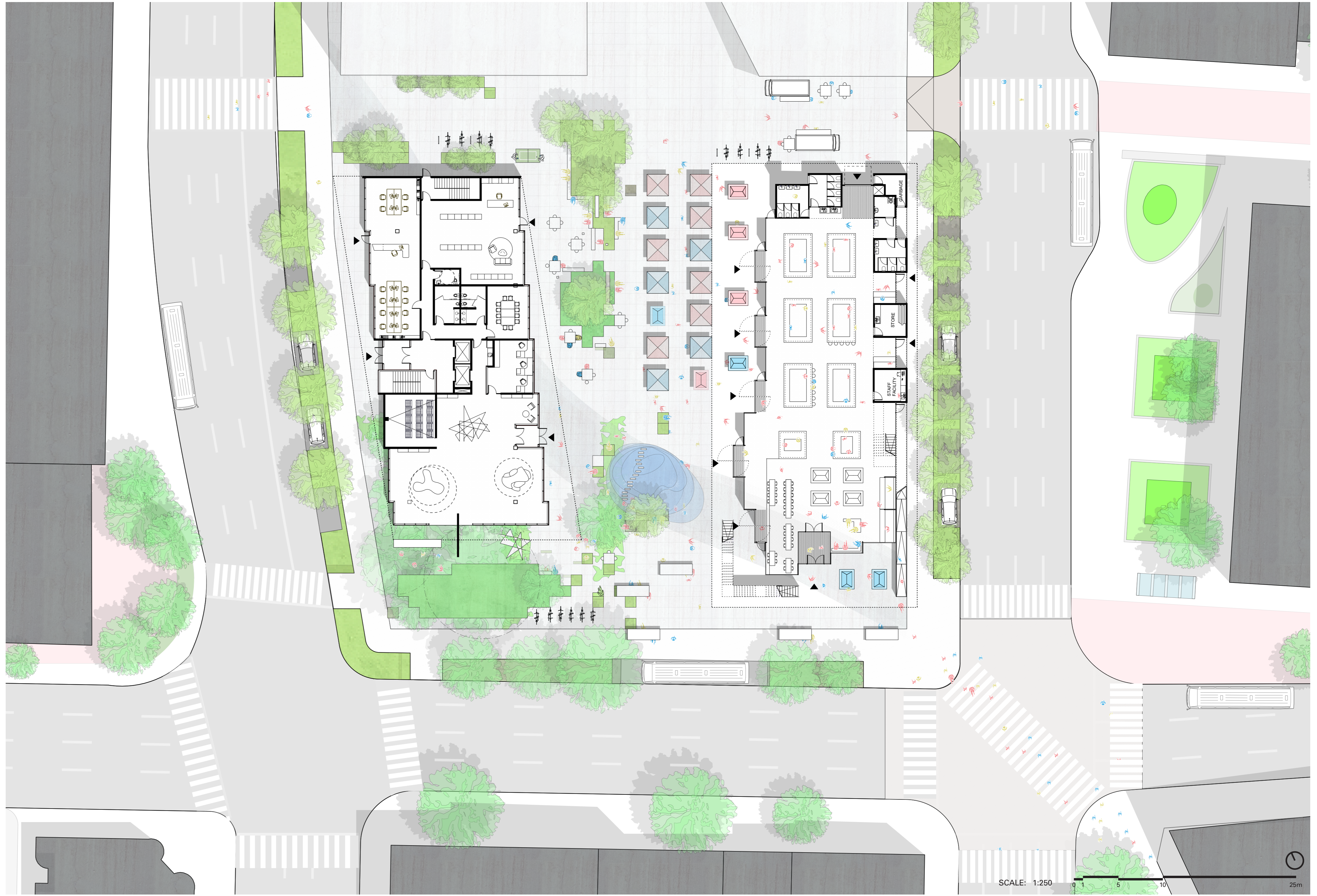
Site photo taken from key approach route, Albert Street



Site photo of existing trees to be retained, junction of William Avenue and Princess Street



Context plan at roof level



Plan of ground floor of the market, housing and gallery, and plaza



Artist's impression of the plaza with market building seen behind

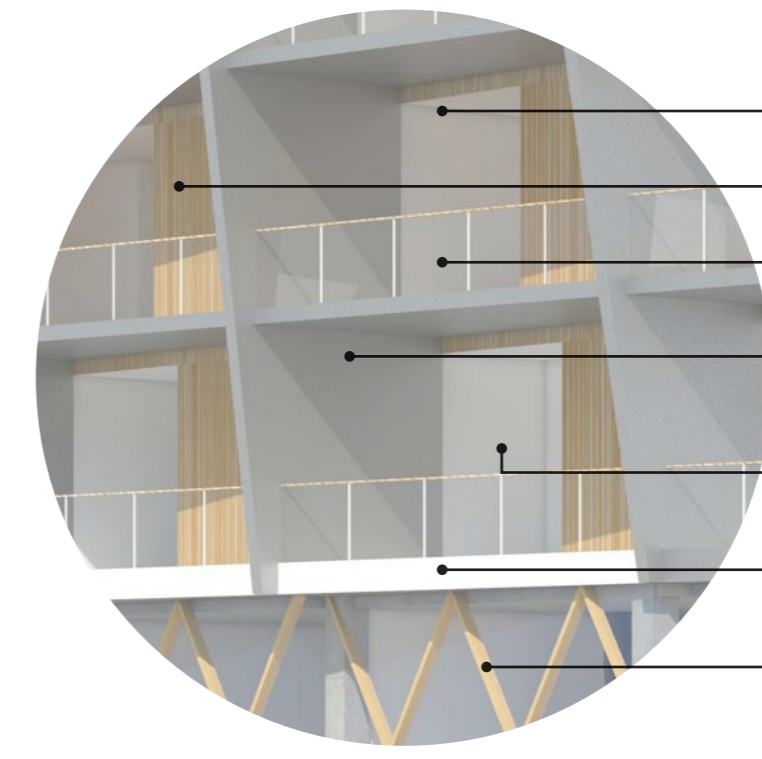


Artist's impression of the housing and market hall building seen from the old market square

Market House

Affordable Housing

The 'Market House' is conceptually a carved block of wood with a changing silhouette when seen in the round. The 100-unit building is kept compact to maximize the Plaza. The form is subtle but sophisticated, directing west sunlight into the Plaza, addressing the shifting of Princess Street south of William Avenue and embodying movement. A glassy footprint addresses the needs of the Urban Shaman Gallery and includes two commercial units, with the housing entrance core. On the east, facing Market Hall, is the Gallery entrance, whilst exhibitions can spill out onto the Plaza on the south side. All apartments face east, south, or west. The sustainable Cross Laminated Timber (CLT) waffle structure pays tribute to the rich history of historic timber framed buildings in the Exchange District, and provides all residents with the warm wood interiors and big views from full-width sheltered balconies.

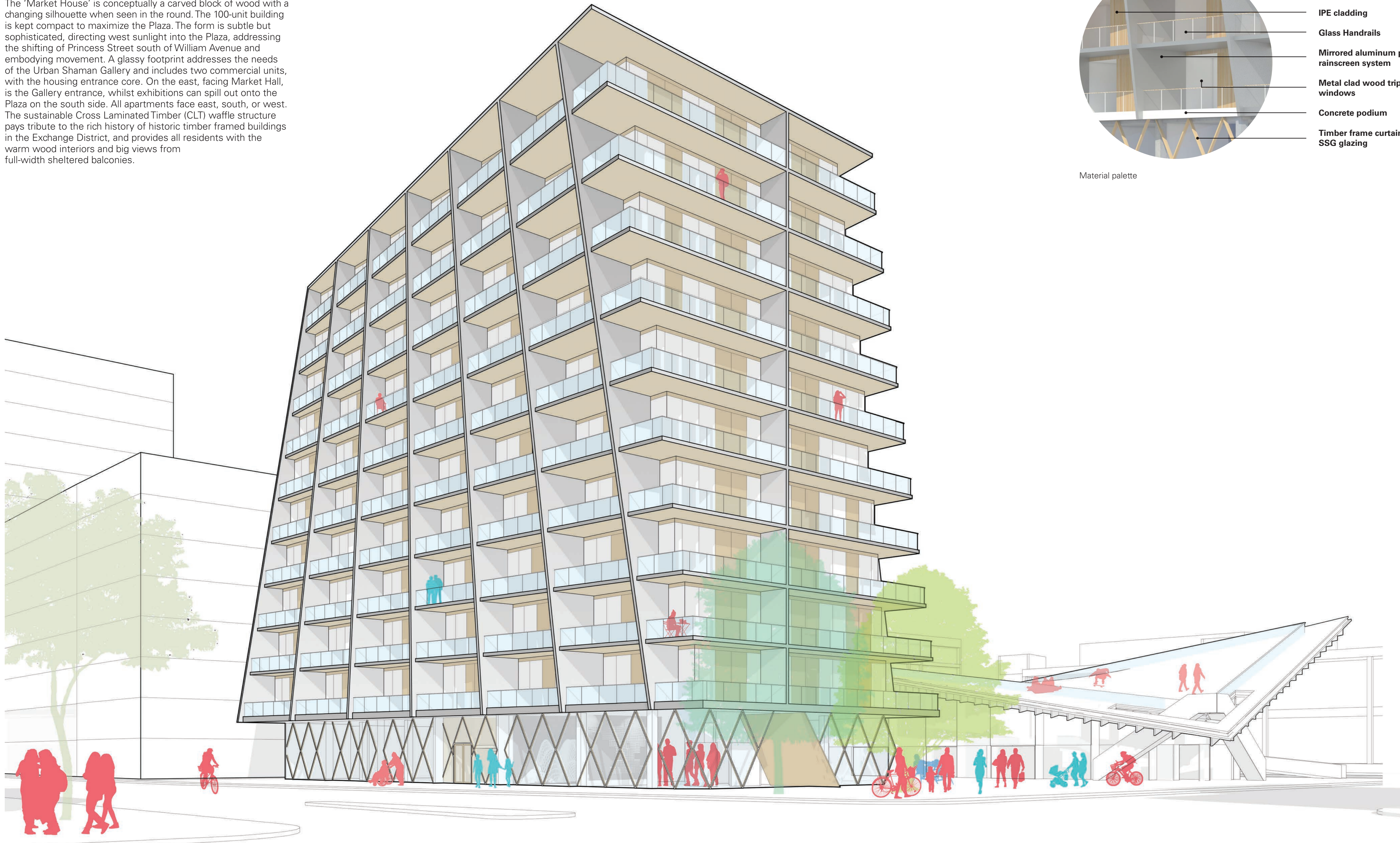


- Cross Laminated Timber structure
- IPE cladding
- Glass Handrails
- Mirrored aluminum panel rainscreen system
- Metal clad wood triple pane windows
- Concrete podium
- Timber frame curtainwall c/w SSG glazing

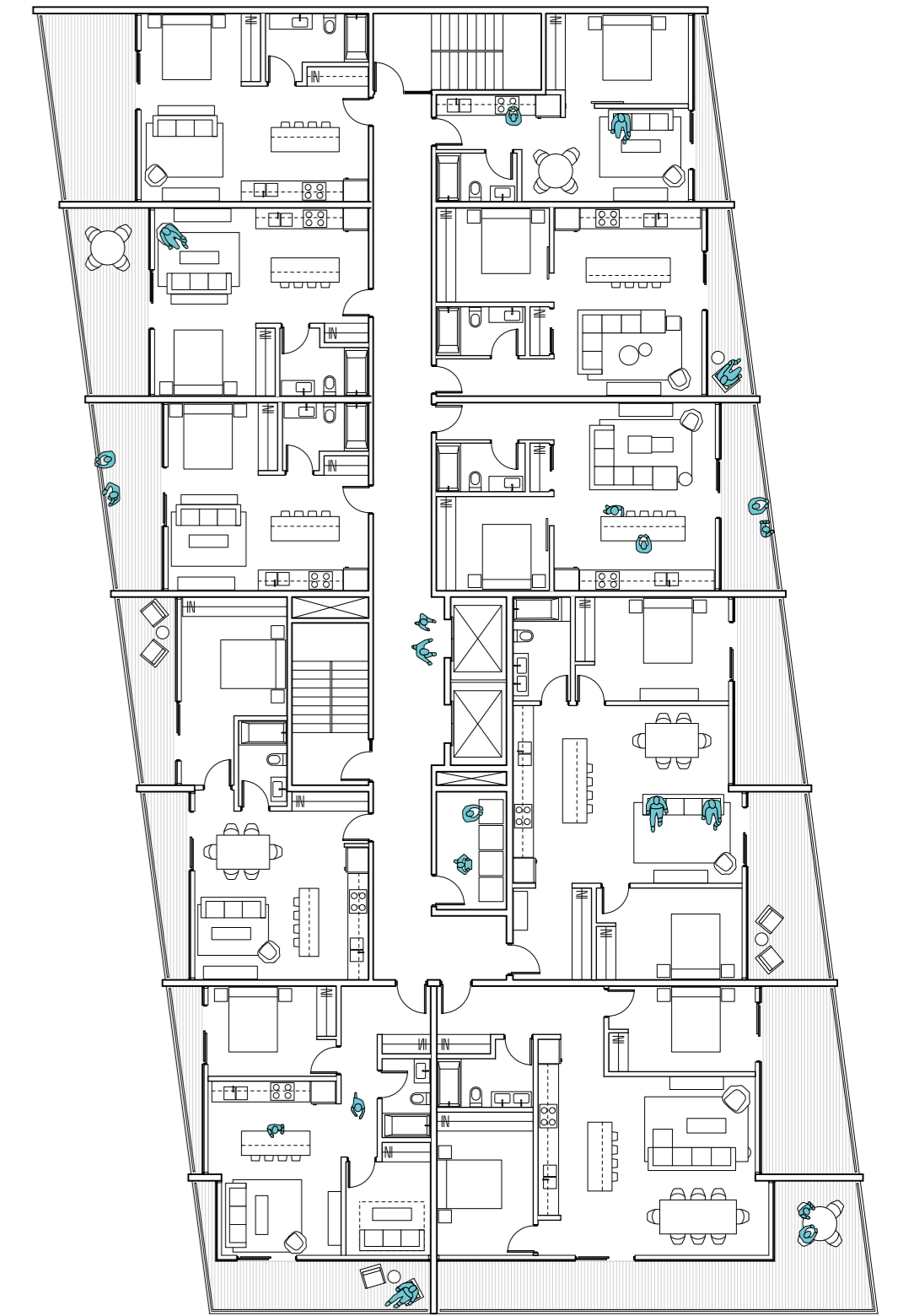
Material palette



Mass timber construction by StructureCraft (Canada)



View from South West



SCALE: 1:200 0 1 5 10 20m

Level 3 Floor Plan (Typical)



Residential Floor Stacking Diagram

Market Hall

Public Market

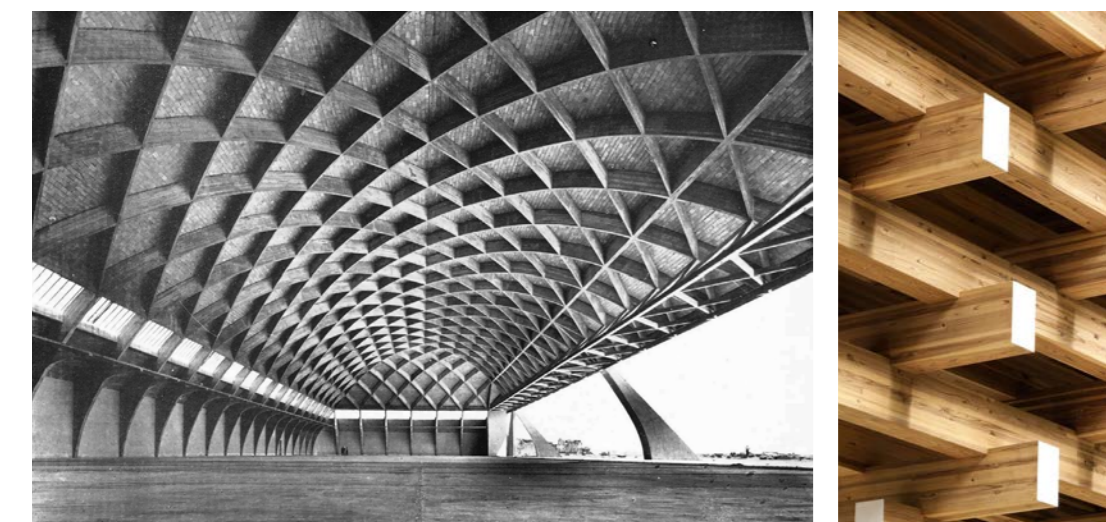
Market Hall is the dynamic destination on the new diagonal route through the site. The soaring, column-free roof offers a dramatic silhouette, yet is a minimal structure constructed efficiently and sustainably as an engineered timber 'hyperbolic paraboloid'. This creates varying heights with a curved coffered vault generated from straight lines, and requires only supporting in two opposite corners. The free span maximises the flexibility and commercial viability of the Hall. The sculptural rooftop is accessible; extra Plaza area is here symbolically elevated to provide an event and gathering space for activities like picnics, open-air cinema or snowman competitions, depending on the season, all with great views. Steel stairs to the roof double as supporting columns, also working as waterspouts bringing snowmelt down to Plaza drains.

Beneath the shelter of the warm, Douglas Fir timber roof, the Market Hall is framed by full-height glass façades to establish strong connectivity between inside and outside. Views through the building span from end to end, and side to side, providing sightlines to the activity of the Plaza through the Market when viewed from City Hall. The transparent main façade of the market opens southwest to the Plaza. On the north and east sides, solid fixed 'cubes' at intervals accommodates entries, stores, washrooms, lift, services, garbage cans and storage. These support a mezzanine bar. All form an active urban edge to King Street. The rooftop plaza and ground level washrooms are independently accessible from the Plaza stairs and King Street ramp after business hours.

The Market floor contains all services necessary for stalls to plug in, aligned with gridlines common to both buildings and Plaza. We envisage a combination of some fixed stalls, some mobile. In summertime, mobile stalls can spill out of the openable west façade to be joined by more outside. Stalls cooking hot food have fumes drawn down through floor ducts, rising up in the Plaza via a 'totem' of food preparation that doubles as Market Lands external signage. Designed to be dramatic externally and yet intimate internally, Market Hall is a year-round celebration of civic generosity, activity and inclusivity. A place for all people.



Interior perspective



Orvieto Hangar, concrete diagrid longspan roof frame (Pier Luigi, Nervi, Italy) Engineered laminated timber



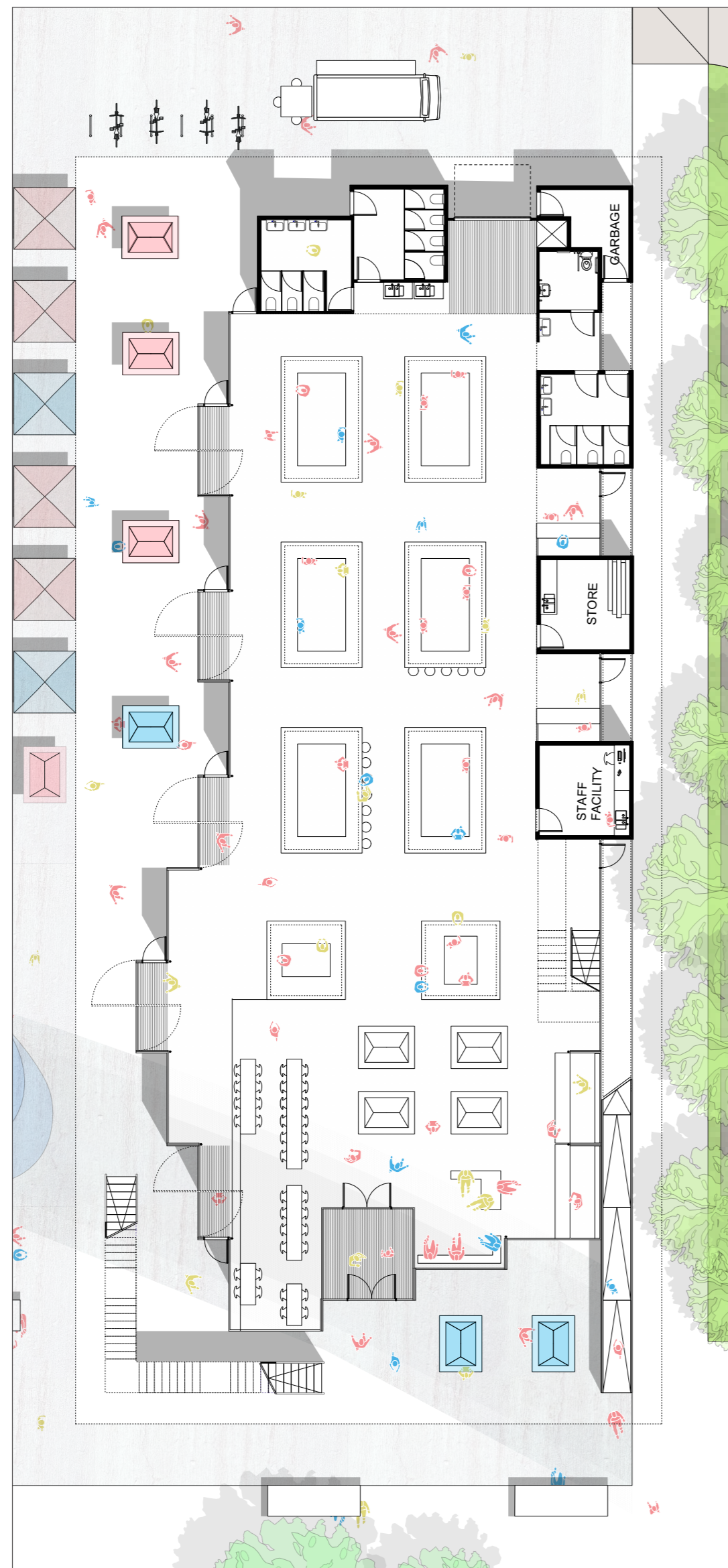
Site photo of the existing Public Safety Building tyndall stone cladding to be recycled into roof pavers



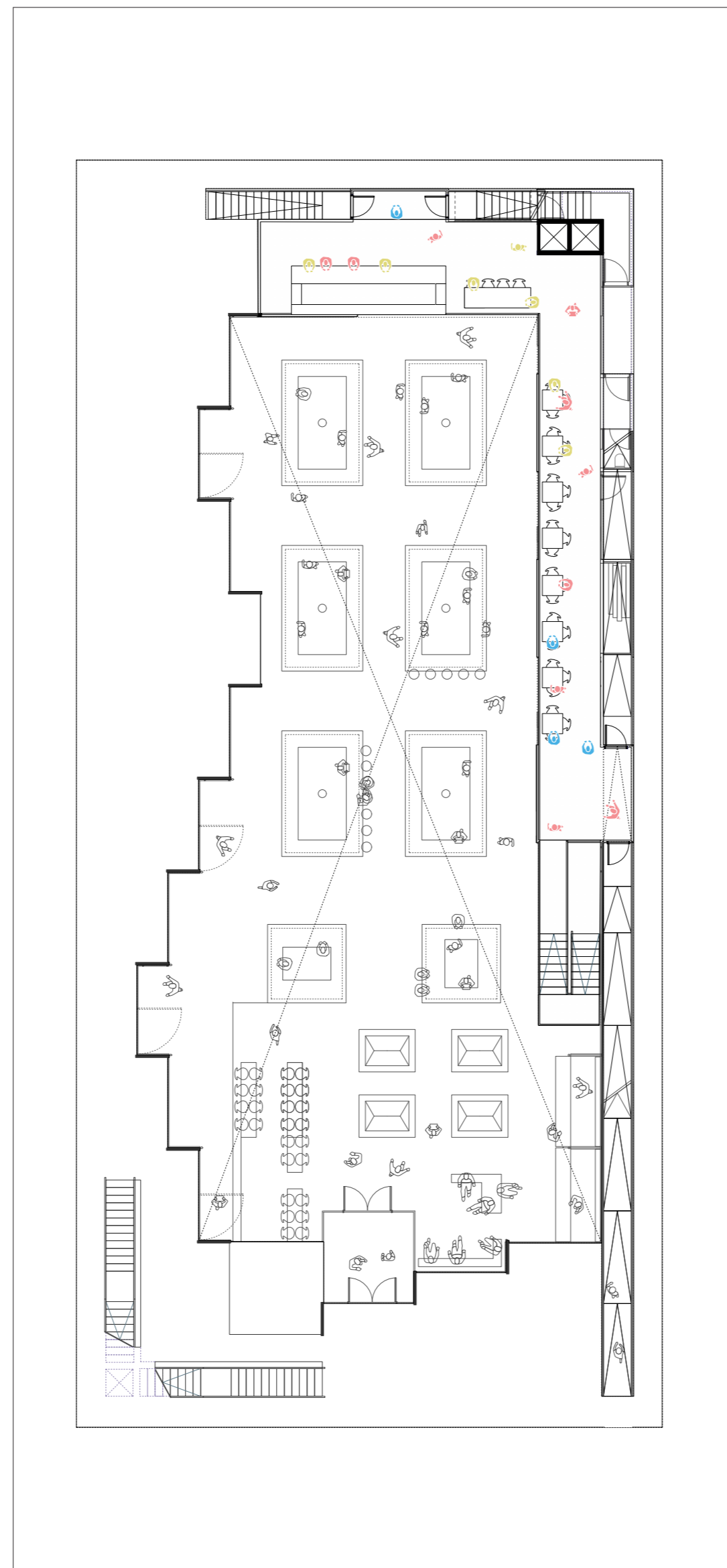
Photo of ice festival sculpture, as a potential use of the market square



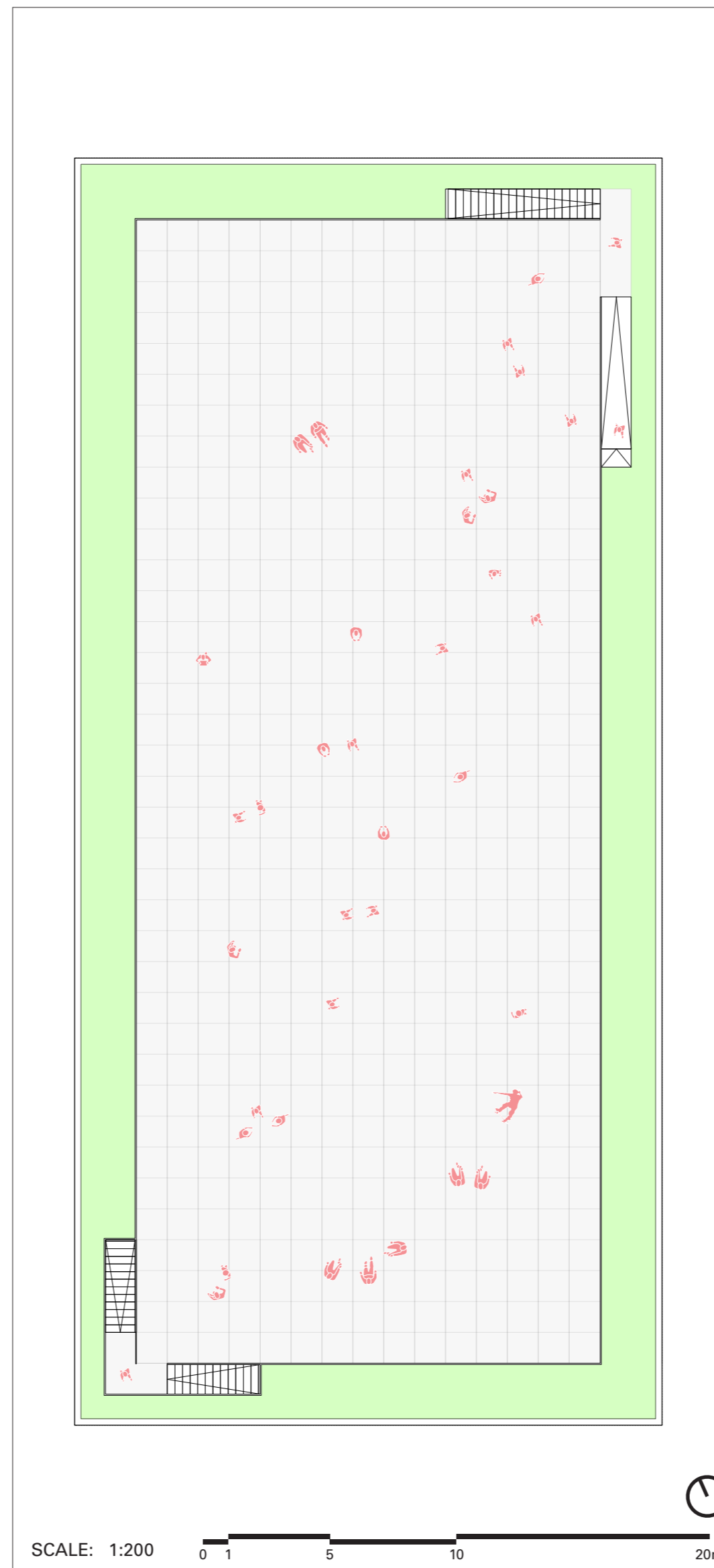
Photo of street food market, as a potential use of the market square



Main Floor Plan



Mezzanine Plan



Roof Plan

SCALE: 1:200 0 1 5 10 20m

- 1 Recycled Tyndall stone roof finish
- 2 Planted sedum roof edge
- 3 Balustrading / snow capture
- 4 Rain / snow melt water collection
- 5 Rain / snow dispersal through stairs and ramp
- 6 Douglas fir timber gridshell roof structure
- 7 Smoke-extract totem / signage
- 8 Fresh air inlet
- 9 Heated air outlet through floor / furniture
- 10 Draught lobby
- 11 Under bench lights
- 12 Plaza floor uplighting market canopy
- 13 Landscape water features / wind barrier
- 14 Rainwater storage
- 15 Roof access lobby
- 16 Lift
- 17 Bar
- 18 Loading area
- 19 Market sinks
- 20 Washrooms
- 21 Stalls signage and lighting

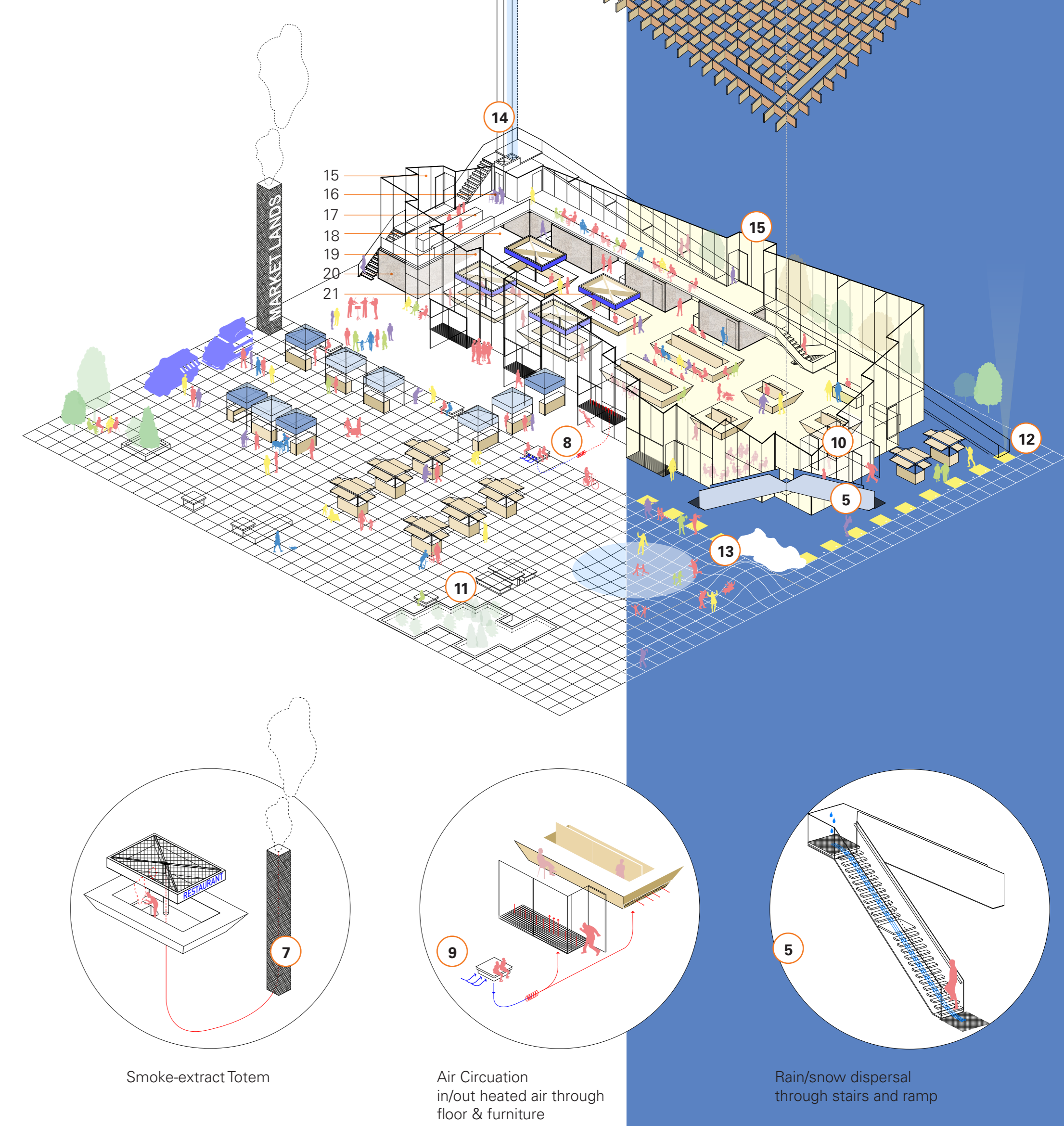
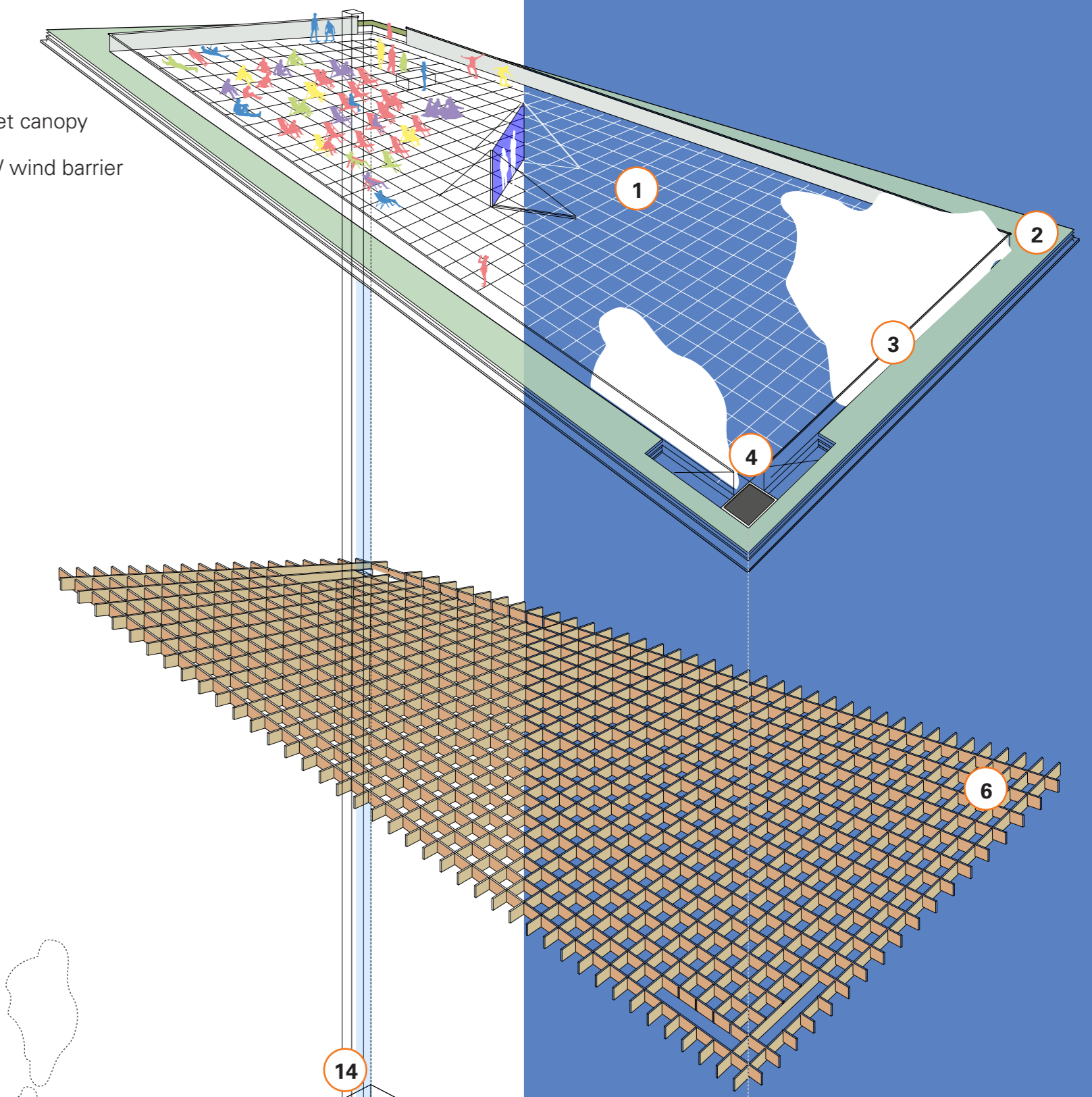


Diagram of shell, services, systems, and functioning of the market in different seasons

Sparrow Eye View

Perspective



Aerial perspective of the site from the south

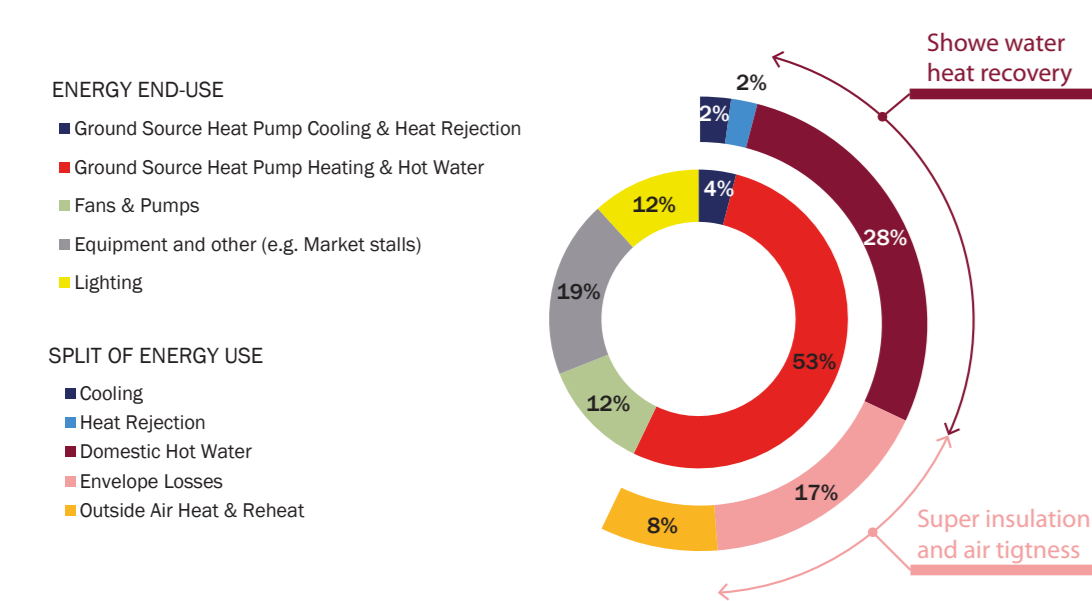
Smart Systems Sustainability Framework

Social and environmental sustainability is top of the agenda. The aim is to create vibrant and comfortable public realm that can be used year-round, adapt to challenges of climate change, emerging technologies, and ever-changing lifestyles. Social interaction is encouraged in the vibrant heart of the Exchange District, linked to existing and future, transport networks, civic centres, cultural venues, businesses, and outdoor facilities.

Smart City infrastructure will be embedded within every component of the development to:

- Encourage city-center living and visitor experience by providing interaction and bonds between local residents, public realm, and visitors
- Improve visitor experience by actively managing events, transport, services and programmes using interactive and real-time information
- Monitor and manage goods, deliveries, and maintenance to minimize operating costs, local traffic congestion, pollution and disruption
- Provide future-technology-ready infrastructure (e.g. zero-carbon infrastructure, such as heat pumps, EV charging and batteries, low-energy heating and cooling etc.)

PROPOSED DESIGN SITE ENERGY USE CHARACTERISTICS WINNIPEG MARKET LANDS

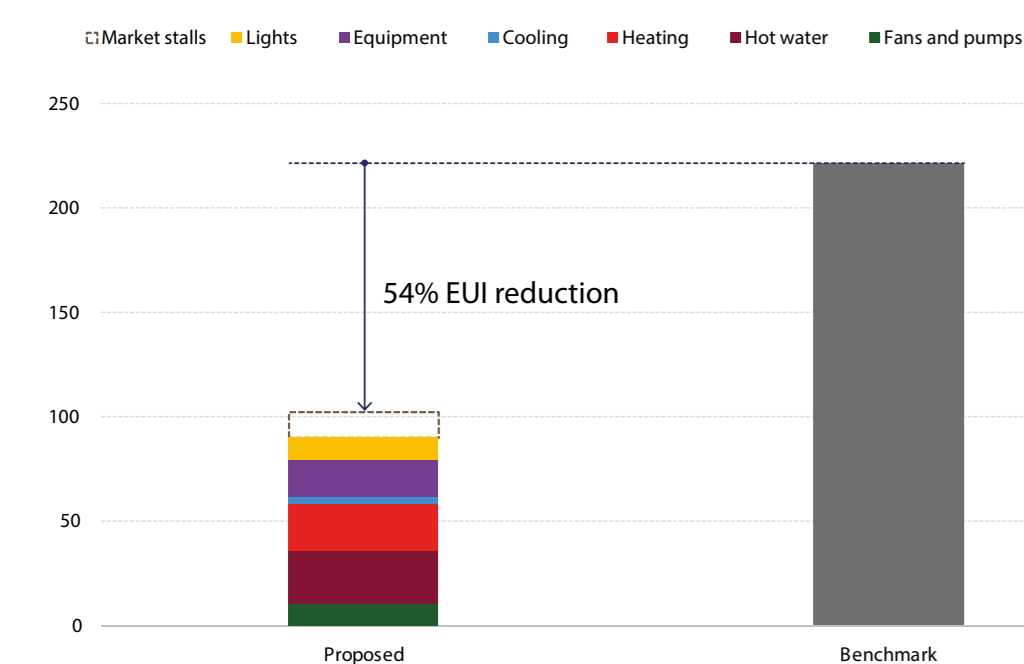


Energy characterization and analysis

Market Hall: should be a testbed for smart and innovative technologies. We propose to condition the space using direct ground loop water circulation through the Hall floor. Market stalls can use fully flexible electric power supply linked to batteries with smart energy management app controls, which also manage operation, deliveries, customer services and energy/water use.

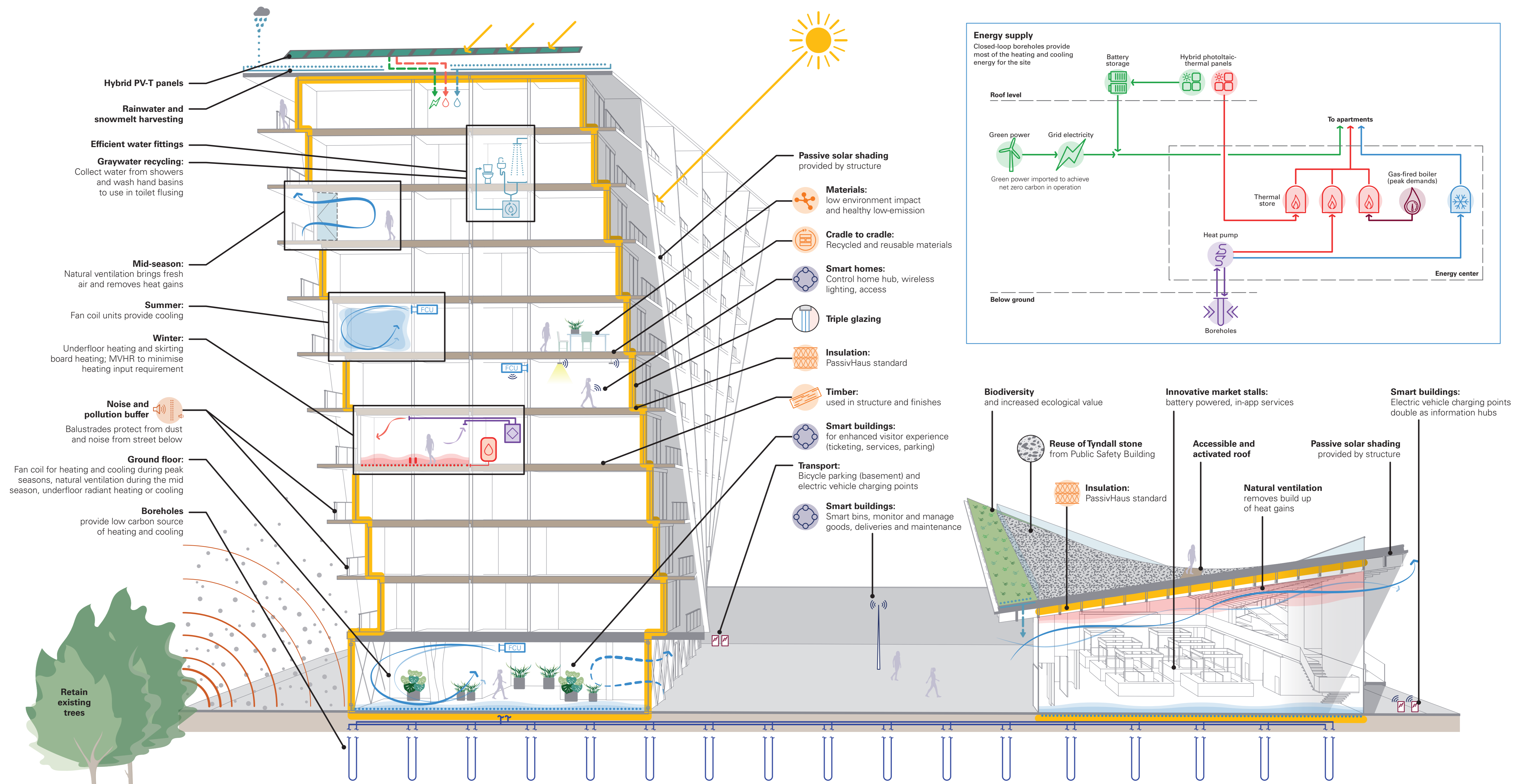
Our strategy for energy, water and materials efficiency aims to set the new standard for mixed use city-center developments in Canada, and achieve leadership level of environmental sustainability performance verified by third party frameworks and standards, such as LEED Canada, Green Globes, PassivHaus, ILFI Zero Carbon Certification, and Cradle to Cradle materials. Rather than approaching certification as a prescriptive tick-box exercise, we have developed major design strategies from the first principles that can achieve the best sustainability performance within constraints of the site, budget and the brief. This tends to also achieve the highest certification rating against all major frameworks.

SITE ENERGY USE INTENSITY WINNIPEG MARKET LANDS

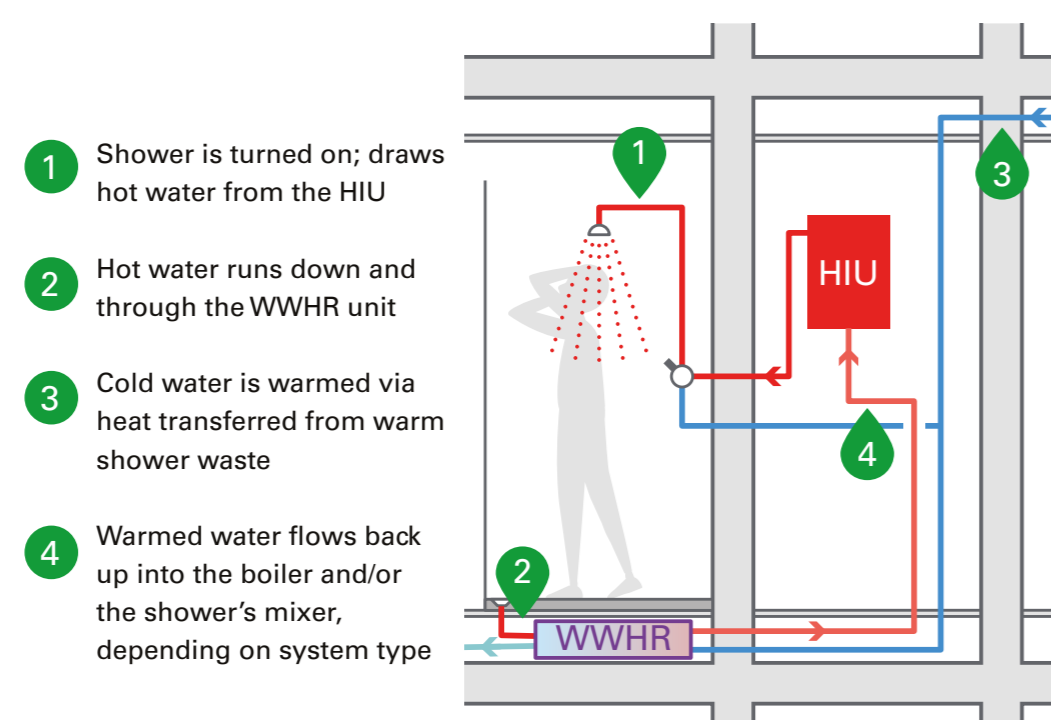


Energy use intensity (EUI) reduction - Proposed vs Benchmark

Achieving Zero Energy on-site in dense urban environments is almost impossible without using alternative fuels, such as biomass or biofuel. However, we felt that relying on on-site combustion is inappropriate as it has a detrimental effect on air quality. Instead our proposal focuses on achieving exemplar energy efficiency to minimise demand, and then supply as much energy from on-site renewable and low-carbon energy sources, such as ground source heat pumps and hybrid solar PV-thermal panels.



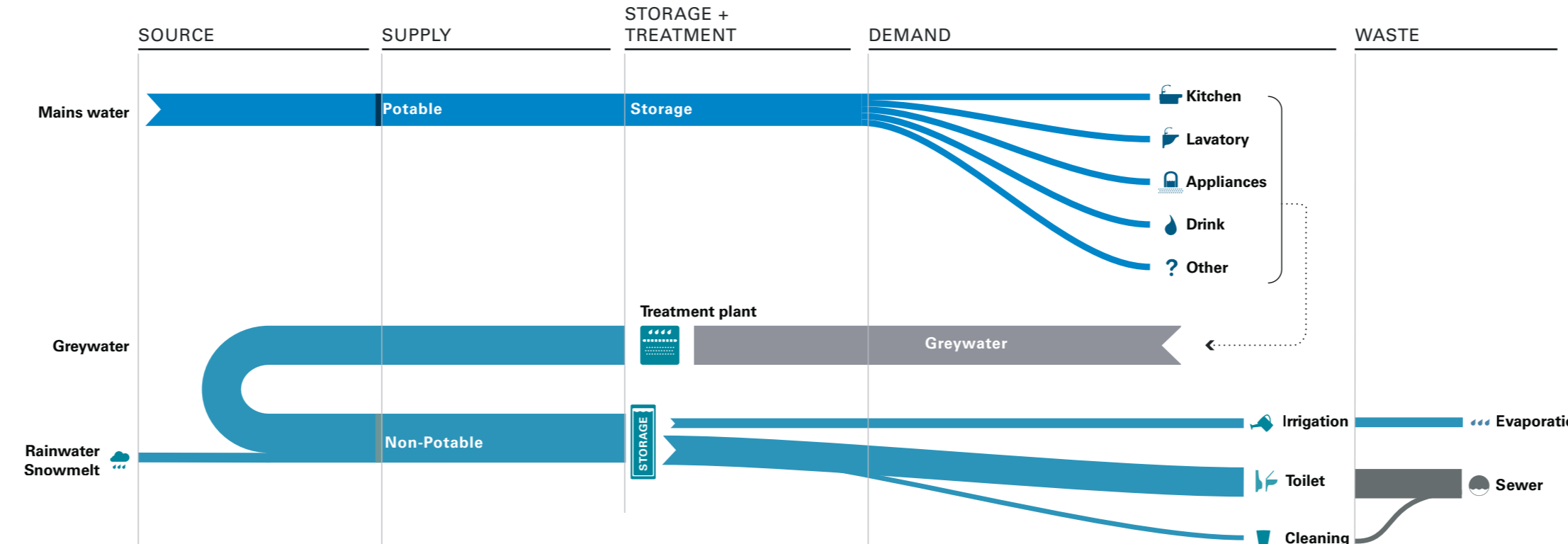
Hybrid solar thermal photovoltaic panels and Smart EV charging



Shower waste water heat recovery

Remaining energy demand will be met from the grid, and we propose purchasing green/zero carbon electricity from a certified supplier which will enable NET zero carbon in operation, and qualify for ZERO CARBON certification with International Living Building Institute. Residential blocks will have insulation and air-tightness levels approaching PassivHaus standard, which will

greatly reduce energy use intensity (EUI) compared to local EUI benchmarks. This will also increase the proportion of energy use that can be met from on-site renewables and consequently minimise imported "green" energy cost required to achieve NET zero carbon in operation.



Water flow diagram

Water has inspired public realm and landscaping design, including paving patterns that reveal the ghost creek passing through the site; highlighting the importance of fresh water as a scarce natural resource and the impact climate change will have on natural water run-off management. Our water efficiency target is Zero Water Waste, which assumes no/zero potable water use for non-potable purposes. Rainwater and snow melt will be collected as well as greywater recycling reused for toilet flushing, cleaning, and irrigation. Market Hall roof stairs guide harvested rainwater underfoot into a non-potable tank integrated into the building services.

Materials will be one of the defining factors of the development's character. The focal point of the development, Market Hall roof and public realm landscaping, will be partly surfaced using repurposed Tyndall Stone from the demolished Public Safety Building. Canadian sustainably managed timber will be used as structure, cladding and for some finishes. In a highly efficient modern building, embodied carbon within construction and refurbishment materials is as high as carbon emissions associated with operational energy use. We aim to source all materials locally, reuse as much material from demolition of existing buildings onsite, and maximise use of certified low-environmental impact materials such as Cradle-to-Cradle (C2C).



Reclaimed and crushed concrete

Our approach embraces and showcases passive building design, making the buildings more resilient to climate change, energy efficient, more healthy, stimulating and comfortable for residents and visitors. For example, the residential balconies with dividing walls and a projecting roof overhang on the Market Hall provide privacy, solar shading/control and shelter but are also defining components of the architecture. Market Hall is a daylight and sunlight filled fluid space, which adapts to seasons. The west glass wall opens up to outside when conditions are good for natural ventilation, the roof overhang cutting off high altitude sunshine in summer to reduce overheating risk. In winter, direct low-altitude sunlight can enter and warm the Hall under its snow-covered roof, and projecting eaves overhang.