



VIENNA HOUSE

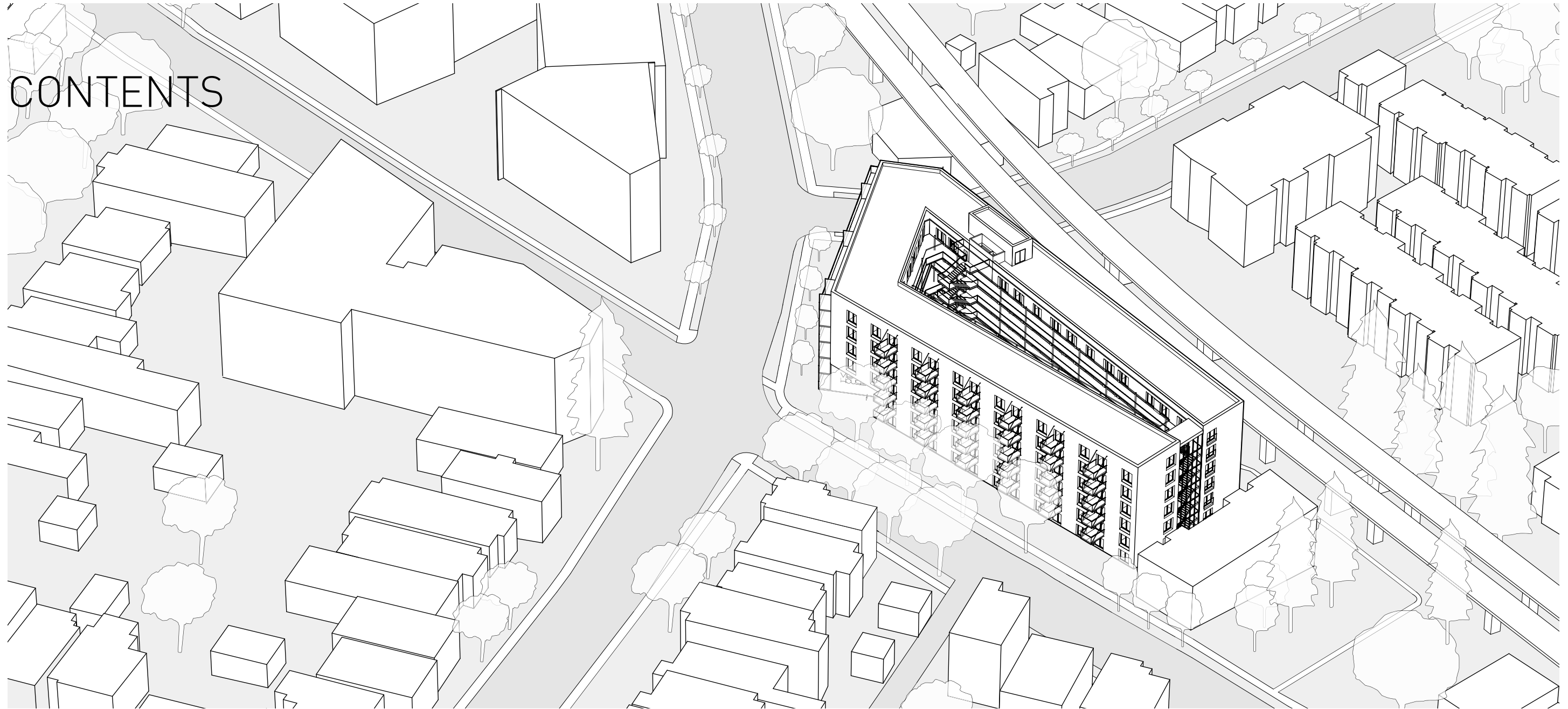
2009-2037 STAINSBURY AVENUE,
VANCOUVER, BC

OPEN HOUSE BOOKLET
JANUARY 17, 2022

PUBLIC ARCHITECTURE + COMMUNICATION
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public

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INTRODUCTION

Project team

City of Vancouver

The city has a long history of climate action creating innovative solutions for below-market housing in Vancouver. Since the 1990s, Vancouver has been working with the community to address the environmental challenges facing our city. The City is committed to demonstrating global leadership in addressing the challenges of climate change while creating economic opportunities and maintaining world leading standards of living for local residents.

BC Housing (BCH)

BC Housing develops, manages and administers a wide range of subsidized housing options across the province. BCH works with the ministry responsible for housing to address critical gaps across the housing continuum, which range from emergency shelter and rent assistance in the private market to affordable home ownership. They work with about 800 housing providers and help more than 110,000 households in communities across British Columbia.

More Than a Roof Housing Society (MTR)

More Than A Roof has a 30 plus year history of developing inclusive communities that offer affordable housing for families, seniors, and individuals with low to moderate incomes, those suffering with mental health issues, and people

working to recover from addiction. The Society provides housing to over 1700 tenants across 12 housing communities throughout Metro Vancouver, Victoria, and Prince George. MTR is the Vienna House owner and operator.

Vancouver Affordable Housing Agency (VAHA)

VAHA's vision is for all Vancouver residents to have access to affordable, safe, and quality homes. Building on City-owned land, VAHA liaises with investment, development, and community partners to create below-market housing options. VAHA is a project manager.

CPA Development Consultants

For over a decade, CPA has been assisting public, private, and non-profit clients meet their development objectives. They have a strong working relationship with agencies at every level of government, as well as all current and past clients. CPA is a project manager.

Public: Architecture + Communication

Public builds culture and shapes identity. Their work creates spatial experiences—beyond buildings — to the city at large, capable of spurring transformation, engagement and renewal. Public is the architect and prime consultant for the Vienna House project.

Kindred Construction

Kindred is proud to have completed over \$2 billion in construction across the market

sectors they serve, consistently fulfilling the requirements, aspirations, and goals of clients. Kindred is the construction manager.

Wicke Herfst Maver

WHM is a structural engineering firm with a wealth of experience in the design of wood frame and mass timber residential, commercial, institutional and educational facilities located in Canada and the United States.

Integral Group

Integral Group is an interactive global network of design professionals collaborating under a single deep green engineering umbrella. Integral is providing mechanical, electrical, fire protection, and Passive House consulting services.

GHL Consultants

GHL's diversified background and experience, enables them to provide a wide range of services, building code compliance review, performance based design and alternative solutions. GHL is the code consultant and certified professional.

Morrison Hershfield

Morrison Hershfield is the envelope consultant.

Core Group Consultants

Core Group is the civil consultant bringing expertise in innovative stormwater management strategies.

Gunn Consultants

Gunn is providing elevator consulting services.

Matthew Thomson Design

MTD is a professional design studio offering landscape architecture and urban design services. MTD is the landscape architect.

Steven Winter Associates

Steven Winter Associates, Inc. provides research, consulting and advisory services to improve commercial, residential and multifamily built environments for private and public sector clients. They specialize in energy, sustainability and accessibility consulting as well as certification, research & development and compliance services. SWA is the Passive House Certifier.

Scius Advisory

Scius's technical, research and advisory services are supported by many years of experience in Canada and around the world. They provide strategic research and real estate consulting that help companies and communities understand the technical and business implications of innovative and high-performance/green building and construction projects. Scius leads the research project.

INTRODUCTION / CONT'D

On behalf of our clients, Vancouver Affordable House Agency (VAHA), More Than a Roof Housing Society, and CPA Development Consultants, Public: Architecture + Communication is applying to the City of Vancouver for a Rezoning for the Vienna House project.

This project focuses on developing the five City of Vancouver owned parcels of land at 2009, 2015, 2021, 2031 and 2037 Stainsbury Avenue, currently zoned RS-1, into a multi-unit social housing project that is affordable, sustainable, energy efficient, environmentally focused, and financially viable. The project has a gross area of 109,000 sq. ft. and has 123 units including 56 family units all mixed between shelter, BC Housing housing income limits (HILs), and average market rental units.

Background

The City's and Vancouver Affordable Housing Agency's (VAHA) mission is to create and implement innovative solutions for below-market housing in Vancouver. VAHA's vision is for all Vancouver residents to have access to affordable, safe, and quality homes. In 2014, Council authorized the creation of the Housing Agency with a mandate of delivering 2,500 affordable housing units on City and partner

land by 2021, commencing with an initial program of 500 affordable housing units subject to interim review.

In April 2018, Council designated the Housing Agency to act as the agent of the City to enable development of affordable housing on City-owned land at 2009, 2015 and 2021 Stainsbury Avenue. In late 2018, the Properties were acquired through the City's Property Endowment Fund on behalf of the Housing Agency to support the development. In June 2019, Council designated two additional adjacent lots at 2031 and 2037 Stainsbury Avenue, a total of five lots, to VAHA to support a larger affordable housing project on an assembled site.

BC Housing approval

In the fall of 2018, VAHA applied to BC Housing's Community Housing Fund and was successfully awarded an "A" letter entitling the project to proceed to the next stage of funding and financing approval through BC Housing.

In June 2020, BC Housing selected More Than A Roof (MTR) Mennonite Society as the non-profit housing operator for the future development. MTR is a member of the Project Steering Committee and a key stakeholder throughout the rezoning process. Full responsibility for design, development and building permit application process, approvals, permitting, demolition, and construction are to be transferred from VAHA to MTR at the completion of the rezoning process.

Vienna House vision

The Cities of Vancouver and Vienna signed a Memorandum of Understanding in 2018 to share knowledge and advance innovation in low-carbon affordable housing. Both Cities are committed to demonstrating global leadership in addressing the challenges of climate change while creating economic opportunities and maintaining world leading standards of living for local residents.

One of the most compelling opportunities is the exchange of knowledge through cooperation on a new building project located in each city – a "Vancouver House" in Vienna, and a "Vienna House" in Vancouver. The project teams and

researchers involved in each project share learnings throughout design and construction regarding the process and outcomes of their work.



VIENNA HOUSE IS THE RESULT OF A COLLABORATION BETWEEN THE CITIES OF VANCOUVER AND VIENNA

PUBLIC would like to acknowledge that the land on which we work is the unceded, traditional, and ancestral territories of the Musqueam, Squamish, and Tsleil-Waututh Nations.

INTRODUCTION / CONT'D

Goals & objectives

In 2020, VAHA prepared a Project Charter for Vienna House including the following:

Client goals

1. Increase the supply of safe, accessible, sustainable, and affordable housing to support the well-being of the residents of Vancouver
2. Reduce greenhouse emissions by building efficient and high-performance buildings in the City
3. Explore opportunities to accelerate the development and construction process
4. Maximize quality performance design
5. Increase knowledge and awareness of the capabilities of the prefabricated construction Industry.

Client objectives

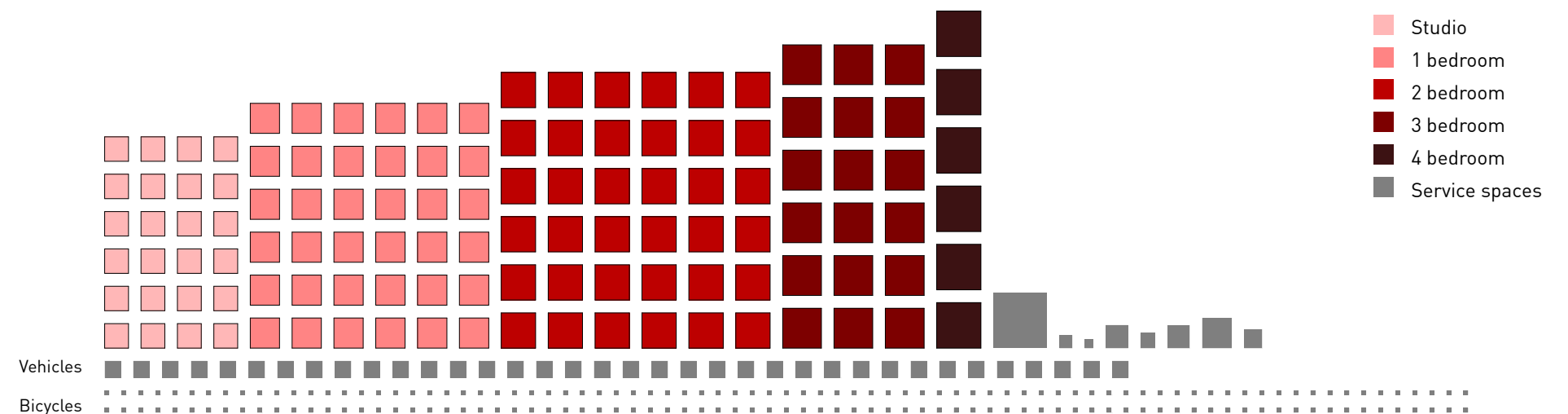
1. Near zero emissions building
2. Climate Resilient Design
3. Off-site pre-fabrication
4. Knowledge transfer
5. Improved affordable housing supply and availability
6. Maximize capital investment to ensure the project is financially feasible and sustainable
7. Use renewable construction materials, as much as possible, such as wood, to help support the local lumber industry
8. Achieve more efficient development schedule by utilizing the City's Social Housing or Rental Tenure (SHORT) review program and harnessing faster construction methodology
9. Develop the project on schedule and on budget.

Program

The proposal is for a 7-storey multi-unit social housing development featuring a single level below grade parkade and 123 affordable rental units requiring rezoning to CD-1 (Comprehensive Development).

The building features a mix of Studio, 1, 2, 3 & 4 bedroom units with a family unit target of 47%. Vehicle stalls, bicycle storage, and a waste storage room accessed by dual elevators are located at level L0 .

Common areas including a multipurpose room, laundry, mail room and office will be located on the first floor accessed from street level. Juliette balconies are proposed for the studio and one-bedroom units and balconies for family units. All units will be adaptable and minimum 5% of units will be accessible as per the City's and BC Housing design requirements.



THE PROGRAM HAS BEEN OPTIMIZED ACROSS ALL FLOORS TO ALLOW EFFICIENT ALIGNMENT OF STRUCTURE AND SERVICES.

SITE ANALYSIS



- Residential - Low rise apartment
- Commercial
- Mixed residential & commercial
- Residential - non-market housing
- Residential - Single detached & duplex
- Light industrial
- Institutional
- Recreational space

Land use

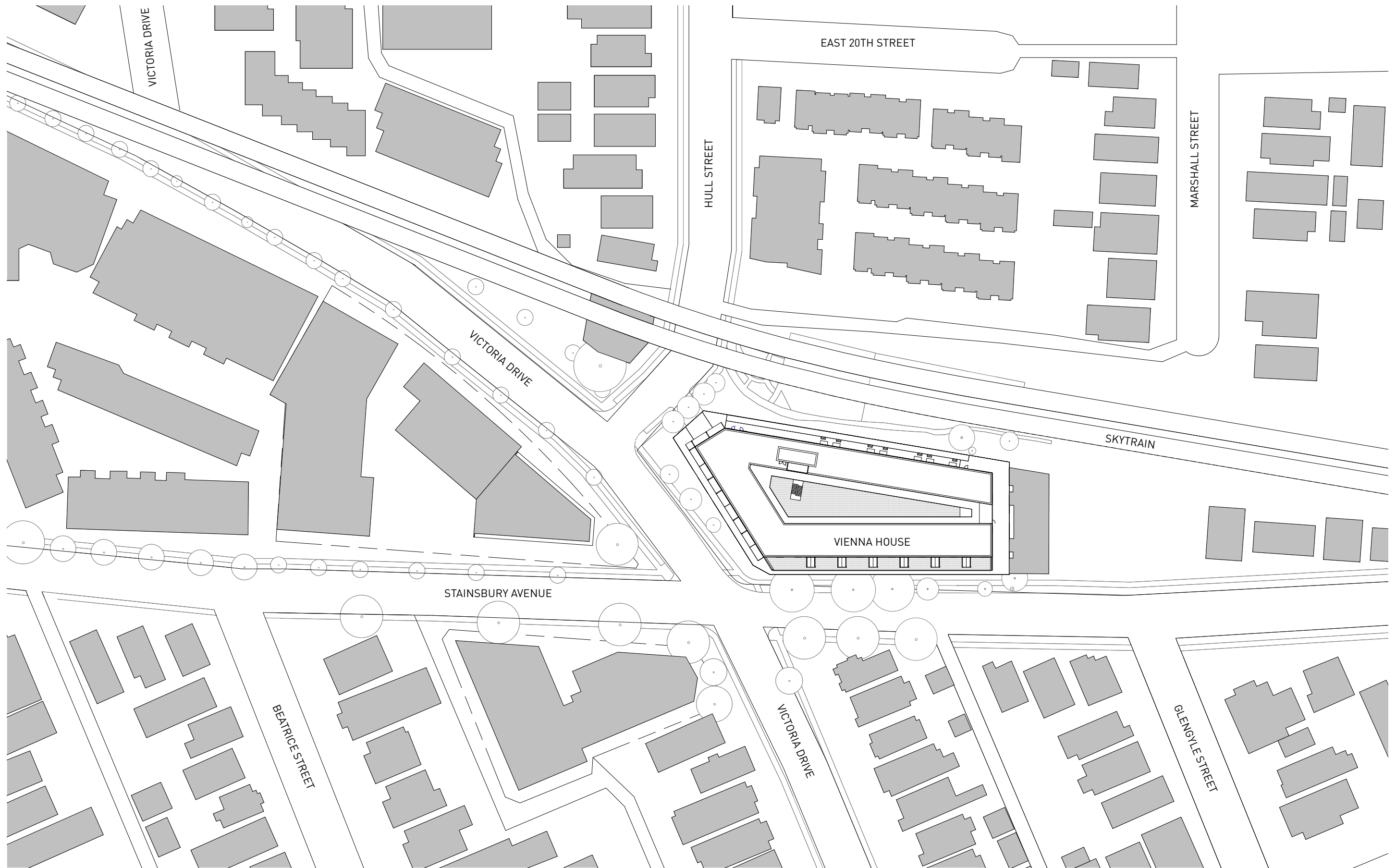
Vienna House is adjacent to an emerging mixed use medium density residential and commercial neighbourhood. Trout Lake community centre and park, schools and retail shopping streets are within a ten minute walking radius.



- Sky train
- Bus routes
- Bike routes
- Pedestrian trails

Transportation analysis

Bus stops running north and south along the Victoria Drive arterial roadway are located within 120 metres of the site and the newly refurbished Nanaimo Street Expo Line Station is located approximately 600 metres to the east.



Context plan



TROUT LAKE
COMMUNITY CENTRE

TROUT LAKE

RESIDENTIAL
UNDER CONSTRUCTION

THE VICTORIA

RESIDENTIAL
UNDER CONSTRUCTION

VICTORIA DRIVE

VIENNA HOUSE



Street end view studies

The site is located at the intersection of Stainsbury Avenue and Victoria Drive where Victoria turns into Commercial Drive. The bend in the street and the drop in grade creates a street end view where the south west corner of Vienna House can be seen from Victoria Drive. Large mature trees screen the Stainsbury elevation from neighbouring residences.

This site is not subject to protected view cones.

L: NORTH VIEW FROM VICTORIA DRIVE NORTH OF 22ND AVENUE
 R: NORTH VIEW FROM VICTORIA DRIVE SOUTH OF 22ND AVENUE

SITE ANALYSIS / CONT'D



WEST VIEW FROM VICTORIA DRIVE & HULL STREET



NORTHWEST VIEW FROM VICTORIA DRIVE



SOUTH VIEW FROM VICTORIA DRIVE



SOUTH VIEW OF SITE FROM HULL STREET & VICTORIA DRIVE



VICTORIA DRIVE & 18TH AVENUE

Site photos

Existing site photos and residential development on adjacent sites.

SITE ANALYSIS / CONT'D



WEST VIEW ALONG STAINSBURY AVENUE



NORTH VIEW OF SITE FROM STAINSBURY AVENUE SIDEWALK



VIEW OF EAST ADJACENT PROPERTY ON STAINSBURY AVENUE



EAST VIEW UNDER SKYTRAIN GUIDE-WAY

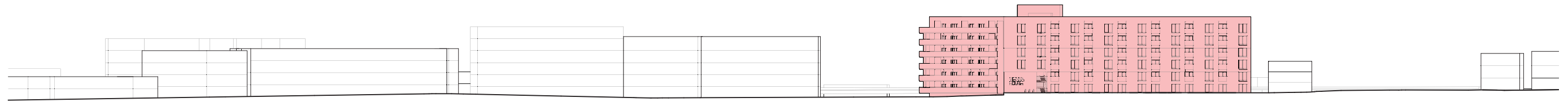


WEST VIEW ALONG NORTH PROPERTY LINE

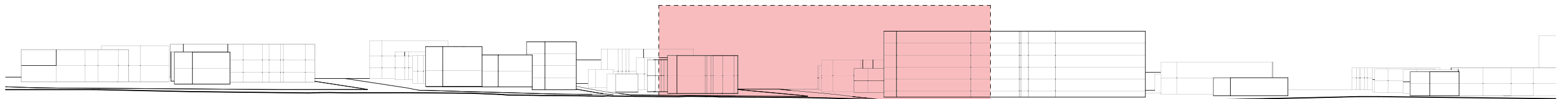


EAST VIEW ALONG NORTH PROPERTY LINE

SITE ANALYSIS / CONT'D



STREETSCAPE 1: STAINSBURY AVENUE LOOKING NORTH



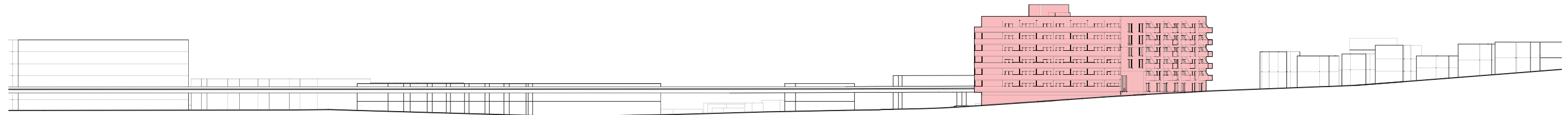
STREETSCAPE 2: STAINSBURY AVENUE LOOKING SOUTH - VIENNA HOUSE SHOWN IN DASHED LINES



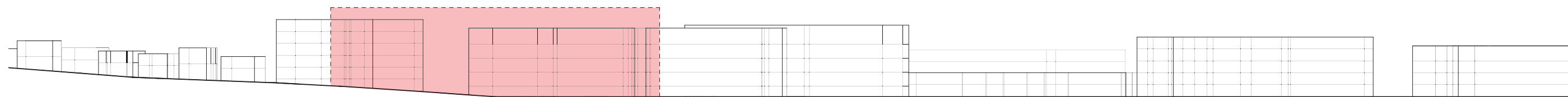
Massing context

Recent development on adjacent sites have transformed the neighbourhood from single family and light industrial in to a vibrant multi-family mixed-used neighbourhood.

SITE ANALYSIS / CONT'D



STREETSCAPE 3: VICTORIA DRIVE LOOKING EAST



STREETSCAPE 4: VICTORIA DRIVE LOOKING WEST -
VIENNA HOUSE SHOWN IN DASHED LINES



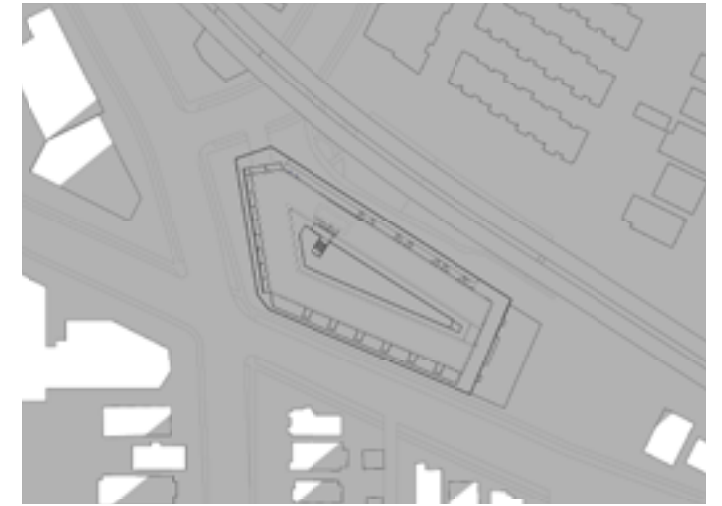
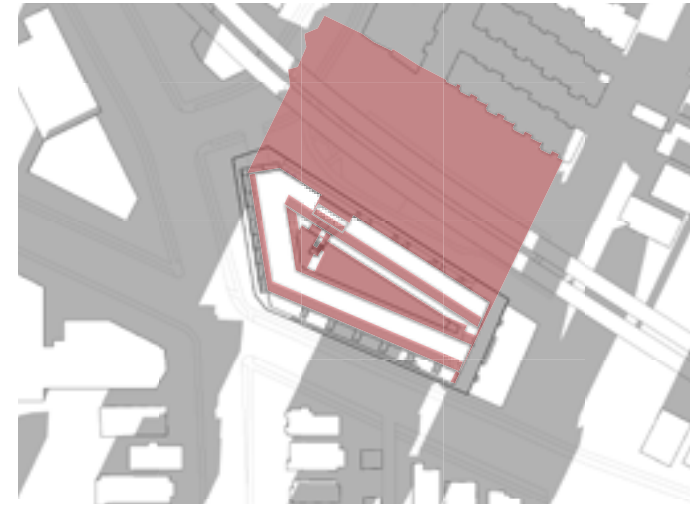
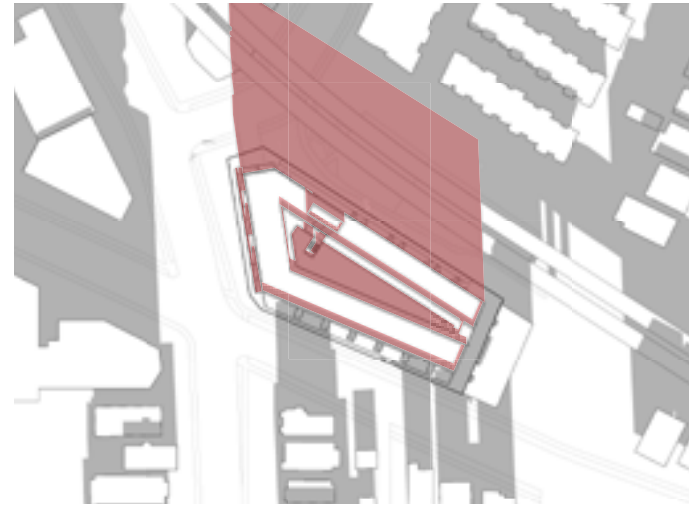
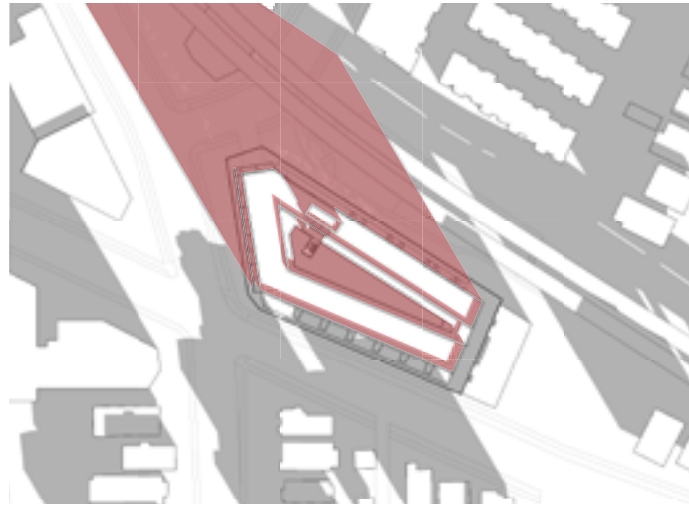
Streetscapes

The west balcony treatment responds to the neighbouring six storey development on the west side of Victoria Drive. The south elevation anticipates future development of City owned lots east on Stainsbury Avenue. The site is not subject to any protected view cones.

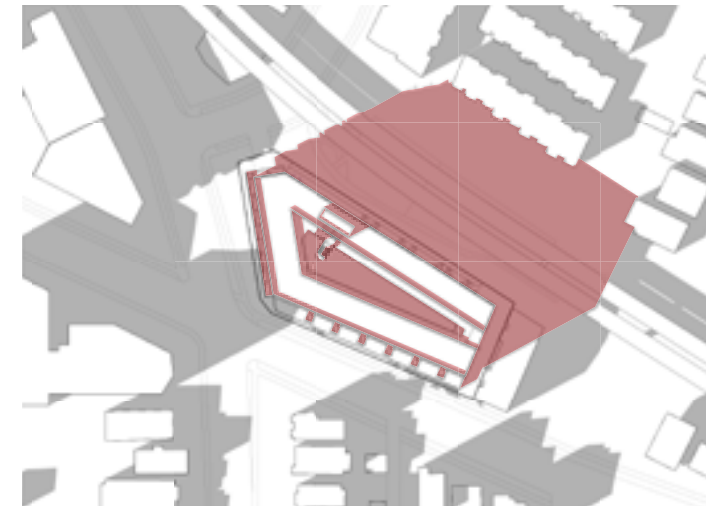
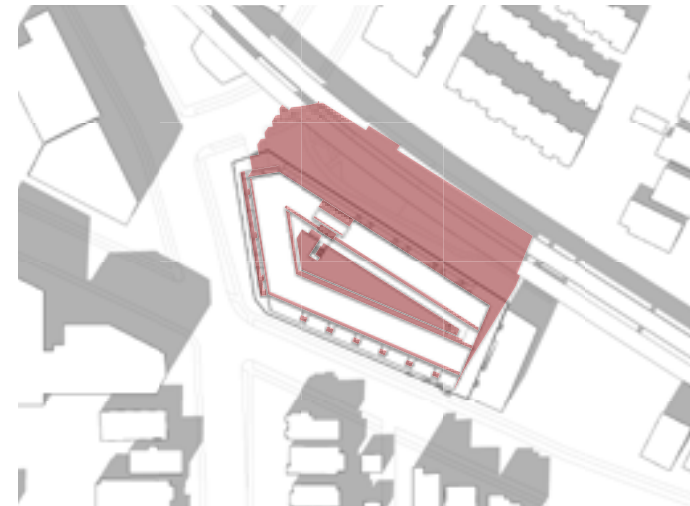
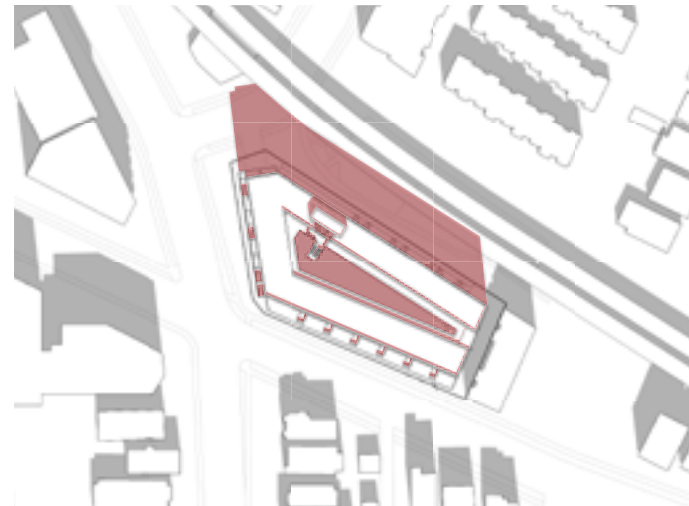
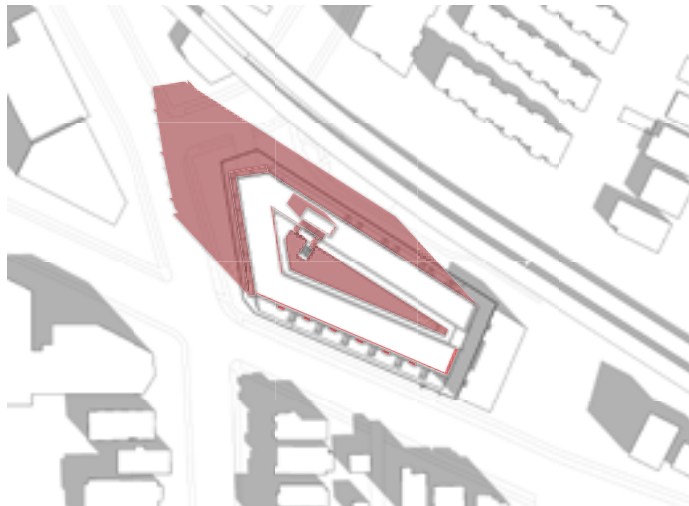
SITE ANALYSIS / CONT'D

Shadow studies

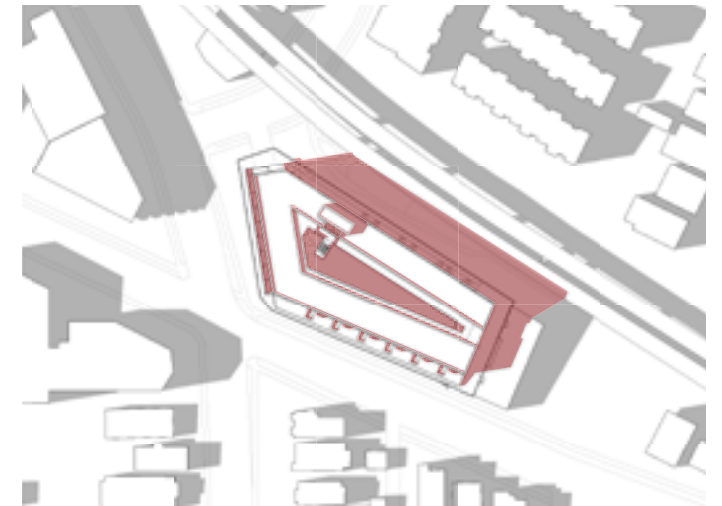
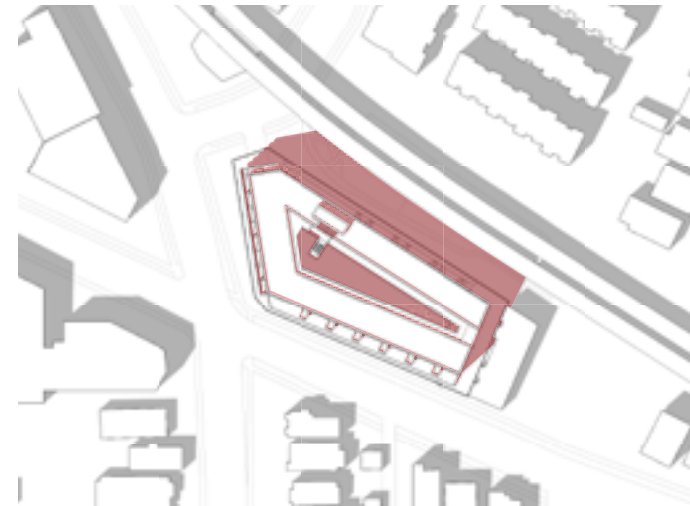
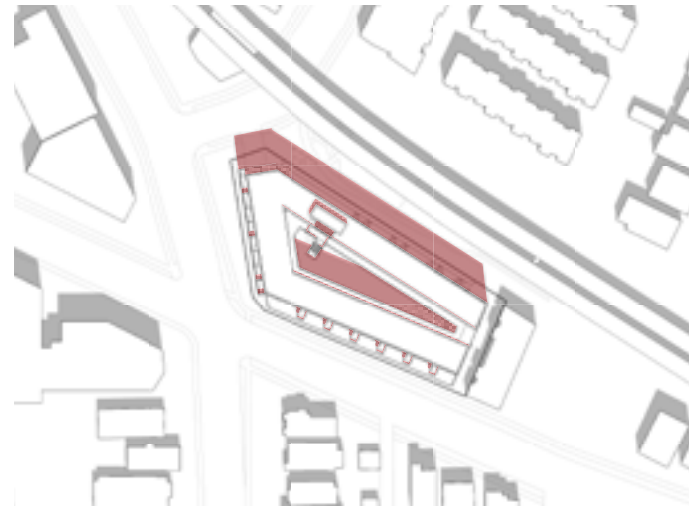
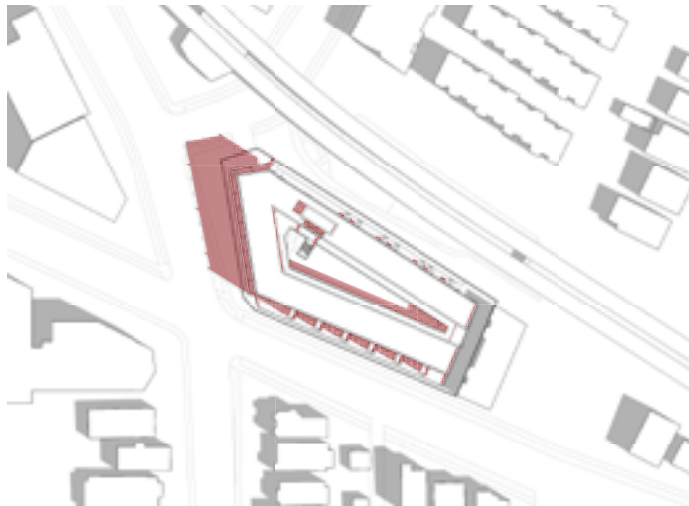
WINTER SOLSTICE



SPRING EQUINOX



SUMMER SOLSTICE



10AM

12AM

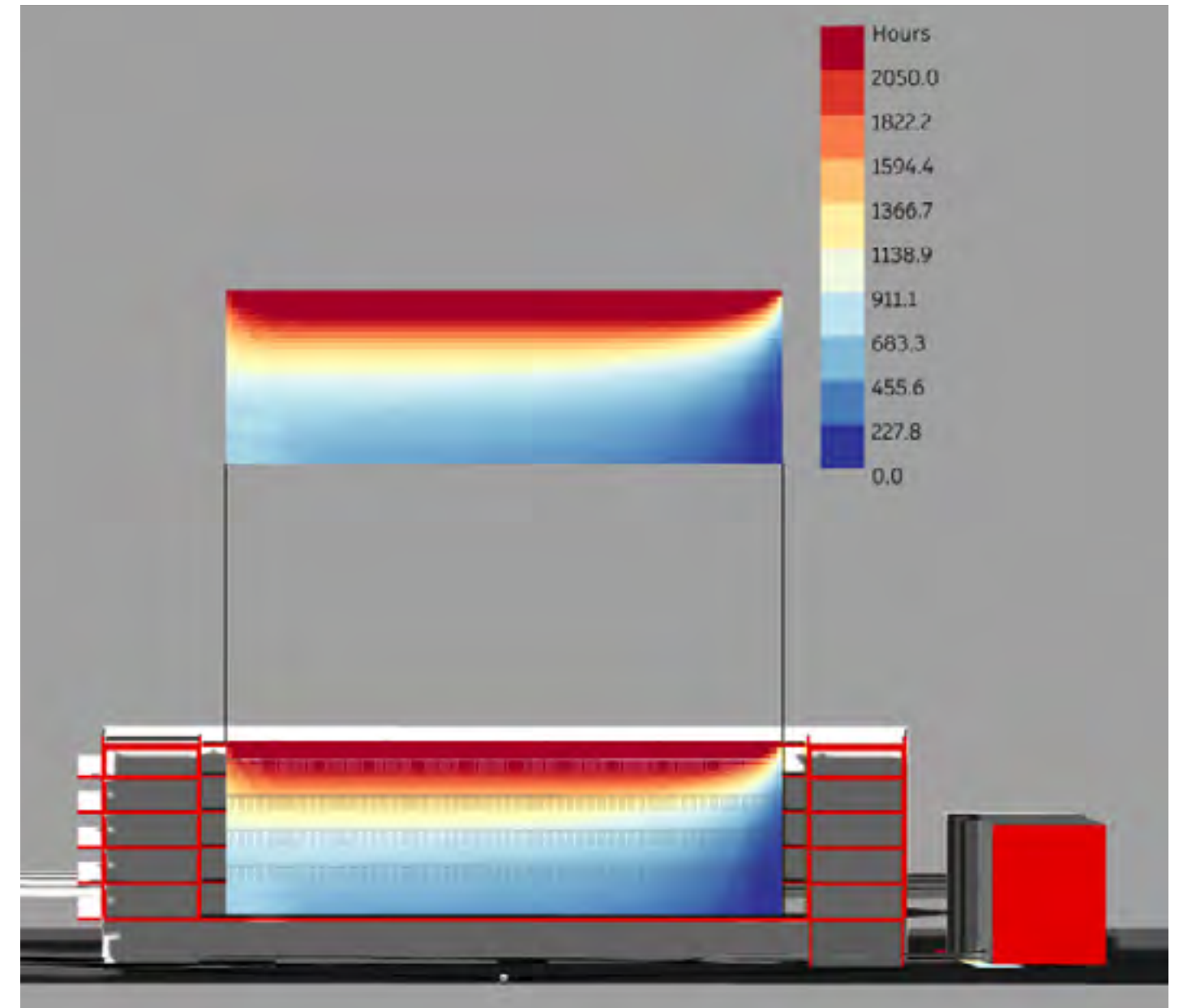
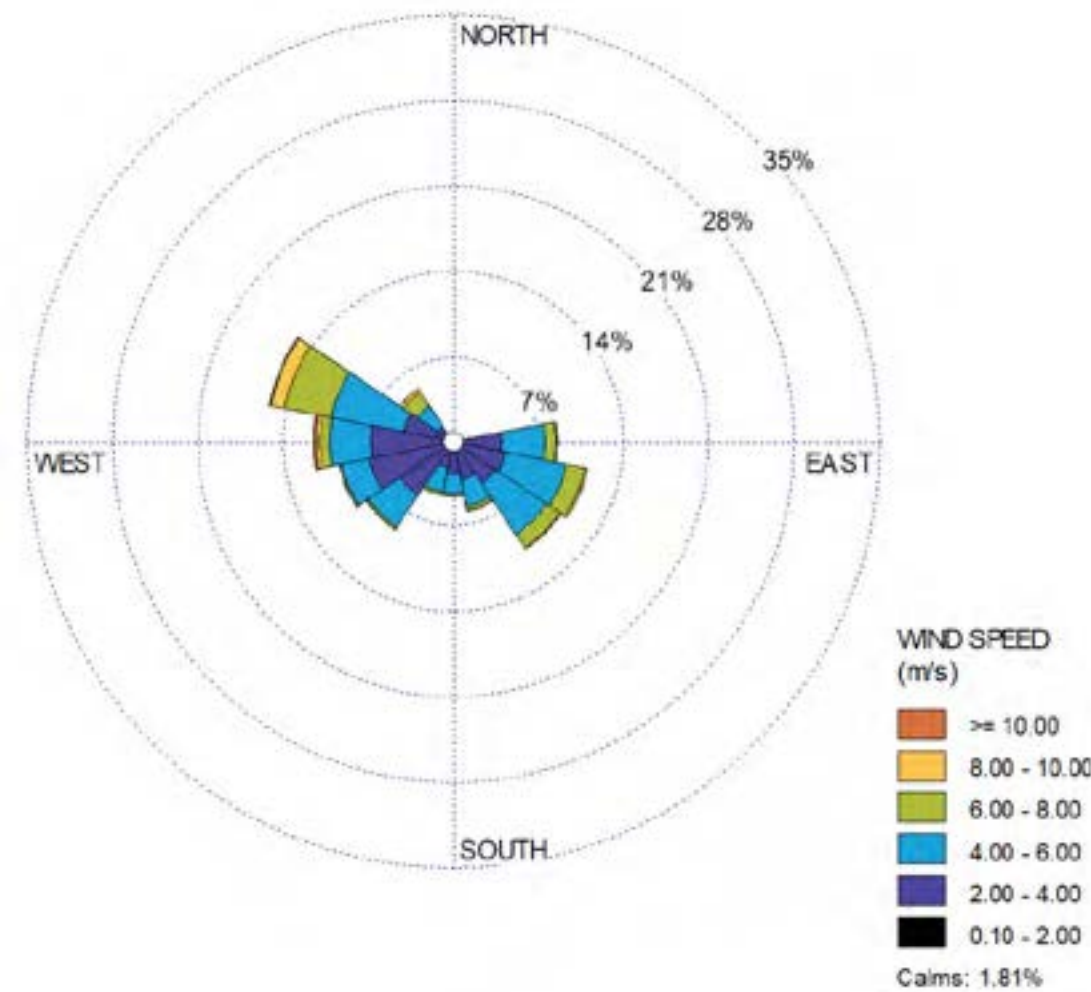
2PM

4PM



VIENNA
HOUSE

SUSTAINABILITY & PASSIVE HOUSE



ANNUAL SUNLIGHT HOURS IN THE COURTYARD - *Integral*

Climate and micro-climate

Prevailing easterly and westerly winds align with the courtyard's east-west geometry and openings; effectively ventilating the space. Daylight studies show the courtyard will receive ample sun in the upper levels. Light coloured materials in the courtyard will reflect light and make the space bright and welcoming.

Passive house

A highlight of design strategies used to achieve an affordable and comfortable Passive House design include:

Minimize surface area – reduced surface area reduces costs and increase energy performance. Step-backs and cantilevers are avoided to reduce cost and complexity and to improve air and water tightness.

Stacking – stack units to reduce structural complexity, strengthen the building, and reduce the length of service runs.

Light weight construction – light wood construction reduces embodied carbon by using less steel and concrete.

Reducing penetrations – rainwater leaders are located outside the enclosure; heating pipes are insulated, and ventilation stacks are gathered to minimize energy losses.

Efficient mechanical distribution – mechanical units and risers are located to minimize duct and pipe lengths.

Compact cores – compact service cores with grouped bathroom and kitchens result in efficient mechanical and plumbing distribution.

Light filled stairways – stairs are open air or have access to natural light to encourage people to walk rather than use the elevator.

SUSTAINABILITY & PASSIVE HOUSE / CONT'D



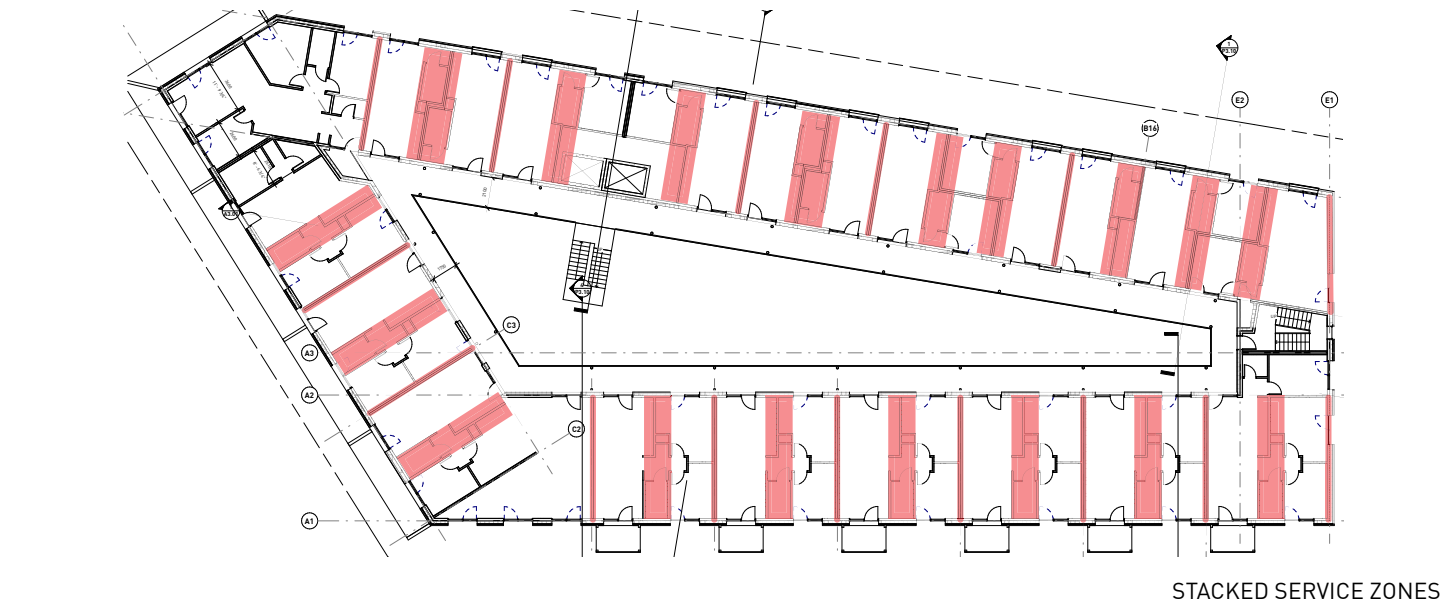
SIMPLE BUILDING FORM

Model for summer comfort – 2050 climate data is being used to align active and passive cooling with future climate predictions.

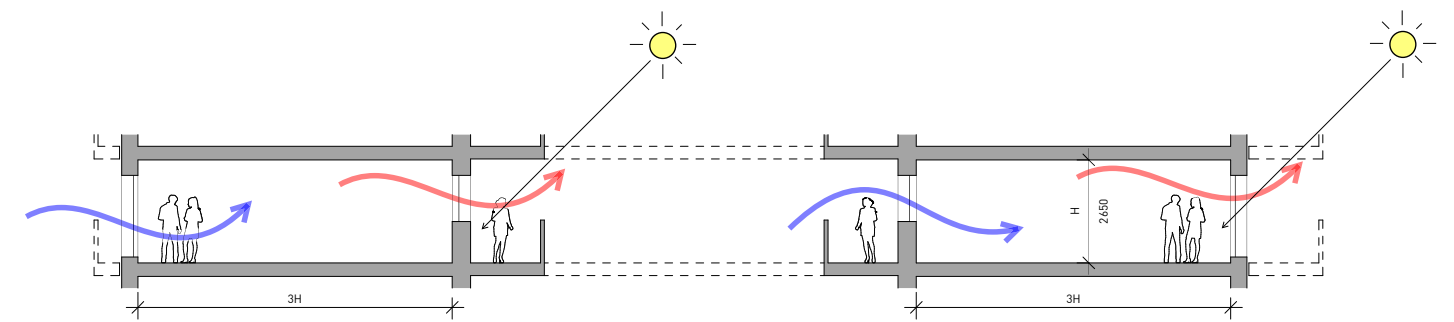
Summer overheating - heat gain is controlled with exterior window shades, balcony overhangs, cross-ventilation and partial cooling. Urban heat island effects are reduced with high albedo roofing and landscaping.

Operable exterior window shades – rolling shades let in light when needed while reducing summer heat gain. Shades will be integrated into the exterior window opening and operated through the inward opening tilt-turn windows.

Shading balconies – West and south facing family units have large inviting balconies that provide shading to the units below. North courtyard units have deeper south facing walkways for shading and seating.



STACKED SERVICE ZONES



PASSIVE COOLING - CROSS-VENTILATION AND SHADING

Partial cooling via ventilation air – filtration, dehumidification and cooling will temper in-suite ventilation air and contribute to thermal comfort during extreme heat events when windows are not able to open due to poor outdoor air quality.

Thermally broken balconies and walkways – suspended balconies and self supporting walkways are proposed to reduce thermal bridging to occupied areas.

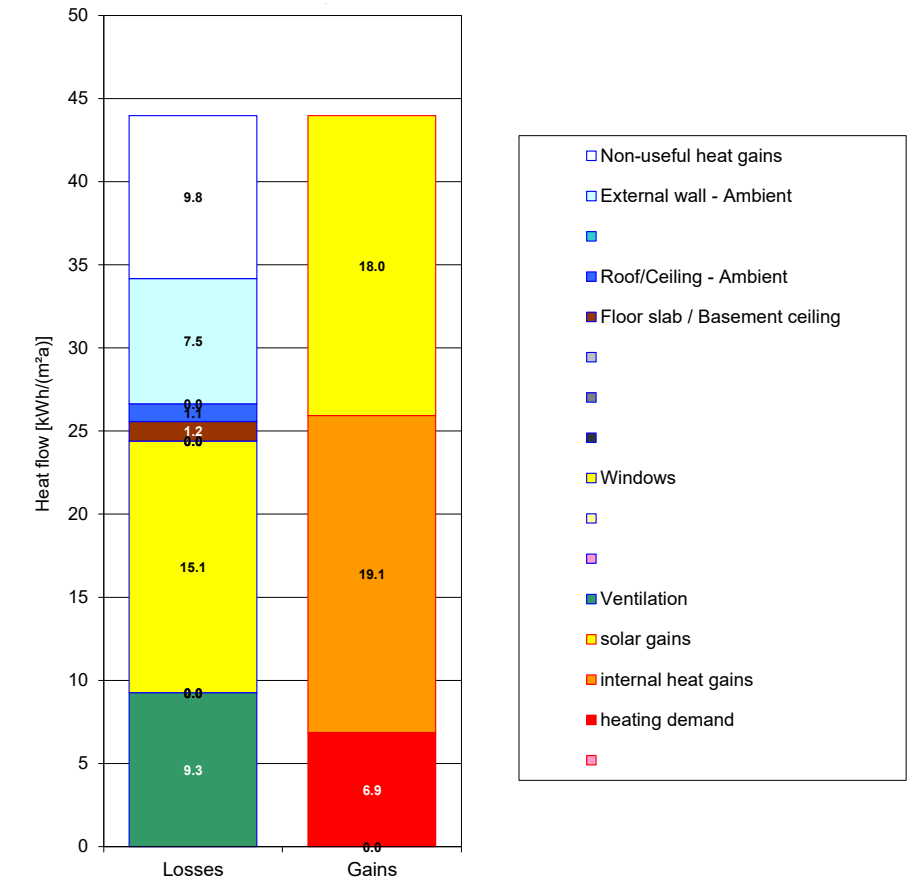
Efficient windows and doors – thermal bridging will be minimized by eliminating intermediate mullions in windows and doors. Fully glazed balcony and entry doors are more thermally efficient than conventional opaque doors.

Courtyard cooling – the interior courtyard reduces traffic and transit noise and helps keep residents cool through the stack effect.

SUSTAINABILITY & PASSIVE HOUSE / CONT'D

Building: **Vienna House** Standard: **1-Passive House** Primary energy verification: **2-PER (renewable)**
 Class: **1-Classic**

Specific building characteristics with reference to the treated floor area						
				Criteria	Alternative criteria	Fullfilled? ²
Space heating	Treated floor area m ²	7594				
	Heating demand kWh/(m ² a)	7	≤	15	-	yes
	Heating load W/m ²	8	≤	-	10	
Space cooling	Cooling & dehum. demand kWh/(m ² a)	5	≤	15	15	yes
	Cooling load W/m ²	1	≤	-	11	
	Frequency of overheating (> 25 °C) %	-	≤	10		-
	Frequency of excessively high humidity (> 12 g/kg) %	0.0	≤	10		yes
Airtightness	Pressurization test result n ₅₀ 1/h	0.6	≤	0.6		yes
Non-renewable Primary Energy (PE)	PE demand kWh/(m ² a)	157	≤	-		-
Primary Energy Renewable (PER)	PER demand kWh/(m ² a)	71	≤	72	83	yes
	Generation of renewable energy (in relation to projected building footprint area) kWh/(m ² a)	0	≥	-	64	
<small>---: No requirement</small>						
Passive House Classic?						yes



PASSIVE HOUSE PRELIMINARY VERIFICATION

ENERGY BALANCE MONTHLY METHOD

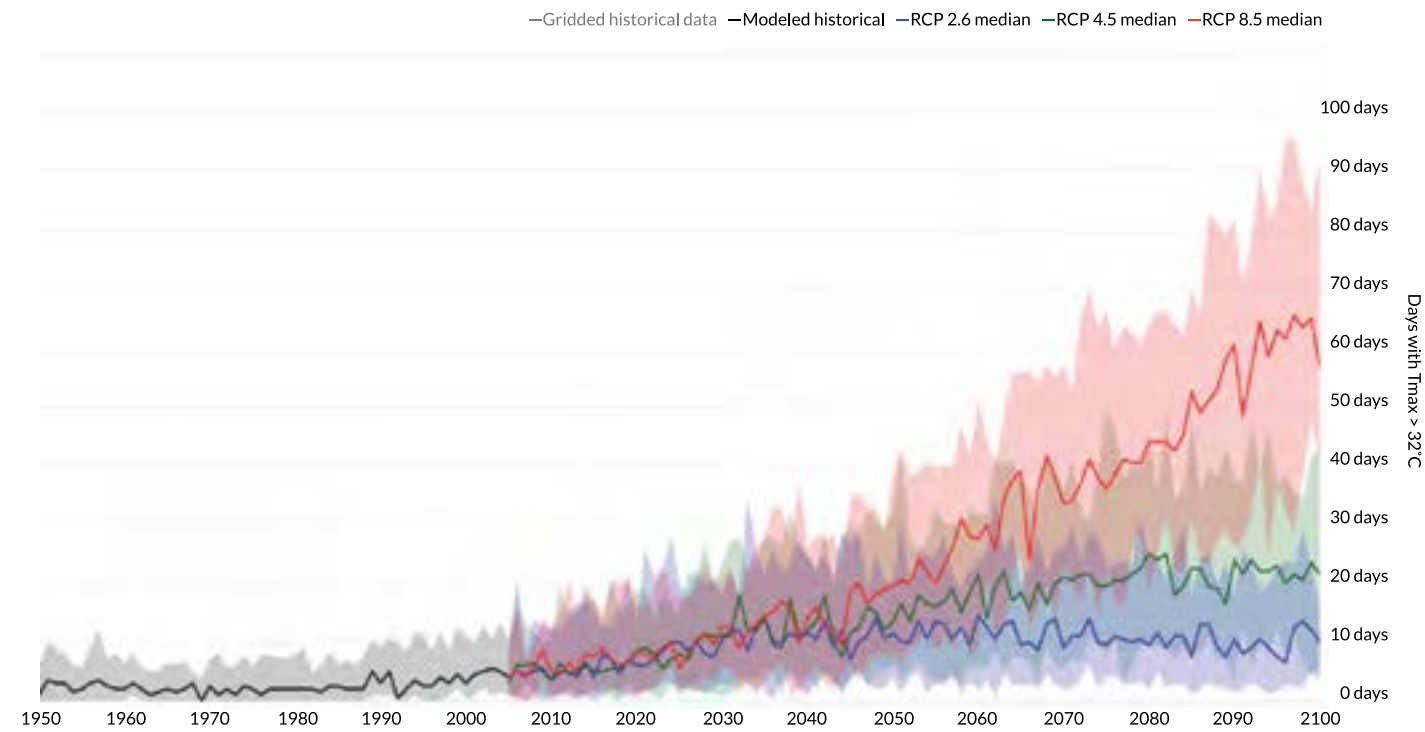
Energy Model

The sustainable strategies being considered for Vienna House focus on promoting resident comfort, health and well-being. The project team is dedicated towards meeting the key performance criteria of Passive House Certification including the following:

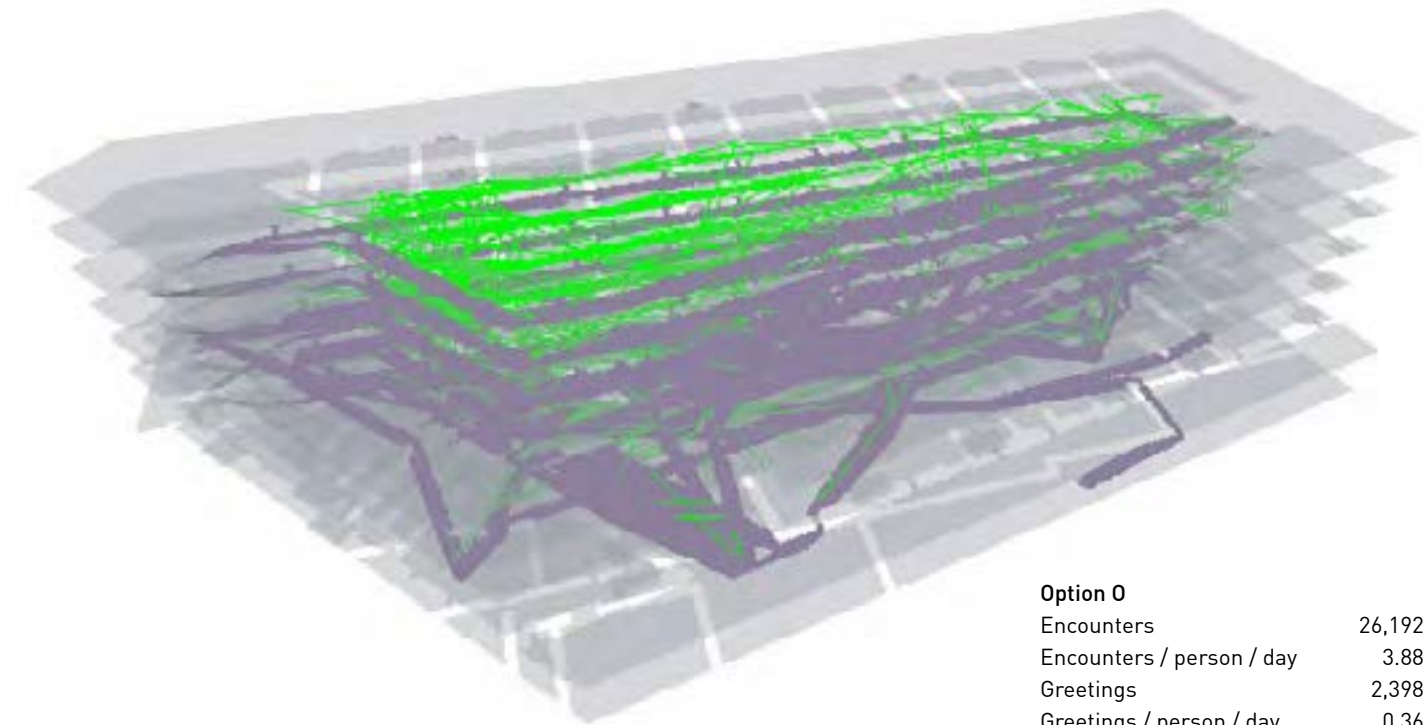
- Space Heating Demand: ≤ 15 kWh/(m²a);
- Space Cooling & Dehumidification Demand: ≤ 15 kWh/(m²a);
- Frequency of Overheating (> 25 °C): ≤ 10%;
- Airtightness: ≤ 0.6 ACH₅₀
- Primary Energy Renewable (PER): ≤ 60 kWh/(m²a);
- Efficient massing with a form factor of 1.24 surface area to floor area (TFA);
- Balance daylighting needs with glazing performance by establishing a window to wall ratio of 27%;
- Develop a high performance building envelope with targeted effective thermal resistive values of R70 (0.079U) for roof assemblies, R40 (0.145U) effective for wall assemblies, and 0.792U for window assemblies;
- Supplementing natural light sources with energy efficient LED lighting in all spaces;
- Providing a constant supply of fresh air to all residence rooms and common spaces;
- Specifying low-VOC materials and finishes that do not negatively impact air quality,
- and recovering heat from the building's exhaust system.

Additional sustainable strategies for the project are framed around optimizing the life-cycle impact of the appliances, fixtures, materials and finishes selected for the residence.

SUSTAINABILITY & PASSIVE HOUSE / CONT'D



DAYS WITH TMAX > 32 DEG C
 Climatedata.ca



FLUID sociability model - 30 day period
 Human Studio

Climate resilience

Vienna House was developed using the Integrated Building Adaptation and Mitigation Assessment (IBAMA) framework to help increase the building's resilience to climate hazards while optimizing GHG reduction and sustainability goals. IBAMA was developed as part of BC Housing's Mobilizing Building Adaptation and Resiliency initiative.

The IBAMA integrated design team workshops ran concurrently with regional pandemic, extreme heat, adverse air quality, extreme wind, flooding and supply chain disruptions. Specific strategies to increase the capacity of the building to absorb external climate stresses; retain function; reduce risk; and enable occupants and systems to persist include:

Absorb external climate stresses - The envelope and HVAC systems are being designed to the Passive House standard using 2050 climate data to buffer against compounding hazards such as extreme heat during wildfire season when opening windows are not possible. Provisions for partial cooling and the ability to fit central Heat Recovery Ventilators with smoke filters during such events are planned for.

During extreme heat events the courtyard provides a cool refuge due to sun shading, landscaping and stack effects.

Retain function - Vienna House's simple regular forms with stacked service cores and reduced window to wall ratio in plywood sheathed walls are expected to perform better than conventional structures in seismic events, increasing the probability of residents to shelter in place after an earthquake.



COURTYARD FROM FOURTH FLOOR LOOKING SOUTHEAST

In addition, the hot water tanks have been located on the roof to provide a three day gravity fed drinking water supply in the event of water supply disruption due to earthquake or drought.

Enable occupants and systems to persist - Vienna House is being designed to create a strong sense of community to overcome loneliness, trauma, health issues, and natural disasters. Modeling carried out by FLUID Sociability suggests a high incidence of social interactions compared to

conventional building forms are made possible by Vienna House's courtyard typology. A single exterior gathering space, directly accessible from most suites, suitable for Christmas caroling, trick or treating, or summer feasts, creates a cohesive community, which is an asset during disasters.

Smaller indoor and outdoor amenity areas on multiple floor levels will foster connections between residents and can be used for emergency functions, if required.

Reduce risk - The project team has applied for a grant from the CMHC for an **net zero design option** including structural and electrical infrastructure to support the future installation of a photo-voltaic system. If funding is available, the risk of disruption of systems due to power outages will decrease.

SUSTAINABILITY & PASSIVE HOUSE / CONT'D

Courtyard daylight studies



SUMMER 10AM



EQUINOX 10AM



SUMMER 12PM



EQUINOX 12PM



SUMMER 2PM



EQUINOX 2PM

VIENNA HOUSE



COURTYARD FROM THIRD FLOOR LOOKING NORTHWEST SUMMER 8AM

FORM OF DEVELOPMENT

Site design

Indoor - outdoor amenities - a large indoor amenity room is located next to the main entry, south facing common terrace with play space and the internal courtyard.

Social interaction - the amenity room is set up to support small, medium and large gatherings in the courtyard. Birthday parties, children's play, meetings, and bi-annual communal dinners can all be hosted form here.

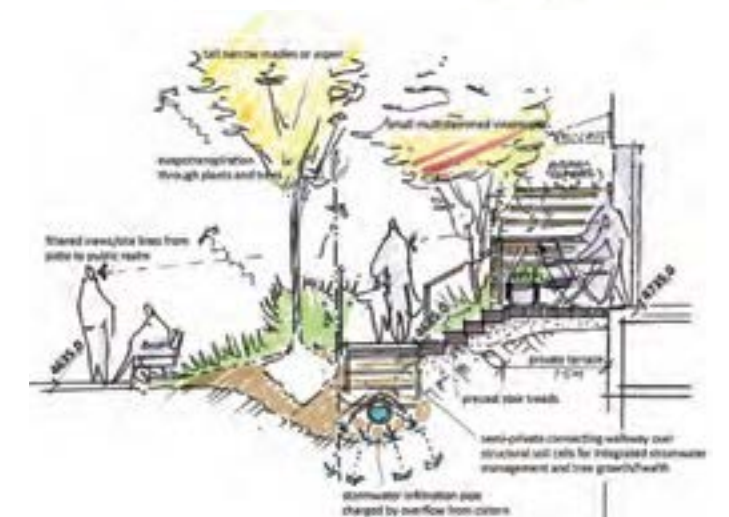
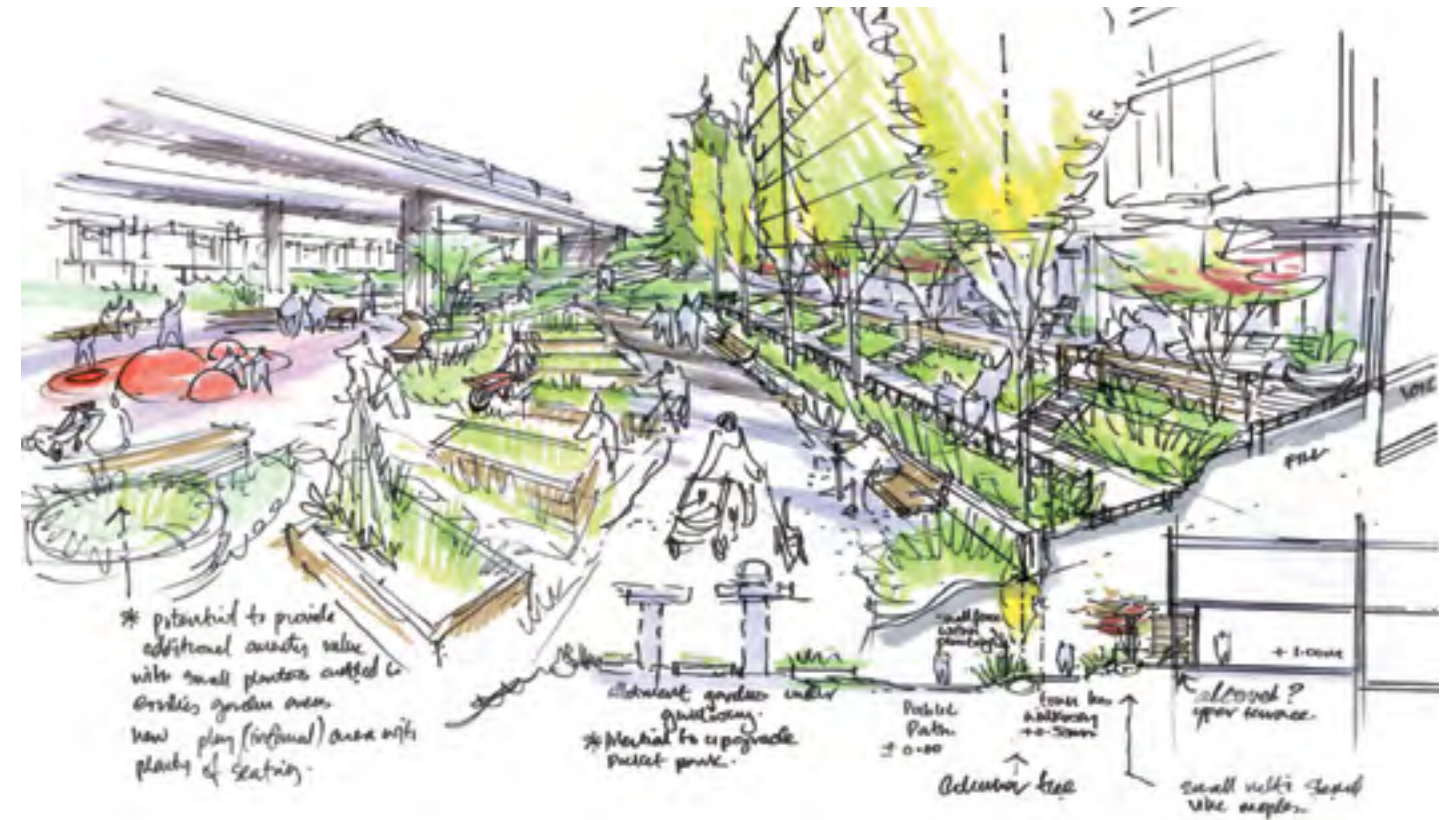
Informal play - is encouraged in the south terrace and courtyard with natural, interpretative play structures.

Vertical garden - columnar trees, large planted pots on each floor turn the courtyard into a vertical garden. Planting provides privacy for ground floor units, while informal seating encourages residents to mingle and enjoy the garden.

Communal gardens - shared planting boxes are located along Stainsbury to buffer ground floor units from the sidewalk while encouraging interaction with neighbours.

Rainwater collection - a large cistern collects storm water for on-site irrigation. A blue-green roof system is being considered for select roof areas.

Private terraces - all ground floor units have private terraces. North facing unit terraces step down to a semi-private walkway overlooking the community garden and green-way under the SkyTrain tracks providing natural surveillance.



Matthew Thomson Design



Landscape plan

VIENNA HOUSE

Matthew Thomson Design

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Site Furnishings and Amenities:

- potential public art / stormwater feature
- large communal picnic bench
- tots and young children play area
- communal harvest/potting bench
- raised planters and fruiting plants + trees
- movable tables and chairs within courtyard



Planting List per Areas-

Area 1. Exposed beds:

- fagus sylvatica
- quercus palustris
- hamamelis x intermedia 'diane'
- amelanchier grandiflora 'autumn brilliance'
- malus fusca
- philadelphus lewisii
- rosa nutkana
- ribes sanguineum
- fothergilla gardenii 'mt. airy'
- arctostaphylos uva-ursi



Area 2. Proposed Swale/Wet Feet

- cornus sericea
- myrica gale (male and female plants)
- scirpus microcarpus
- juncus effusus
- darmera peltata
- vicia americana
- sium suave
- asclepias tuberosa



Area 3. Shade (North and East side of building)

- acer circinatum
- gaultheria shallon
- oemleria cerasiformis
- maianthemum dilatatum (ground cover)
- maianthemum stellata (ground cover)
- oxalis oregana (ground cover)
- achlis triphylla
- polystichum munitum
- adiantum aleuticum
- maianthemum racemosa
- aruncus dioicus
- vaccinium ovatum



Area 4. Courtyard

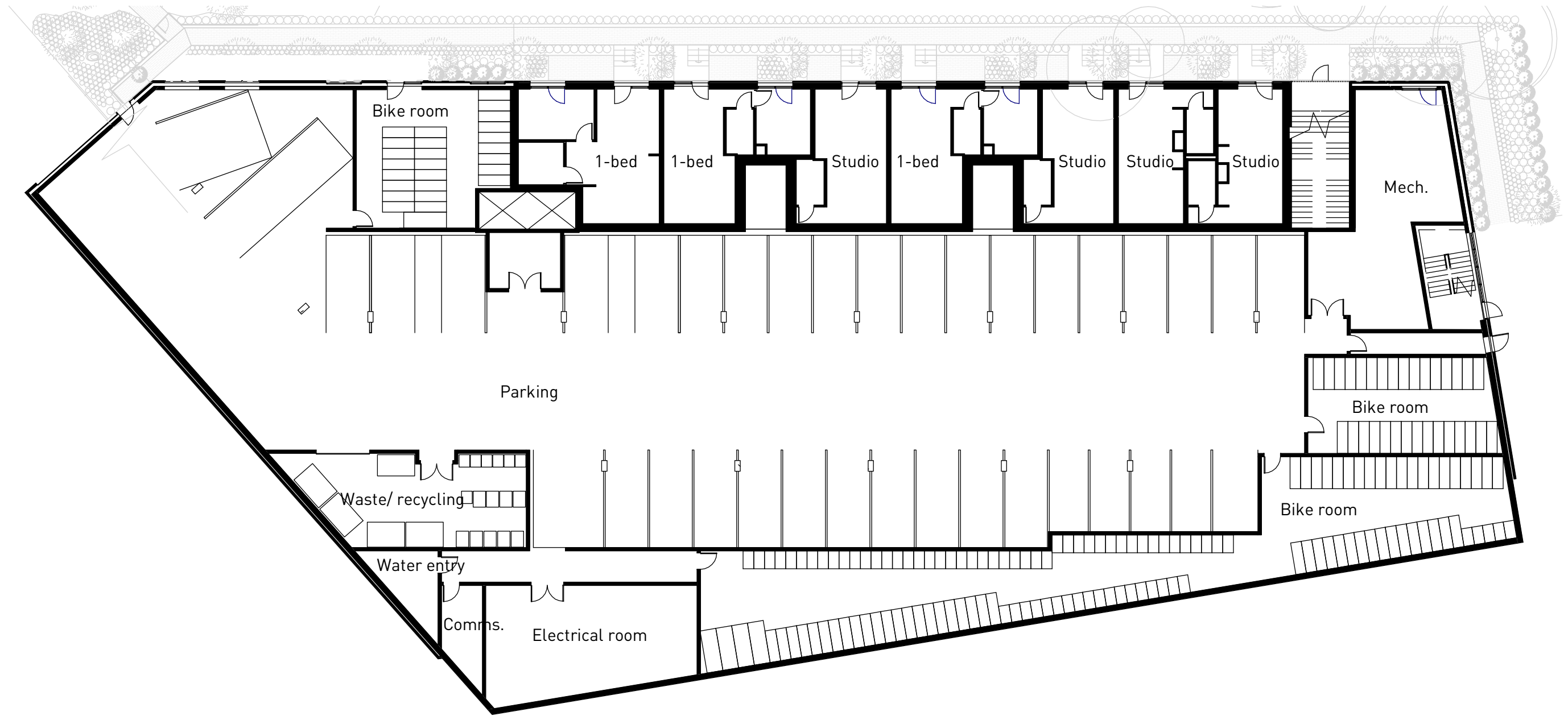
- acer circinatum
- vaccinium ovatum
- maianthemum stellatum
- vancouveria hexandra
- sarcococca hookeriana 'sarsid 1'
- asplenium tichomanes



HEDGING:

- taxus hicksii or taxus hillii
- prunus lusitanica
- ilex crenata 'convexa'

Landscape materials



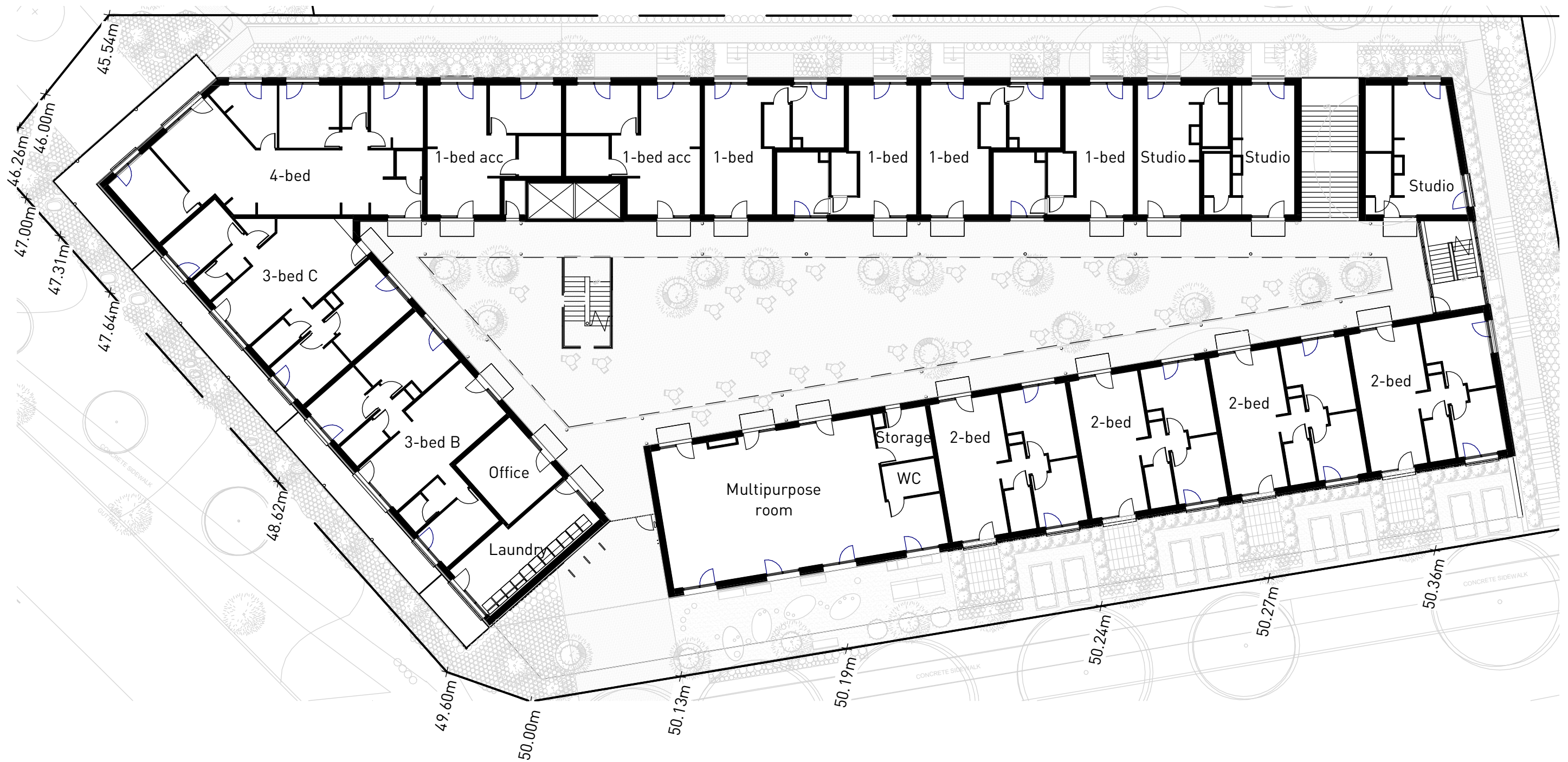
Building plans

Floor plan - L0 - with an at-grade service entrance on Hull Street, residents have easy access to bicycle and vehicle parking, loading, waste and recycling storage. Residents and

guests can access the terrace units via a secondary garden entrance from Hull Street, which enhances safety and natural surveillance of the neighbouring communal garden and

provides a more direct connection to Trout Lake Park. A generous stair connects the terrace units with the courtyard above.

Loading (1 Class A & 1 Class B) spaces and recycling and garbage rooms are located near to the elevator core for convenient access.



Floor plan - L1 - the main accessible entrance is located off Stainsbury with a small gathering place for visitors and residents. The multipurpose room is located to take advantage

of its direct connections to the courtyard and south facing shared gardens and children's play spaces. Both enhance the pedestrian nature of Stainsbury and will contribute to the future

bike-way planned by the City. Mature street trees provide ample shading in the summer to the south facing units and shared garden. Units facing Victoria Drive have large wrap-around

balconies to enhance privacy, buffer vehicle noise and headlights and provide additional shading from low angle west sun.



Floor plan - L2 - a central stair and twin elevators connect the courtyard with the levels above. The north walkway is wider to accommodate outdoor use for units with

northern juliet balconies. Potted plants, benches and entry mats will contribute to a neighbourly character. In the south corner the walkway overlooks the main entry below.

The east stair is glazed on two sides to bring morning light into the courtyard and to reflect the glazed central stair in the neighbouring building to the east.

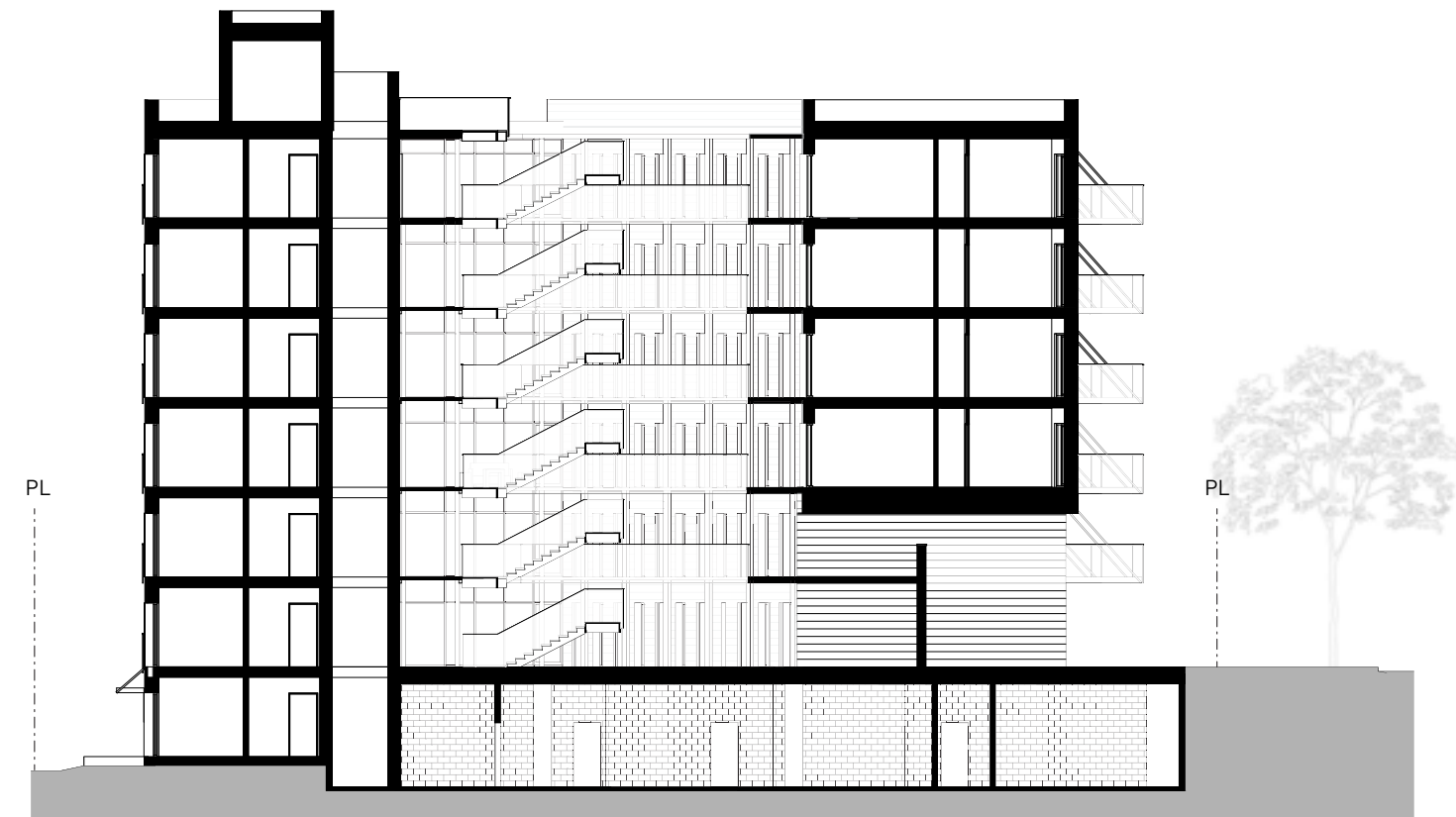
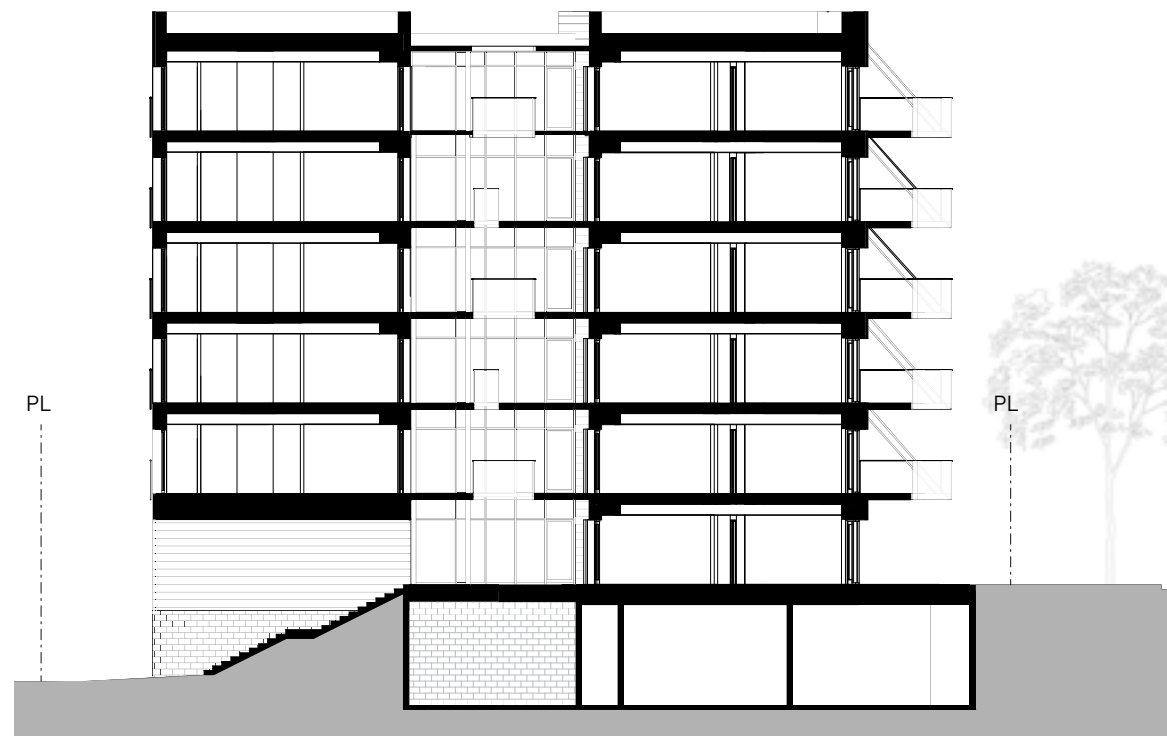


Typical floor plan - L3 - L6 - south facing two bedroom units have large balconies that extend out towards the street tree canopy. These spaces reach-out to the street to encourage

interactions with passersby. North facing studio and one bedroom units have cross ventilation and windows (with restrictors) to the courtyard to allow for nighttime flushing during summer

heatwaves. Alternating floors have an shared balcony seating area for residents to meet with neighbours and friends.

FORM OF DEVELOPMENT / CONT'D

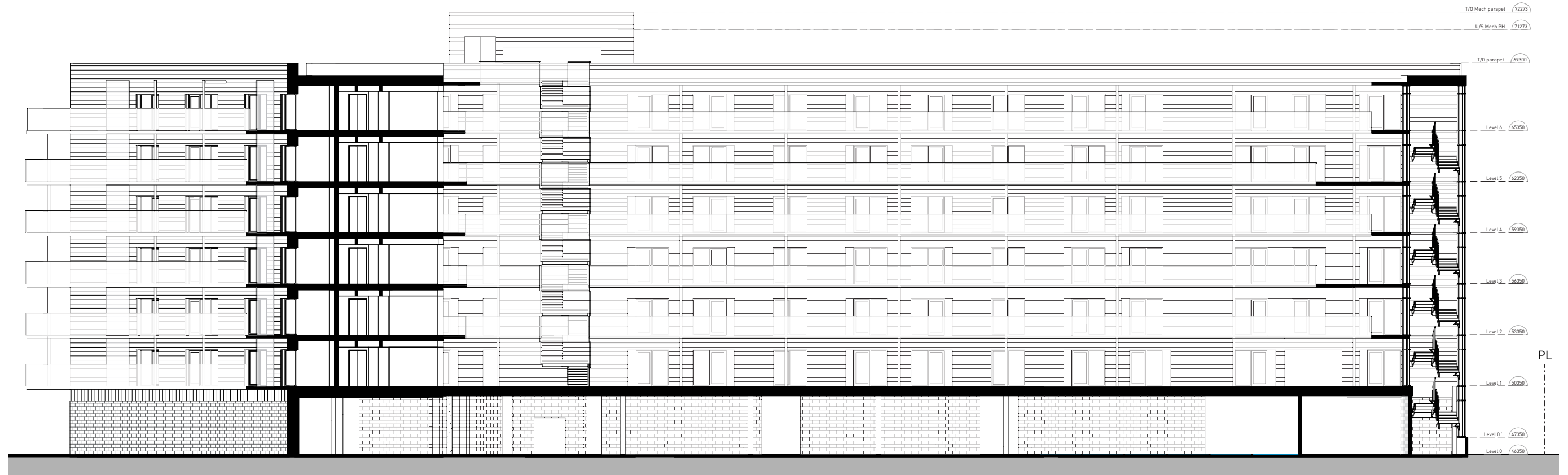


Courtyard sections - The courtyard has an accessible connection to Stainsbury. Stairs connect the courtyard to the terrace units.

Setbacks are sized to balance adequate light in the courtyard and comfortable private terraces and common spaces along north and south property lines.

Setbacks include a tolerance to allow for 30% variation in exterior wall thickness to accommodate varying exterior wall dimensions from different prefabrication suppliers.

FORM OF DEVELOPMENT / CONT'D



Longitudinal section - the courtyard is connected to parking and service spaces by two elevators and the east stair.

The 3,000 mm floor to floor height for all residential floors provides headroom for installation of ceiling fans in bedrooms and living rooms.



PARTIAL SOUTH ELEVATION

VIENNA HOUSE



PARTIAL NORTH ELEVATION



PARTIAL WEST ELEVATION

Materials in Context

Each facade is coordinated with its context and solar orientation.

Summer solar heat gain - heat is reduced with window shades, balcony overhangs and cross-ventilation.

Operable exterior shading - exterior rolling shades let in light when needed while reducing summer cooling demand. Shades will be integrated into the exterior window opening and operated through the inward opening tilt-turn windows.

Shading balconies - are sized to encourage use and provide shading. West and South facing family units have large inviting balconies. North facing studio and one-bedroom units have juliet balconies.

Large windows and doors - large rectangular windows reduce frame heat loss and provide ample free area for cooling when the windows are open. Fully glazed balcony and entry doors are more thermally efficient than conventional opaque doors.

Material expression - a vertically layered facade with a tripartite division lightens from bottom to top with more robust materials at the base. The serial tripartite composition is animated with shadow and light by morning and afternoon low-light angles sun on the north and midday sun on the south.



NORTH ELEVATION

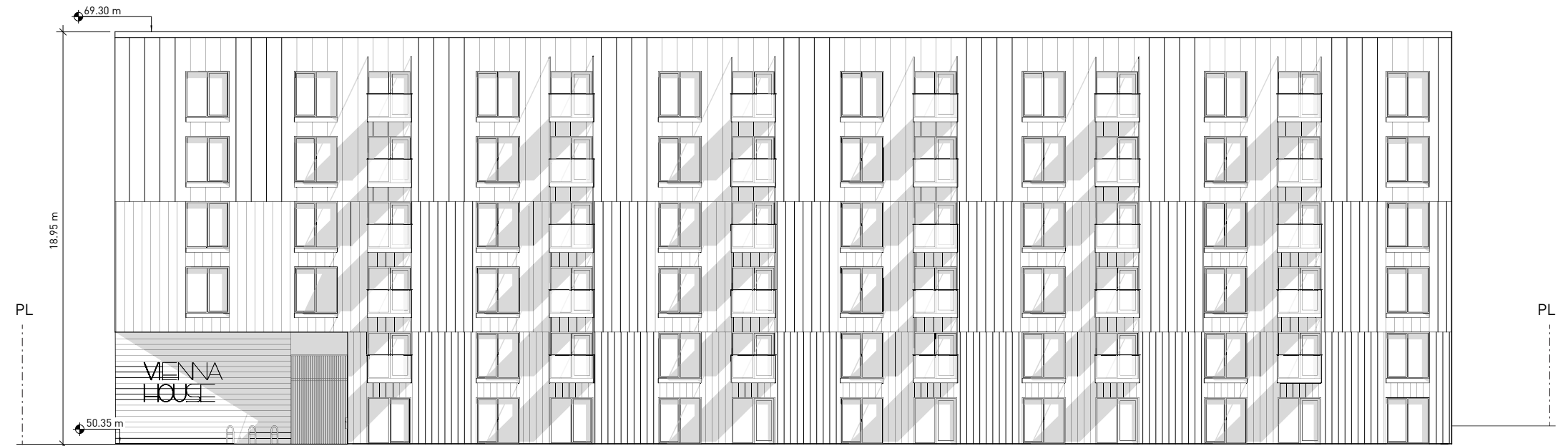


EAST ELEVATION

North and east elevations - the east stair provides natural light in the courtyard and mirrors a central glazed stair in the neighbouring building to the east.

Residents and guests can access the terrace units via a secondary garden entrance from Hull Street, which enhances safety and natural surveillance of the neighbouring communal garden. A generous stair connects the terrace units with the courtyard above.

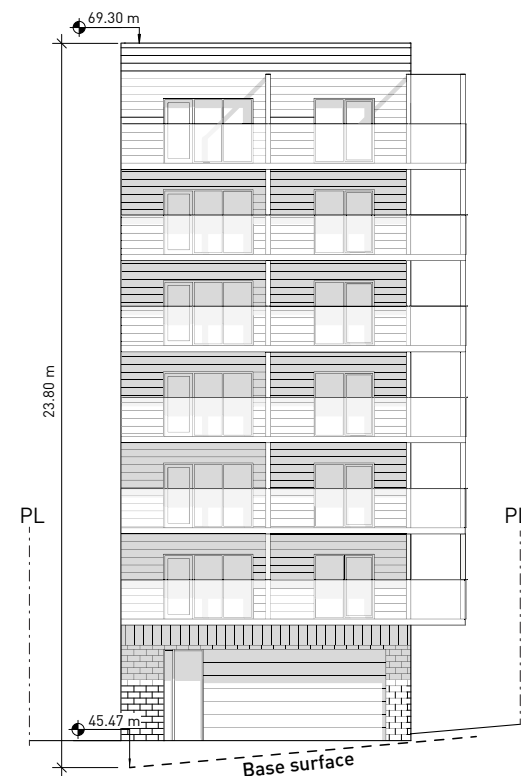
FORM OF DEVELOPMENT / CONT'D



SOUTH ELEVATION

South and west elevations - the main accessible entrance is located off Stainsbury with a small gathering place for visitors and residents. The multipurpose room is located to take advantage of its direct connections to the courtyard and south facing shared gardens and children's play spaces.

With an at-grade service entrance on Hull Street, residents have easy access to bicycle and vehicle parking, loading, waste and recycling storage.



NORTHWEST ELEVATION



WEST ELEVATION



public

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