A mix of cultural spaces that activate the pedestrian-friendly laneway

CULTURE-HOUSE

Located within a developing Transit-Oriented Area, the project is tasked with delivering a high-density, mixed-use development while embracing the rich local and Indigenous culture. Our proposal seeks collective efforts to address this design challenge. From housing providers, Indigenous artist groups, and local residents to design professionals, prefabrication specialists, and government agencies, the collaboration extends from neighbourhood planning to site-specific operations.

The project includes residential and cultural spaces that work together to create a hybrid, vibrant, and inclusive community. It is a place that celebrates local and Indigenous culture, prefabricated building technologies, and sustainability. The project challenges current building codes and policies to unlock the full potential of mass timber construction, proposes alternative prefabrication methods to reduce construction time and costs, and provides a healthy living environment as well as community cultural spaces.

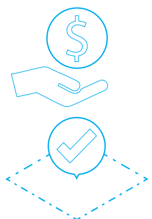
COLLABORATIVE DEVELOPMENT FRAMEWORK

ESTABLISH COMMON VALUE

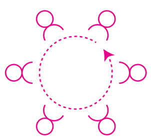
Co-development partnership is formed between **non-profit housing provider** and **Indigenous artist group** with common objectives to provide affordable housing for local community and promote Indigenous art culture, as well as celebrating various cultures within the community.

FUND AND LAND SECUREMENT

Joint effort made between the housing provider and artist group in **applying for project funding and land**, through government art and housing agencies such as BC Arts Council and CMHC, strengthening project viability and public support.



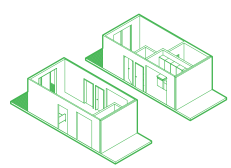
PROGRAM PLANNING



Artist group helps lead public consultation to build **creative cultural spaces** and programs tailored to local needs, while housing provider engages with prospective tenants to determine **various housing needs**. The coordinated program decisions help housing and cultural spaces complement each other, creating shared value for the wider community.

DESIGN AND CONSTRUCTION

Collaborative engagement with **design professionals and project builders** throughout the design and construction process to make cultural and housing visions integrated into the built spaces.



ENEGAGE COLLABORATORS

Art & Culture Institution

Provide art education, curate exhibitions, and host performance events rooted in local and Indigenous culture.

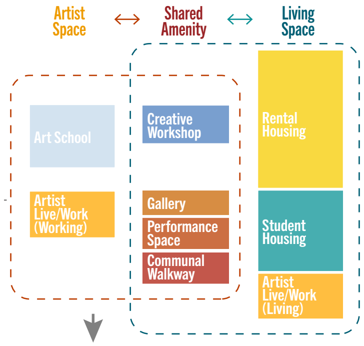
Art Entrepreneurs

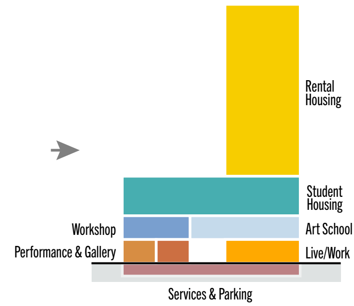
Bring creative energy, diverse artist practice, and cultural programming that enrich the community and foster economic vitality.

Indigenous Communities

Offer art, storytelling, and intergenerational knowledge sharing that strengthen the community identity and deepen its connection to the land.

Program Development

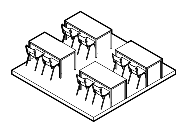




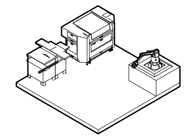
Program Overview

Rental Housing	103,550 sq.ft.
Student Housing	15,320 sq.ft.
Artist Live/Work	12,020 sq.ft.
Art School	9,020 sq.ft.
Workshop	2,490 sq.ft.
Performance Space	2,250 sq.ft.
Gallery	1,790 sq.ft.

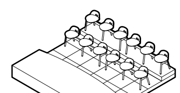
Places where people meet



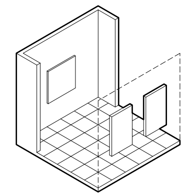
Art School
Places where ideas, knowledge, and experiences are shared and passed on.



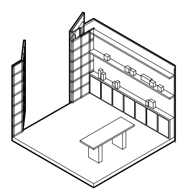
Workshop
Offer hands-on opportunities to create, learn, and collaborate.



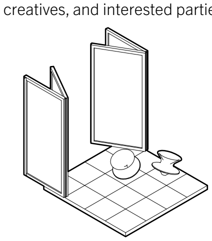
Performance Space
Open venue for hosing community and art events.



Gallery
Flexible spaces to showcase works by Indigenous artists, local creatives, and interested parties.



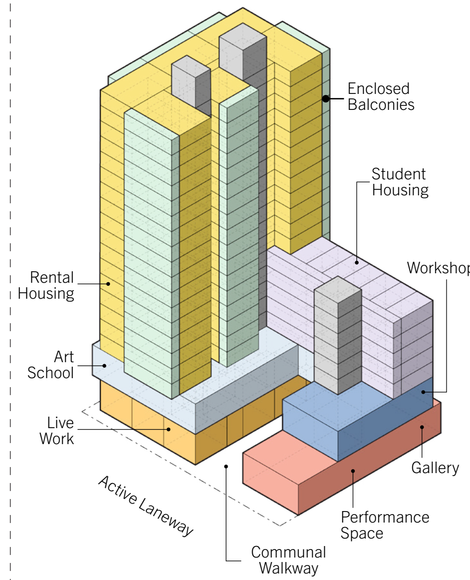
Live Work
Ground-oriented artist creative space with affordable living unit above.



Communal Walkway
Outdoor gathering spaces for performances, pop-up markets, and festival.

Creating high-density, mixed-used development

20 Storey
8.0 FSR



PROMOTE COMMUNITY INTERACTIONS

CO-FACILITATE OPERATION

Partnership between housing provider and artist group continues to ensure the building supports diverse community needs in the long run. **Revenue-sharing** agreements established between housing and art components to **balance operating costs** and maintain long-term affordable lease for both residential and artistic tenants.

Further collaboration with surrounding and future developments...

HYBRID CONSTRUCTION AND SHARED NEIGHBOURHOOD PLANNING

We propose a hybrid construction approach that combines panelized and volumetric prefabrication to balance efficiency, cost-effectiveness, and quality. Panelized construction offers lower transportation costs and greater design flexibility, while volumetric construction enables faster on-site installation with higher precision. By integrating both methods, developments can reduce overall construction time, lower costs, and minimize the carbon footprint.

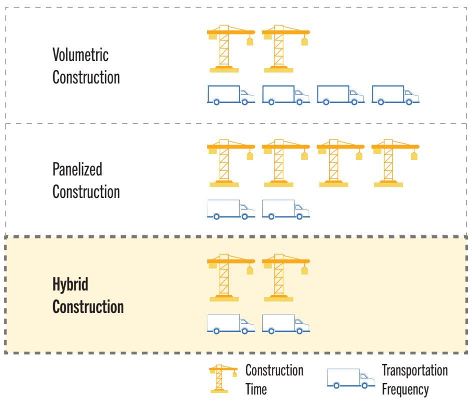
This hybrid approach is realized by **identifying and establishing temporary site-adjacent factories** on select parcels to support production for neighbouring projects with earlier development timelines. These facilities would assemble panelized prefabricated components and other building elements into completed volumetric modules before lifting them into place on nearby sites. This strategy reduces transportation logistics while maintaining high construction quality in a controlled factory environment. Incentives could be introduced for hosting parcels, such as reduced Community Amenity Contribution charges when the hosting site transitions to its development phase.

As sites across the Transit-Oriented Area come to development, further collaboration among projects can reduce construction costs and unlock mixed-use potential. For example, developments could **implement shared parking infrastructure**, consolidating vehicular access to fewer entry points. This would free the ground plane for safe and pedestrian-friendly laneways, creating vibrant public spaces connecting to transit stations. An interconnected parking network and reduced access ramps would improve land efficiency, lower construction costs, and reduce overall parking requirements.

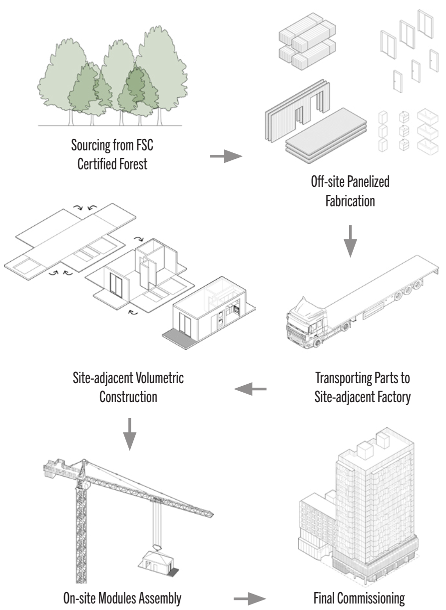
Similarly, **amenity programming** can be coordinated to diversify shared resources, avoid redundancy, and enrich the neighbourhood fabric. Instead of replicating standard amenity spaces in every building, each development could host distinct facilities - such as fitness centres, co-working spaces, childcare, or cultural venues - made accessible to all residents through shared-use agreements.

Create site-adjacent factory — Share parking infrastructure — Diversify shared amenities

PREFABRICATION CONSTRUCTION COMPARISON



HYBRID CONSTRUCTION CYCLE



HYBRID STRUCTURAL STRATEGY

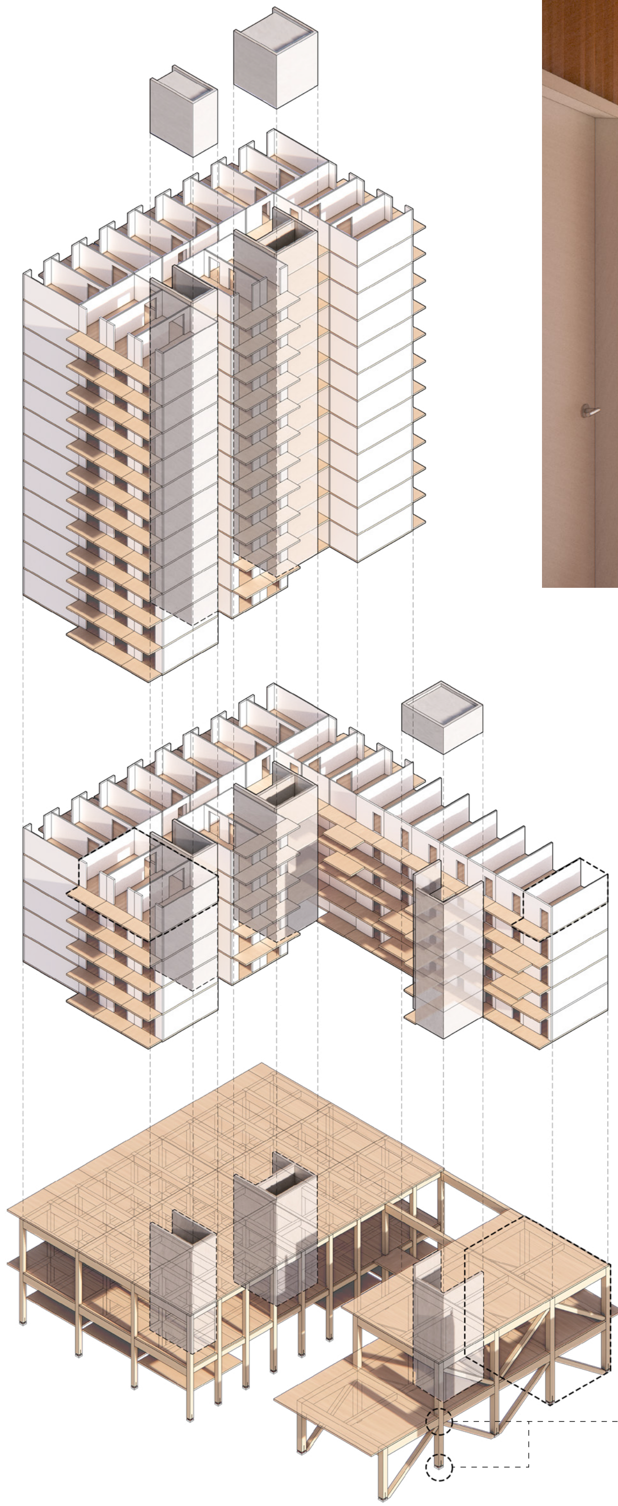
The building utilizes different structural systems for different components, each selected for its specific advantages.

For the lower three levels, which house artist programs, a mass timber post-and-beam system is used to achieve the larger spans required for open public spaces. Additional cross-bracing provides lateral stability and helps transfer loads from the upper floors to the foundation.

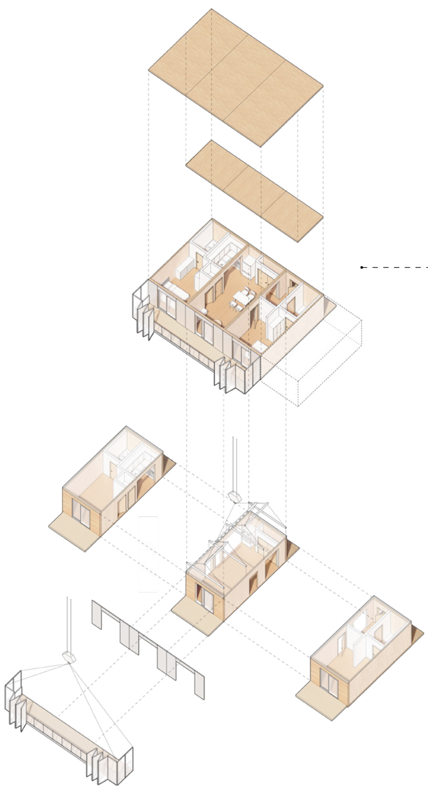
The upper residential levels employ volumetric mass timber modules for efficient, standardized assembly. While each student housing unit consists of a single module, rental housing units ranging from one to three-bedroom contain multiple modules to maintain standardization on panel sizes and streamline installation workflows.

These modules rest on the post-and-beam structure below and are tied together through continuous load paths. Concrete building cores run the full height of the building, providing vertical circulation, connecting all components, and acting as the primary lateral force-resisting system.

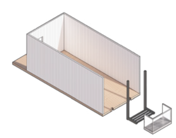
The project incorporates two balcony systems: an enclosed balcony with a CLT floor integrated into the volumetric construction, providing protected and spacious outdoor areas for rental units; and a prefabricated clip-on balcony system, enabling quick installation and durable, individual outdoor spaces for student housing units.



Interior view of rental living space with natural wood finishes from CLT floor and walls

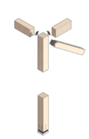


Rental Housing - Consist of multiple prefabricated volumetric construction modules assembled together, with enclosed balconies installed on site.

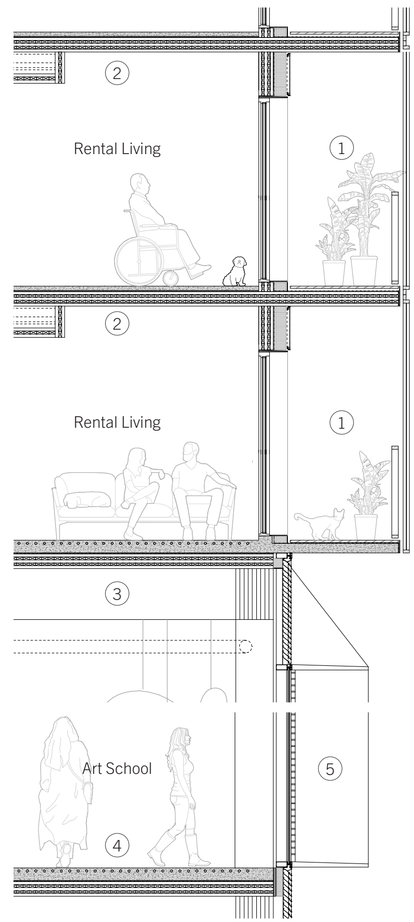


Student Housing - Volumetric construction modules with prefabricated bolt-on balconies.

Artist Spaces - Post-and-beam system allowing larger spans and flexible open uses.



Mass timber post and beams with cross-bracing for lateral stability.



1. Enclosed balcony is used to protect CLT floor and provide usable outdoor space all year around.
2. Exposed CLT floor provides natural wood finish to indoor and outdoor living spaces, while additional CLT bulkhead contains horizontal services and enhances fire separation.
3. Post-and-beam structure is used above the art school and workshop for open space and to transfer load from the floors above.
4. A reinforced concrete topping is applied over the CLT floor to increase the fire-resistance rating and to act compositely with the timber in carrying compressive forces as part of an integrated floor system.
5. A combination of louver screens and canopies is used to diffuse daylight and control solar heat gain.

DECODING BUILDING POLICIES

1. Align Building Height with Provincial TOA Policy
Reference: TOA Policy, BC Building Code 3.2.2.93

The BC Building Code currently permits mass timber buildings up to 18 storeys, yet the Provincial Transit-Oriented Areas (TOA) Policy sets a *minimum* allowable building height of 20 storeys within Tier 1. This misalignment represents a missed opportunity for mass timber to reach its full development potential in TOA-designated areas. Mass timber buildings exceeding 20 storeys have already been proven achievable around the world. With established structural and fire safety precedents, **updating the BC Building Code to align with TOA policy** is both feasible and advantageous.

2. City-wide Zoning and Development Framework Update
Reference: TOA Policy, Municipal Zoning Bylaw

A city-wide zoning change for TOA areas that align with provincial policy can **eliminate the need for site-specific rezoning**, significantly reducing permitting time and development costs.

Currently, some municipal frameworks impose both height and density limits, with developments triggering rezoning if either threshold is exceeded. Recent TOA project examples have shown that while a 20-storey building complies with the height requirement, it often exceeds the 5.0 FSR density set out under zoning policy – resulting in unintended rezoning. We propose **unifying the development framework** by either:

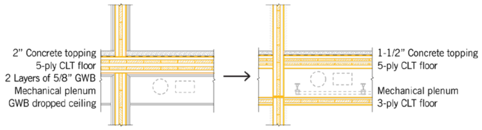
a. Increasing the allowable density to support 20-storey or more developments, or

b. Adopting a single regulatory metric – either height or density – to simplify the approval process.

3. Alternative Approaches to Encapsulation Requirements
Reference: BC Building Code 3.1.6.4 & 3.2.2.93

We suggest **alleviating encapsulation requirements** to both reduce construction costs and highlight the exposed mass timber aesthetic. Reducing the use of gypsum boards also contributes to lower carbon emissions. **To maintain fire safety, we propose several alternative approaches that are appropriate for mass timber construction.**

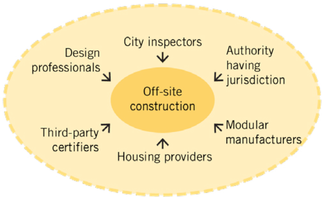
For volumetric construction modules consisting of CLT floor and ceiling panels, the ceiling of the lower module can act as the fire-protective layer for the floor of module above, eliminating the need for additional encapsulation. Horizontal plenums between modules units can replace dropped ceilings for mechanical systems, further minimizing gypsum use. Additionally, sprinklers within concealed spaces can provide further fire protection.



On lower levels constructed with post-and beam systems, we propose combining enhanced fire separation floor assembly with active suppression systems in place of rated encapsulation. The thicker CLT slabs – used for larger spans – also naturally provide an higher rating for fire separation.

4. Standardize and Implement CSA A277
Reference: CSA A277

Although CSA A277 provides standards for off-site construction, its implementation remains inconsistent. Many stakeholders are unaware of the standard or unsure of their roles during off-site fabrication. This ambiguity often leads to confusion and rejection of prefabricated components at the construction site. To address this, we recommend **clear assignment of responsibilities** within the CSA A277 framework and broader education across the construction industry to support effective and consistent application.

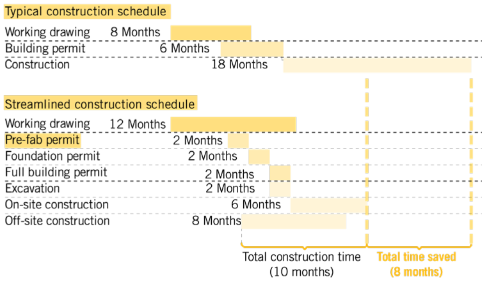


5. Enable Use of Enclosed Balconies
Reference: Municipal Zoning Bylaw

Not all municipalities permit enclosed balconies, and some impose limits on their maximum allowable area. Enclosed balconies enhance year-round usability, particularly for mass timber buildings, where standard **CLT balconies benefit from added weather protection**. We believe accessible, weather-protected outdoor space is essential for all residents. A modest revision to zoning bylaws to permit enclosed balconies could deliver meaningful improvements in both quality of life and building performance.

6. Introduce Prefabrication Building Permit
Reference: Municipal Building Permit Requirements

Prefabricated construction requires intricate coordination and often a longer design cycle. Currently, there is a significant lag between full building permit submission and the start of off-site fabrication. To address this, we propose introducing a **Prefabrication Building Permit**. Similar to how excavation permits allow for early site work, **this permit would specifically cover prefabricated structural components and authorize off-site construction** to begin before the full building permit is finalized. The additional building permit phase can align overall permitting process well with design and prefabrication workflows, reduce overall project timelines, and enhance construction efficiency.



Open gathering space at art school encourages spontaneous interactions and exchange of ideas.

SUSTAINABLE BUILDING PRO FORMA

The building is designed on a 12' by 12' grid system to unify various program spaces into a clear modular and structural layout. The housing components include a mix of student housing and one to three bedroom units, allowing for different housing mixes and ready for adaptable configurations.

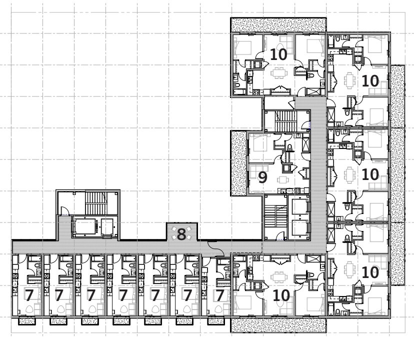
The project aims to reduce its carbon footprint by using mass timber construction combined with a site-adjacent factory, which lowers carbon emissions typically associated with transporting volumetric modules. A shared parking network and fewer parking entrances across the neighborhood increase parking and mechanical service space efficiency, while minimizing excavation needs at all Transit-Oriented Area sites — further reducing both carbon footprint and construction costs.

Additional carbon reductions are achieved through the use of low-carbon concrete for underground structures and lateral reinforcement, and by minimizing gypsum board use with alternative approaches to encapsulation requirement.

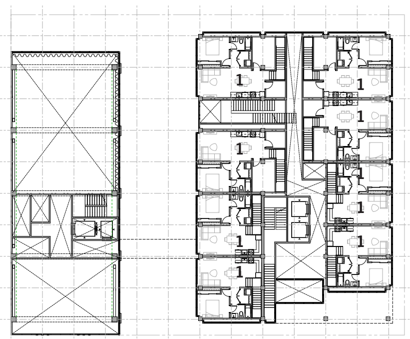
The project also benefits from a streamlined construction schedule, supported by a new prefabrication building permit that aligns with the prefabrication design and construction cycle. This approach shortens the total construction time and effectively lowers overall costs.

1 Artist Live Work
2 Residential Lobby
3 Performance Space
4 Gallery / Event Space
5 Art School
6 Workshop
7 Student housing
8 Common Space
9 Rental 1 Bed
10 Rental 2 Bed
11 Rental 3 Bed
12 Rental Studio

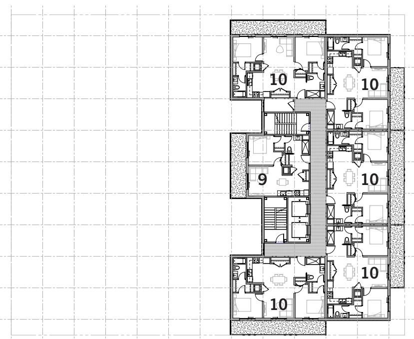
Level 1 - Performance Space, Gallery, Artist Live/Work



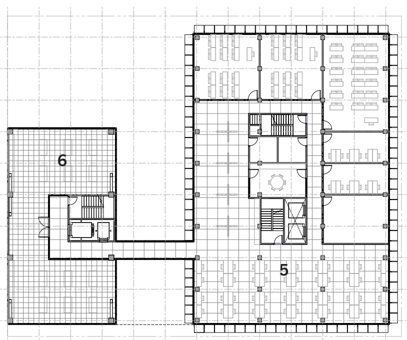
Level 4 to 8 - Student Housing and Rental



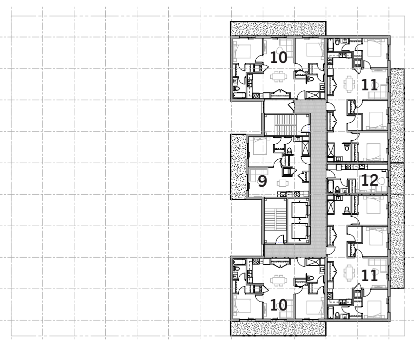
Level 2 - Living for Artist Live/Work



Level 9 to 20 - Typical Rental with 1-2 Bedroom Mix



Level 3 - Workshop, Art School



Level 9 to 20 - Typical Rental with Studio-3 Bedroom Mix


Exterior view looking at different facade treatments for rental, student housing, art school, and live,work units.

PROJECT DATA	
FSR	8.00
LOT SIZE	18,300 sq.ft.
BUILDING SQ FT ABOVE GRADE	146,450 sq.ft.
BUILDING EFFICIENCY (%)	80%
NON RENTABLE	29,935 sq.ft.
RENTABLE	116,515 sq.ft.
TOTAL STORIES ABOVE GRADE	20
TOTAL STORIES	21
BASE FLOOR	1
ABOVE 1ST STOREY	19
STORIES BELOW GRADE	1
UNITS	145
BEDROOMS	230
AMENITY SPACE	6,540 sq.ft.
NON-RESIDENTIAL	9,020 sq.ft.

CONSTRUCTION COST		CONCRETE (BASE CASE)		SUBMISSION		
	SF	COST/SF	COST	COST/SF	COST	
BELOW GRADE	18,300 sq.ft.	$315	$5,764,500	$378	$6,917,400	LOW-CARBON CONCRETE FOR BELOW GRADE CONSTRUCTION
BASE FLOOR	12,353 sq.ft.	$360	$4,447,080	$398	$4,916,494	REDUCE GYPSUM BOARD COST THROUGH ALTERNATIVE APPROACHES (SEE PAGE 5)
ABOVE 1ST STOREY	134,097 sq.ft.	$385	$51,627,345	$426	$57,125,322	REDUCE GYPSUM BOARD COST THROUGH ALTERNATIVE APPROACHES (SEE PAGE 5)
BALCONIES	18,360 sq.ft.	$500	$9,180,000	$450	$8,262,000	CLT AND MODULAR BALCONIES ARE USED. COST CALCULATED BY AREA FOR COMPARISON
	COST/MONTH	# MONTH	COST	# MONTH	COST	
SCHEDULE COSTS	$50,000	18	$900,000	10	$500,000	SUBMISSION FOLLOWS STREAMLINED CONSTRUCTION SCHEDULE (SEE PAGE 5)
TOTAL			**$71,918,925**		**$77,721,216**	

EMBODIED CARBON		CONCRETE (BASE CASE)		SUBMISSION		
	SF	EMBODIED CARBON	TOTAL CARBON	EMBODIED CARBON	TOTAL CARBON	
BELOW GRADE	18,300 sq.ft.	6.69 kg/sq.ft.	122,409 kg	4.01 kg/sq.ft.	73,445 kg	LOW-CARBON CONCRETE YIELDS 40% REDUCTION IN CARBON FOOTPRINT
ABOVE GRADE	164,810 sq.ft.	6.69 kg/sq.ft.	1,102,417 kg	2.39 kg/sq.ft.	394,586 kg	REDUCE CARBON FOOTPRINT THROUGH MINIMIZED GYPSUM BOARD USE
TOTAL		**6.69 kg/sq.ft.**	**1,224,826 kg**	**2.56 kg/sq.ft.**	**468,032 kg**	