PROPOSAL STATISTICS

DENSITY

14,995 SF SITE AREA (120’x124.9’)
±173,995 SF OF TOTAL GROSS FLOOR AREA
±10.28 FSR

HEIGHT

35 STOREYS
± 348’-4” ABOVE BASE HEIGHT

RESIDENTIAL

100 - 1 BEDROOM/STUDIO SUITES
43 - 2 BEDROOM SUITES
16 - 3 BEDROOM SUITES
159 SUITES TOTAL

PARKING

68 REGULAR STALLS
15 SMALL CAR STALLS
11 VISITOR CAR STALLS
5 ACCESSIBLE STALLS
4 REGULAR CULTURAL AMENITY STALLS
2 ACCESSIBLE CULTURAL AMENITY STALLS

2 CLASS ‘A’ RESIDENTIAL LOADING (LOCATED AT GRADE)
1 CLASS ‘B’ RESIDENTIAL LOADING (SHARED WITH CULTURAL AMENITY)

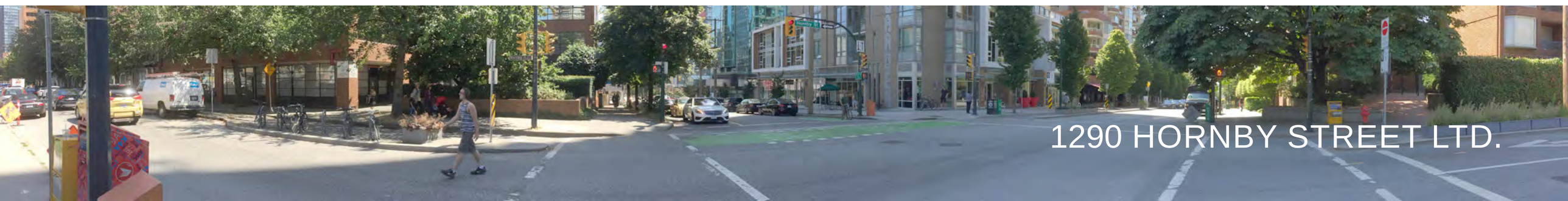
338 CLASS ‘A’ BICYCLE PARKING STALLS
7 CLASS ‘A’ CULTURAL AMENITY BICYCLE PARKING STALLS
12 CLASS ‘B’ BICYCLE PARKING STALLS

RESIDENTIAL AMENITY

± 2,207 SF RESIDENTIAL AMENITY SPACE ON LEVEL 2
± 1,040 SF RESIDENTIAL AMENITY SPACE (INDOOR) ON LEVEL 6
± 1,850 SF RESIDENTIAL AMENITY DECK (OUTDOOR) ON LEVEL 6

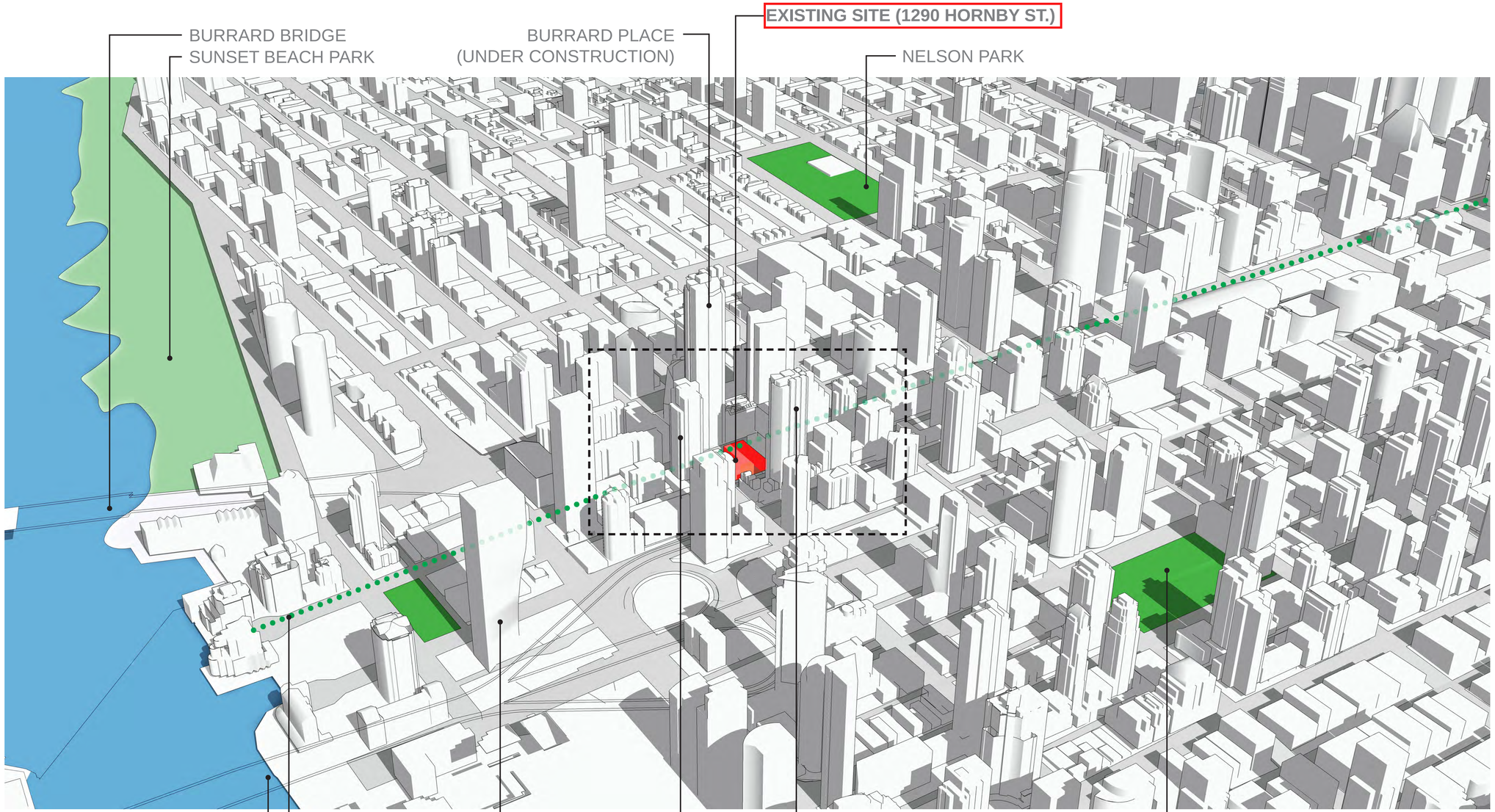
PUBLIC BENEFITS

± 10,531 SF PUBLIC CULTURAL AMENITY ON LEVEL 1, MEZZANINE, & LEVEL 2

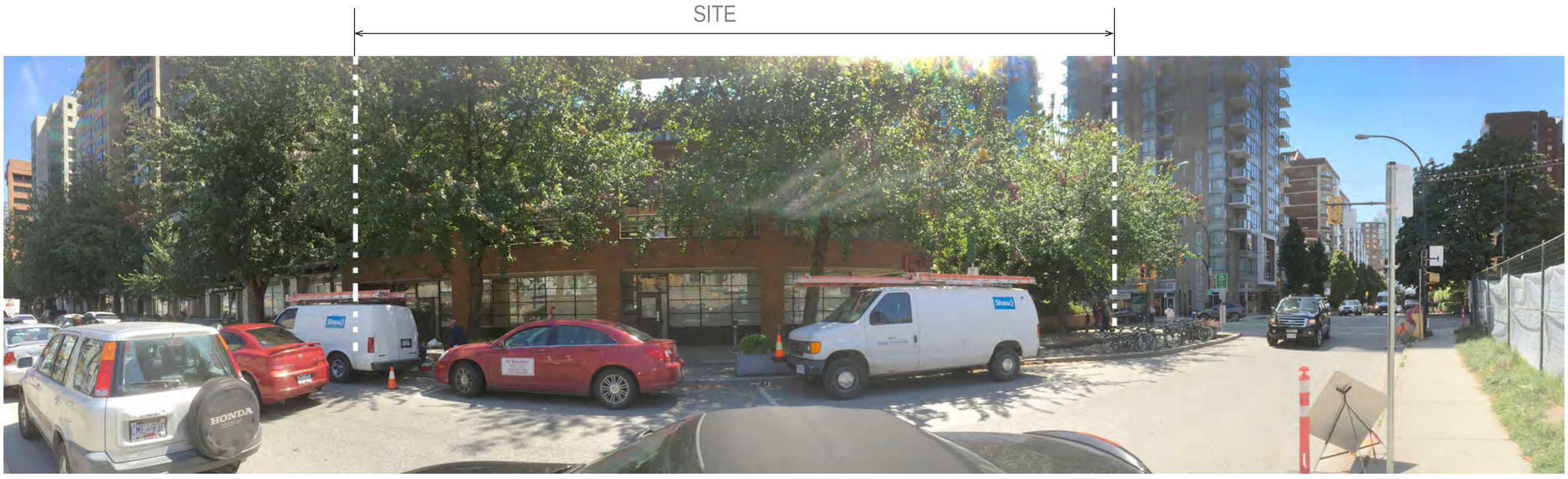


CITY CONTEXT

SITE CONTEXT



SITE CONTEXT PHOTOS



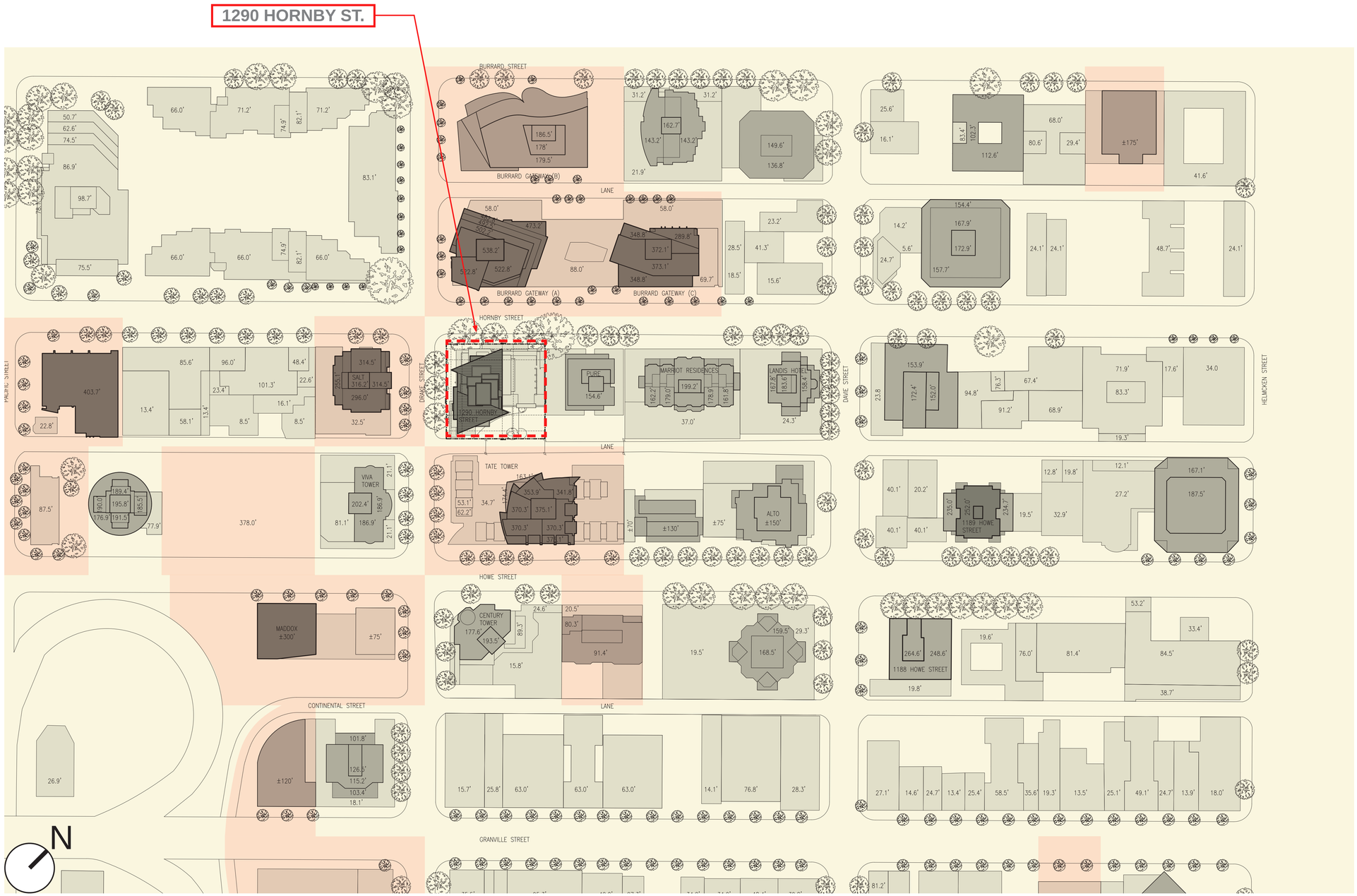
HORNBY STREET (VIEW TO SOUTHEAST, TOWARD SITE)

HORNBY AND DRAKE INTERSECTION (VIEW TO SOUTHEAST, TOWARD SITE)

HORNBY AND DRAKE INTERSECTION (VIEW TO NORTH, TOWARD BURRARD GATEWAY)

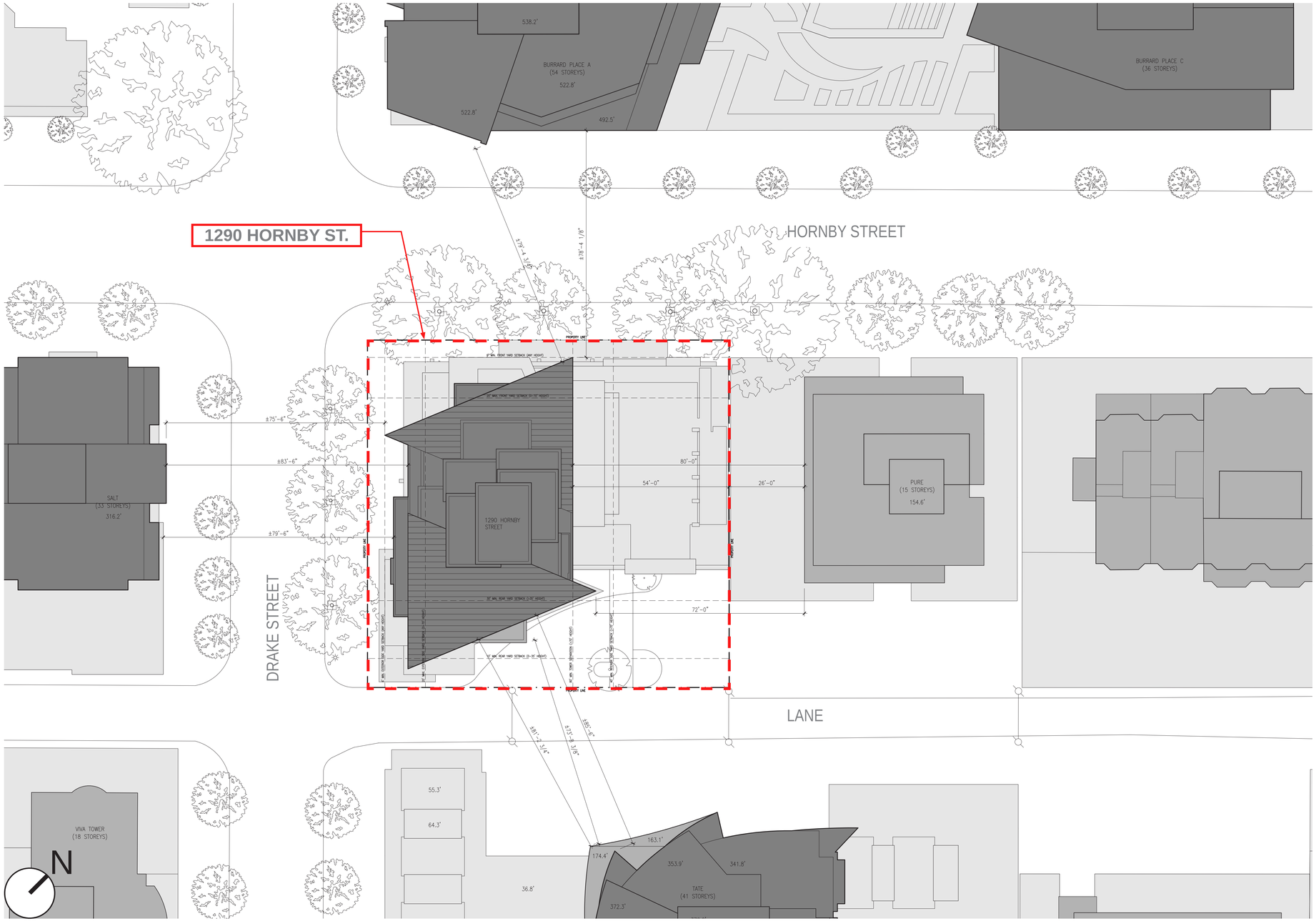
LANE (VIEW TO NORTHWEST, TOWARD SITE FROM REAR LANE)

CONTEXT PLAN



1290 HORNBY STREET LTD.

SITE PLAN


1290 HORNBY ST.
HORNBY STREET
DRAKE STREET
LANE
BURRARD PLACE A
(54 STOREYS)
522.8'
538.2'
522.8'
492.5'
BURRARD PLACE C
(36 STOREYS)
SALT
(33 STOREYS)
316.2'
1290 HORNBY
STREET
PURE
(15 STOREYS)
154.6'
VIVA TOWER
(18 STOREYS)
TATE
(41 STOREYS)
372.3'
353.9'
341.8'
174.4'
163.1'
55.3'
64.3'
36.8'
±78'-4 1/8"
±79'-4 1/8"
±75'-6"
±83'-6"
±79'-6"
±91'-2 3/4"
±73'-5 3/8"
±85'-3"
80'-0"
54'-0"
26'-0"
72'-0"
PROPERTY LINE
PROPERTY LINE
PROPERTY LINE
N

OUR PROPOSAL

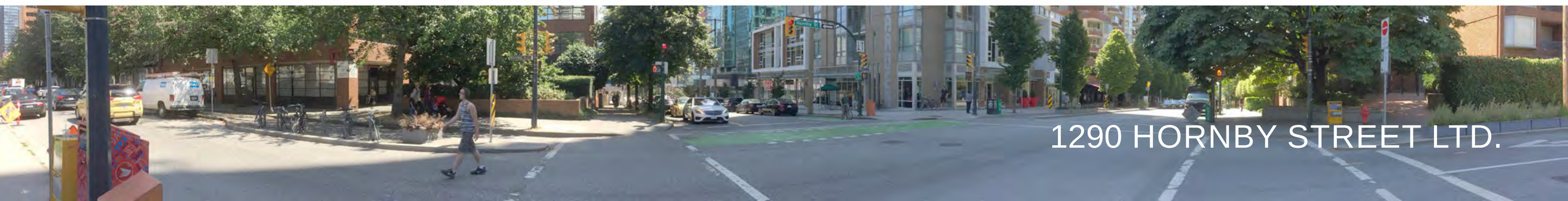
HORNBY & DRAKE ST. VIEW

OUR PROPOSAL

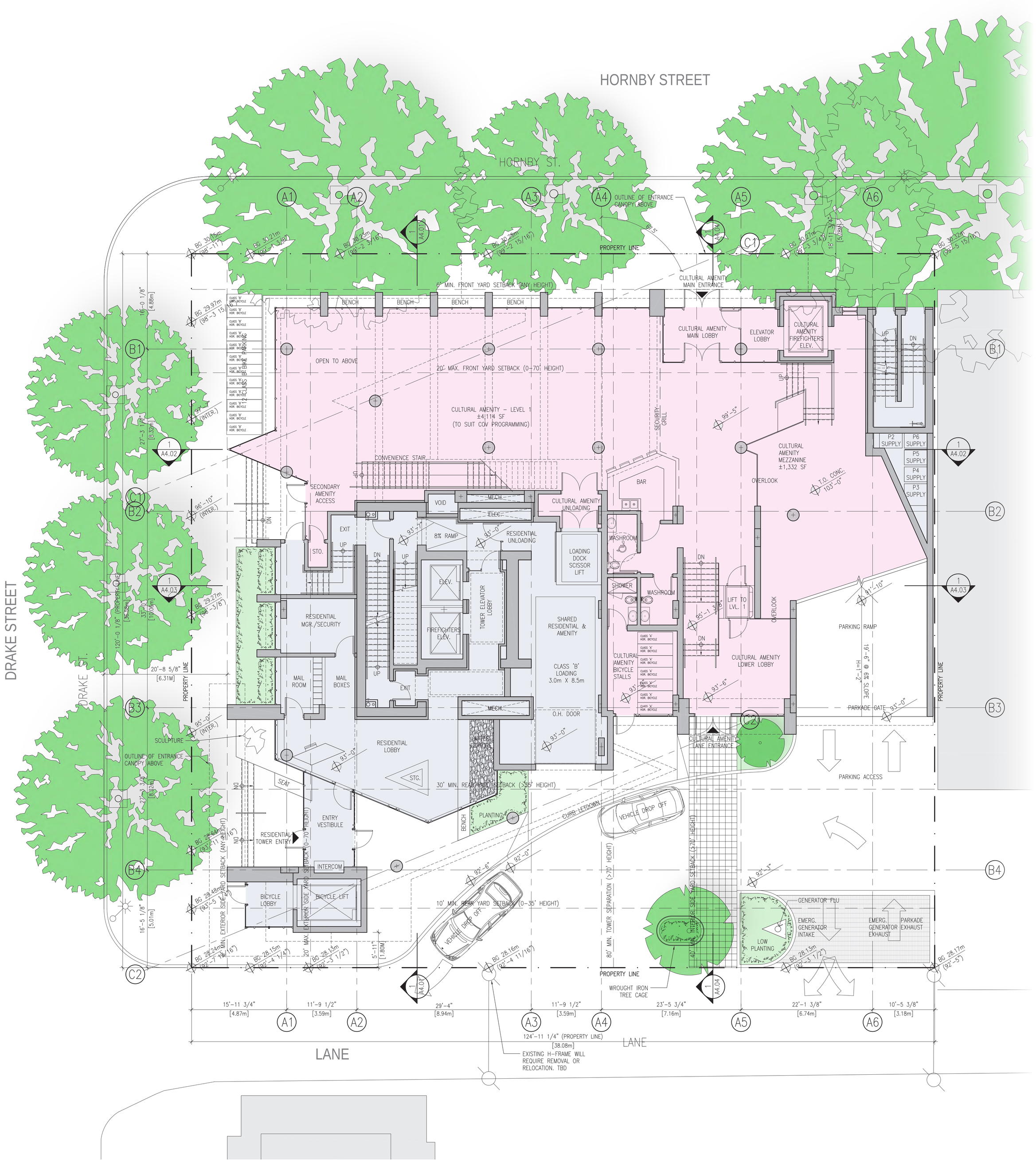
HORNBY STREET (MAIN CULTURAL AMENITY ENTRANCE)

DRAKE STREET (RESIDENTIAL ENTRANCE)

LANE ENTRANCE (LOADING AND PARKADE ENTRANCE)



PLANS

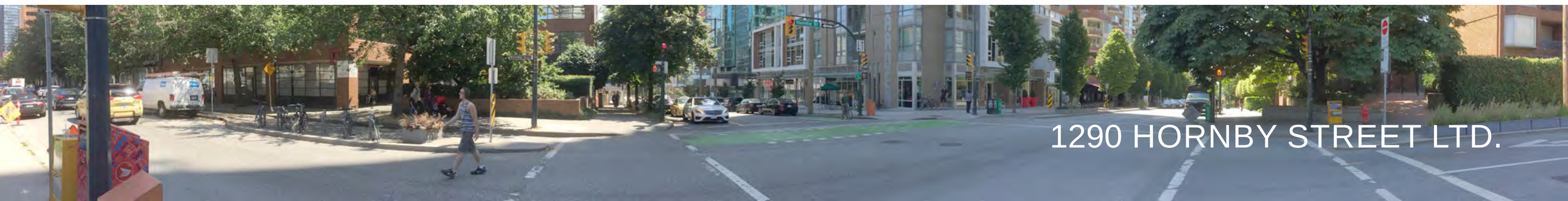


LEVEL 1 PLAN

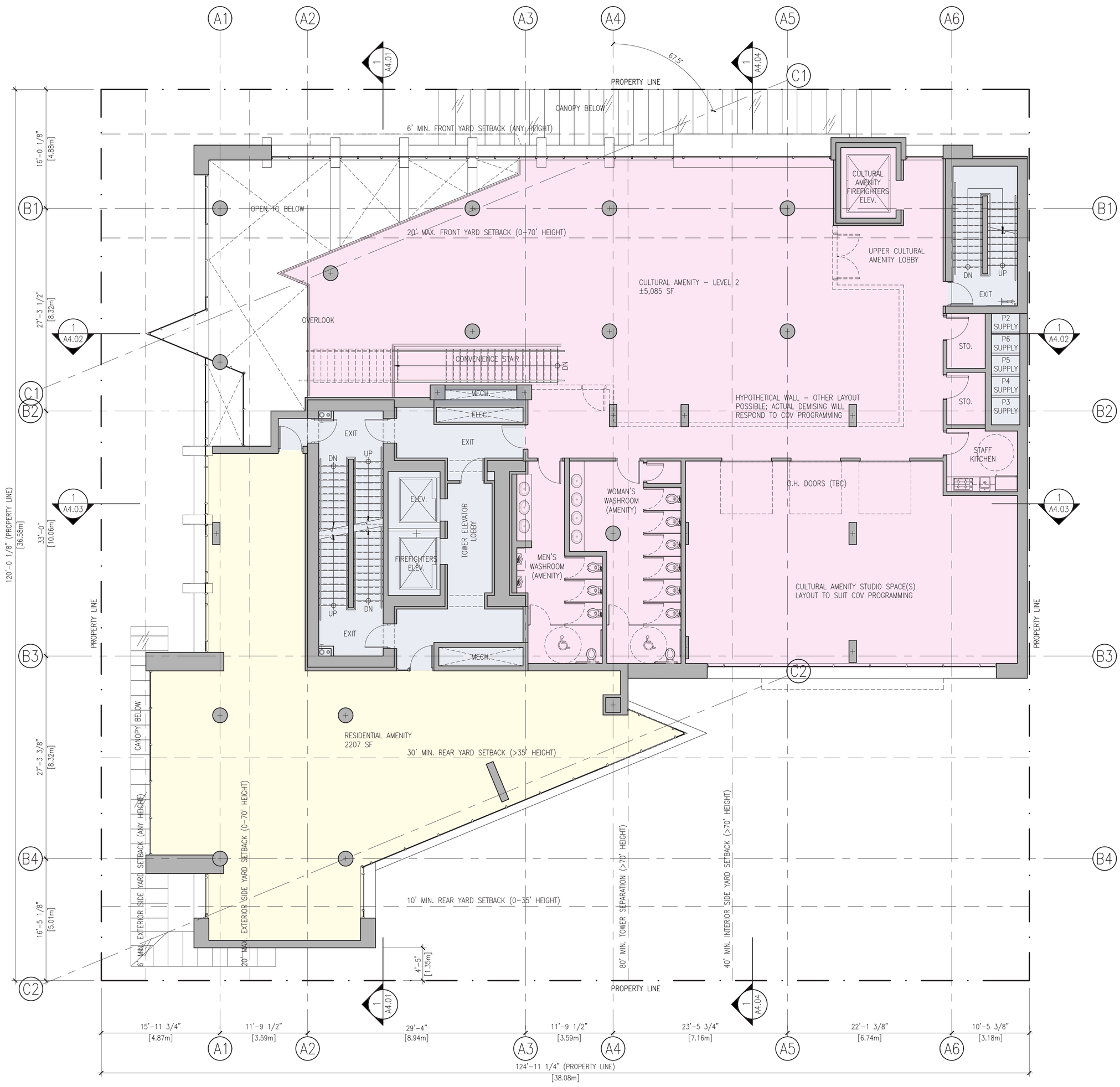
1/8"=1'-0"

CULTURAL AMENITY

RESIDENTIAL



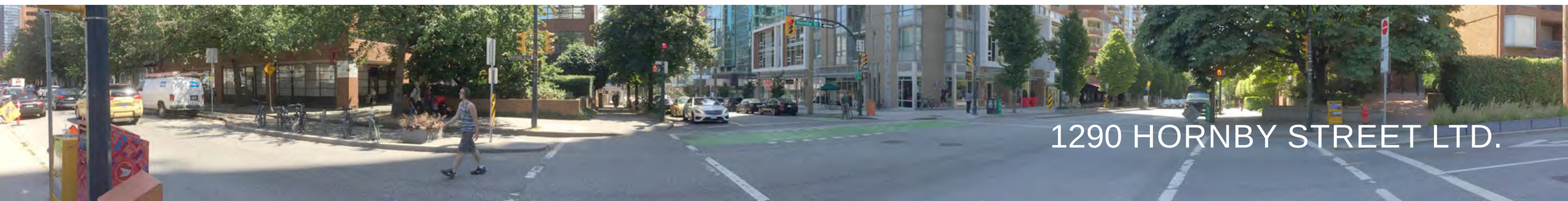
PLANS



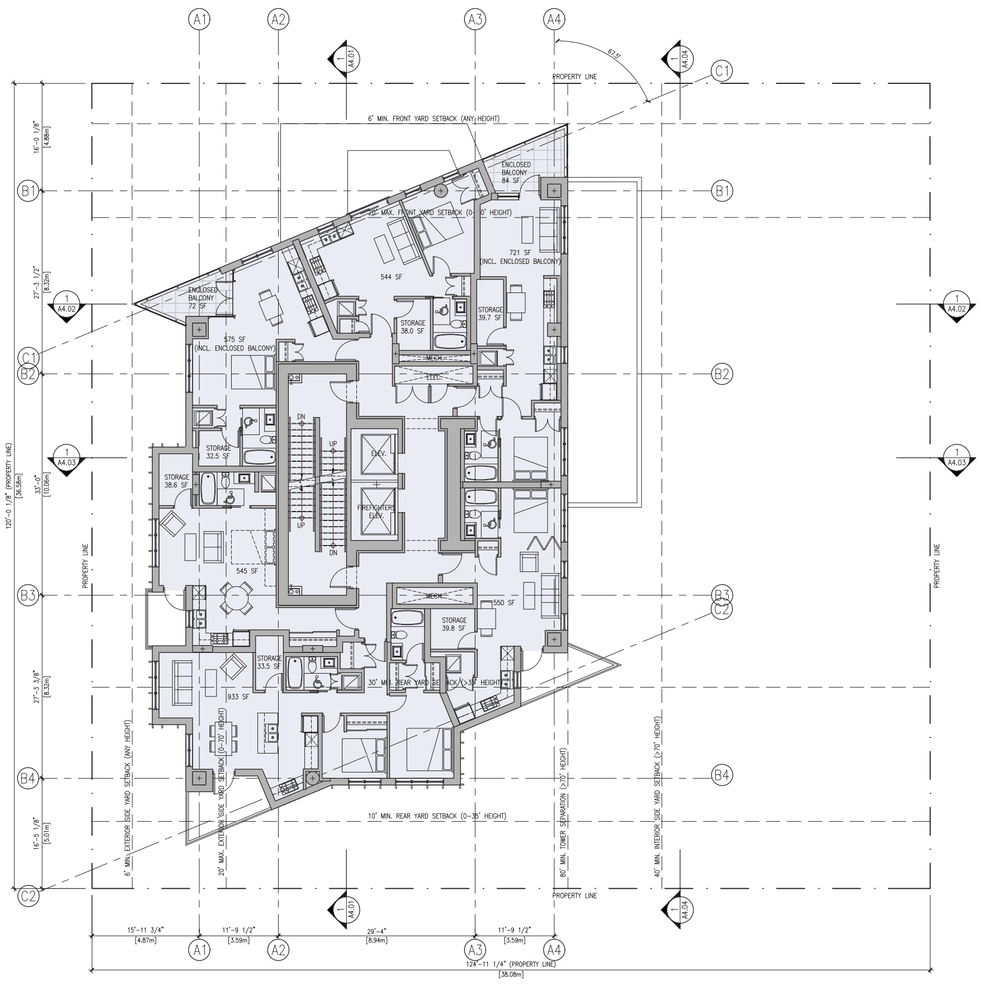
LEVEL 2 PLAN

1/8"=1'-0"

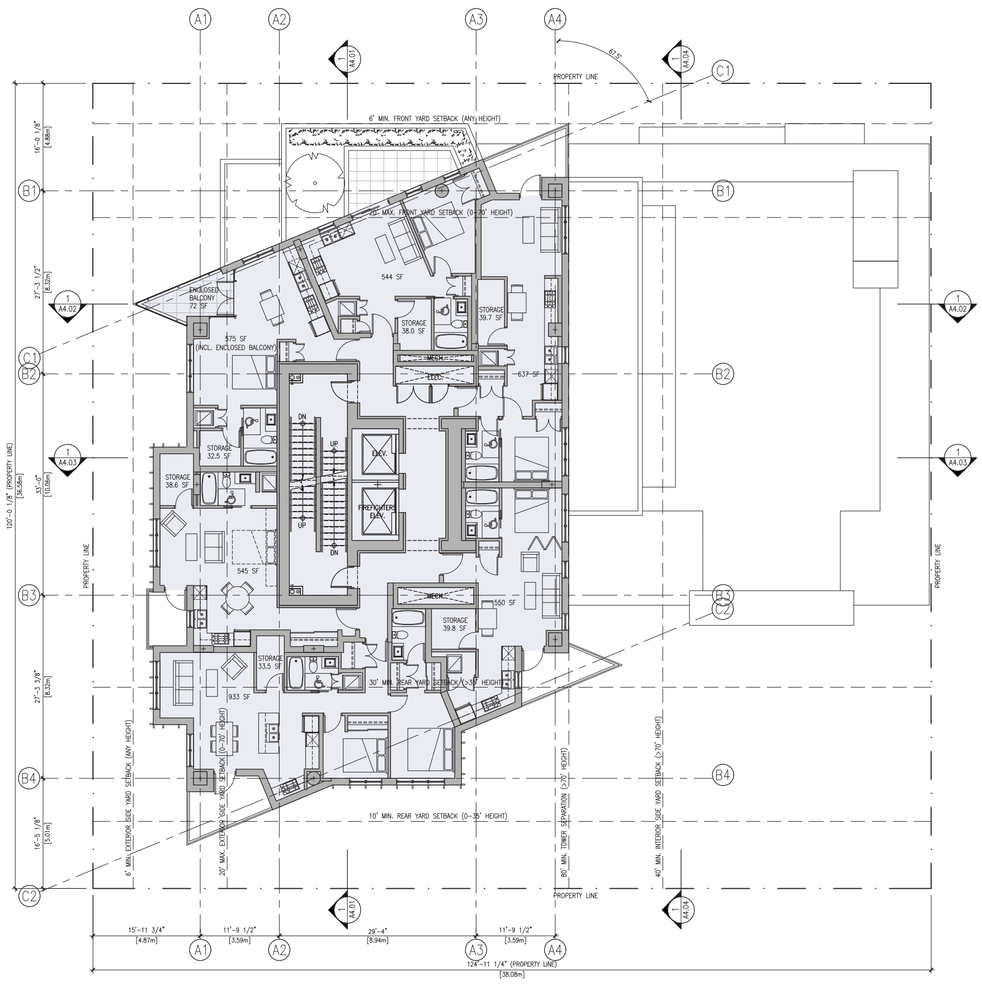
CULTURAL AMENITY
RESIDENTIAL AMENITY
RESIDENTIAL



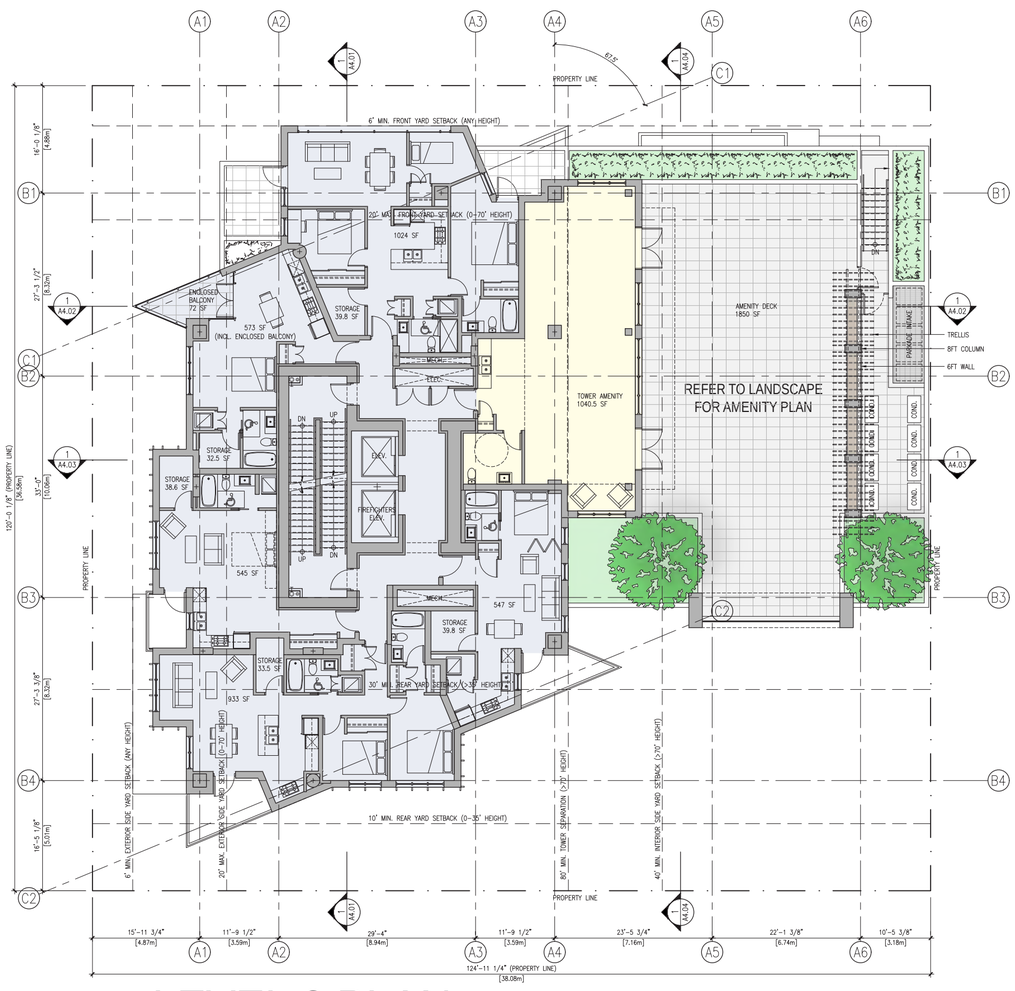
PLANS



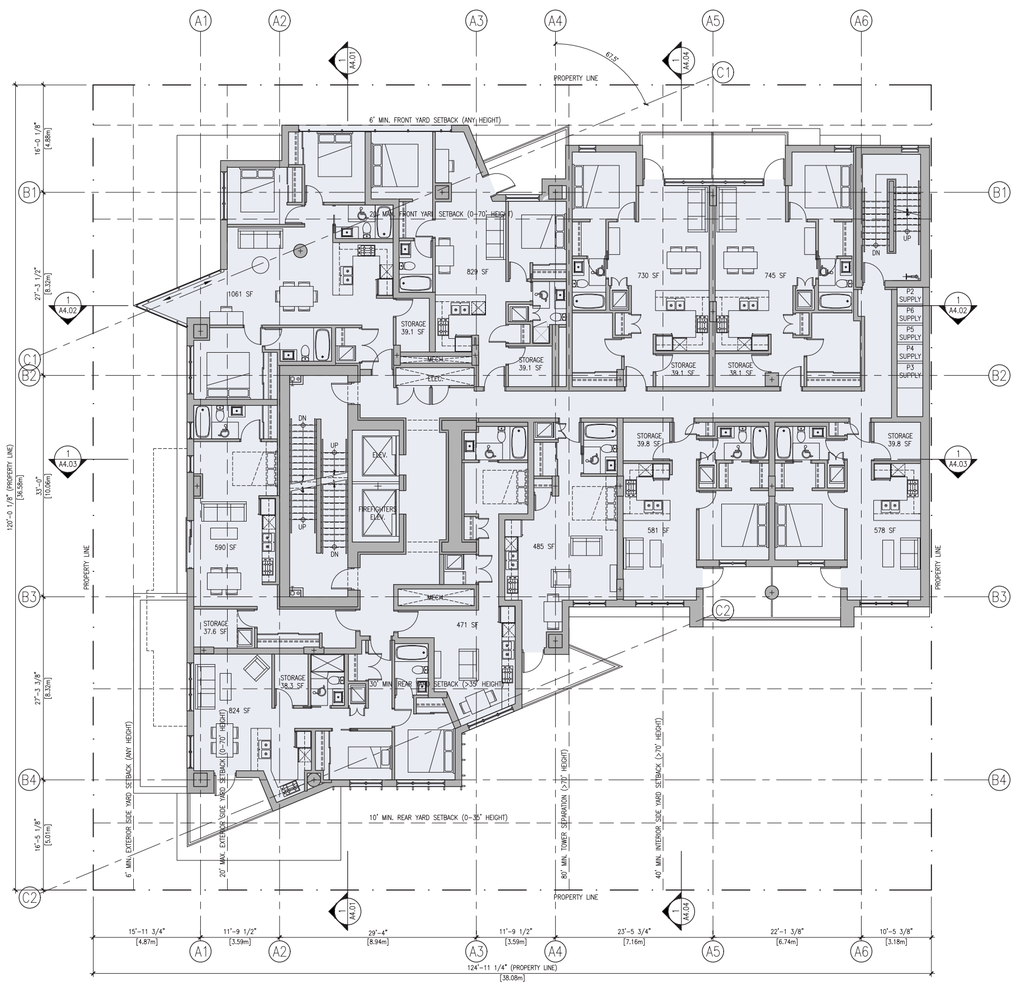
LEVEL 8-9 PLAN



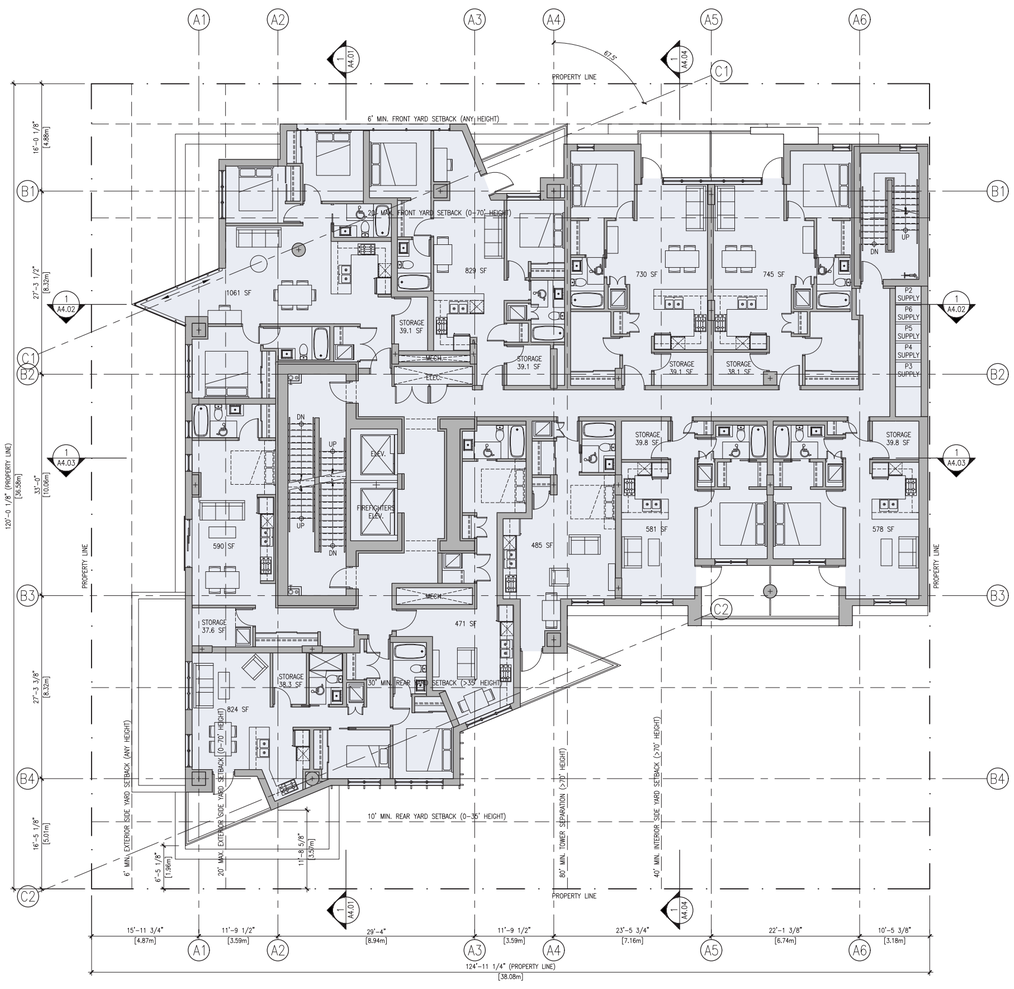
LEVEL 7 PLAN



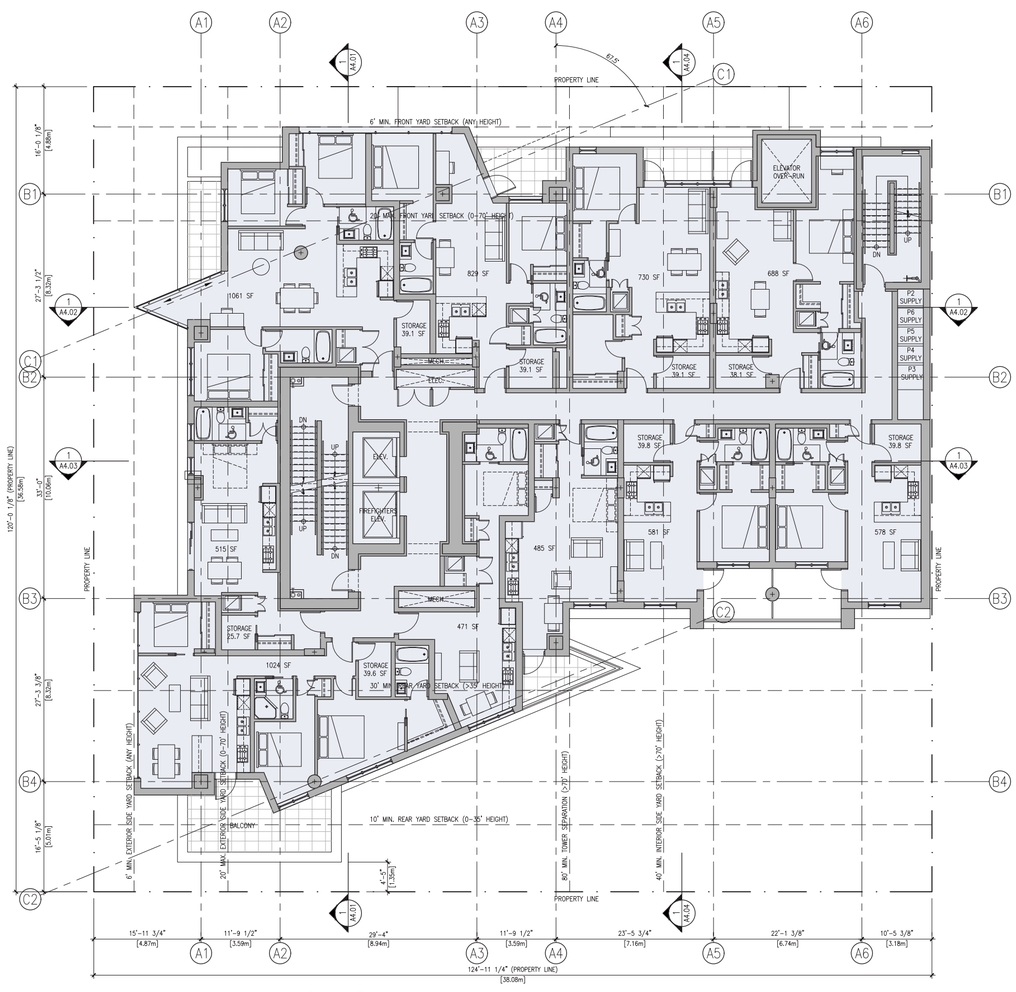
LEVEL 6 PLAN



LEVEL 5 PLAN



LEVEL 4 PLAN



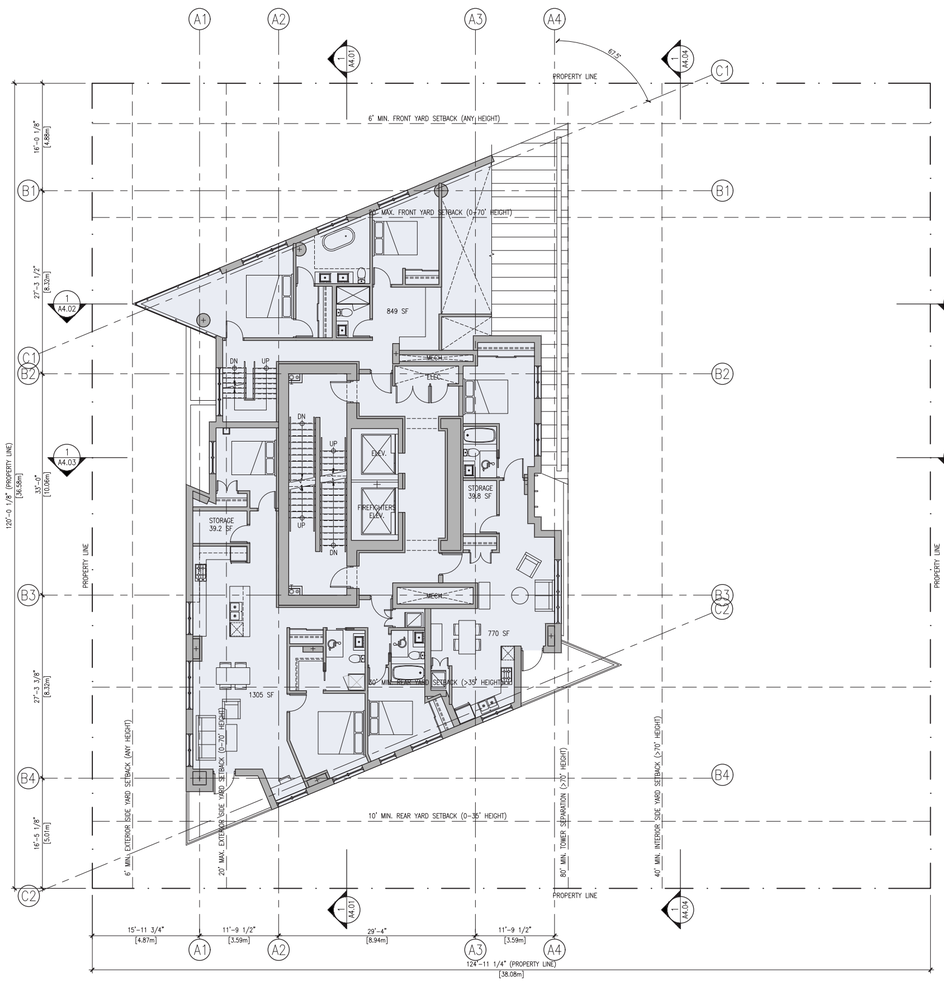
LEVEL 3 PLAN

RESIDENTIAL

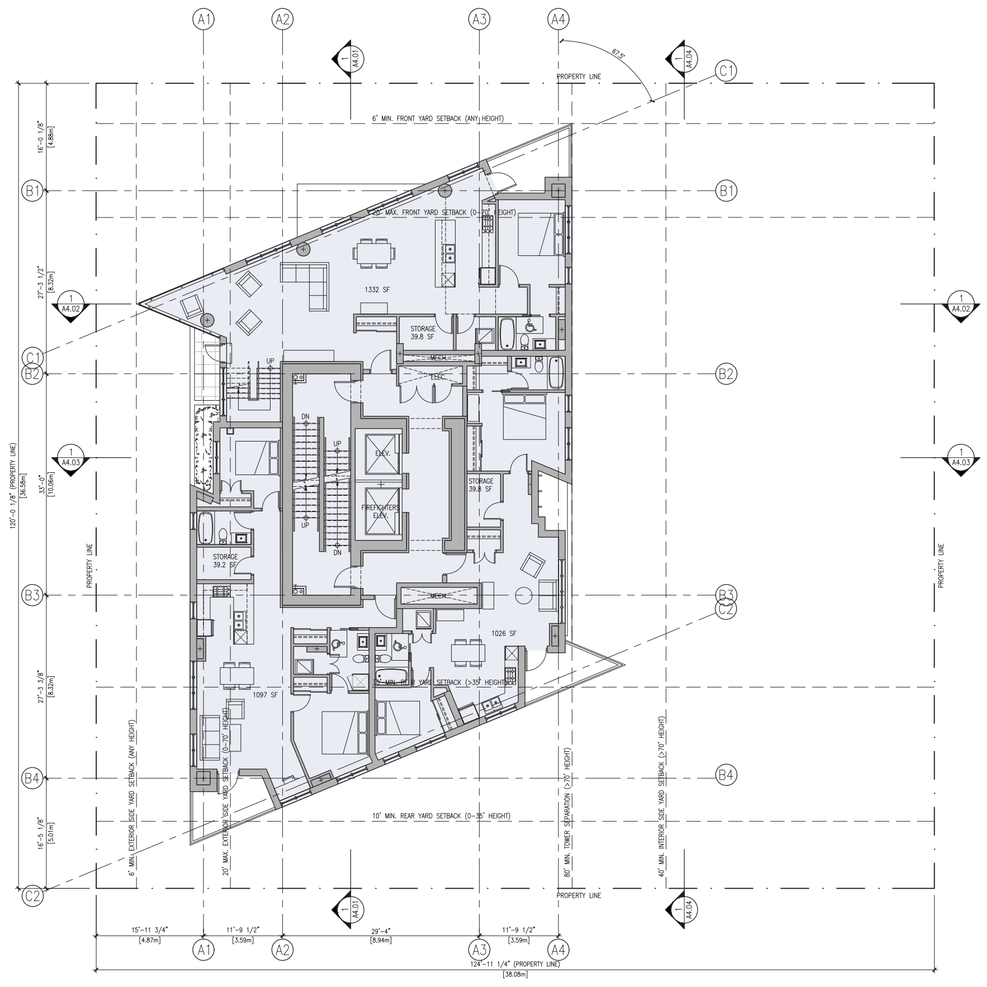
RESIDENTIAL AMENITY

1290 HORNBY STREET LTD.

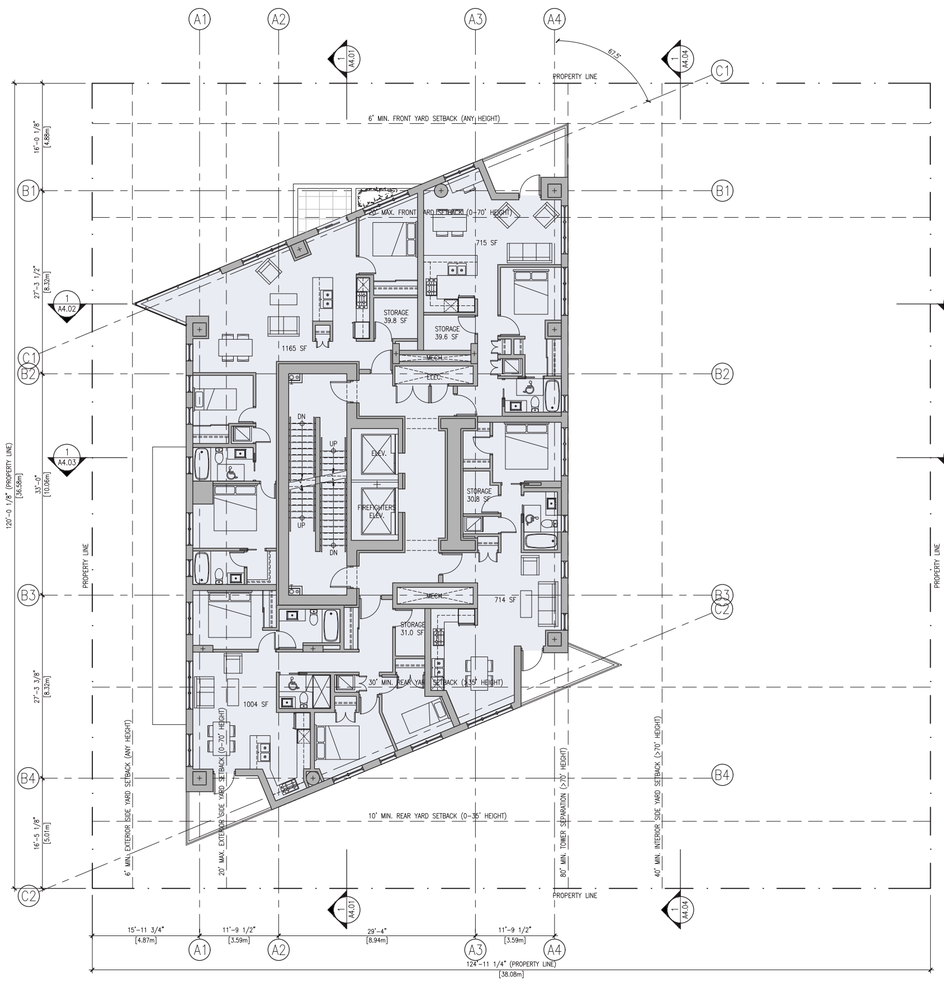
PLANS



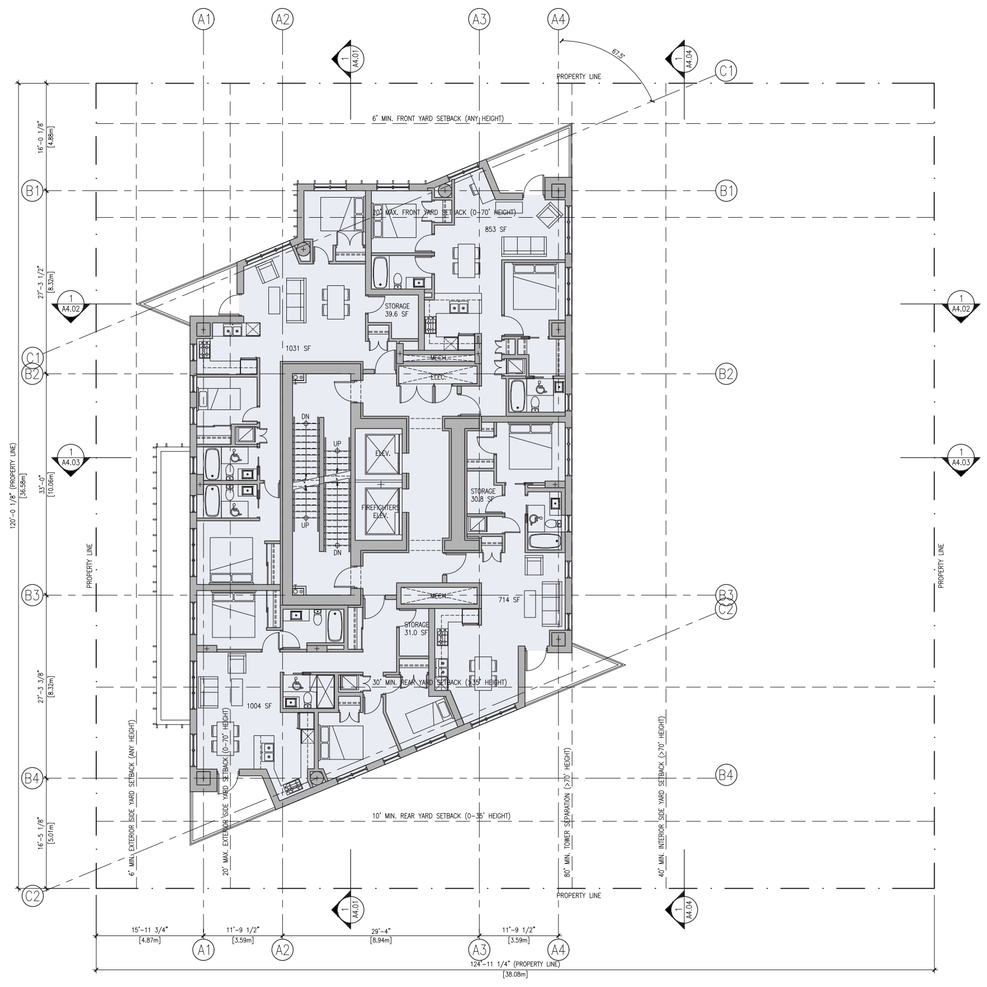
LEVEL 30 PLAN



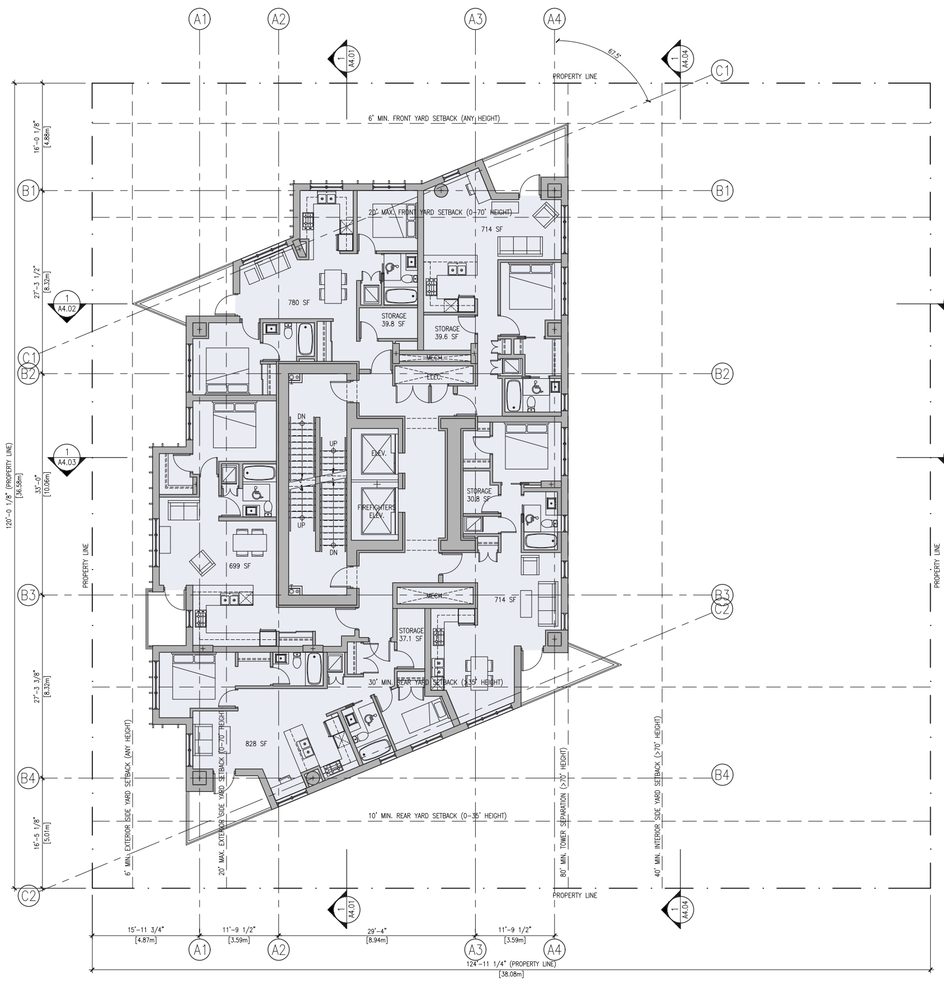
LEVEL 25-29 PLAN



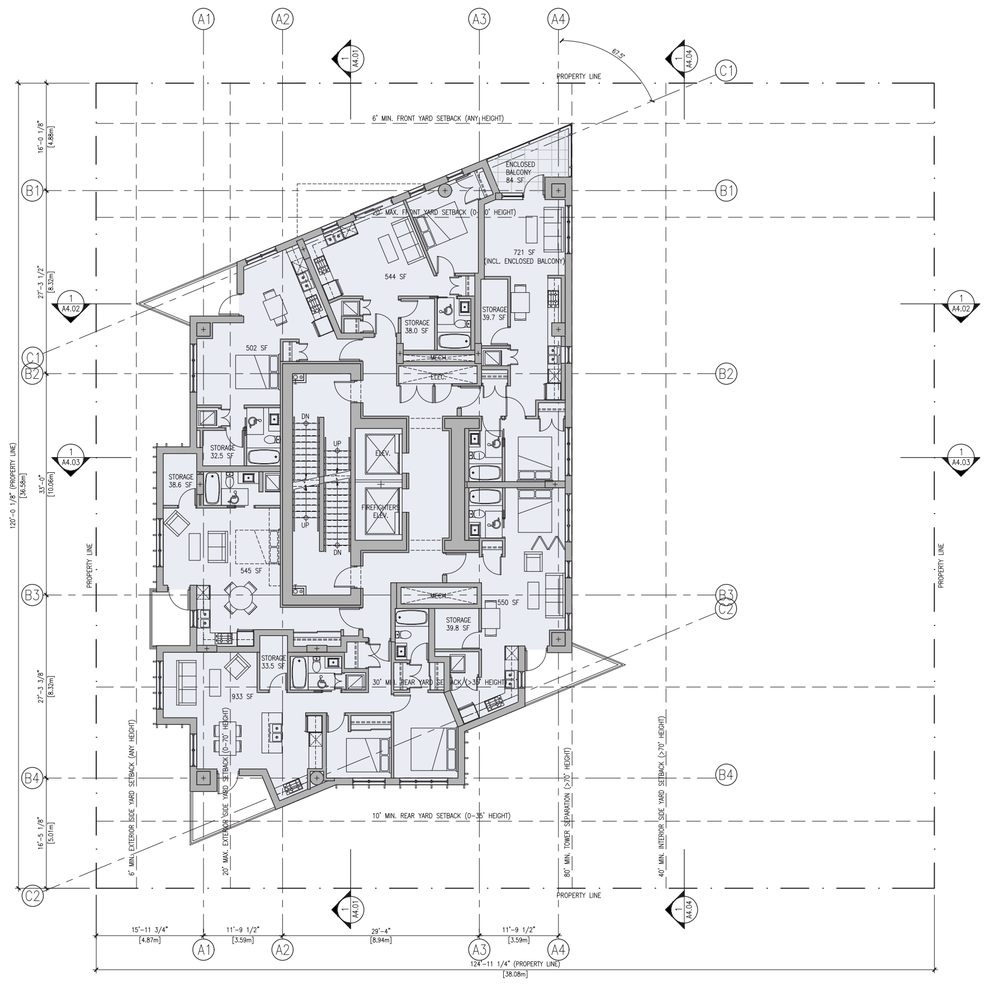
LEVEL 28 PLAN



LEVEL 25-27 PLAN

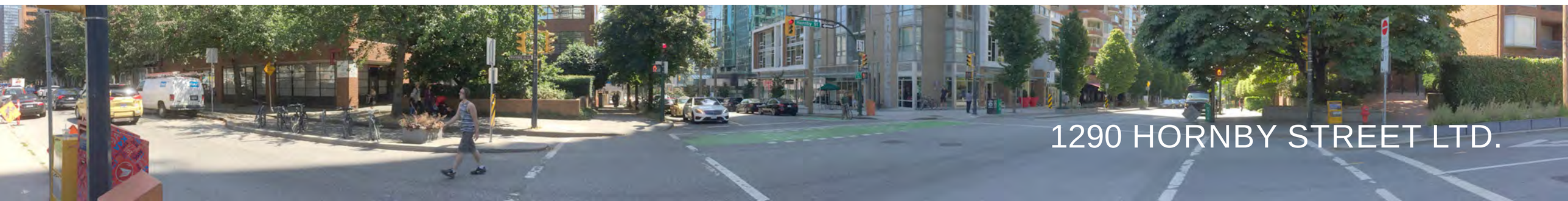


LEVEL 15-24 PLAN



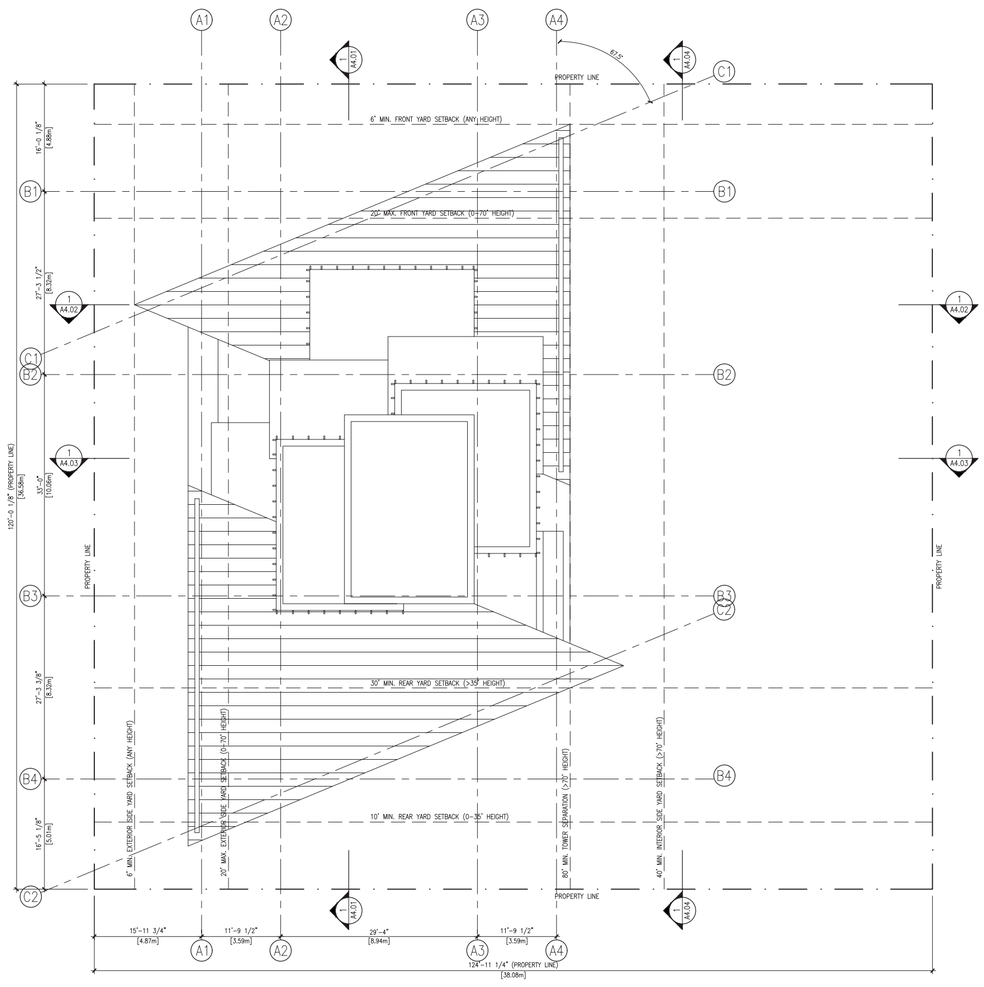
LEVEL 10-14 PLAN

RESIDENTIAL

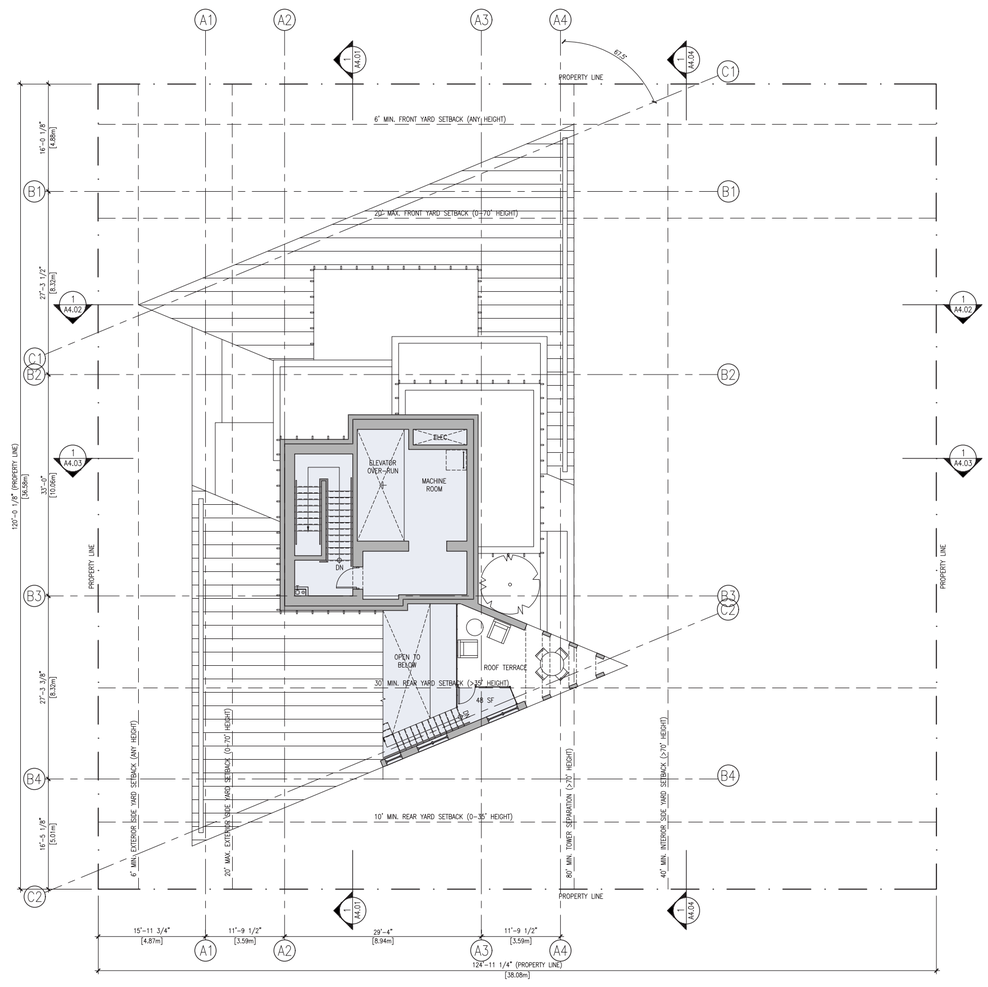


1290 HORNBY STREET LTD.

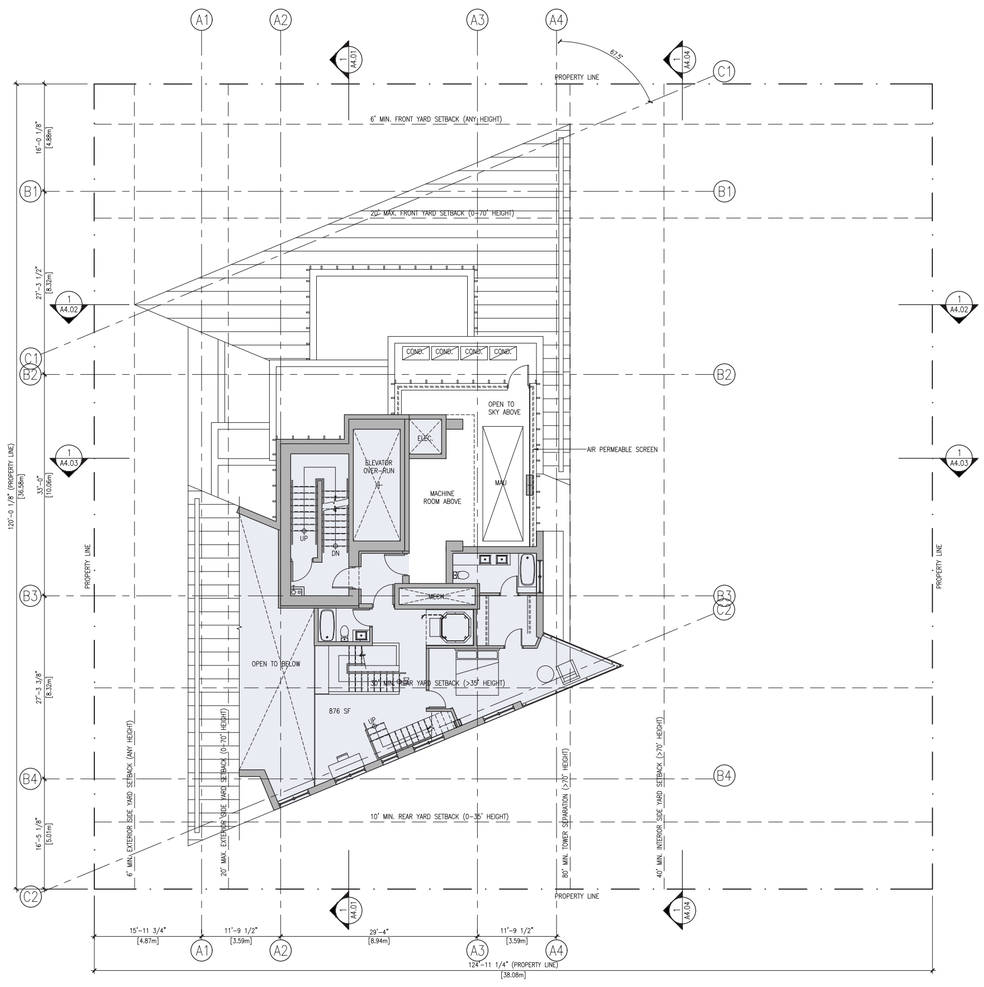
PLANS



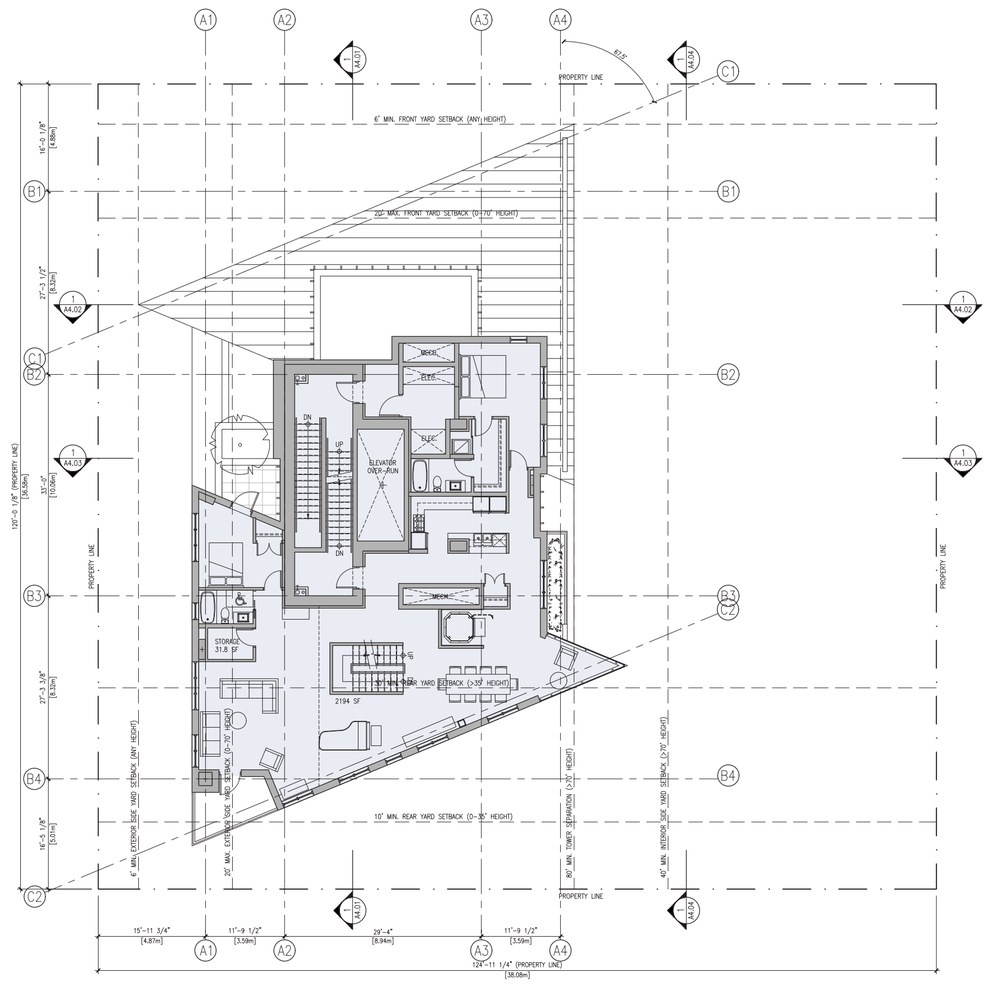
ROOF PLAN



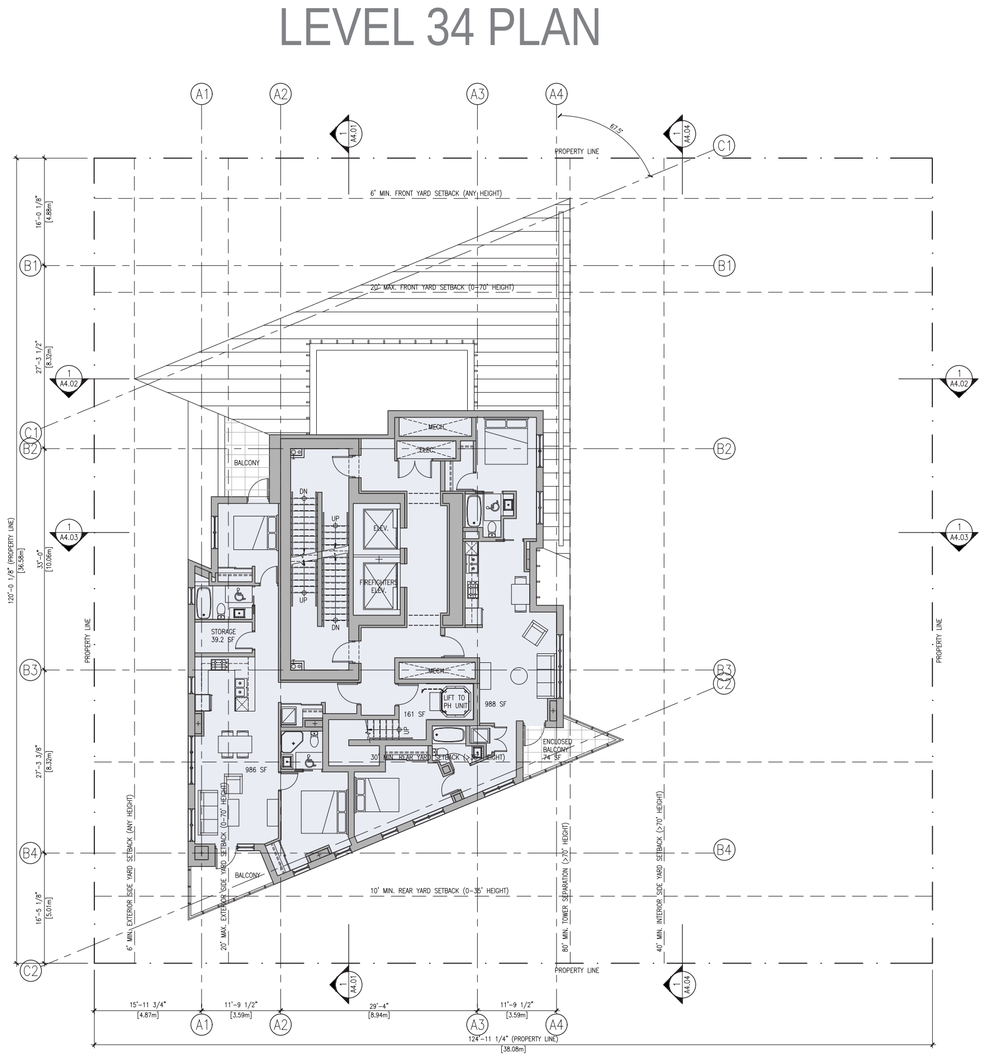
LEVEL 35 PLAN



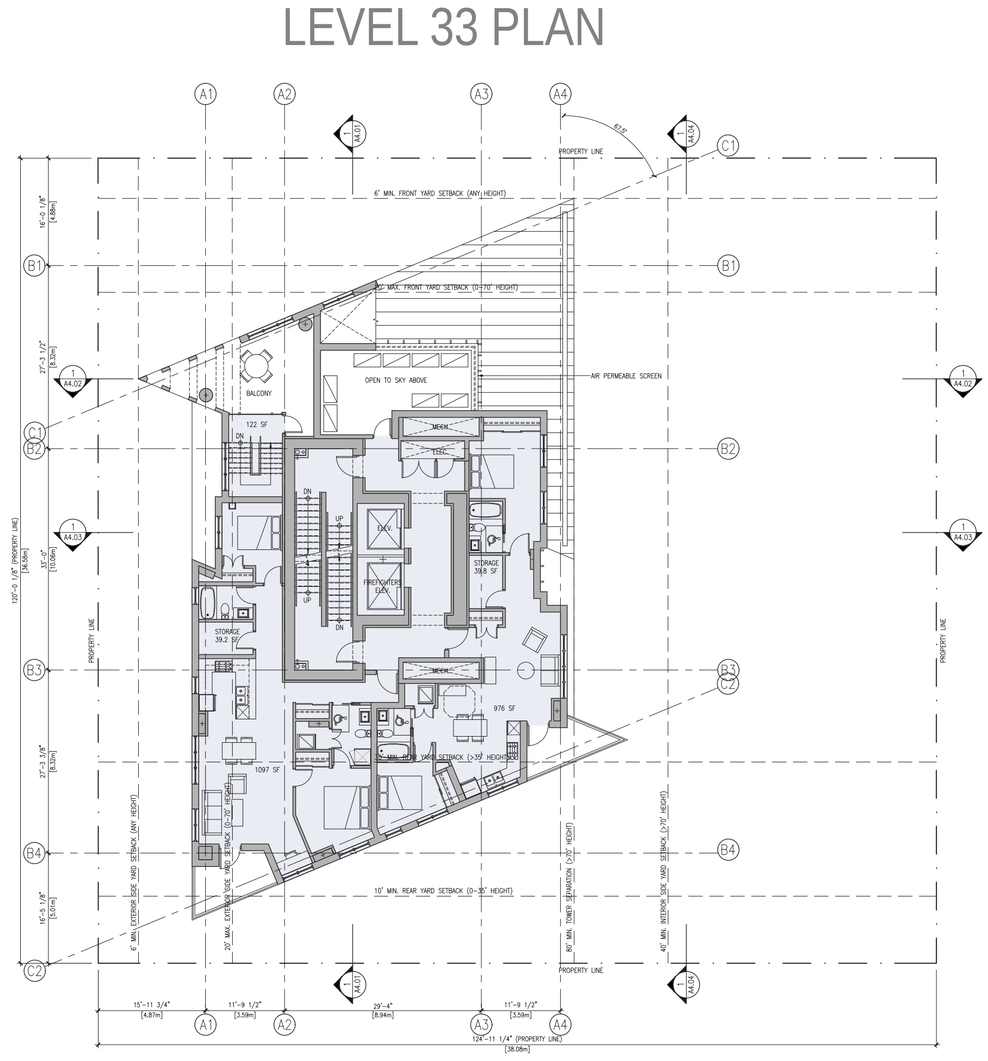
LEVEL 34 PLAN



LEVEL 33 PLAN

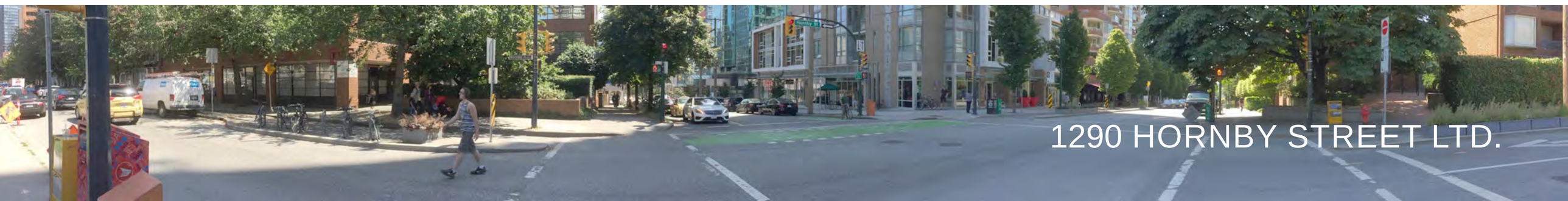


LEVEL 32 PLAN

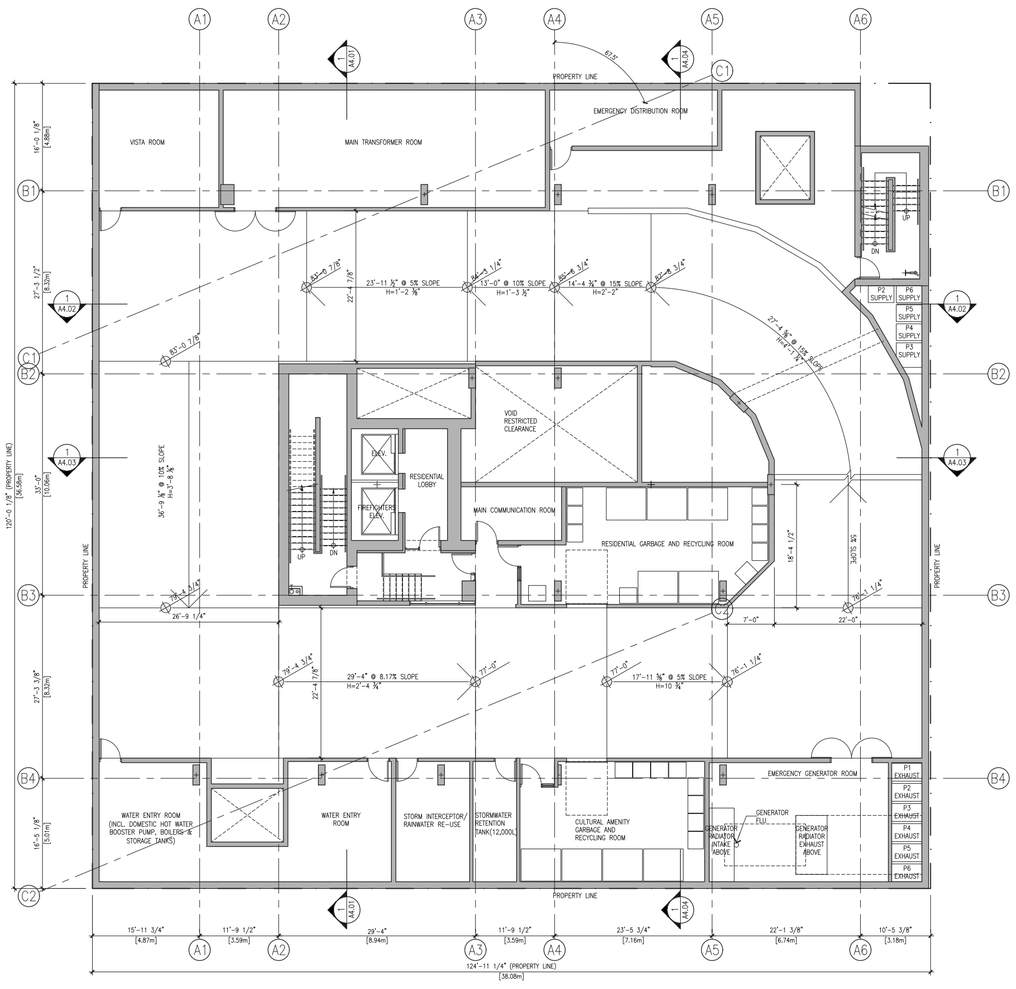


LEVEL 31 PLAN

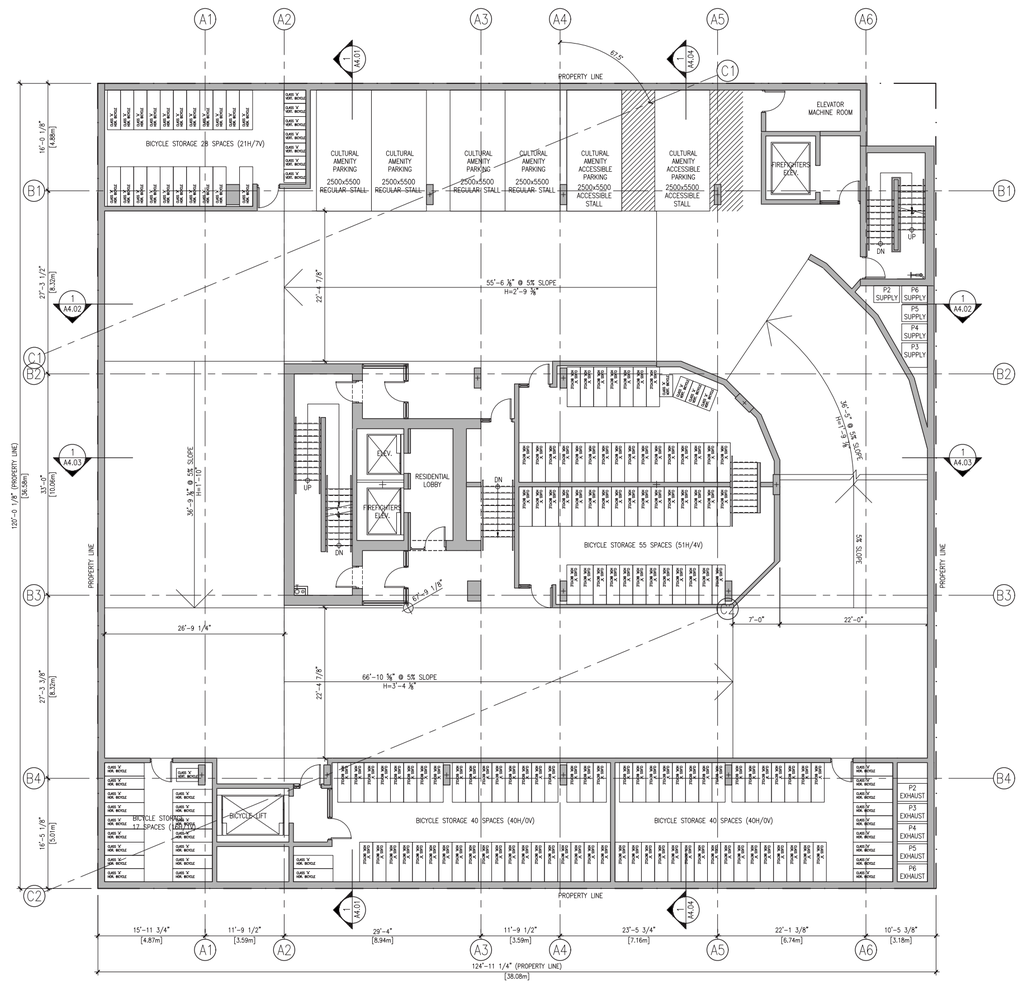
RESIDENTIAL



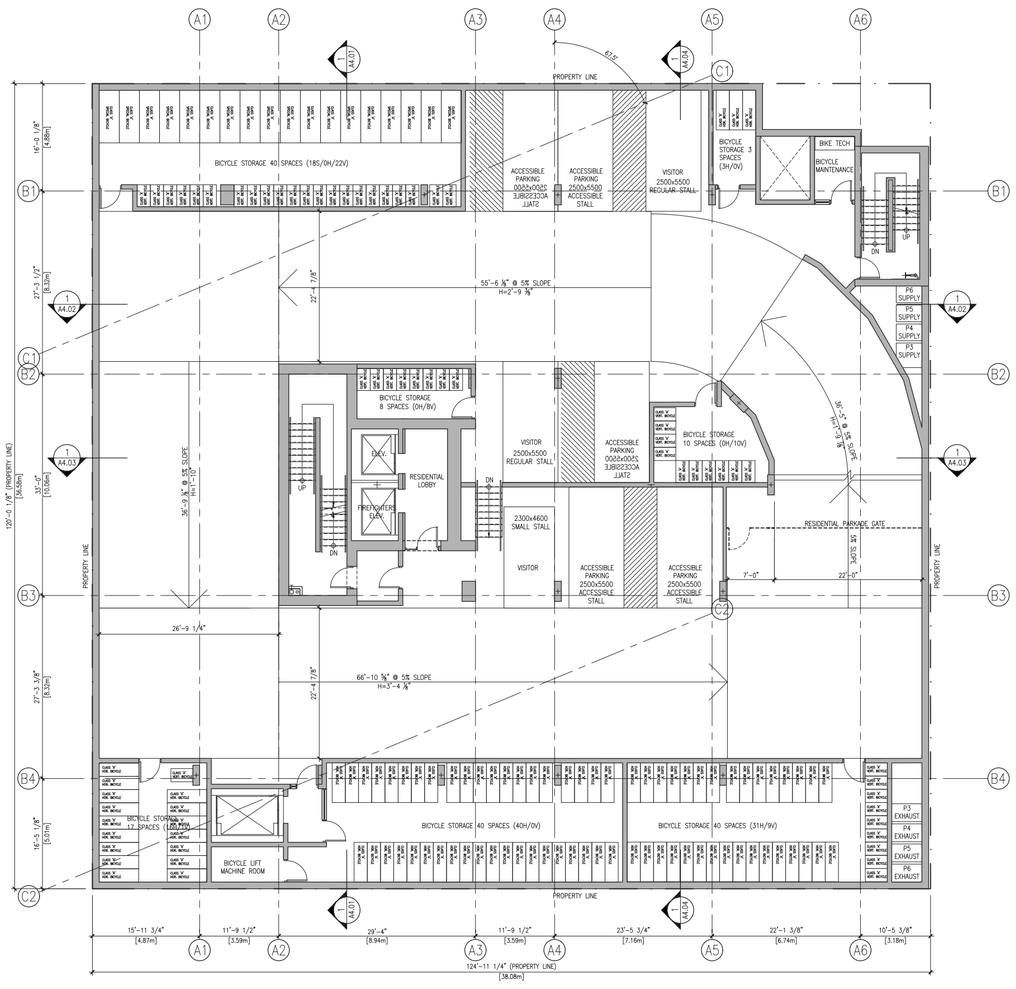
PLANS



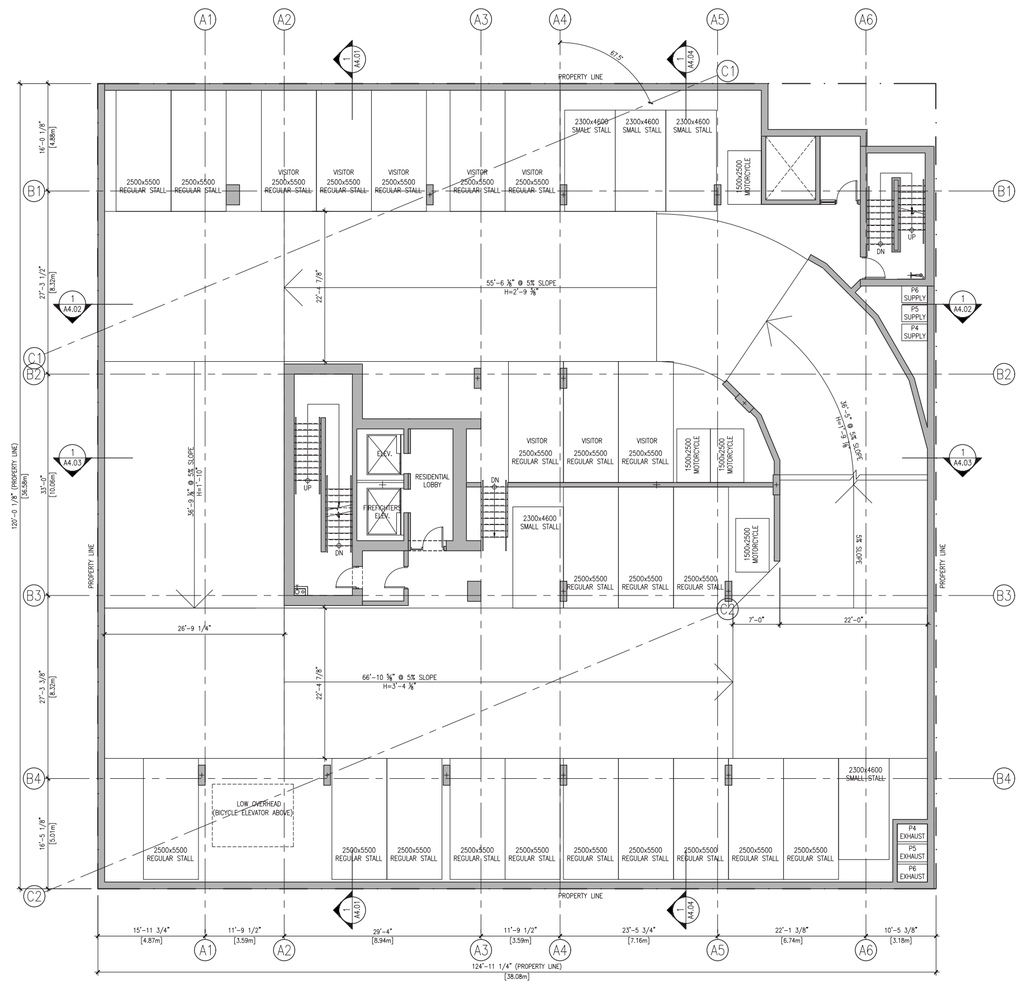
LEVEL P1 PLAN



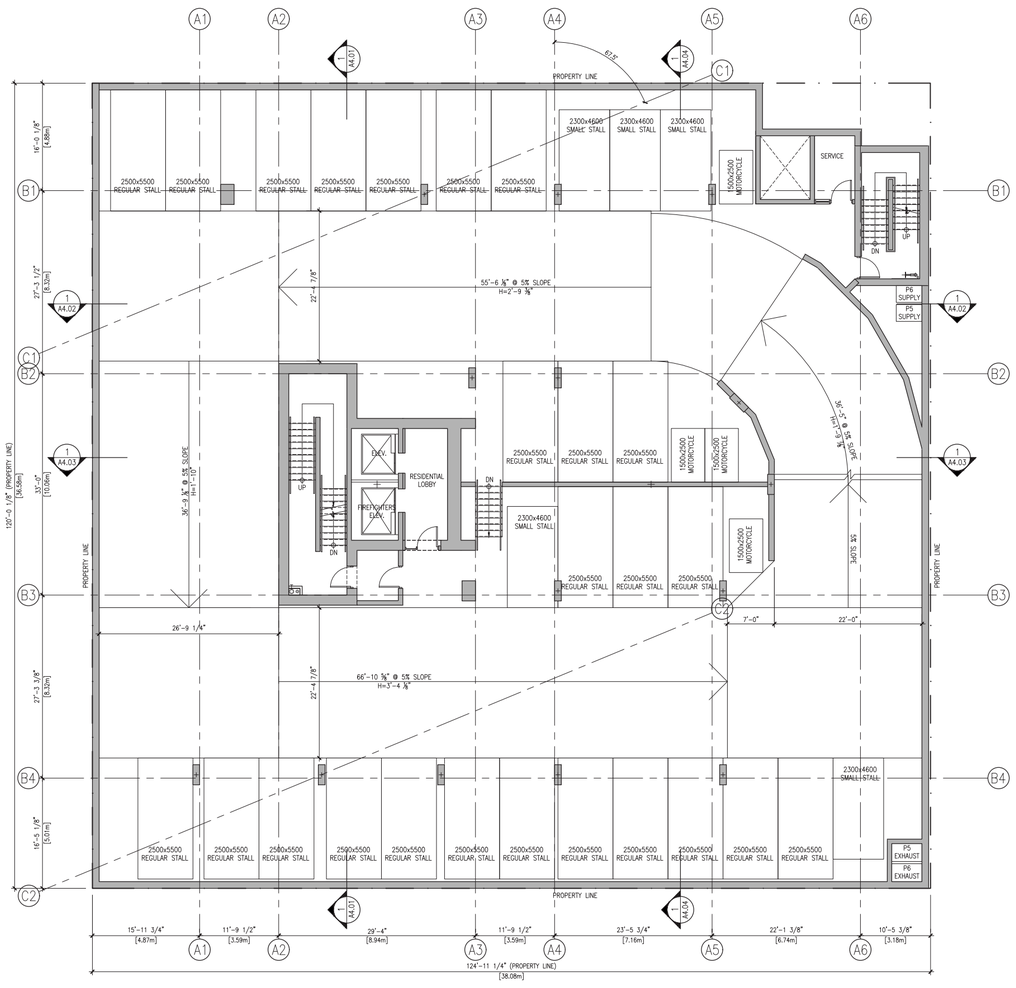
LEVEL P2 PLAN



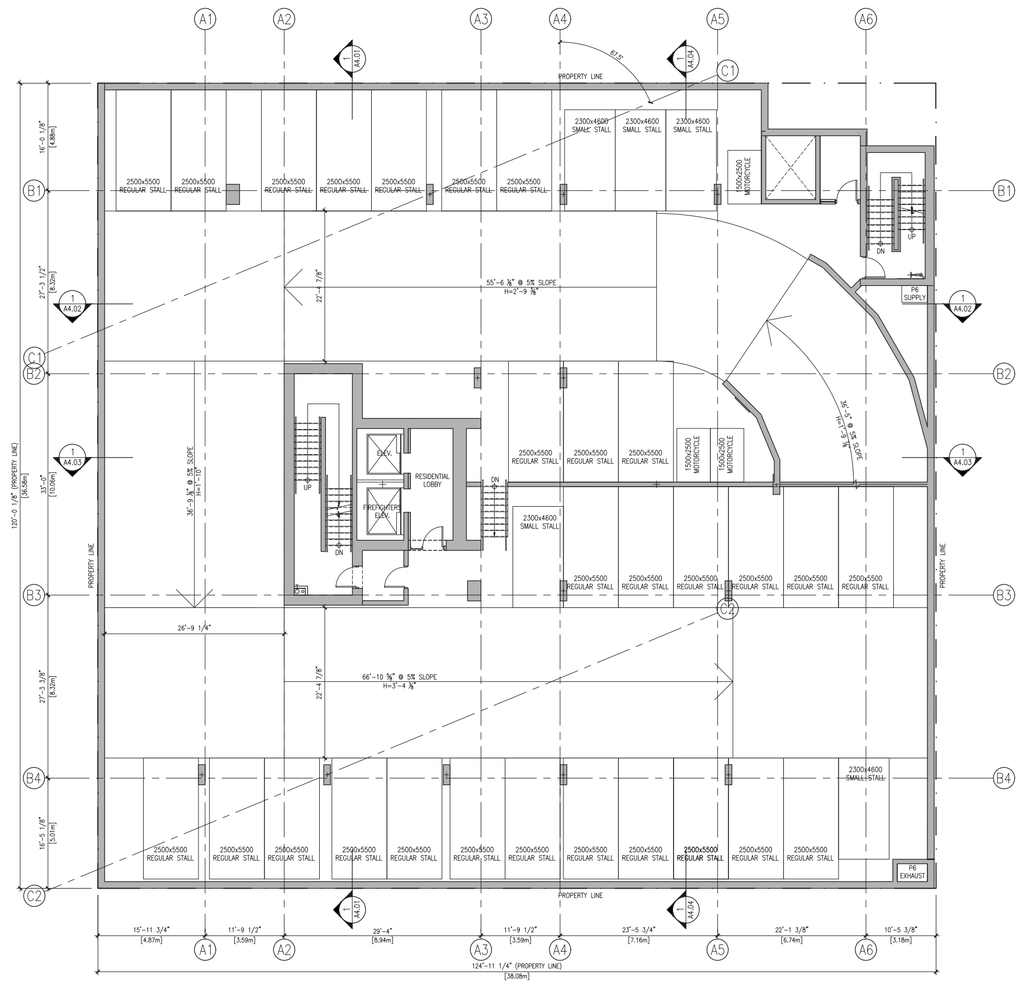
LEVEL P3 PLAN



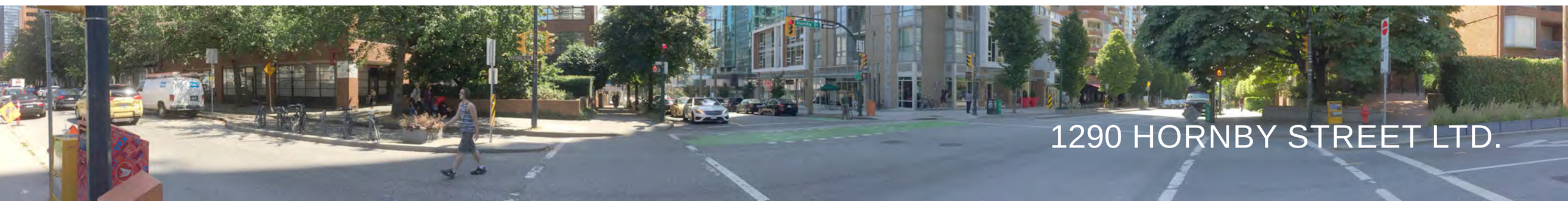
LEVEL P4 PLAN



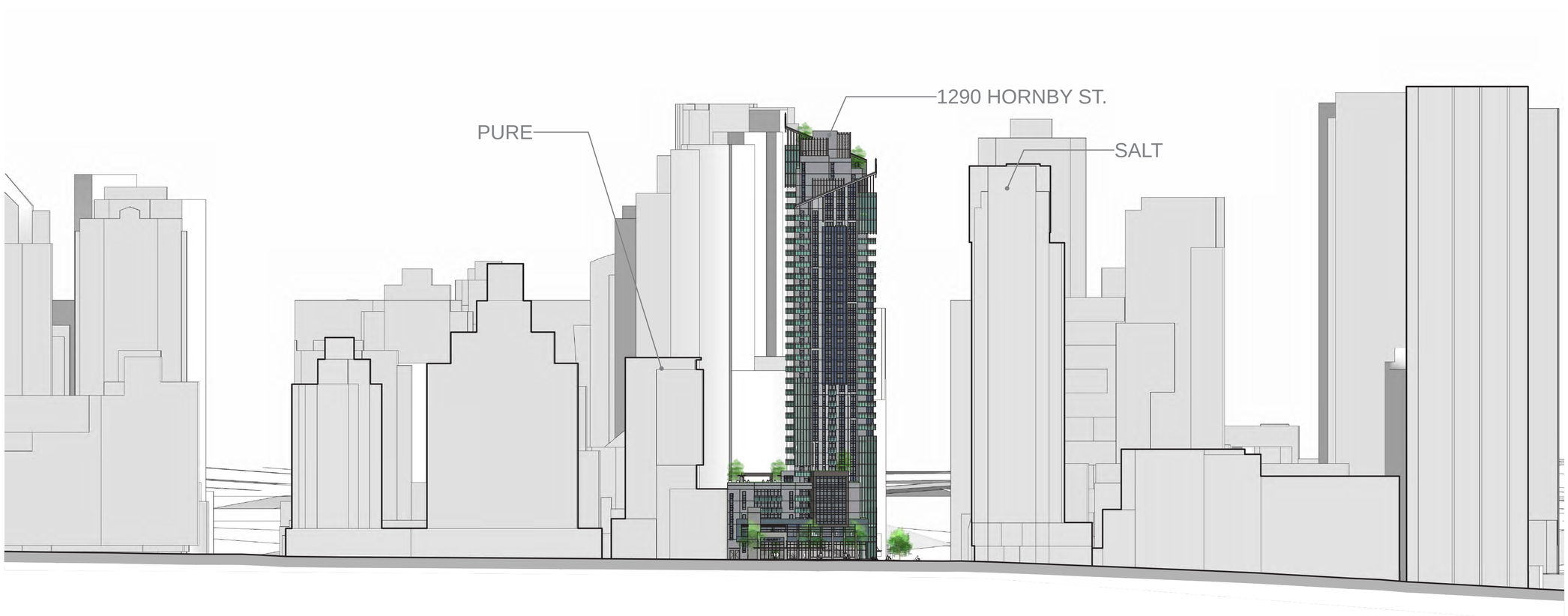
LEVEL P5 PLAN



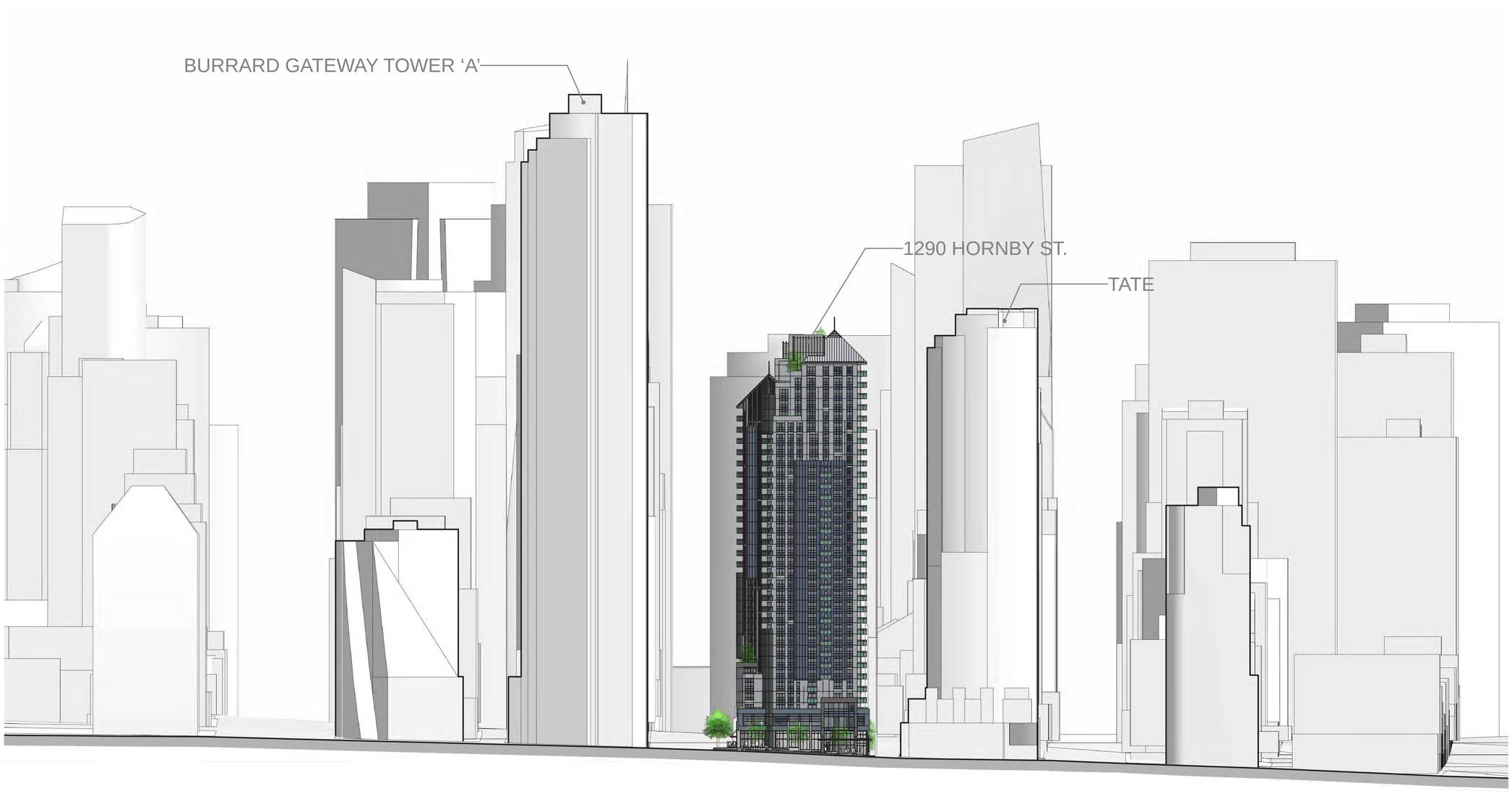
LEVEL P6 PLAN



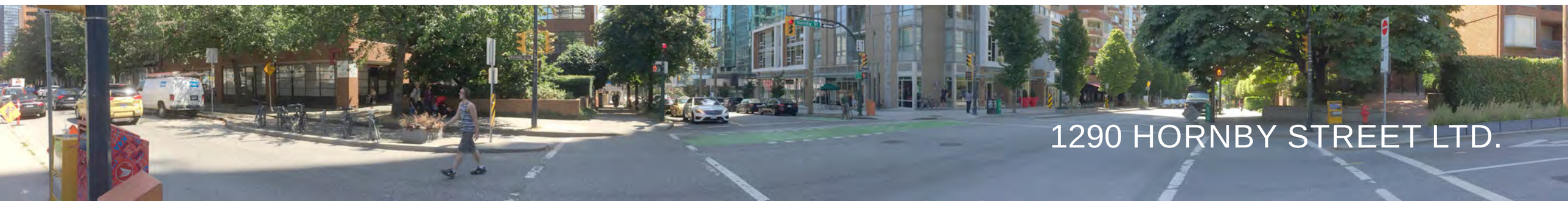
STREET ELEVATION IN CONTEXT



HORNBY STREET ELEVATION

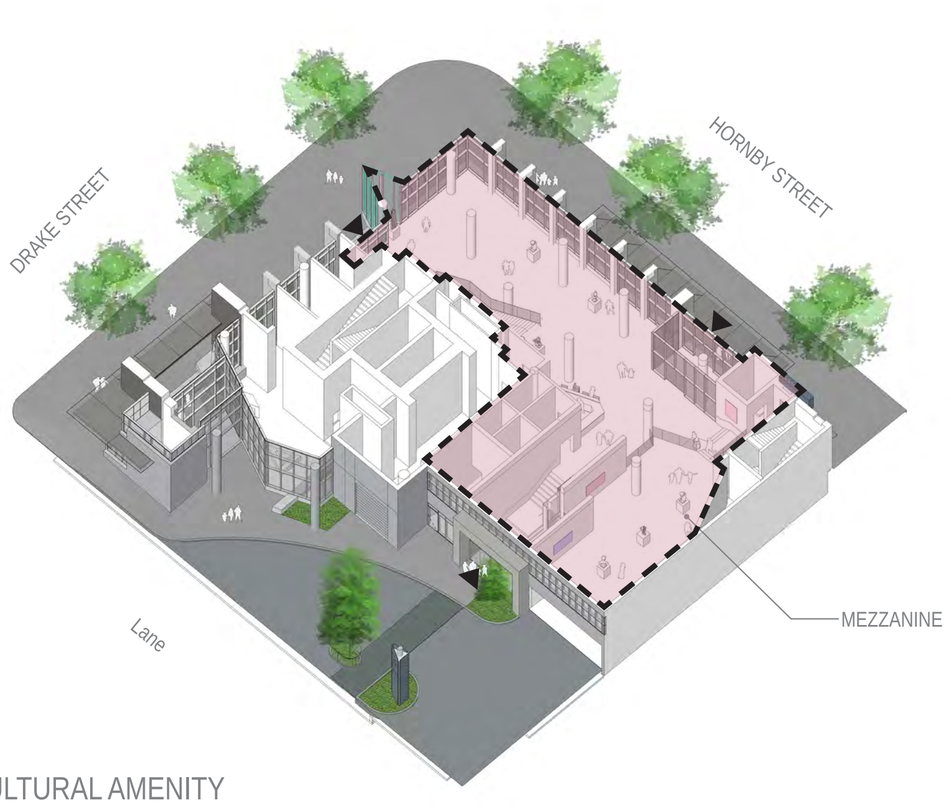


DRAKE STREET ELEVATION

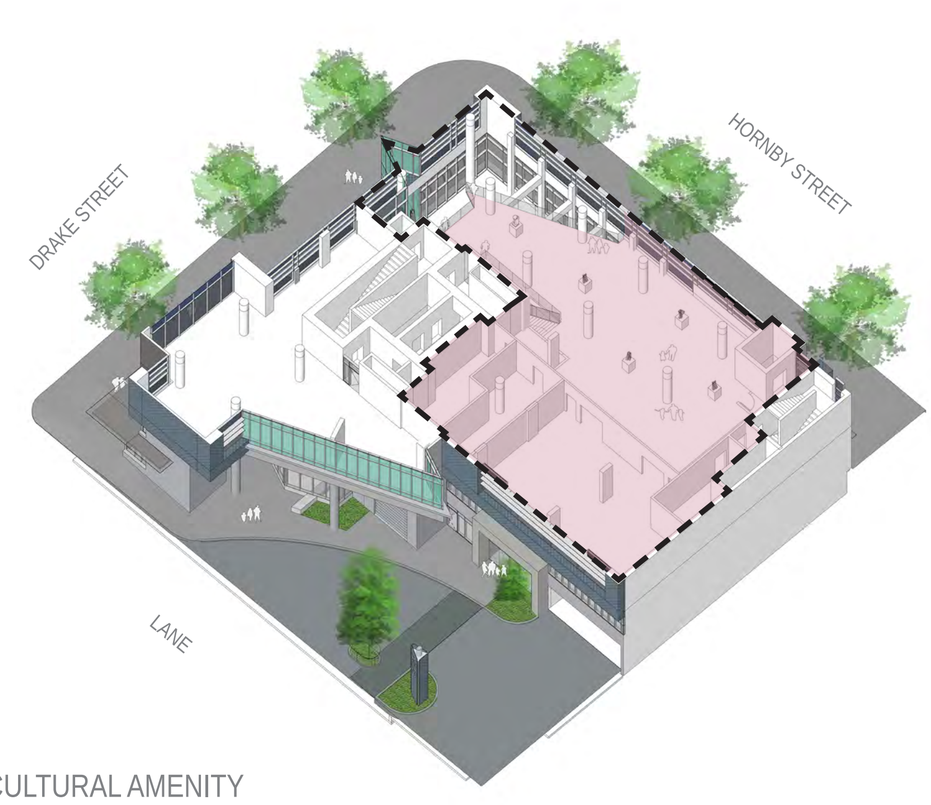


PUBLIC BENEFITS

As part of the City's *Community Amenity Contributions (CAC) through Rezonings* policy, 1290 Hornby St. proposes a ±10,531ft^2 Cultural Amenity to accommodate artist production and presentation space.

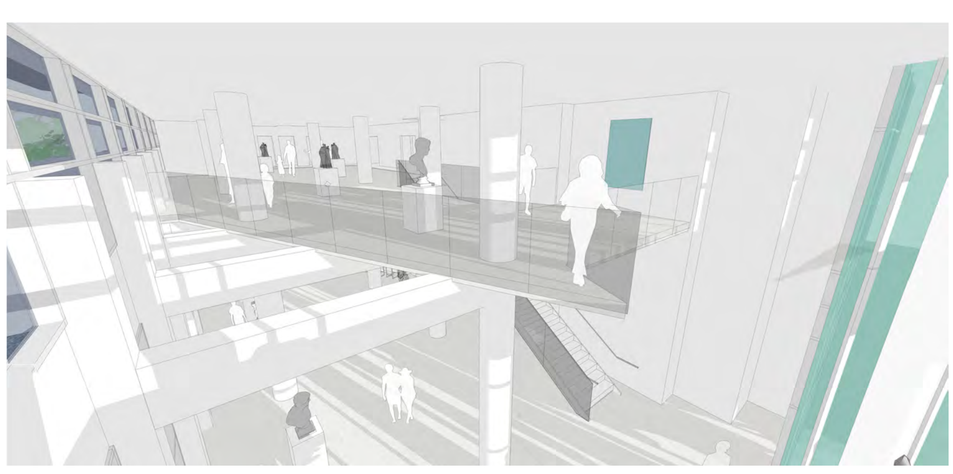


CULTURAL AMENITY
LEVEL 1 & MEZZANINE



CULTURAL AMENITY
LEVEL 2

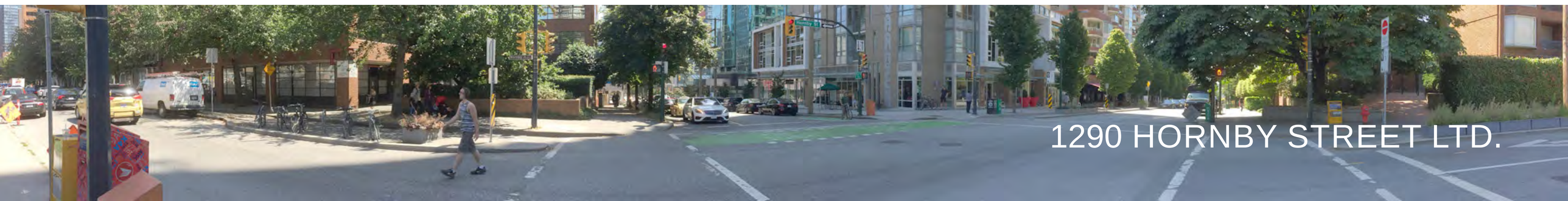
INTERIOR VIEW AT THE MAIN ENTRANCE



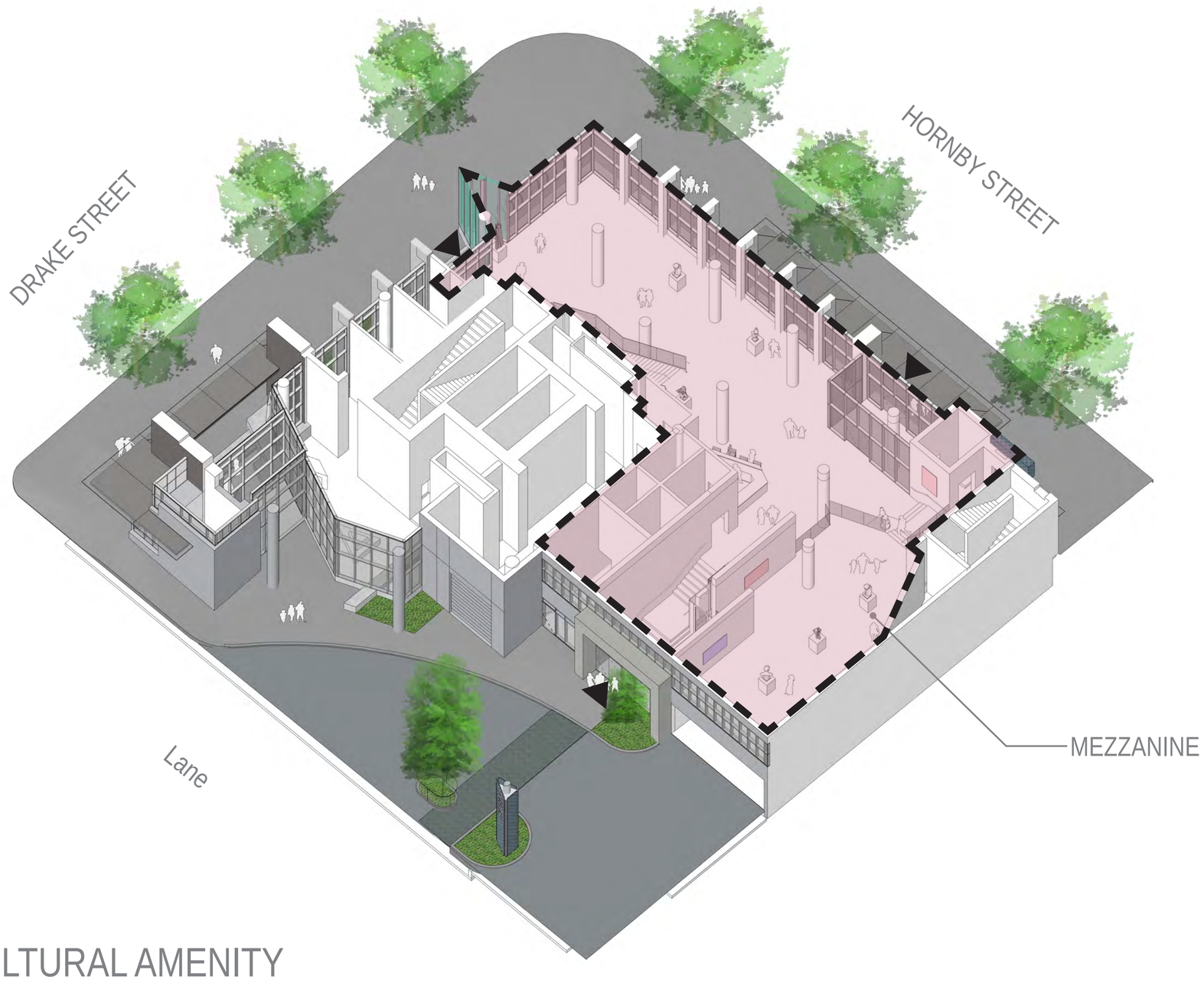
VIEW OF DOUBLE HEIGHT SPACE

ARTISTIC RENDERING OF THE 'TATE' ARTIST STUDIO'S
(1283 HOWE ST.)

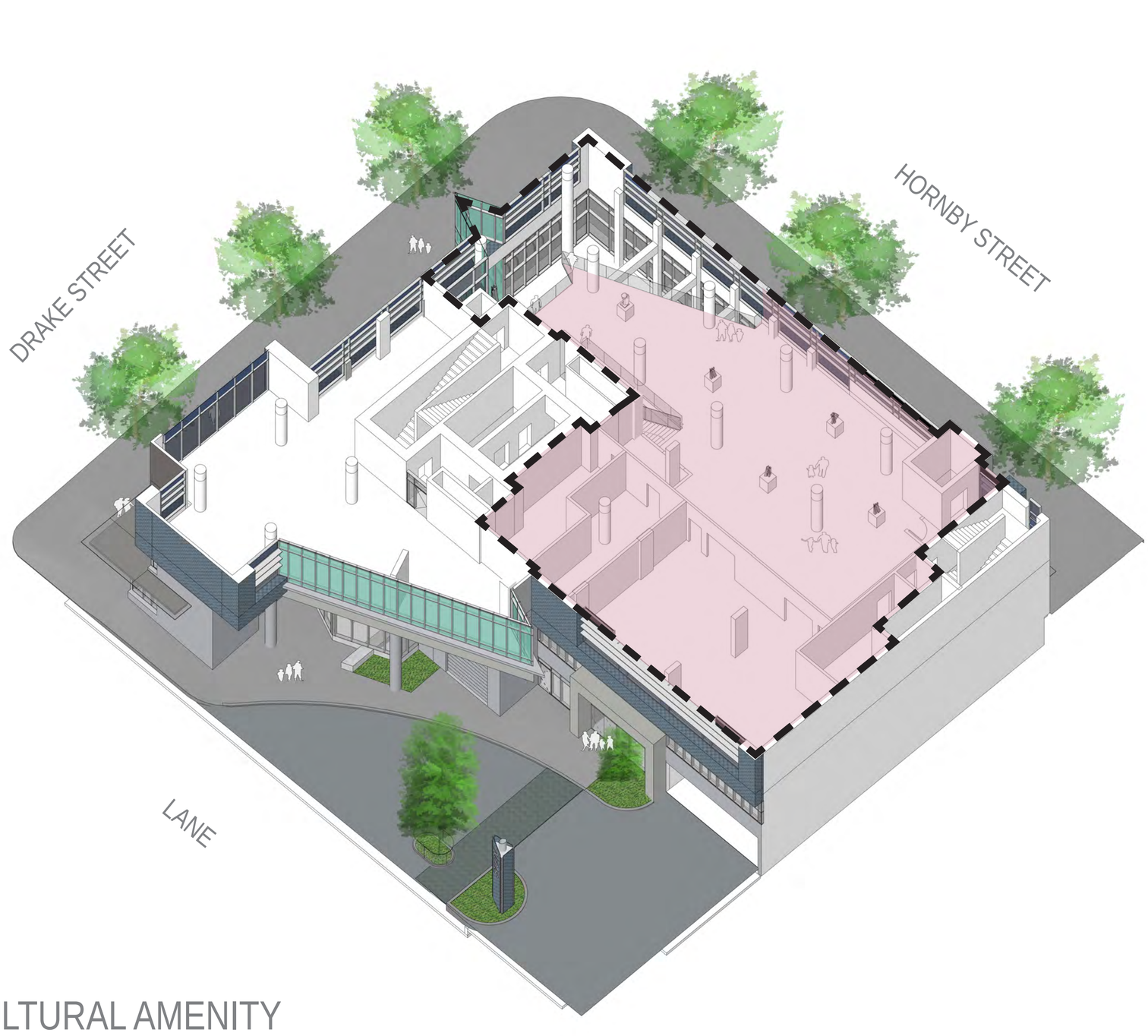
The proposal of artist production and presentation spaces aims to capitalize on the potential synergy between 1290 Hornby St. and the new artist studio's located across the lane (1283 Howe St.). Pedestrian access from the Cultural Amenity to the lane will facilitate ease of movement between these public spaces.



CULTURAL AMENITY

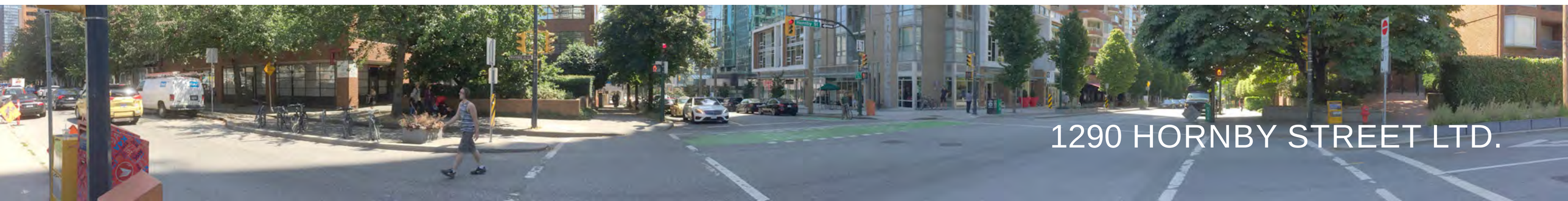


CULTURAL AMENITY
LEVEL 1 & MEZZANINE



CULTURAL AMENITY
LEVEL 2

EXTENT OF AMENITY SPACE

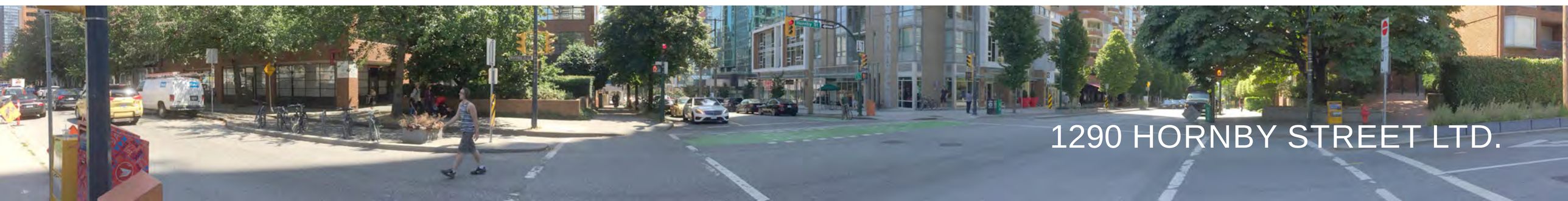


CULTURAL AMENITY

INTERIOR VIEW AT THE MAIN ENTRANCE LOOKING TOWARD LANE

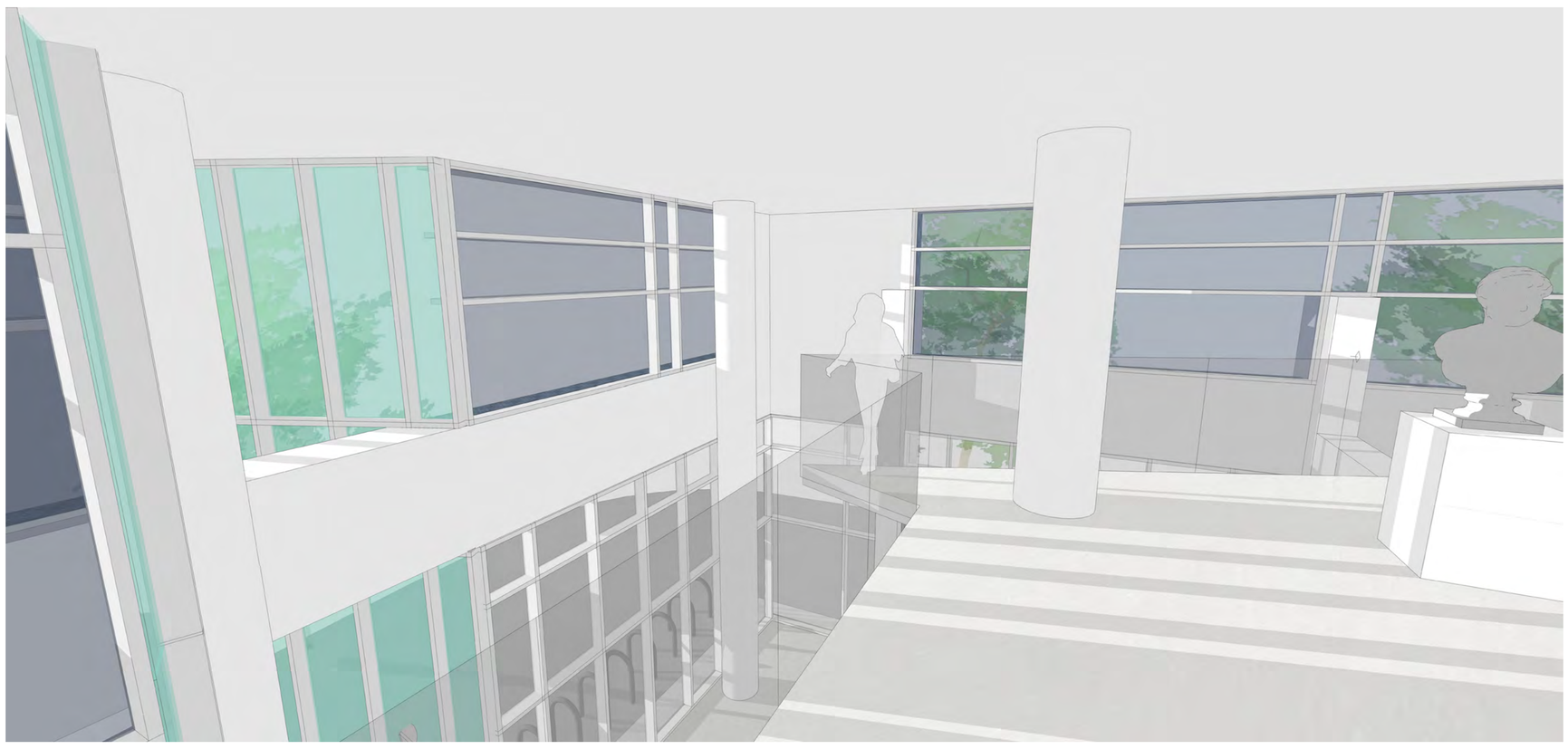
INTERIOR VIEW NEAR MAIN ENTRANCE LOOKING TOWARD DRAKE STREET

INTERIOR VIEW NEAR CORNER OF HORNBY AND DRAKE

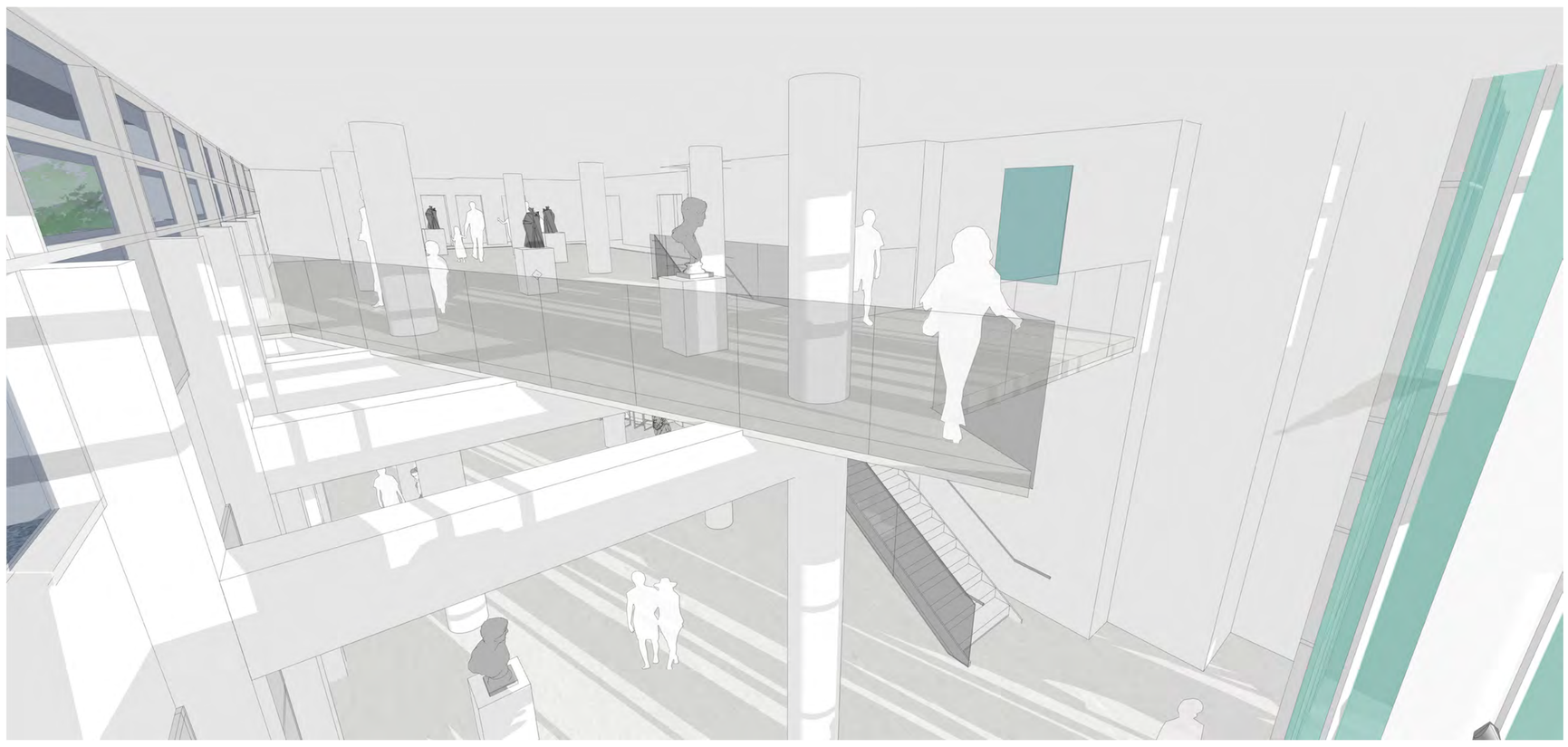


CULTURAL AMENITY

INTERIOR VIEW NEAR MAIN ENTRANCE LOOKING TOWARD MEZZANINE

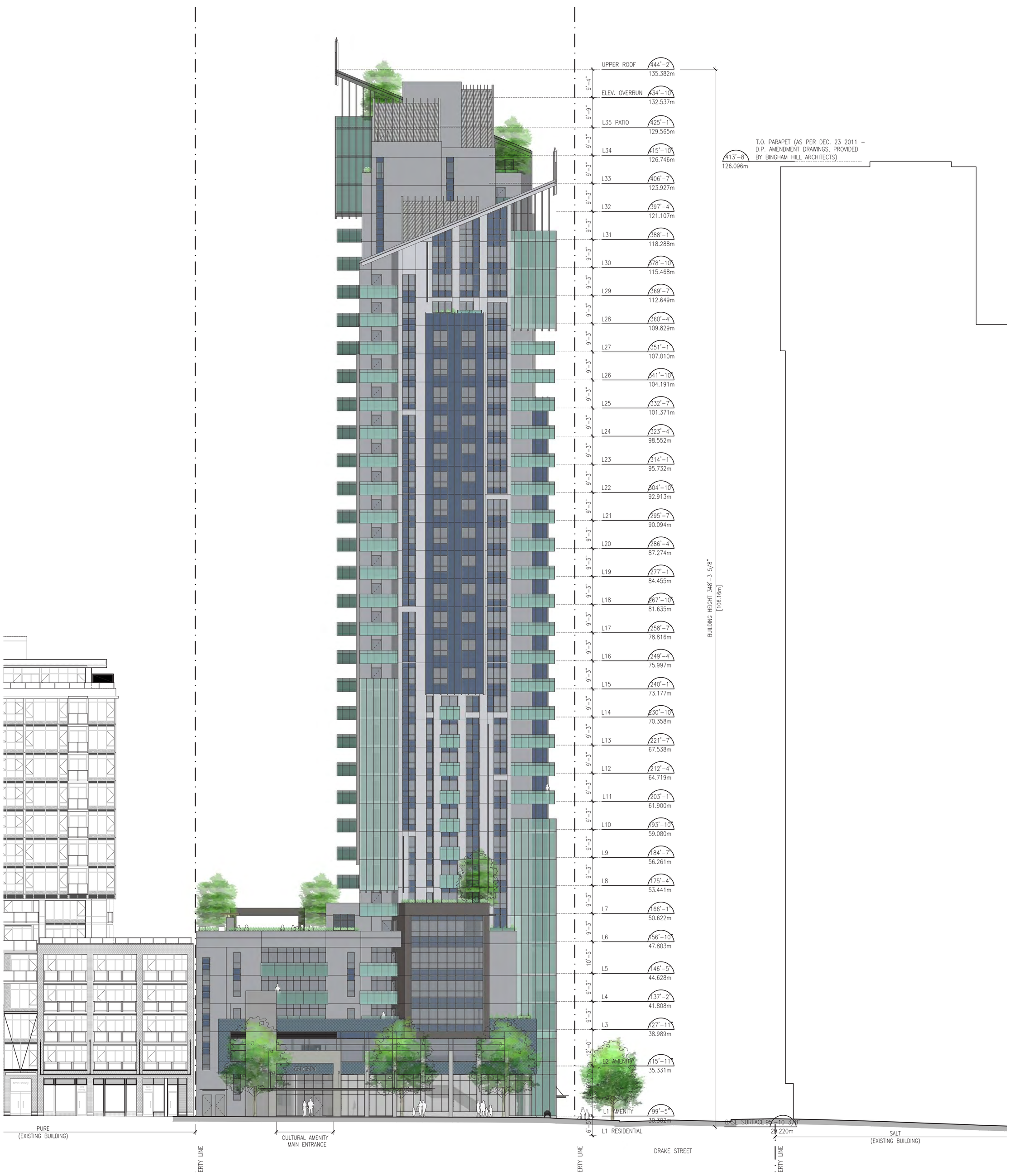


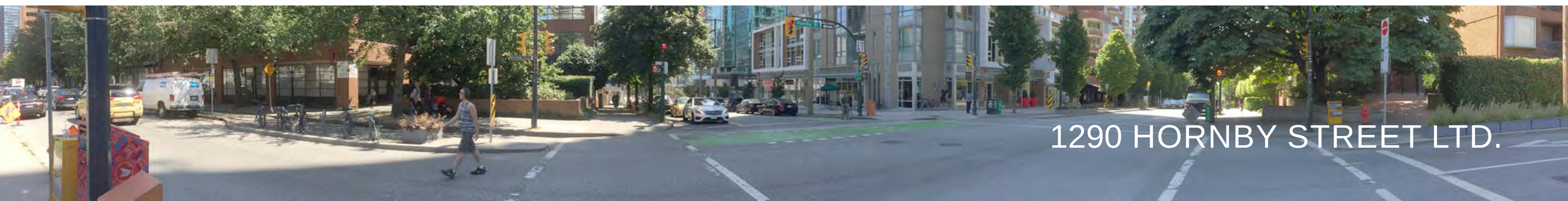
INTERIOR VIEW OF LEVEL 2



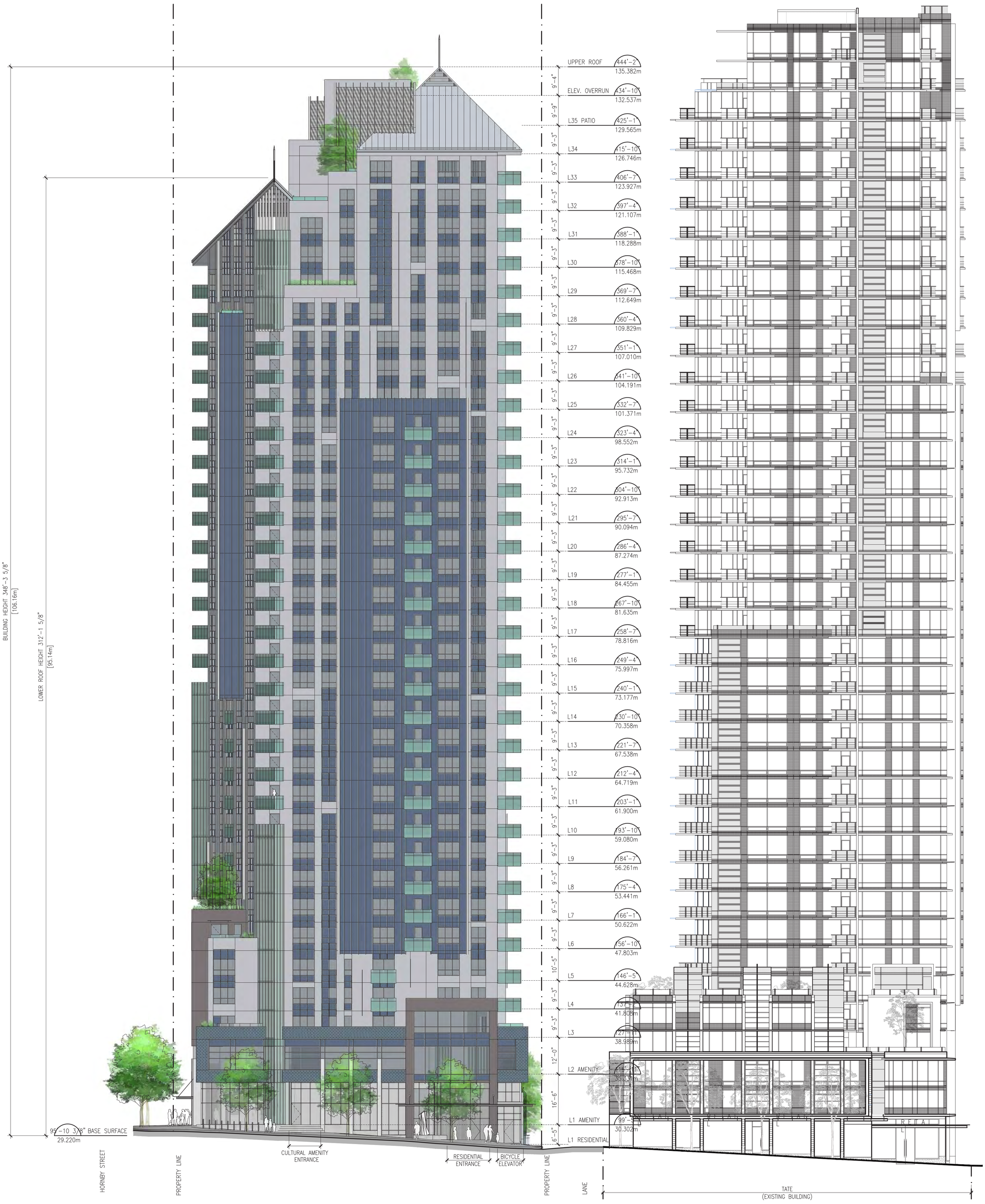
VIEW OF DOUBLE HEIGHT SPACE

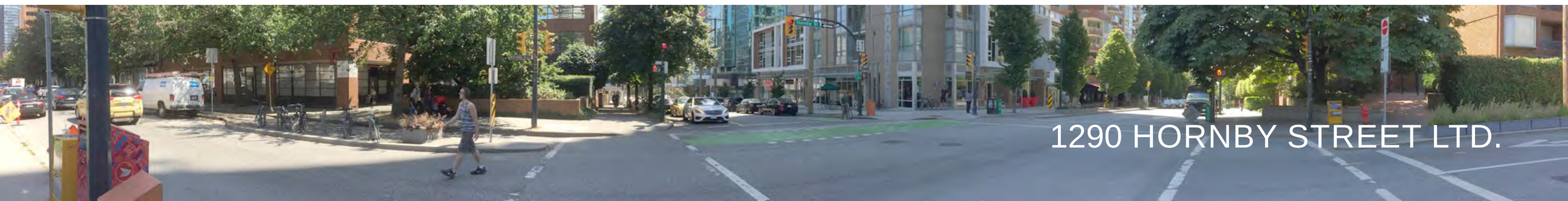
HORNBY ST. ELEVATION



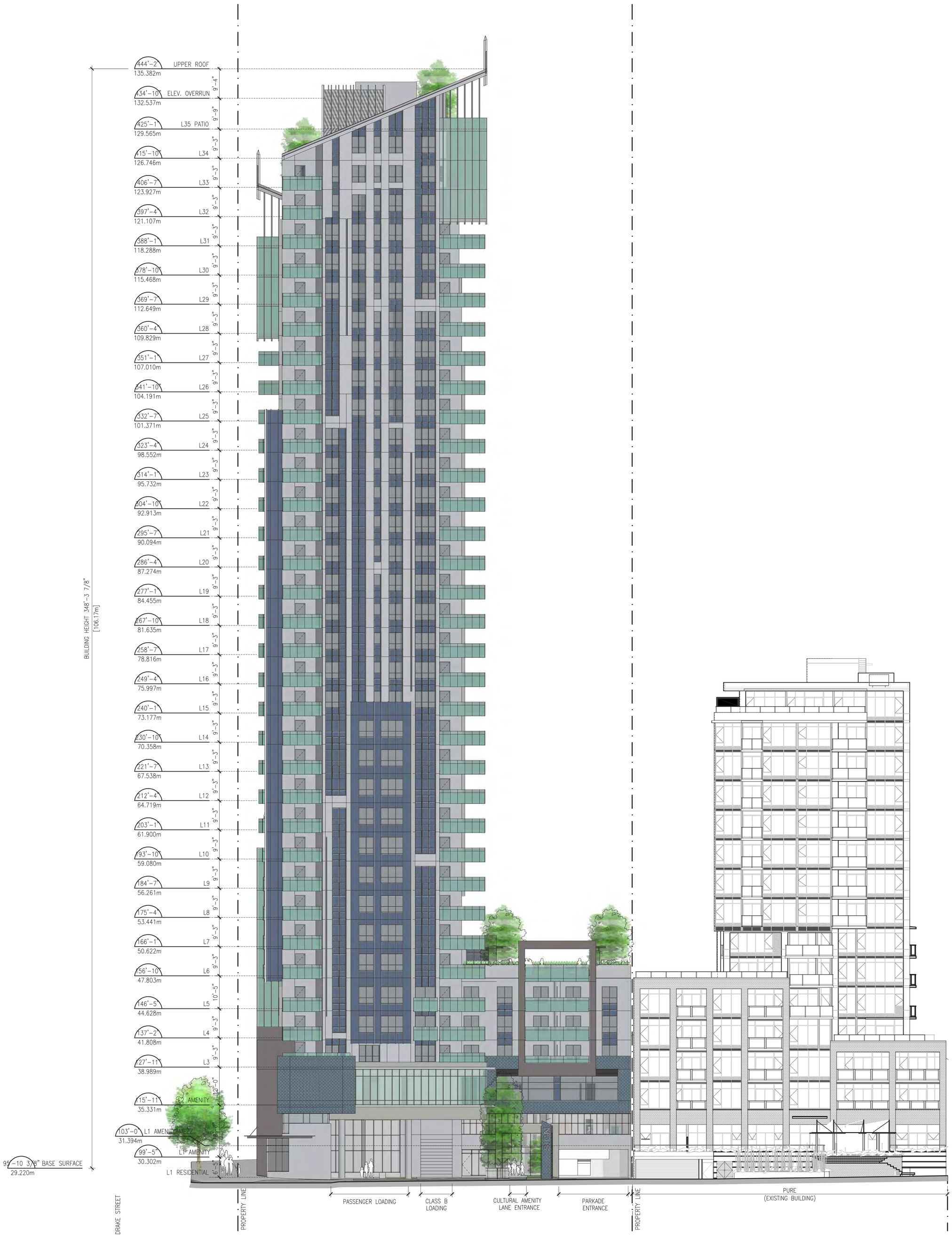


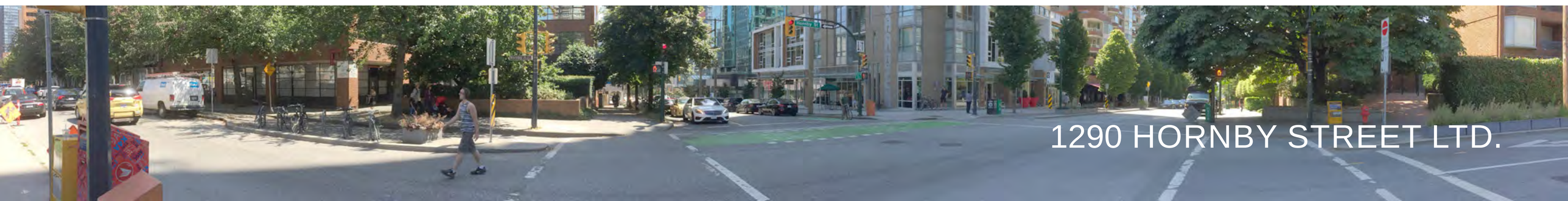
DRAKE ST. ELEVATION





LANE ELEVATION





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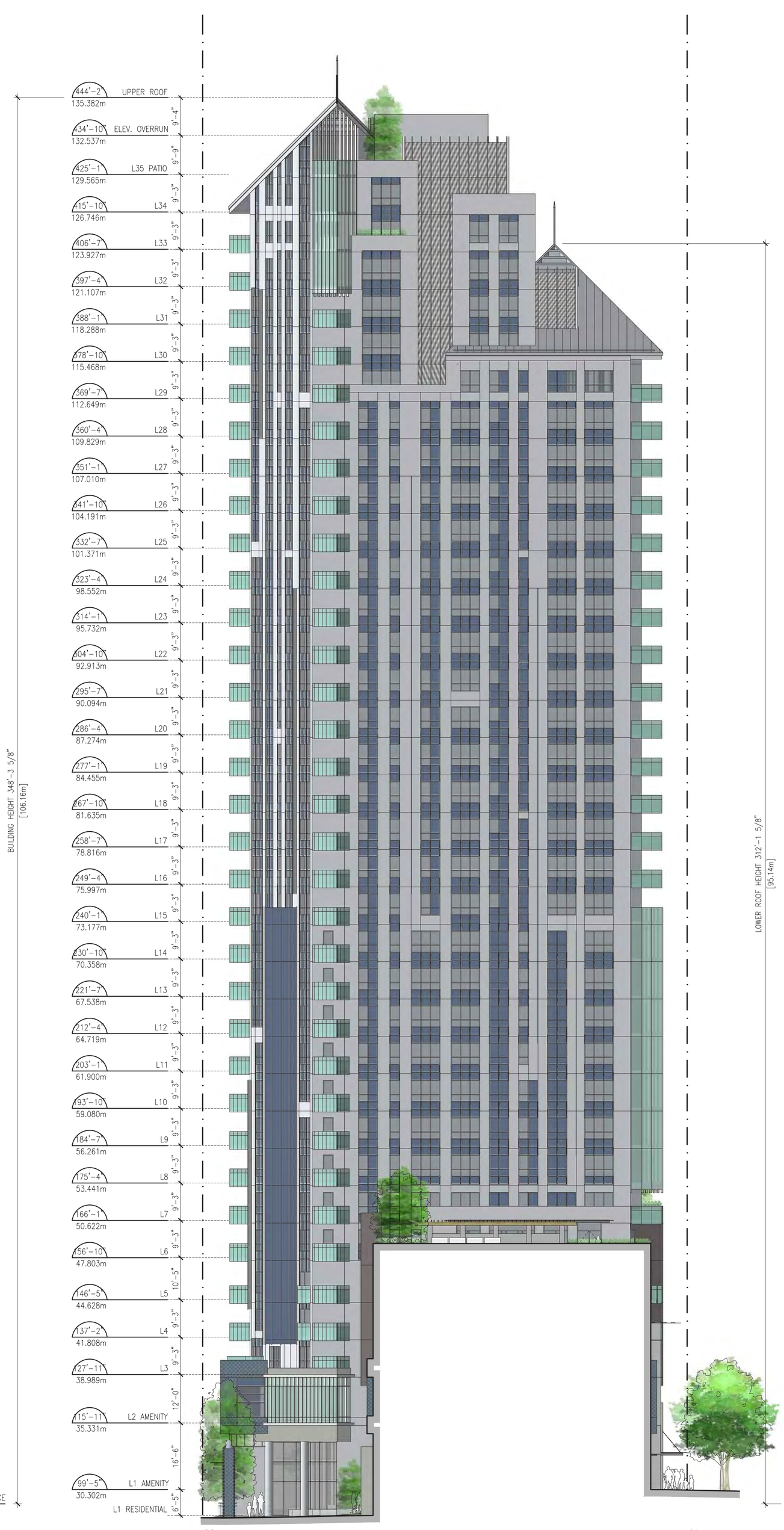
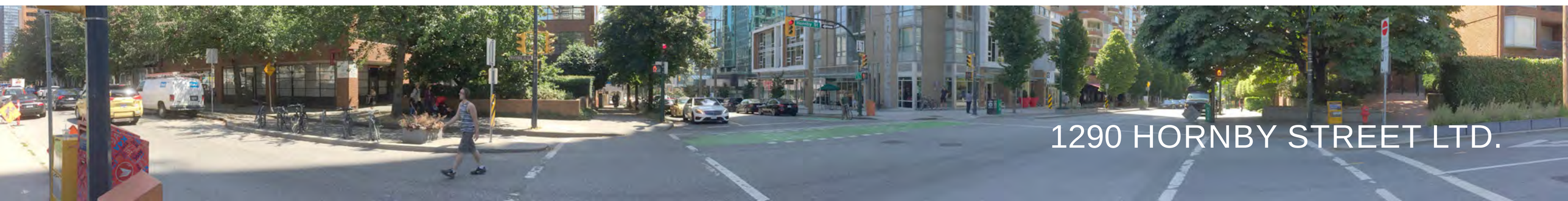
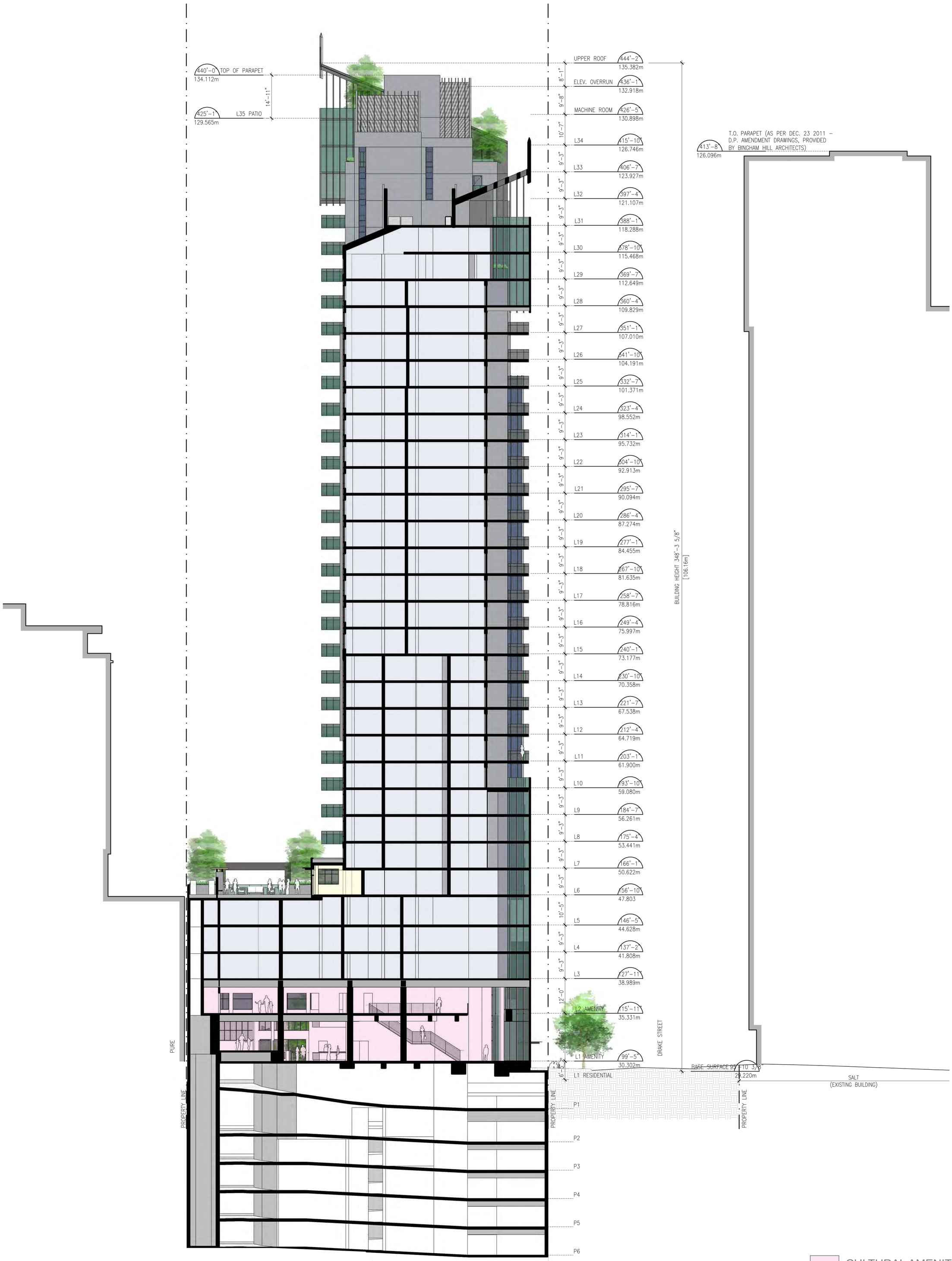
SIDE YARD ELEVATION





SECTION

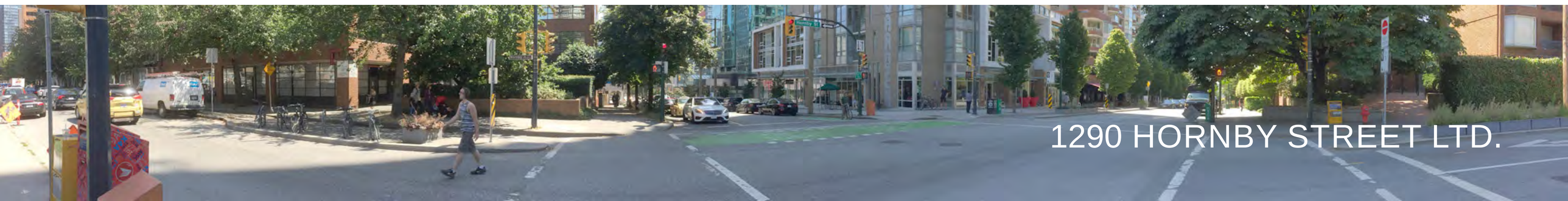


SECTION 1/A4.02

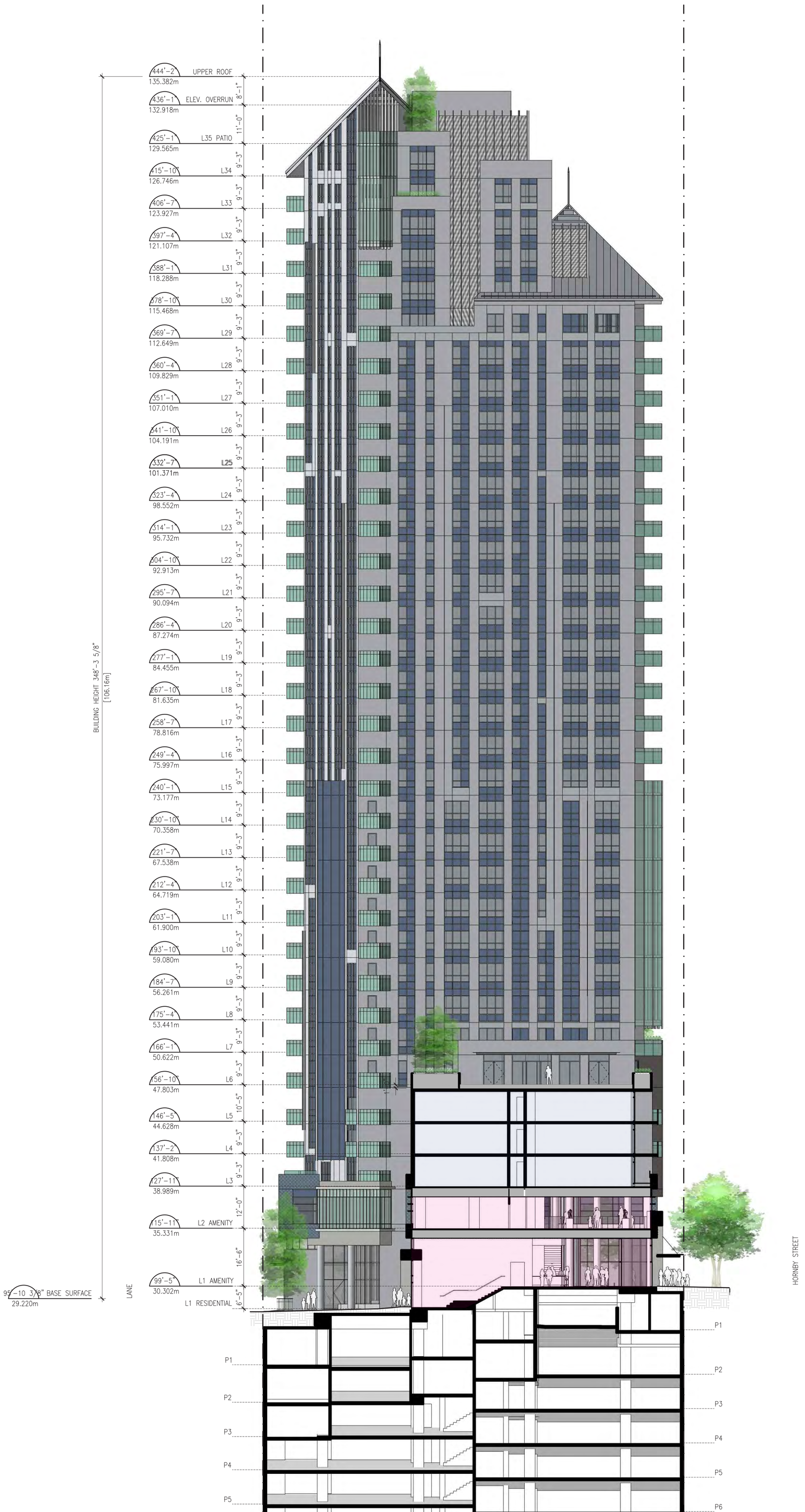
CULTURAL AMENITY

RESIDENTIAL AMENITY

RESIDENTIAL



SECTION



SECTION 1/A4.04

CULTURAL AMENITY

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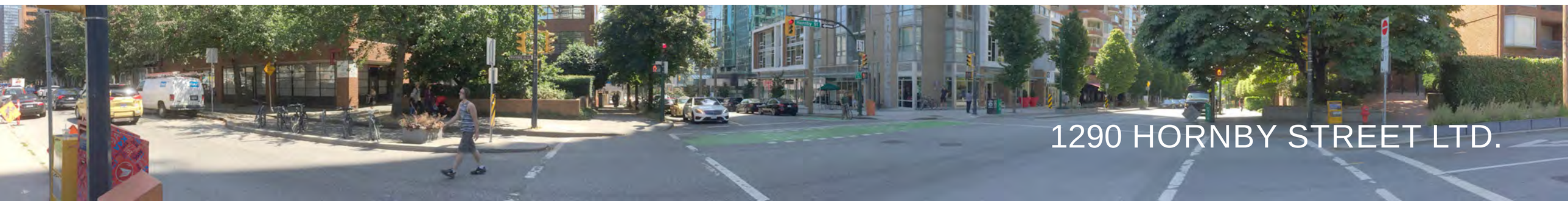

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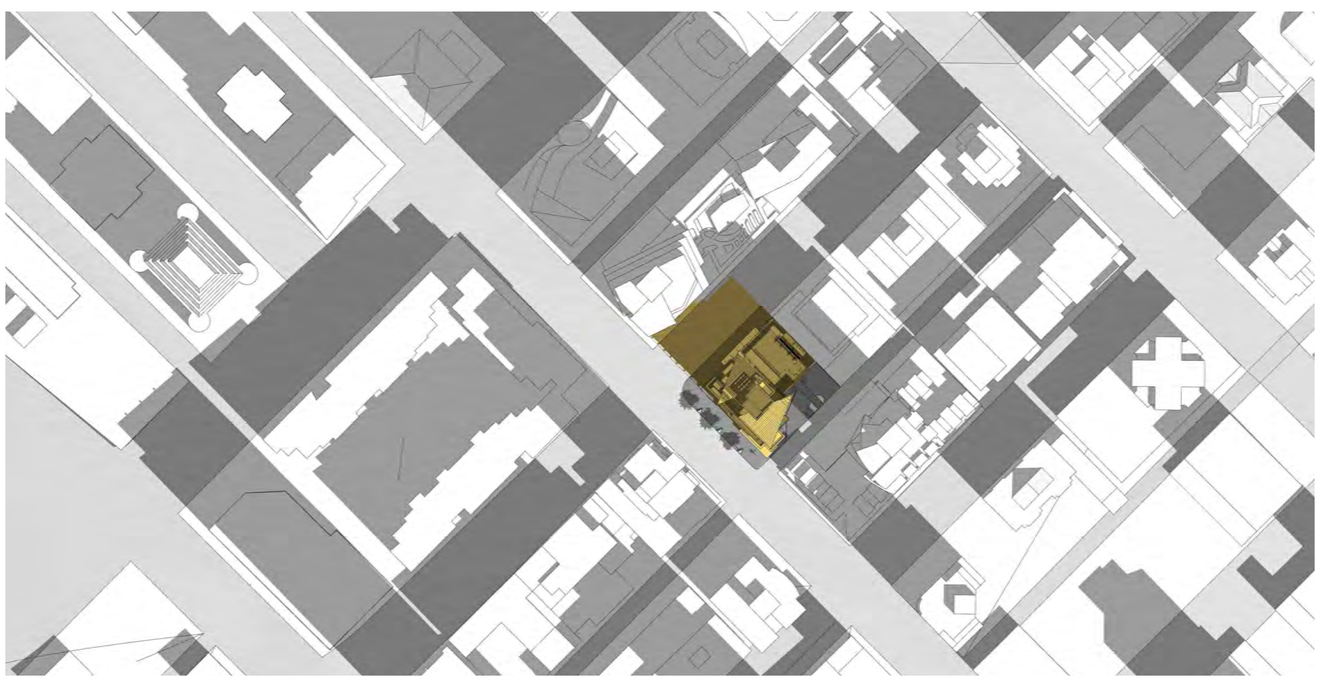
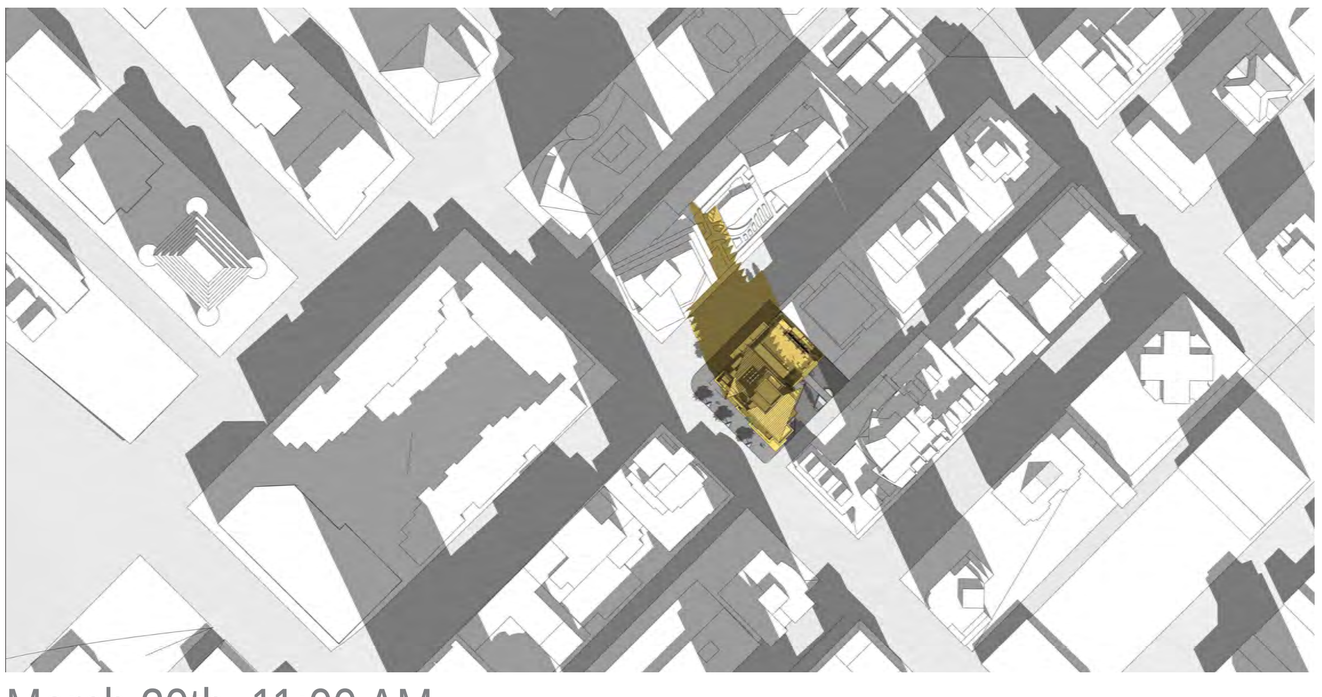
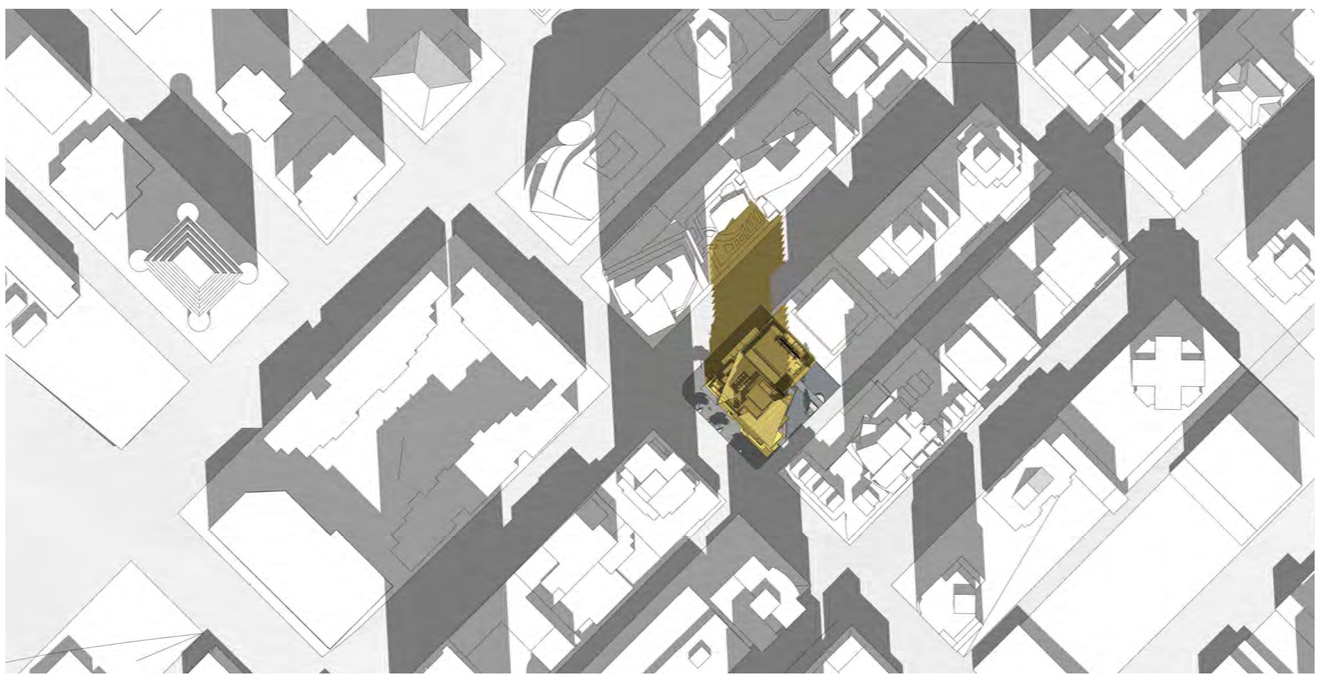
SHADOW STUDY



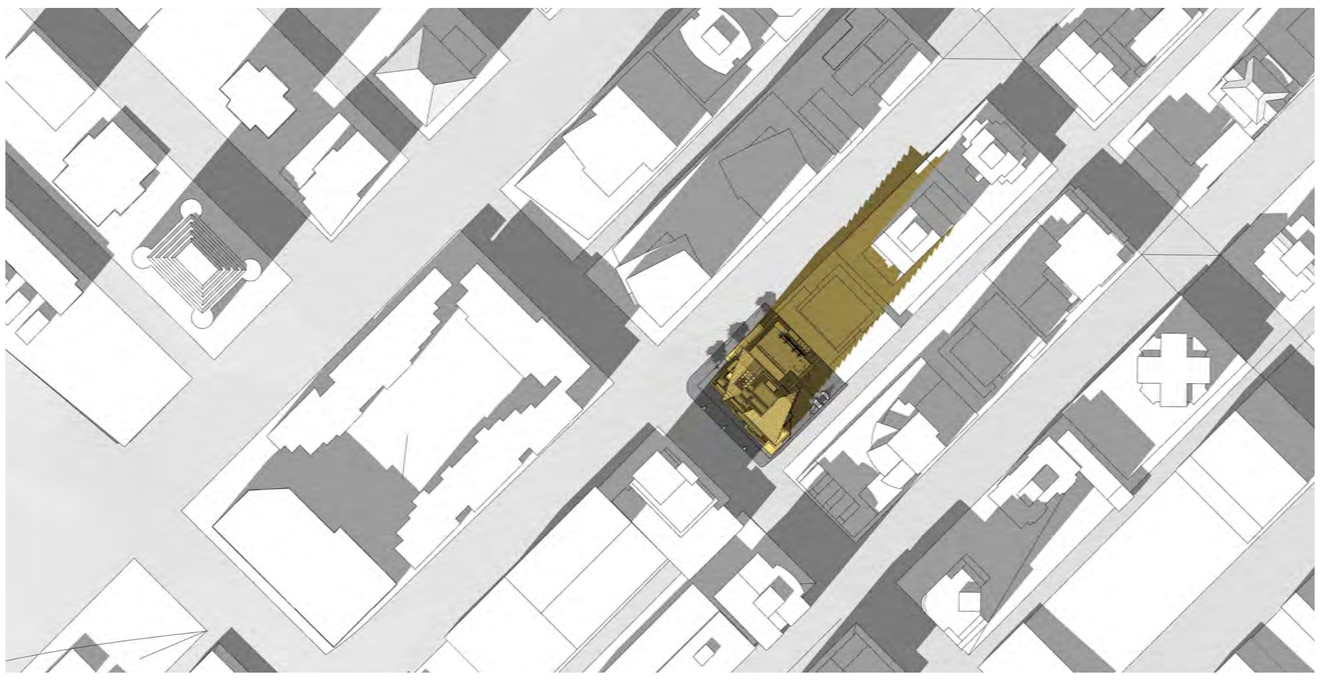
March 20th, 10:00 AM



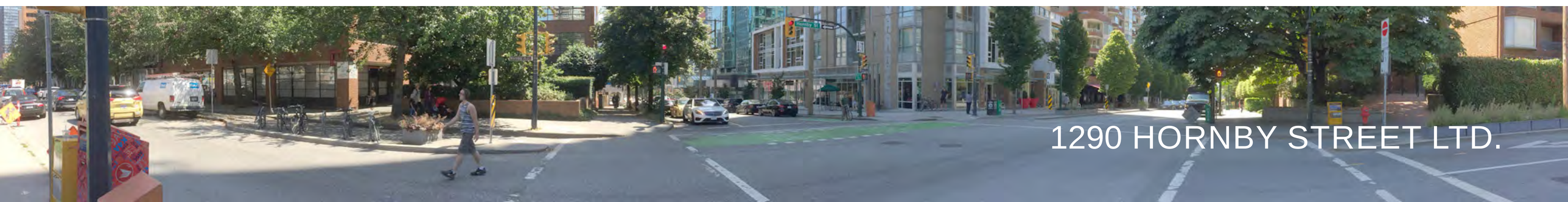
March 20th, 11:00 AM



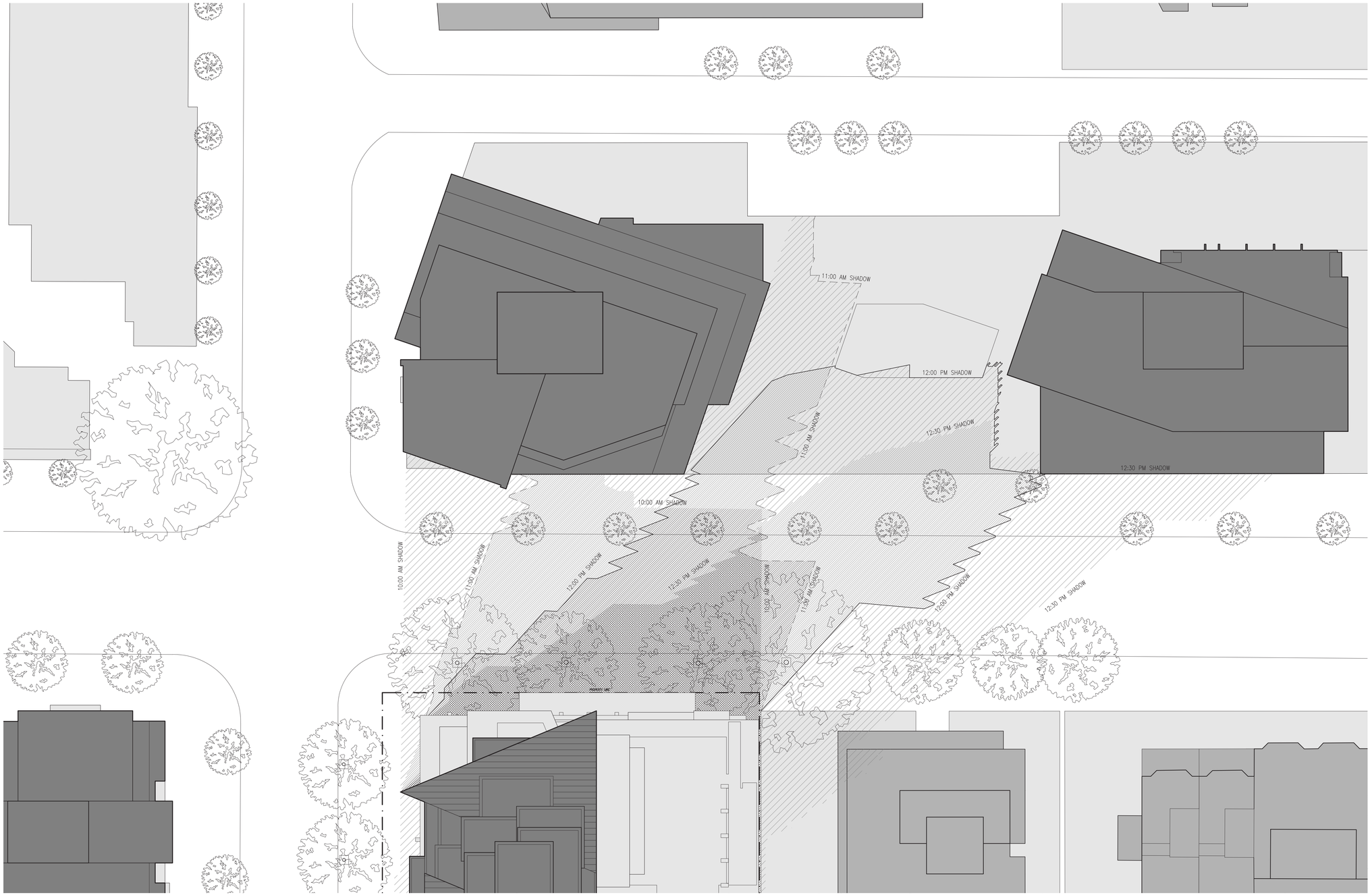
March 20th, 12:00 PM



March 20th, 2:00 PM



BURRARD GATEWAY SHADOW STUDY



1 SHADOW STUDY ON BURRARD GATEWAY PODIUM
SCALE: 1/16" = 1'-0"

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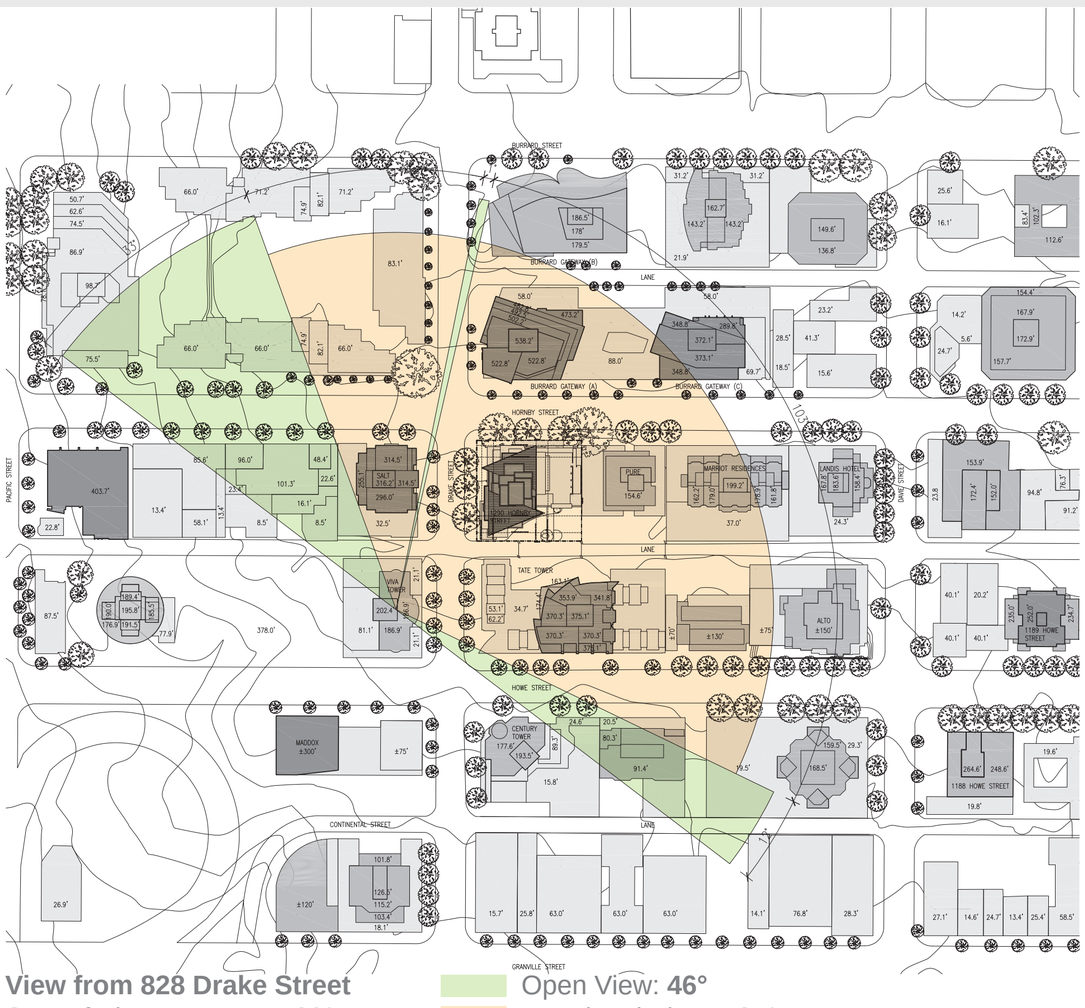
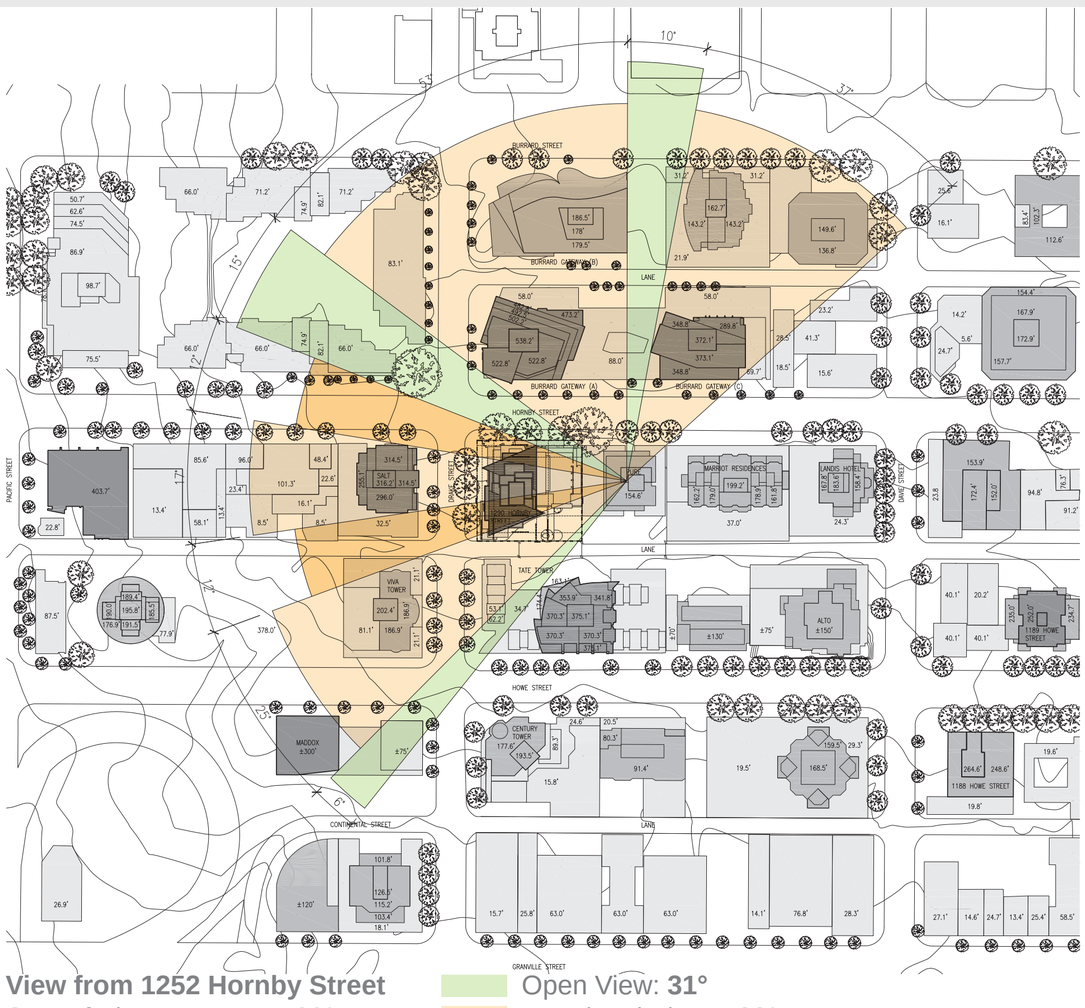
VIEW ANALYSIS



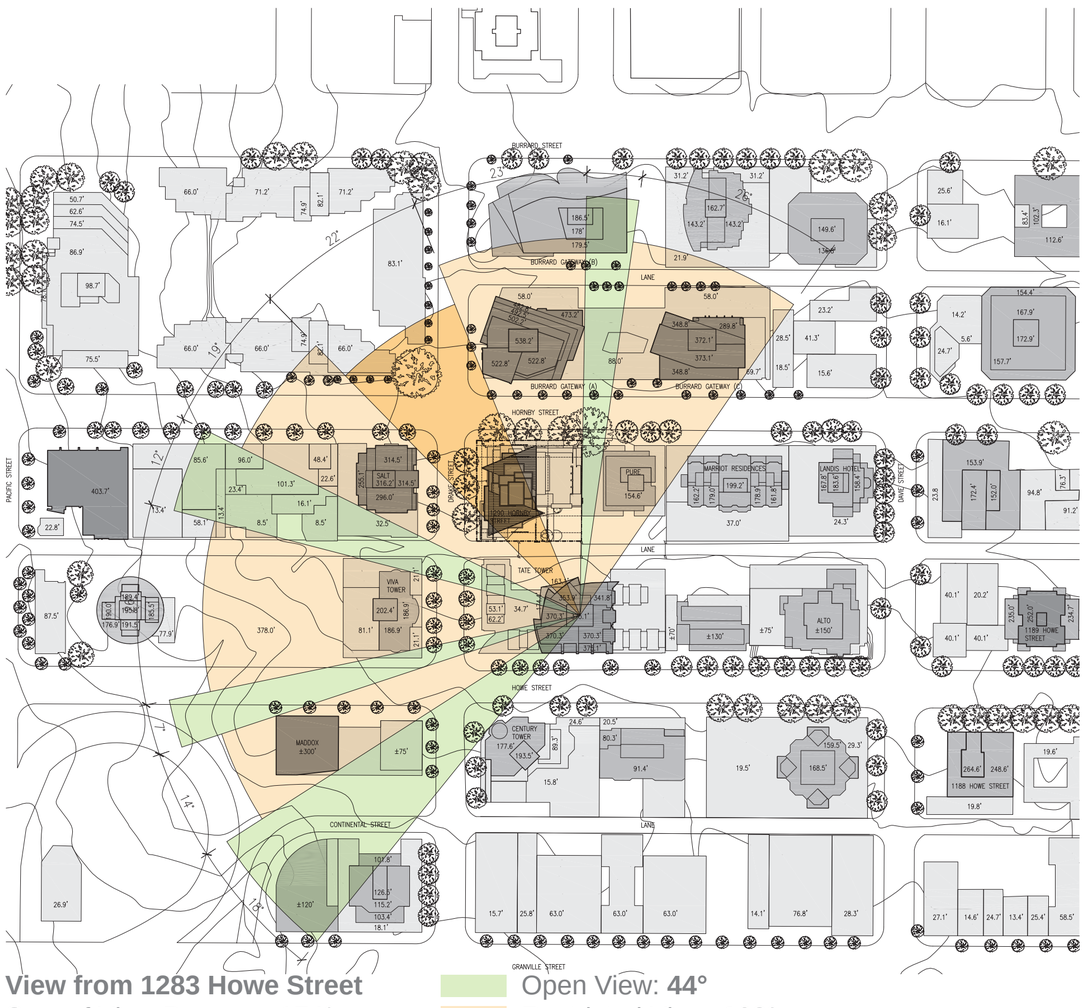
View from 828 Drake Street
Sum of View Degrees: 180°

Open View: **46°**
Restricted View: **134°**
Proposed Scheme Additional Restriction: **0°**



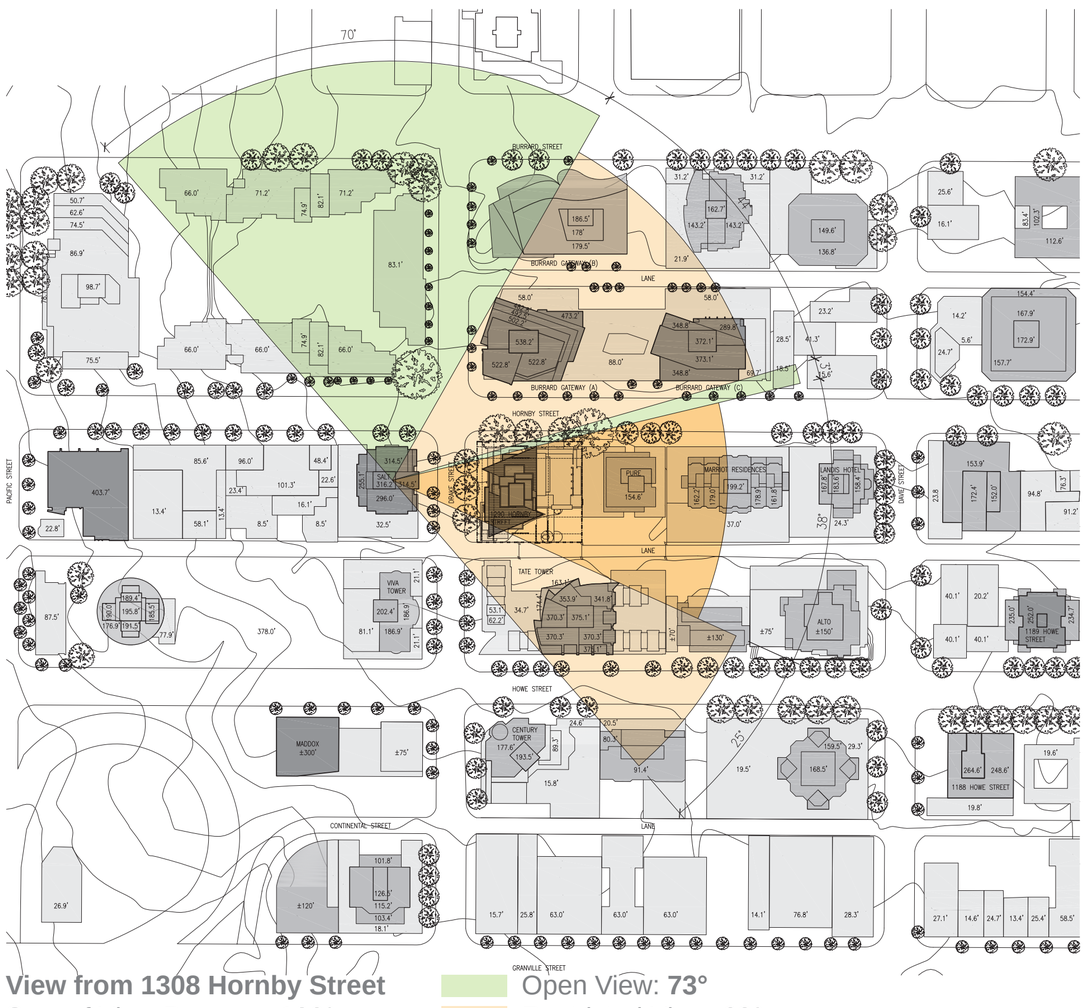
View from 1252 Hornby Street
Sum of View Degrees: 188°

Open View: **31°**
Restricted View: **132°**
Proposed Scheme Additional Restriction: **24°**



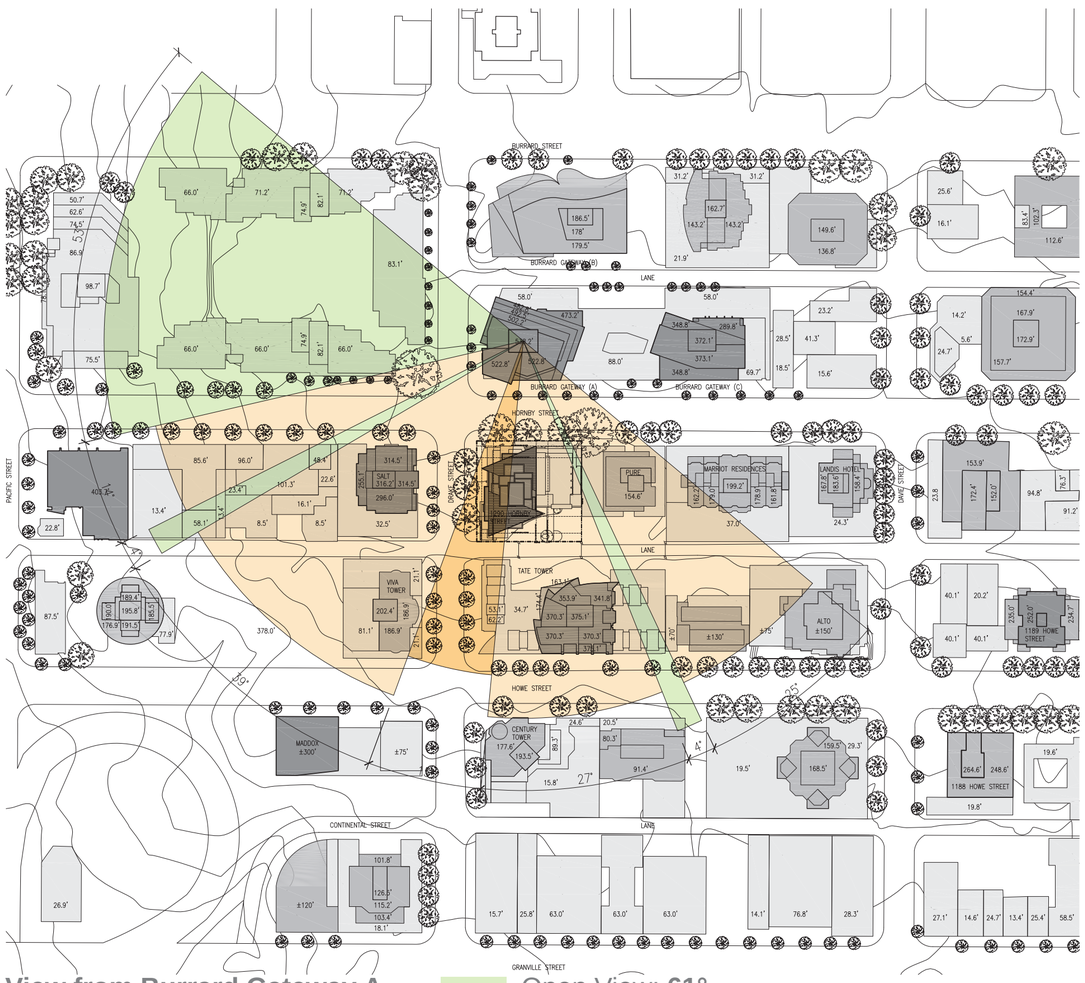
View from 1283 Howe Street
Sum of View Degrees: 174°

Open View: **44°**
Restricted View: **108°**
Proposed Scheme Additional Restriction: **22°**



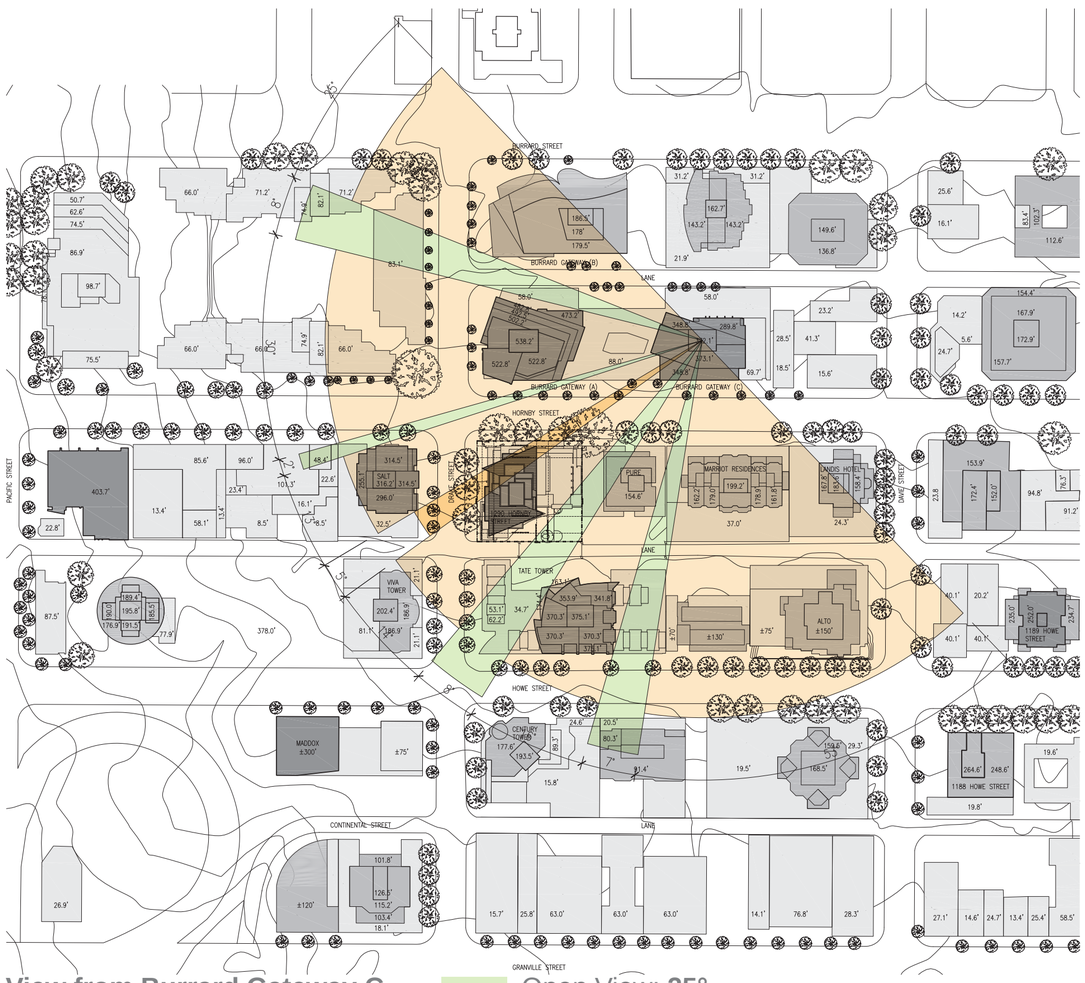
View from 1308 Hornby Street
Sum of View Degrees: 180°

Open View: **73°**
Restricted View: **69°**
Proposed Scheme Additional Restriction: **38°**



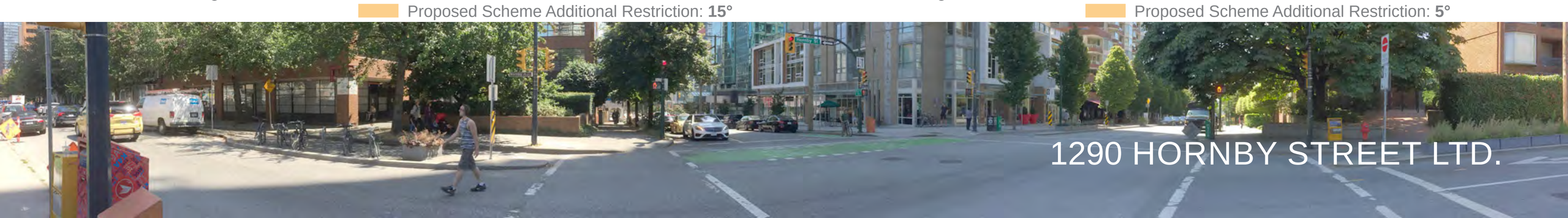
View from Burrard Gateway A
Sum of View Degrees: 181°

Open View: **61°**
Restricted View: **105°**
Proposed Scheme Additional Restriction: **15°**

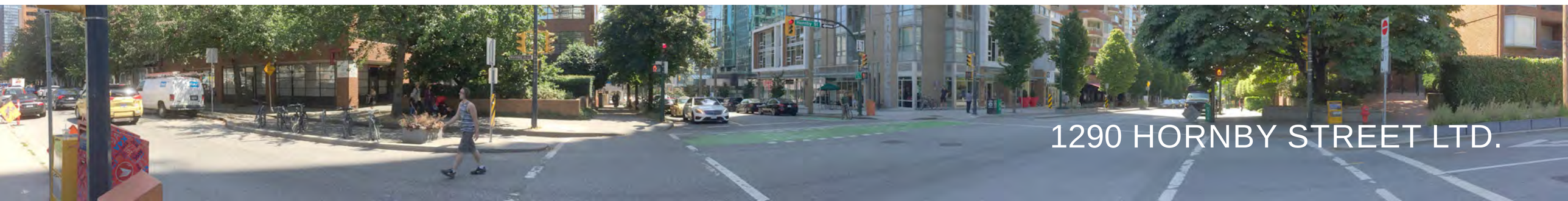


View from Burrard Gateway C
Sum of View Degrees: 181°

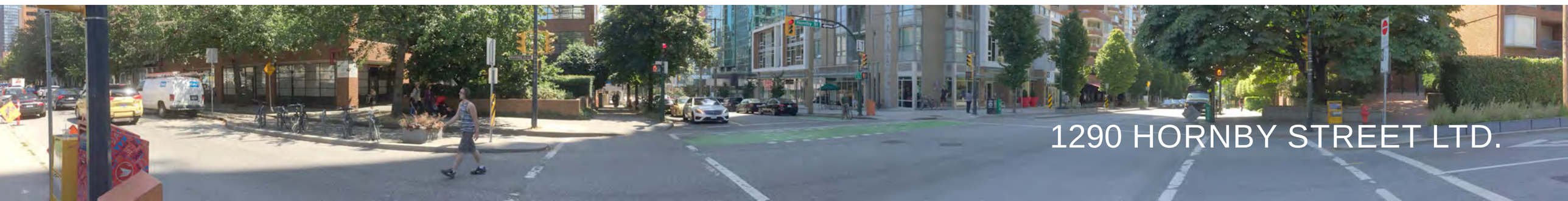
Open View: **25°**
Restricted View: **151°**
Proposed Scheme Additional Restriction: **5°**



PUBLIC REALM

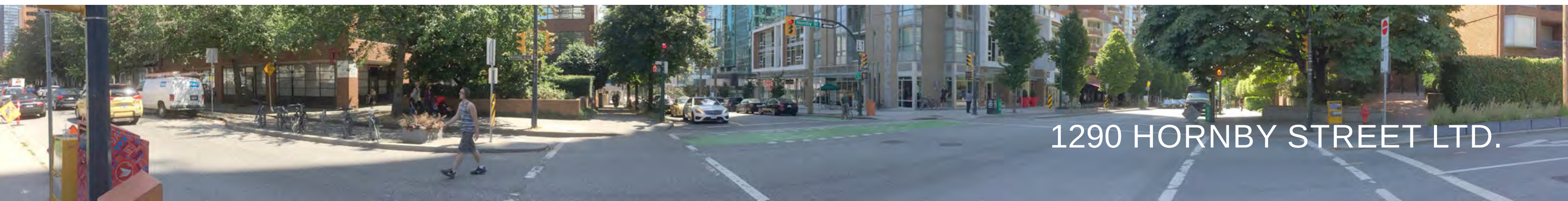


PUBLIC REALM



PUBLIC REALM

LANE



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HORNBY STREET

DRAKE STREET

LANE

Benches between Columns - refer to Architectural Drawings

Canopy over

Existing Street Trees to be protected and retained - refer to Arborist Report

Pull back boulevard paving a minimum 3'/1m from stem of existing tree

Existing Lamp Post

CoV Standard Double Curb Ramp

Existing Traffic Light

Class B Visitor Bike Parking (12 spaces)

Existing Street Trees to be protected and retained, typical - refer to Arborist Report

5'/1.2m wide Cast In Place Broom Finished Concrete Boulevard

Cast In Place Broom Finished Concrete Sidewalk 6'/1.8m x 6'/1.8m Panels with Embossed Leaf Pattern: 3048mm Arc Around Trees, Increased Concentration Closer To Trees, Random Pattern Between Arcs (1 Maple To 4 Alders)

Existing Tele-communications Box

Existing Shaw Box

Existing Shaw Manhole

CoV Standard Curb Ramp

Standard concrete lane crossing to City of Vancouver Engineering Standard

Existing Tree to be removed 2.4' Ø

Outline of Building above

Existing Tree to be removed 1.2' Ø

Planting Sloping with Sidewalk grade

Evergreen Hedge against Building (Taxus media 'Hillii')

Outline of Building above

Canopy over

Raised Plinth

Residential Lobby

Planting Flush with adjacent Paving

Bench

Bench

Bicycle Lift

Gallery Main Entrance

Cultural Amenity

Class B Loading

MECH.

Gallery Lane Entrance

Ramp to Underground Parking

Multi-Stem Tree (Acer circinatum)

Vehicle Drop Off

Coloured Saw Cut Concrete Paving Broom Finished

Flush Cast in Place Concrete Band

Parkade Exhaust

Generator Intake

Generator Exhaust

Generator Flu - refer to Architectural Drawings

Contrasting Paving at Gallery Lane Entrance

Fastigiate Shade Tree (Acer rubrum 'Columnare') in 4'/1.2m Ø Metal Tree Grate + Guard

6"/150mm ht. Upstand Concrete Curb (Cast in Place)

Canopy over

Outline of Tower above

Existing Tree to be removed 1.0' Ø

Existing H-Frame will require removal or relocation - TBD

Existing Tree to be removed 1.0' Ø

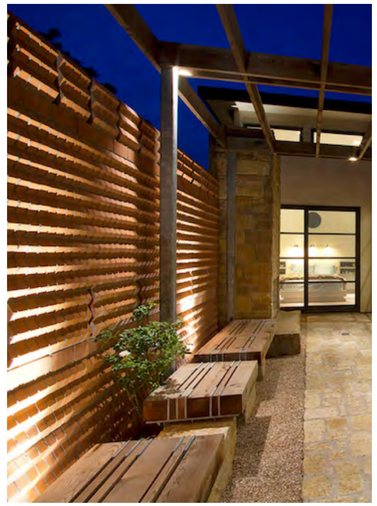
Flush Cast in Place Concrete Band

1 L2.1

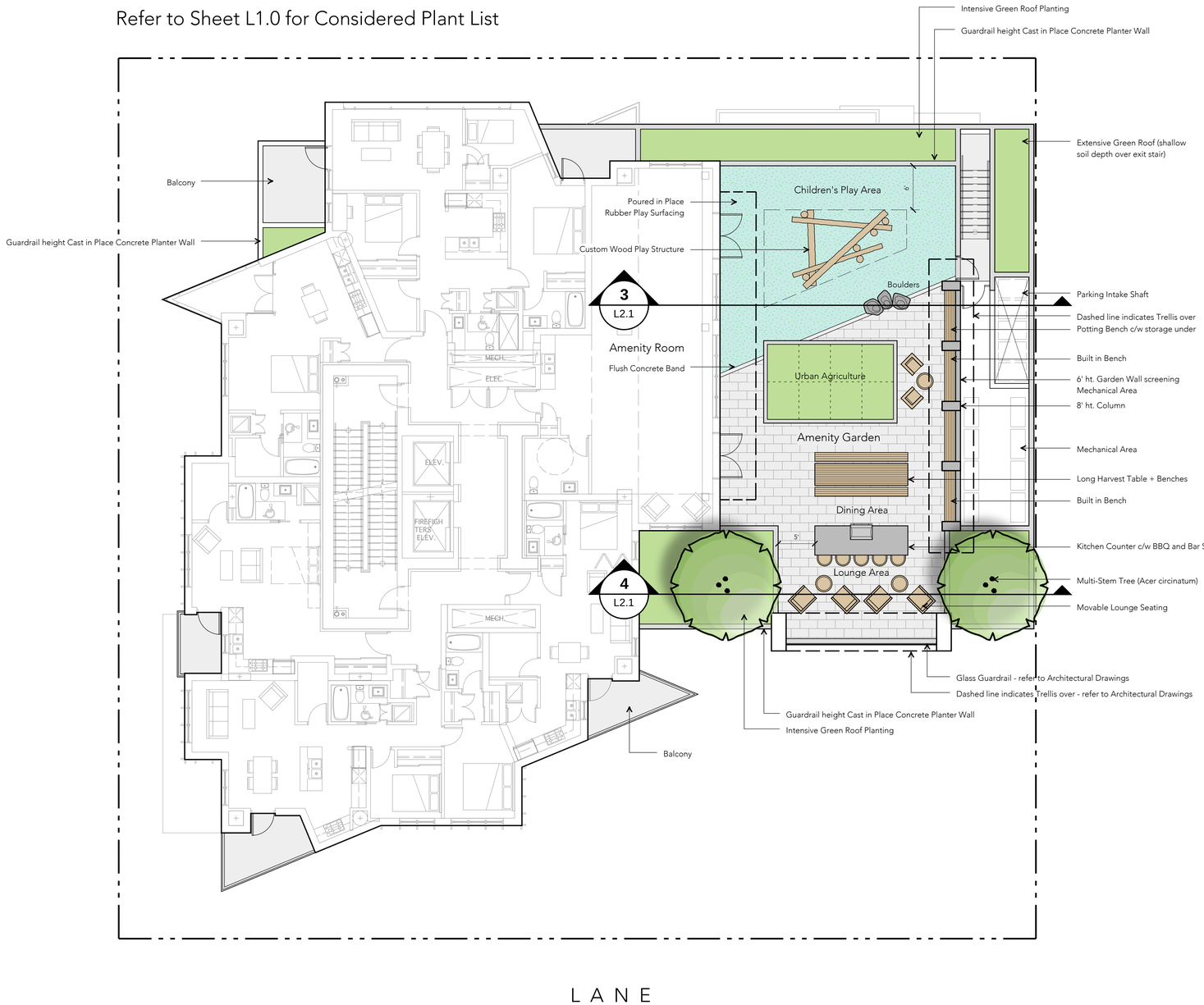
2 L2.1

LEVEL 1 LANDSCAPE PLAN

1290 HORNBY STREET LTD.



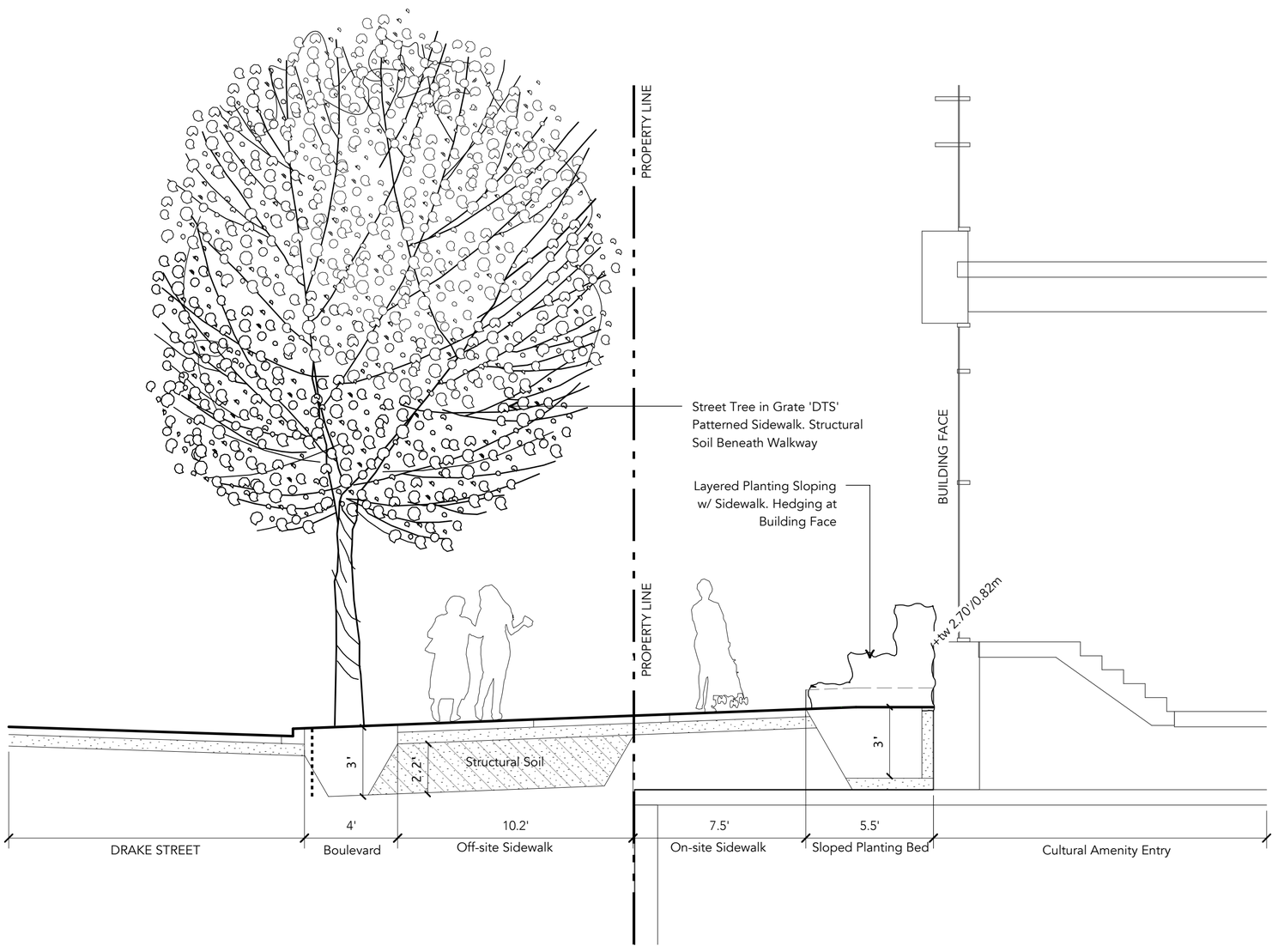
Refer to Sheet L1.0 for Considered Plant List



LANE

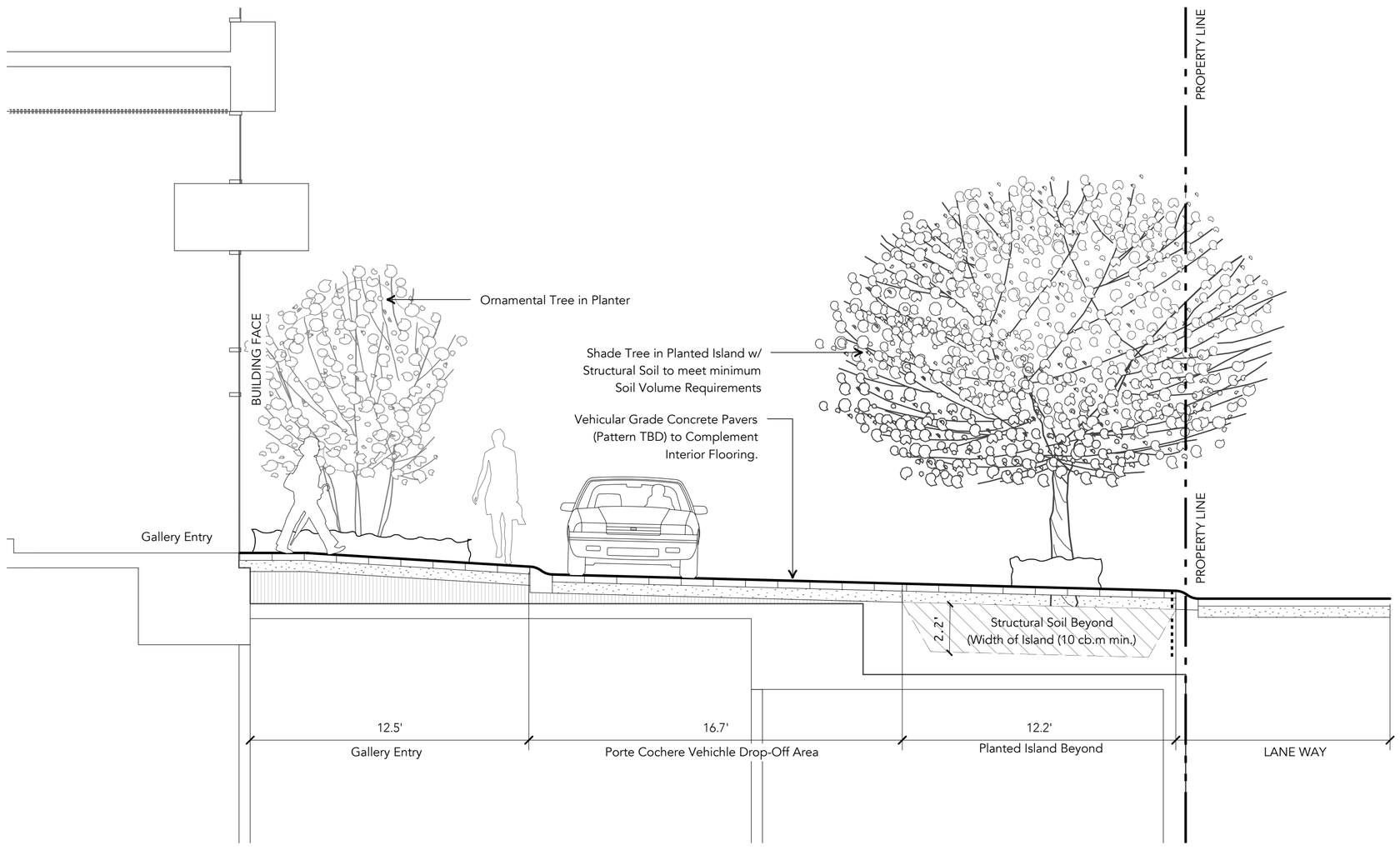
LEVEL 6 LANDSCAPE PLAN

STREETSCAPE



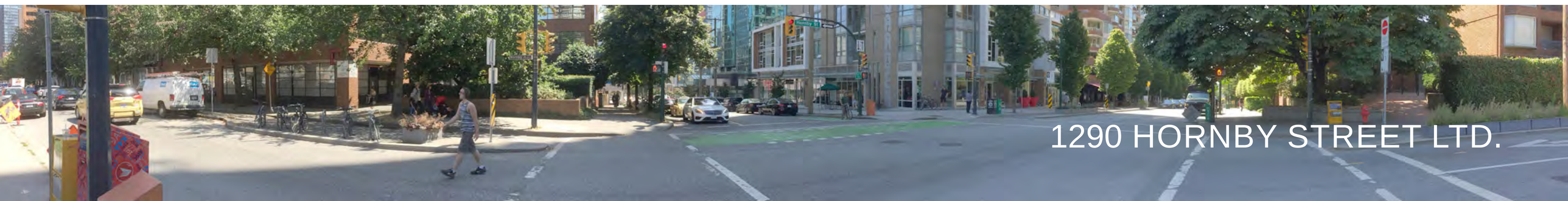
1 / L 1.1 Section through Streetscape at Drake Street

Scale: 1/4" = 1'=0"

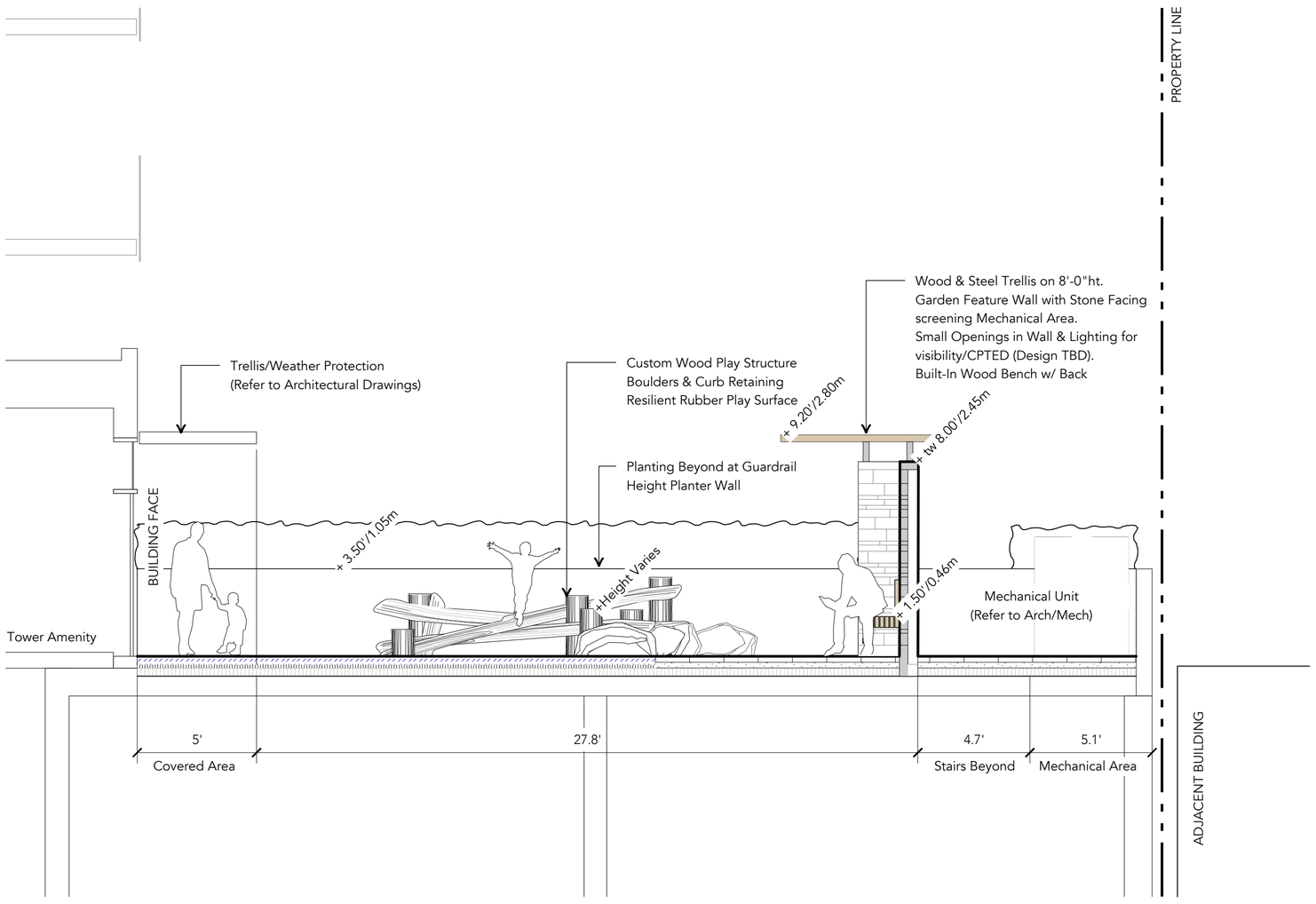


2 / L 1.1 Section through Vehicle Drop-Off Area at Gallery Entry

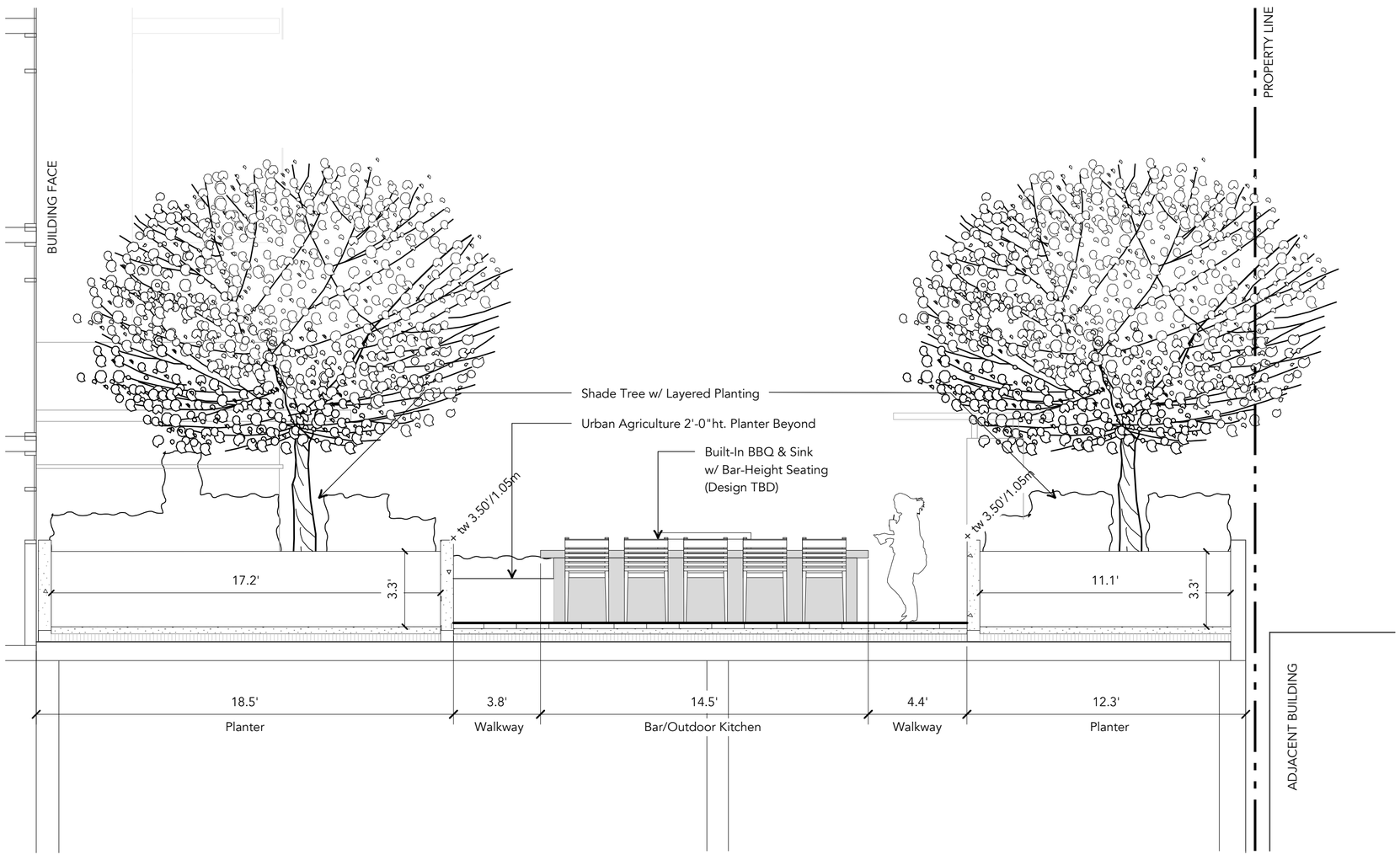
Scale: 1/4" = 1'=0"



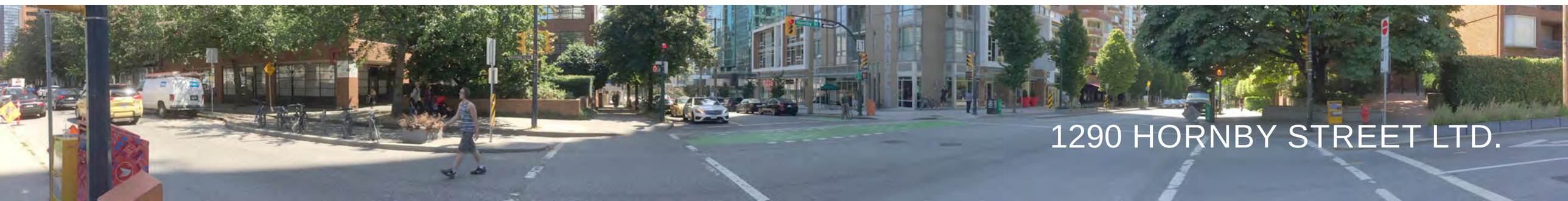
LANDSCAPE



3 / L 1.2 Section through Children's Play Area & Ft. Wall separating Mechanical Area
Scale: 1/4" = 1'=0"



4 / L 1.2 Section through Guardrail Ht. Planters at Lounge/Dining Area
Scale: 1/4" = 1'=0"



SUSTAINABLE DESIGN

SUSTAINABLE DESIGN STRATEGY

As a part of the Rezoning Application package, the following Sustainable Design Strategy has been developed to provide confirmation the project design submitted is on target to meet the requirements as dictated by the Green Buildings Policy for Rezonings 2016, option B. Low Emissions Green Building, effective May 1, 2017.

The following narrative includes preliminary strategies explored by the design team, with the aim to achieve the various requirements of the Low Emissions Green Building pathway, along with all required supporting evidence at this stage, as listed:

- Item B.2: Brief summary of strategies and measures to achieve performance limits for energy use, heat loss, and greenhouse gas emissions, including;
  - Preliminary Zero Emissions Building Plan (ZEBP) Energy Checklist, completed by the project energy modeller, showing that the project meets the performance limits for energy use (TEUI), heat loss (TEDI), and greenhouse gas emissions (GHGI), together with key inputs;
  - 2-4 page summary of detailed energy model inputs for detailed and/or 3rd party review.
- Item B.6.2: Preliminary embodied emissions calculations, and a description of specific measures that will be explored during design to reduce embodied emissions;
- Item B.10: The site IRMP, describing the chosen strategies and green and grey infrastructure measures included in the landscape and building design. The IRMP describes;
  - How these measures contribute to the city-wide IRMP targets for water volume reduction and quality treatment, and
  - Include preliminary site and volume calculations to compare site performance to the City-wide targets;
  - Landscape/Architectural Site Plans highlighting the green and grey infrastructure measures described in the site IRMP as also provided.
- A commitment by the owner to meet the requirements of the Green Buildings Policy for Rezonings with documentation to be submitted at a later project phase, including:
  - B.3: design, build, and test to meet an airtightness target of 2.0 L/s/m² @ 75 Pa;
  - B.4: complete an enhanced commissioning process;
  - B.5: design and build to include building metering and sub-metering of energy, and to enter into agreement on energy reporting, including assistance for building future owners;
  - B.6.1: complete refrigerant emissions calculations;
  - B.7: design and build a direct ventilation system;
  - B.8: design and build with low-emitting materials;
  - B.9: test indoor air quality prior to occupancy;
  - B.11: design and build a resilient potable water access point.

LOW CARBON ENERGY SYSTEM

6.1 LCES Type 2a: Utility-Owned On-Site LCES

This type refers to a new utility-owned LCES located on-site within a development. Type 2a LCES must meet the following requirements:

(a) a qualified engineer must provide written verification that the LCES is designed to provide low carbon energy such that the development will meet the City's GHG limits;

(b) there must be evidence that a utility will purchase the LCES and supply long term energy service from the LCES to the development; and

(c) the utility must have demonstrated experience with other similar successful LCES.

Prior to the application for an occupancy permit, the developer must deliver evidence to the City's satisfaction that the LCES was successfully registered with the BCUC, and that the ownership of the LCES was, or will soon be, duly transferred to a utility.

ENERGY MODEL INPUTS

1290 Hornby Street - LCES Type 2a: Utility-Owned On-Site LCES
City of Vancouver Rezoning Energy Modeling Input Summary Table

	Design Model Characteristics
General	
Location	Vancouver, BC
Simulation Weather File	Vancouver 2016 CWEC
Climate Zone	ASHRAE Climate Zone 5C
Modeling Software	eQUEST 3.64
Building Area	Above grade area: 164,000 ft²
Hours of Operation	Based on *ENERGY MODELLING GUIDELINES section 2.1 Schedules*
Envelope Performance	
Overall Roof U-value (BTU/h·ft²·°F)	U-0.033 (R-30)
Overall Wall U-value (BTU/h·ft²·°F)	Solid wall: U-0.064 (R-15.6) (61% of total vertical envelope) Spandrel: U-0.25 (R-4) (12% of total vertical envelope) Thermally Broken Slab Projection balcony: ≈0.25 BTU/h·ft·°F Overall U-0.10 (R-10)
Percentage Glazing	27%
Overall Glass U-value including frame (BTU/h·ft²·°F), and Solar Heat Gain Coefficient (SHGC)	U-0.35 (fixed), U-0.40 (operable) SHGC-0.35
Floor above parkade U-value (BTU/h·ft²·°F)	U-0.048 (R-20)
Infiltration	Modeled infiltration: 0.2 L/s/m² (0.038 cfm/ft²) as per CoV *ENERGY MODELLING GUIDELINES* 2.4.1
Internal Loads	
Occupancy	Residential: People = no. bedrooms + 1; Studio = 1 person Other spaces as per NECB 2011 (based on CoV ENERGY MODELING GUIDELINE 2.2)
Lighting Power Density (LPD) (W/ft²)	NECB Space by Space Method / Proposed Lighting Power Density [W/ft²] Amenity (Lounge/recreation) 0.87 Amenity Cultural (Convention centre-Exhibit space) 1.45 Studio/mezz gallery (Museum/general exhibition) 1.05 Corridor <2.4 0.78 Electrical/Mechanical 1.25 Lobby for elevator 0.64 Lobby other 0.90 Office 1.11 Parking garage 0.13 Residential suite 0.46 Restroom 0.98 Stairway 0.69 Storage 0.63 All LPD as per NECB 2011, except parking: 0.13 W/ft²
Exterior Lighting (kW)	1.34 kW
Plug-Loads	Residential: 0.464 W/ft² Electrical/Mechanical, Storage, Restroom: 0.093 W/ft² Office: 0.697 W/ft² Lobby, Lobby for elevator, Amenity: 0.093 W/ft² Amenity cultural, Studio, Gallery: 0.232 W/ft² Parking, stairs, corridor: 0 W/ft² (Based on CoV *ENERGY MODELLING GUIDELINES*)
Process Loads	2 tower elevators @ 3 kW each 3 elevators at L1 @ 3 kW each 1 elevator at PH @ 3 kW each (Based on CoV *ENERGY MODELLING GUIDELINES*) Main transformer room: 40 kW (assumption) Other electrical rooms: 5 kW (assumption)
Domestic Hot Water Consumption	Residential: 0.025 gpm/person with 30% reduction (low flow fixture) (Based on *ENERGY MODELLING GUIDELINES section 2.2.1 Residential Suites*)
Mechanical Systems	
Indoor Design Temperature for Conditioned Areas	Based on *ENERGY MODELLING GUIDELINES section 2.1 Schedules*
System Description and Efficiency	Dwelling Units: Heating and cooling by air source VRF fan coil units and ventilation by individual ERV (Lifebreath ERV) • ERV fan power: 60 W (low speed), 154 W (high speed) • Fan coil unit fan power: ≈0.20 W/cfm • Bathroom fan power: ≈13.6 W, fan hours of operation: 2 hr/day • Kitchen hood fan power: ≈13.6 W, fan hours of operation: 2 hr/day • Ventilation fans on continuously Podium Amenity: Heating and cooling by air source VRF fan coil units and ventilation through mechanical louvres (no heat recovery) • Fan coil unit fan power: ≈0.30 W/cfm • Demand controlled ventilation in cultural amenity and common areas (CO_2 sensors) • Fans run continuously during occupied hours and cycle on-off to meet the heating/cooling loads (OA off) Corridor: Roof-top air handler with electric heating (kept at 68°F) • Fan power: 0.30 W/cfm at 4,200 cfm • Hydronic heating coil • Ventilation fans on continuously Electrical rooms: • Fan power: ≈0.30 W/cfm Parkade: Parkade fan • Fan power: ≈0.20 W/cfm • Fan hours of operation: 4 hr/day
Minimum Ventilation Rates	Living areas: 0.35 air changes per hour but not less than 15 cfm per person Corridor pressurization: 25 cfm/door (kept at 68°F) (Outdoor air is calculated by ASHRAE 62-2001) Living areas: 7,630 cfm Corridor pressurization: 4,200 CFM (kept at 68°F) Amenities + Lobby +Gallery +Studio: 8,030 cfm
Ventilation Control	Demand controlled ventilation in cultural amenity and common areas (CO_2 sensors)
Heat Recovery	In-suite ERV (Lifebreath ERV) Sensible effectiveness: 83% at 49 cfm, 79% at 64 cfm
Central Plant	
Heating Type and Efficiency	Air source VRF outdoor unit Efficiency: 4.2 heating COP
Cooling Type and Efficiency	Air source VRF outdoor unit Efficiency: 2.63 cooling COP
Domestic Water Heater and Efficiency	Condensing DHW heater Efficiency: 95% thermal efficiency
Pumps	N/A

ZERO EMISSIONS BUILDING PLAN ENERGY CHECKLIST

CITY OF VANCOUVER

Zero Emissions Building Plan Energy Checklist

Please complete all fields that apply to the project, using information that represents the current stage of design. For fields that do not apply or for which there is no information yet, please enter "N/A".

Project Information (enter all that apply)

Project Address	1290 Hornby Street, Vancouver, B.C.
Secondary Address	
Project Working Title	1290 Hornby Street
POSSE File Name (City use only)	
Gross Floor Area indicated on Arch. Drawings (m²)	15,242
Parkade Area (m²)	7,715

Building Information and Performance Limits

For building types with Performance Limits, enter this information in this section

Building Type(s)	Modelled Floor Area (m²)	Rezoning?	City-Recognized Low Carbon Energy System?	Limits TEUI	TEDI	GHGI
Residential, 7+ storeys (Group C except Hotel)	15,242	Yes	Yes	130	40	6
				0	0	0
				0	0	0
Total	15,242	**TEDI limit for this portion of building**			**40.0**	

For other building types, create a baseline energy model to establish limits, and enter this information in this section

Building Type	Modelled Floor Area (m²)	Rezoning?				
Enter Other Building Type Baseline Model Performance	Energy (kWh)	Em. Factor	Emissions (kgCO2e)		TEUI	TEDI	GHGI
Total Annual Electricity Use		0.011	-	Baseline:	0	0	0
Total Annual Natural Gas Use		0.185	-	Target:	0	0	0
Total Annual District Energy Use		0.070	-				
Total	-		-				
Total Annual Heat Demand - for TEDI							

			TEUI	TEDI	GHGI
Total Modelled Floor Area (m²)	15,242	**Whole-Building Performance Limits**	**130.0**	**40.0**	**6.0**
Modelled Floor Area within 5% of Gross Floor Area?	Yes				

Modelled Building Performance

	Energy (kWh)	Fuel Type	Em. Factor	Emissions (kgCO2e)	TEUI	GHGI
Interior Lighting	439,103	Electricity	0.011	4830.133	28.8	0.3
Exterior Lighting	4,989	Electricity	0.011	54.879	0.3	0.0
Heating	380,726	Electricity	0.011	4187.986	25.0	0.3
Cooling	161,297	Electricity	0.011	1774.267	10.6	0.1
Pumps	-	Electricity	0.011	0		0.0
Fans	288,365	Electricity	0.011	3172.015	18.9	0.2
Domestic Hot Water	301,454	Natural Gas	0.185	55769.01	19.8	3.7
Plug Loads	440,906	Electricity	0.011	4849.966	28.9	0.3
Elevator	45,223	Electricity	0.011	497.453	3.0	0.0
Total Annual Electricity Use	1,760,609	0.011	19,367			
Total Annual Natural Gas Use	301,454	0.185	55,769			
Total Annual District Energy Use	-	0.070	-			
Total	2,062,063		75,136			
Total Electricity Generated On-Site (kWh)		% of Use	0.0%			
Total Purchased Renewable Electricity (kWh)		% of Use	0.0%			
Total Purchased Renewable Natural Gas (kWh)		% of Use	0.0%			

Note: purchaes renewables used to demonstrate compliance must be secured to satisfaction of AHJ

Adjusted Electricity Emissions Factor (kgCO2e/kWh)	0.011				
Adjusted Natural Gas Emissions Factor (kgCO2e/kWh)	0.185				
Annual Heat Demand of portions with Perf. Limits (kWh)					-
Total Annual Heat Demand - for TEDI (kWh)	656,894				
Total Annual Cooling Demand - *for info only* (kWh)	515,996	33.9 kWh/m²			
			TEUI	TEDI	GHGI
		Modelled Whole-Building Performance	**135.3**	**43.1**	**4.9**

Corridor Pressurization Adjustment

Heating Degree Days	2825				
Number of Suite Doors Pressurized	168				
Airflow for Pressurization per Door (L/s/door)	11.7986861				
Area of Corridors Pressurized (m²)	1268.169145				
Make-Up Air Fuel Type	Electricity		TEUI	TEDI	GHGI
Make-Up Air Emissions Factor	0.011	Adjustments for Corridor Pressurization	8.9	8.9	0.1
Suite-level Metering for Space Heating	Yes	Adjustments for Suite Submetering of Heating	-		

Note: select yes if the energy used for heating is metered at the suite level

Adjusted TEDI Performance of Portions with Limits		**(8.9)**
Adjusted Whole-Building Performance for Compliance	**126.4**	**34.2**	**4.8**

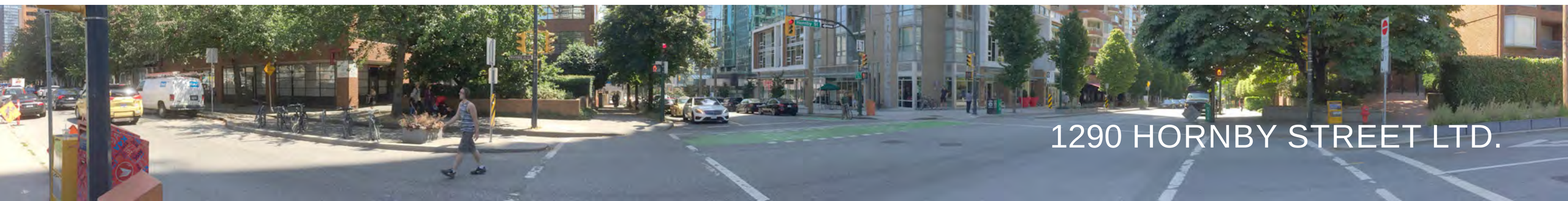
Modelled Inputs

Modelled Above-Ground Wall Area (m²)	10,555	Vertical facade-to-Floor Area Ratio (VFAR)	0.69
Window-to-Wall Area Ratio (WWR)	27%	Window-to-Floor Area Ratio	0.19
Infiltration Rate ($L/s/m^2_{FAC}$)	0.2		
Wall Effective R-Value - incl. thermal bridging (m²K/W)	1.8 (10.00 (ft²hr°F/Btu))	Average Floor Edge Psi-Value (W/m°K)	
Roof Effective R-Value - incl. thermal bridging (m²K/W)	5.3 (29.99 (ft²hr°F/Btu))	Avg. Window Transition Psi-Value (W/m°K)	
Average Window Effective U-Value (W/m²°K)	2.1 (0.37 (Btu/ft²hr°F))	Window Solar Heat Gain Coefficient	0.35
Average Suite Occupant Density (m²/pers)	27.57766365	Average Lighting W/m²	5
Average Suite Ventilation Rate (L/s/m²)	14.15842332	DHW Low-Flow Savings (%)	30%
Average HRV Effectiveness	79%	DHW Drain Heat Recovery Effectiveness	0%
Heating System Type (fuel, plant, distribution, etc.)	Air source VRF fan coil units		
Cooling System Type (fuel, plant, distribution, etc.)	Air source VRF fan coil units		
DHW System Type (fuel, plant, distribution, etc.)	Condensing DHW heater: 95% efficiency		

Modeller Information

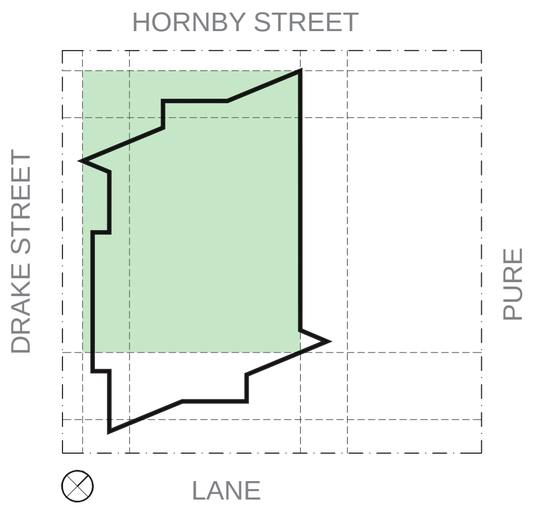
Modeller Name	Lam Pang
☑	*These results have been created using the COV Energy Modelling Guidelines version:* 2
Company	Integral Group
Phone Number	604-687-1800
Email	lpang@integralgroup.com

ZEBP Energy Checklist v1.5 - 2018-07-27



COMPARATIVE SHADOW STUDY

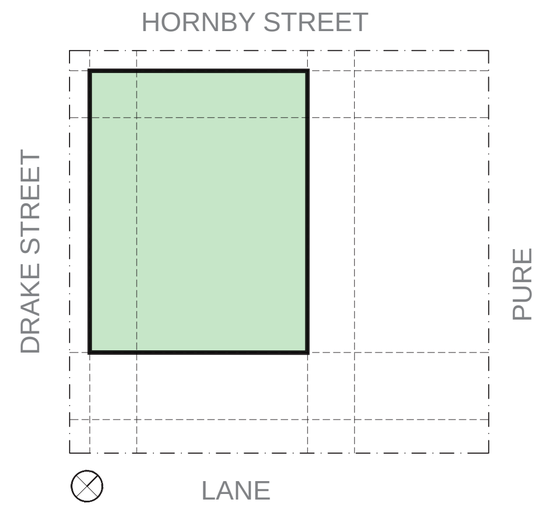
PROPOSED TOWER FORM

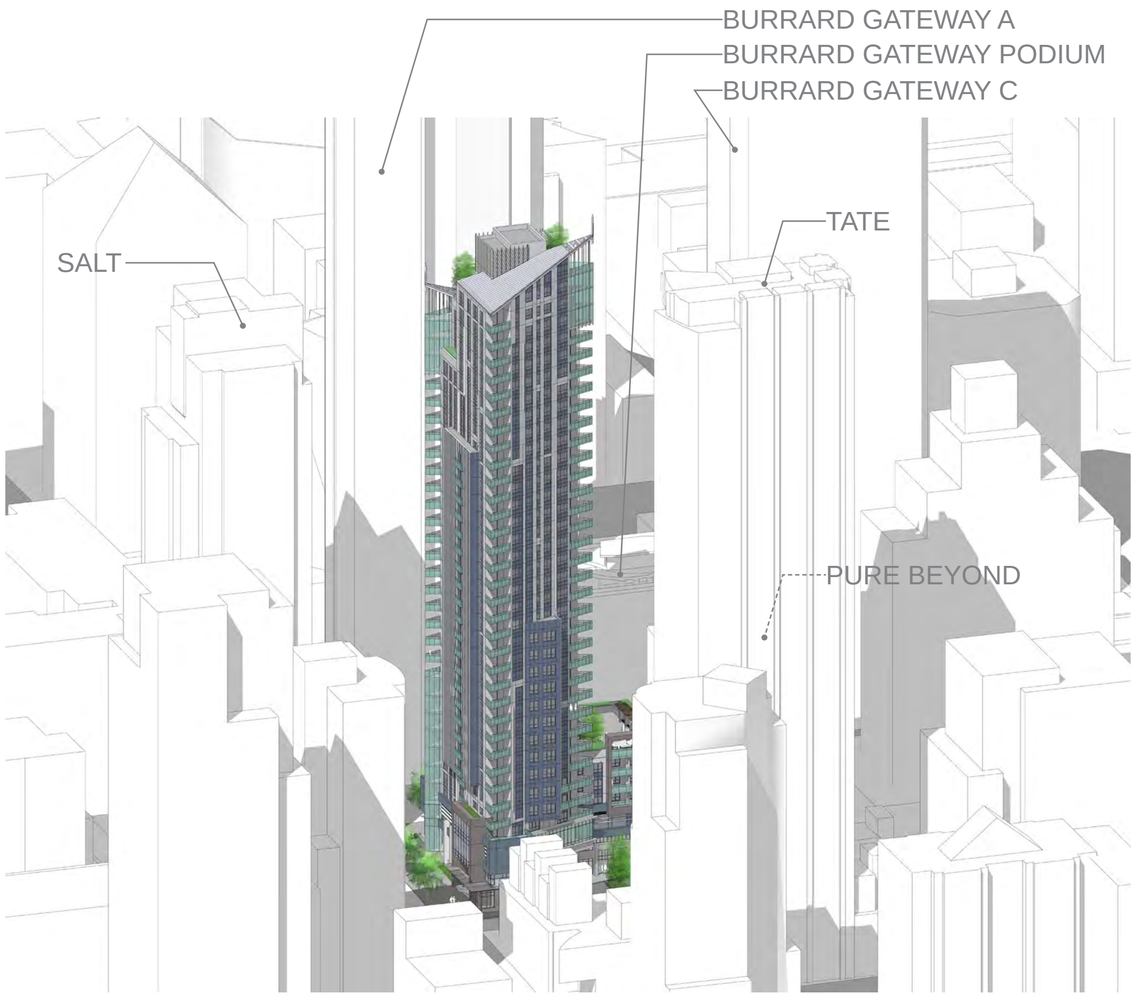


MINIMUM FRONT & REAR UPPER SETBACK AND 80FT TOWER SEPARATION FROM PURE

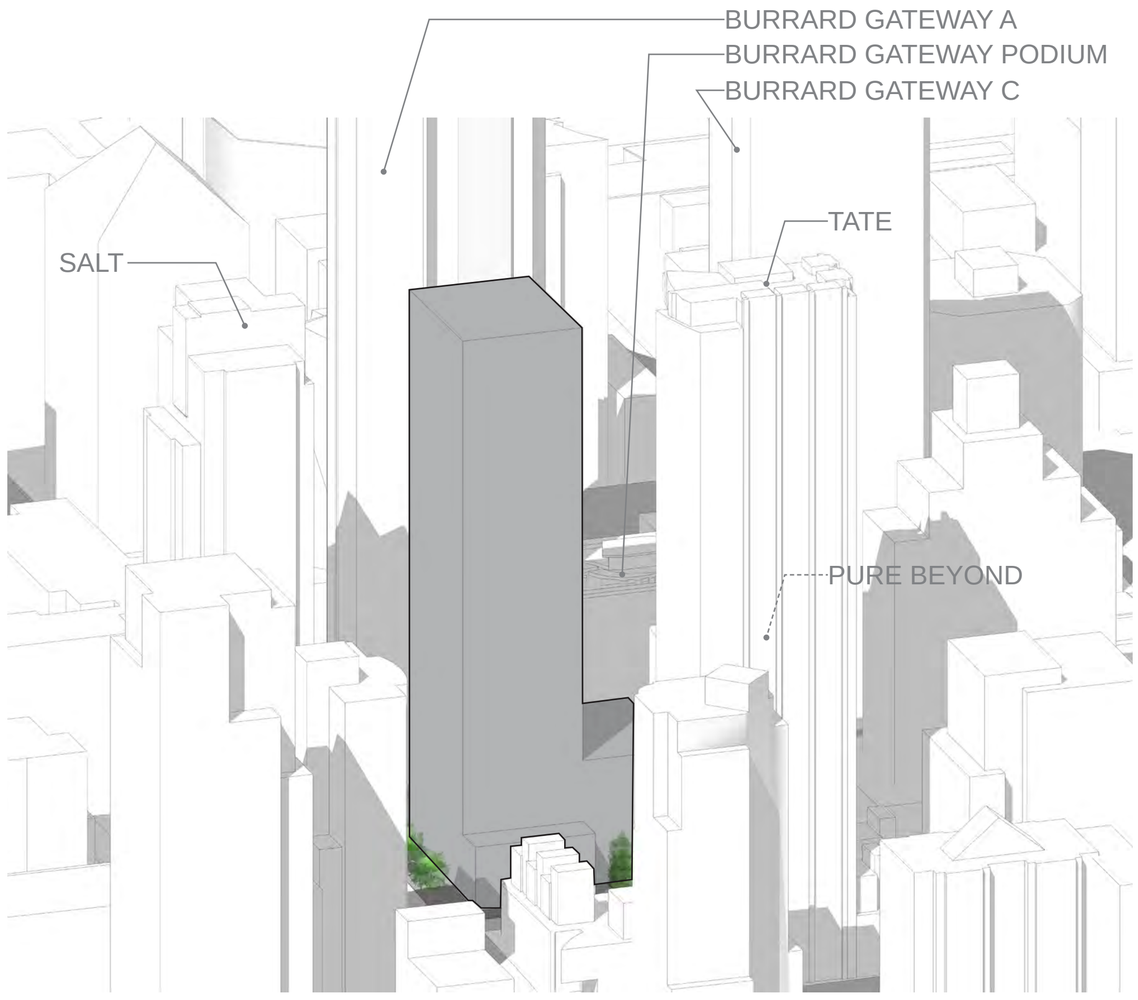
TOWER FOOTPRINT

THEORETICAL TOWER FORM

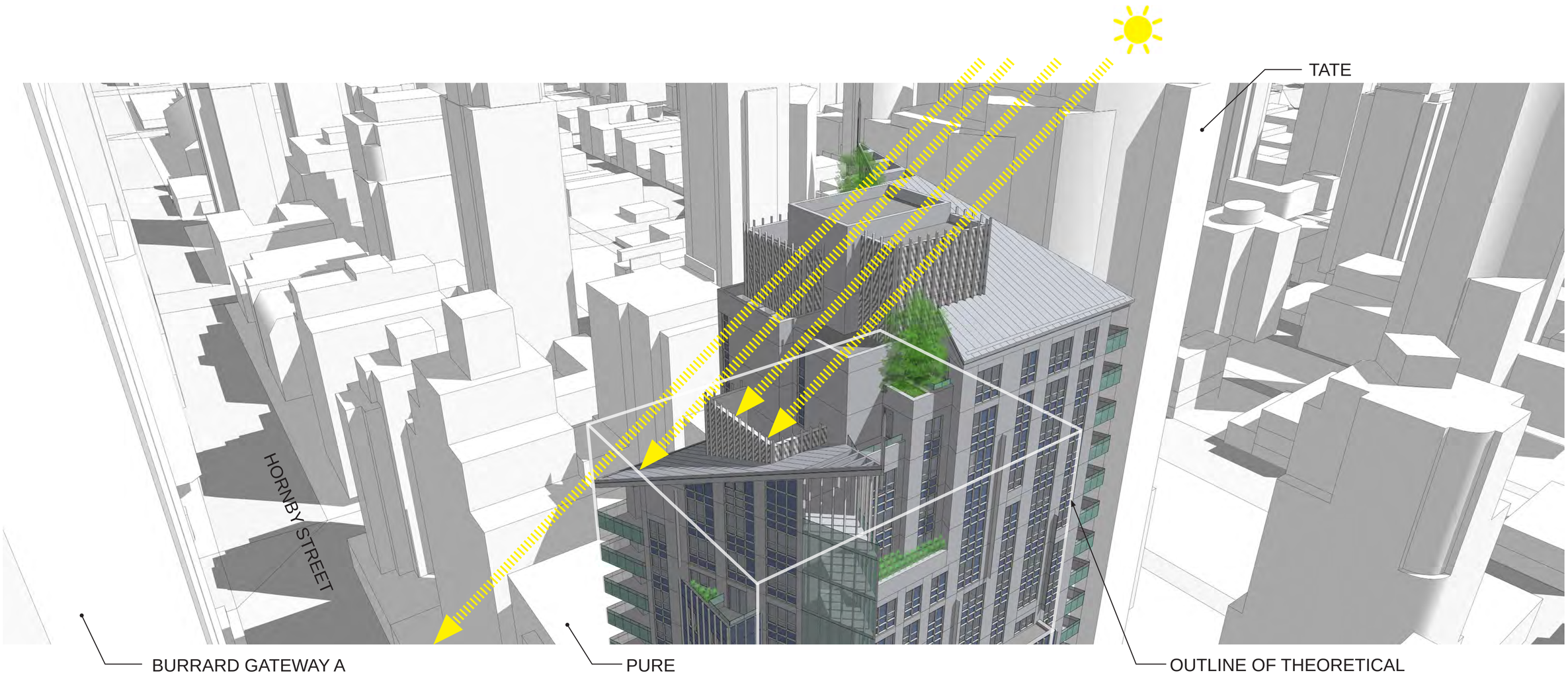




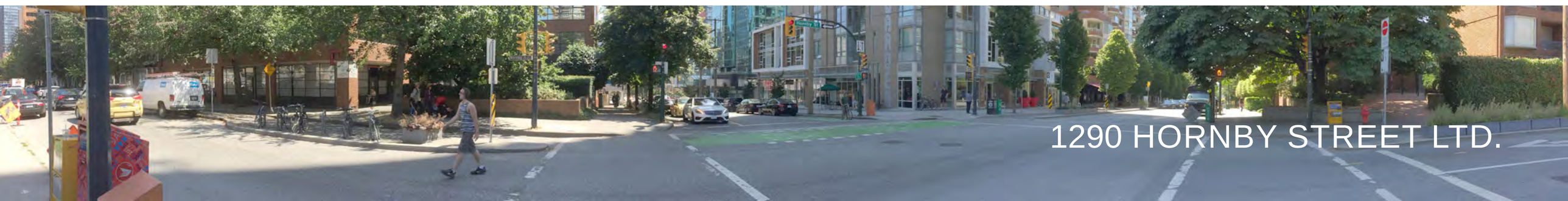
PROPOSED TOWER FORM AT 348.3FT HEIGHT



THEORETICAL TOWER FORM AT 300FT HEIGHT



RESULTANT SUNPATH OF PROPOSED ASCENDING ROOF FORM



COMPARATIVE SHADOW STUDY

PROPOSED TOWER FORM (348.3FT)	THEORETICAL TOWER FORM (300FT)

MARCH 20TH, 10:00 AM

PROPOSED TOWER FORM

THEORETICAL TOWER FORM

MARCH 20TH, 11:00 AM

PROPOSED TOWER FORM

THEORETICAL TOWER FORM

MARCH 20TH, 11:30 AM

PROPOSED TOWER FORM

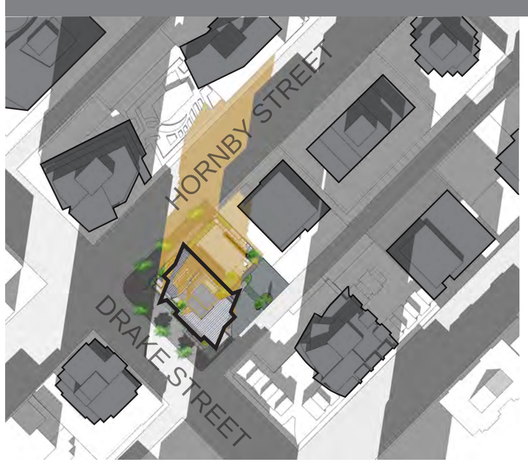
THEORETICAL TOWER FORM

MARCH 20TH, 12:00 PM

PROPOSED TOWER FORM

THEORETICAL TOWER FORM

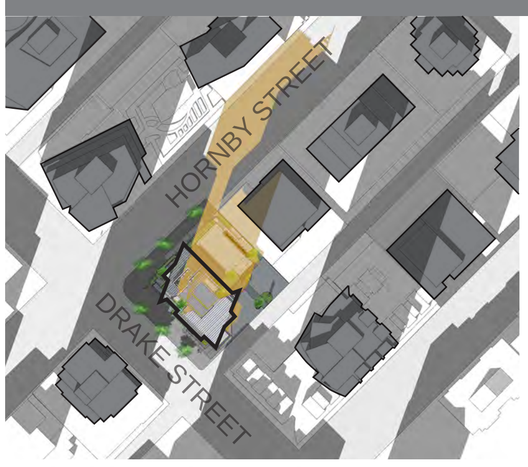
MARCH 20TH, 12:30 PM



PROPOSED TOWER FORM

THEORETICAL TOWER FORM

MARCH 20TH, 1:00 PM



PROPOSED TOWER FORM

THEORETICAL TOWER FORM

MARCH 20TH, 2:00 PM

PROPOSED TOWER FORM

THEORETICAL TOWER FORM

FOOTPRINT OF PROPOSED AND THEORETICAL TOWER FORM

SHADOWING FROM PROPOSED AND THEORETICAL TOWER FORM

FOOTPRINT OF ADJACENT TOWERS