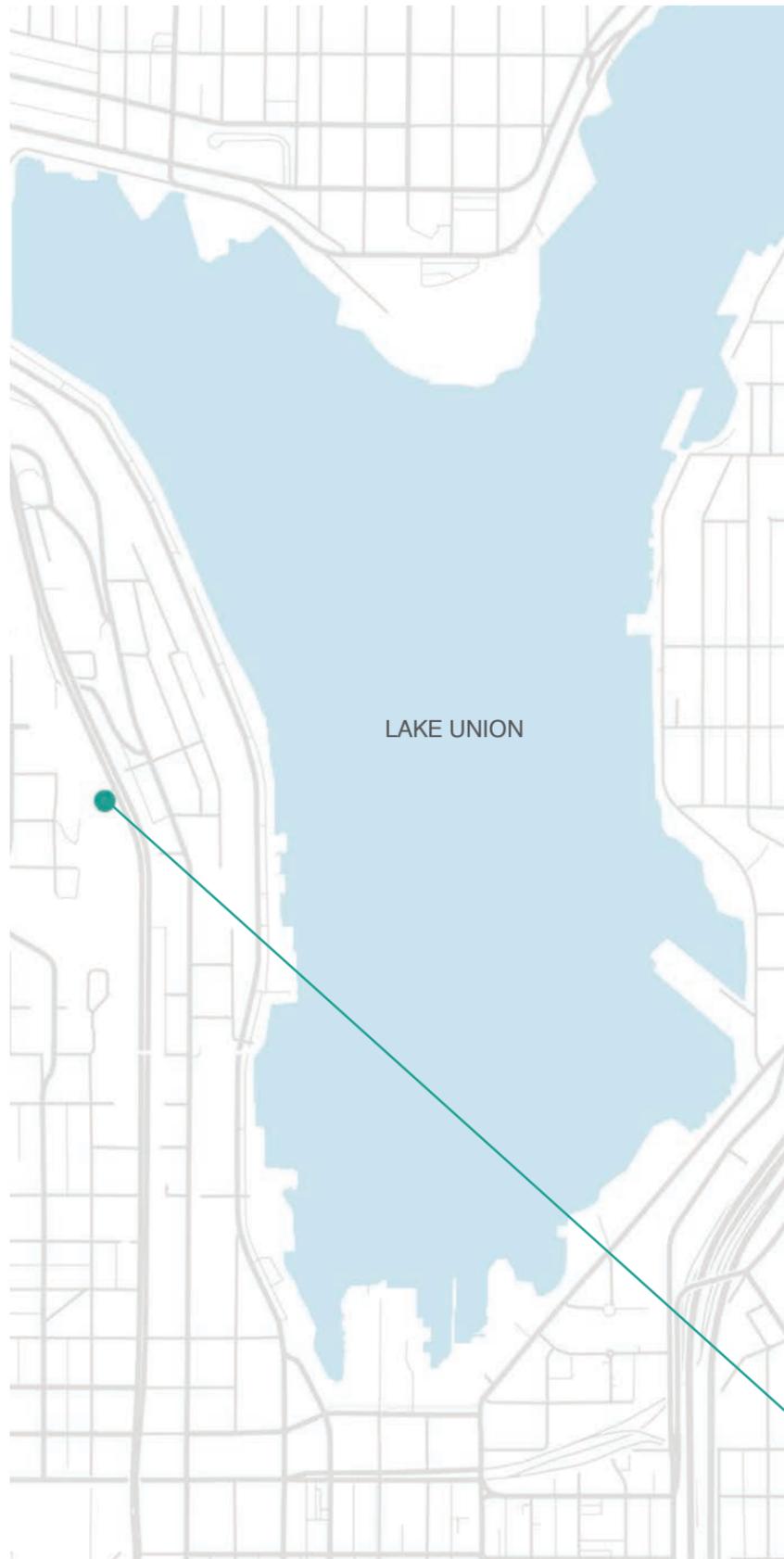


# Geneva Suites

Early Design Guidance  
DPD Project # 3020334  
31 August 2016







VICINITY MAP

**EARLY DESIGN GUIDANCE MEETING**

31 August 2016

**PROJECT ADDRESS:**  
1945 Aurora Ave. N.

**PROJECT TEAM:**  
**Owner**  
Geneva Apartments LLC  
3909 - 51st Ave NE  
Seattle, WA 98105  
Contact: Cheng-Nan Lin  
e/ LINCCA@aol.com

**Architect**  
d/Arch LLC  
2412 Westlake Ave N, Ste 3  
Seattle, WA 98109  
Phone: 206.547.1761  
Contact: Matt Driscoll, AIA  
e/ mattd@darchllc.com

**Surveyor**  
Geo Dimensions, Inc  
10801 Main Street, Ste 102  
Bellevue, WA 98004  
Phone: 425.458.4488

**SITE** 1945 Aurora Ave. N

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Overview

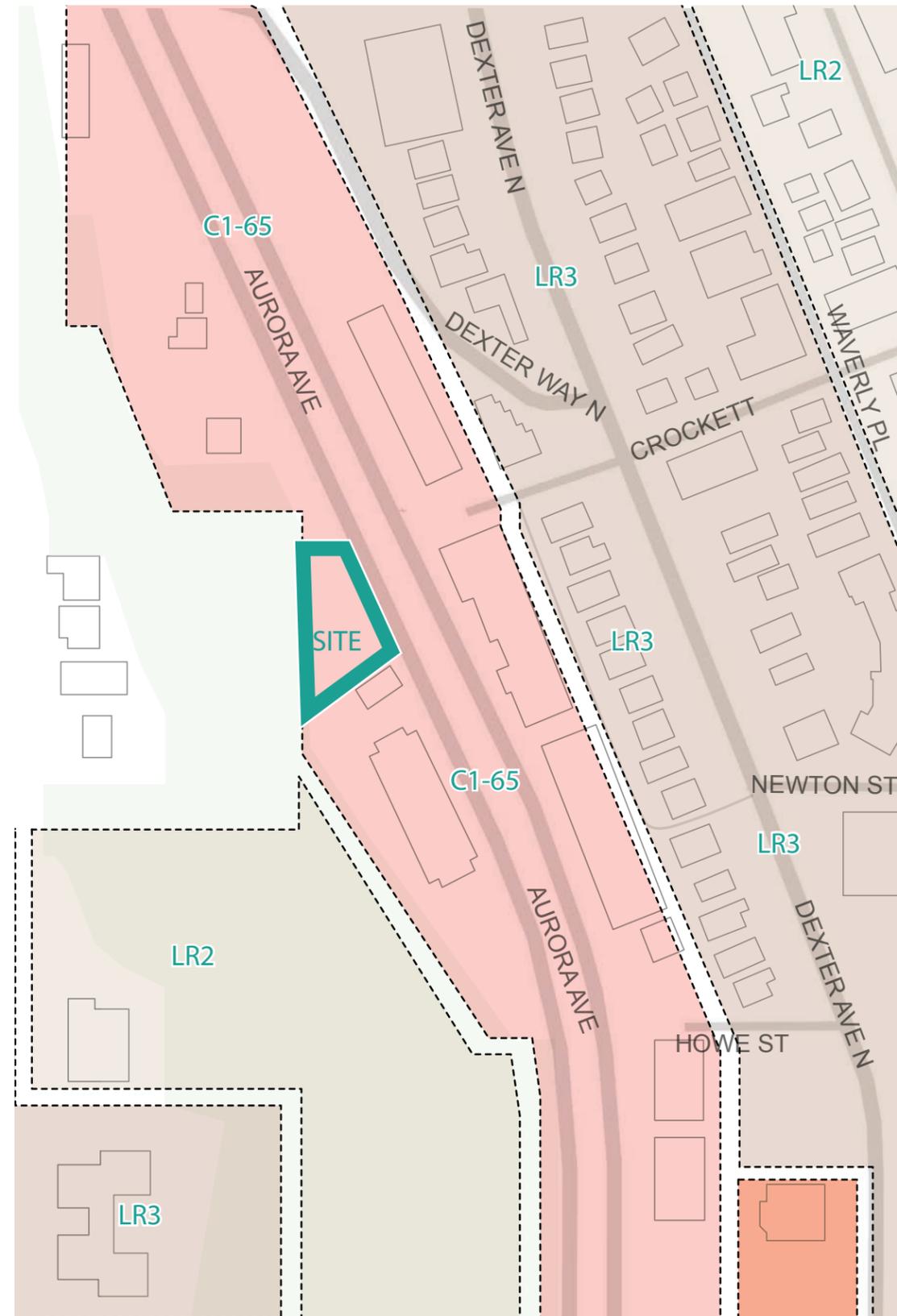
**Project Information**

<b>Parcel:</b>	9301301390
<b>Lot Area:</b>	9,392
<b>Zoning:</b>	C1-65
<b>Overlay:</b>	None
<b>Street Classification:</b>	Aurora Ave N. (Principal Arterial) 6th Ave. N. (Unimproved) Crockett St. (Unimproved)
<b>Frequent Transit:</b>	Yes

The project is a six-story apartment building containing 40 small efficiency dwelling units. Parking for approximately 20 vehicles is provided in a 2-level garage above and below the Aurora Ave. N. grade and accessed from the street. No commercial space is provided. Overall building area is about 31616.33 sf including parking.

**Project Details:**

<b>Units:</b>	40
<b>Total GSF:</b>	38,606.0 sq. ft
<b>Parking Spaces:</b>	20



KEY: Zoning

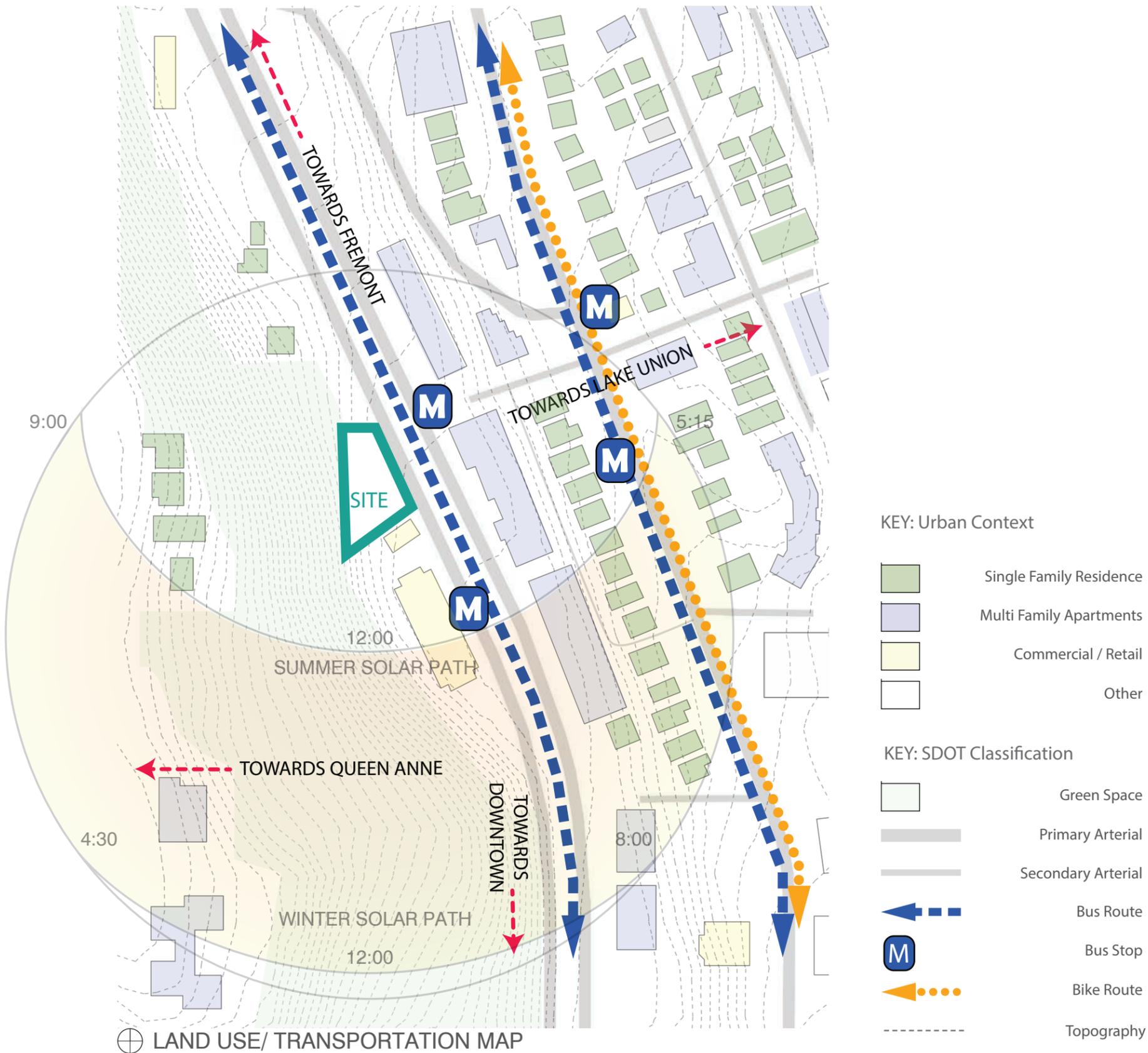
	Neighborhood Commercial 1
	Lowrise 2
	Lowrise 3

⊕ ZONING AND URBAN CONTEXT MAP

Urban Context

The site is located on one of the major arterial streets in Seattle. To the East, the building is adjacent to an unused r.o.w. and a greenbelt. To the North is unimproved Crockett St. The structures to the South are commercial, including a proposed drive-in espresso stand. Across Aurora, the buildings are multifamily.

The close proximity to Aurora Ave. allows for easy transit: North to the neighborhoods such as Fremont, Ballard, or Greenwood, or South towards South Lake Union and Downtown. Bus Routes 5, 16, and E-line operate along Aurora Ave with the bus stops in close proximity to the site. Pedestrian and bicycle (Dexter Ave. N.) connections across Aurora Ave. N. are located to the North at the Dexter Way N. underpass and to the South at the Ray Moore Bridge. Northbound vehicles can go under Aurora at 6th Ave. N near the Canlis Restaurant.

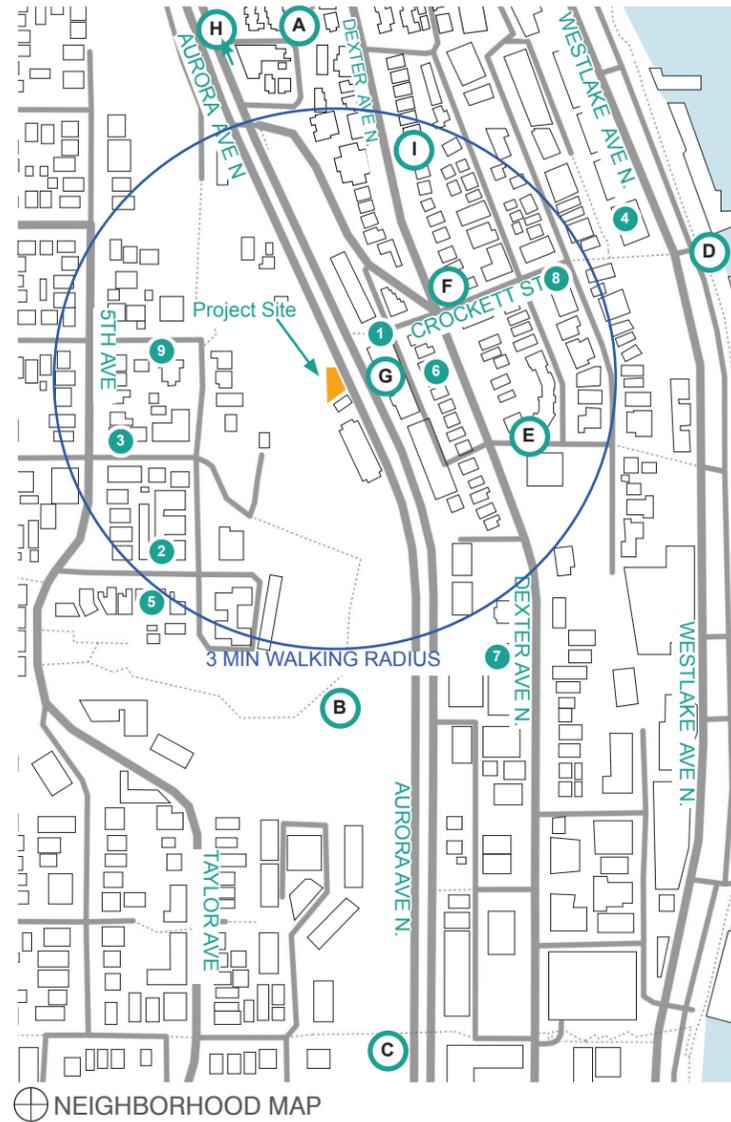


Places and Buildings of Interest

The site is located in a no-man's land between two Seattle neighborhoods. There really isn't a close connection to any relevant buildings. However, there are a number of places and buildings of interest. To the West, adjacent to the property is the Northeast Queen Anne Greenbelt. A couple of minutes to the North, across Aurora Ave. N., is the Thomas C. Wales Park. To the south, the Ray Moore Bridge allows for East-West pedestrian traffic, as does the tunnel under the Aurora Ave (three min north from the site). Other places of interest include Jules Landing on Lake Union, Swedish Cultural Center, and Lyons Grocery Store. The Lake Union waterfront is to the East.

Neighborhood Urban Features

Two of the main neighborhood features are a steep slope down from Aurora Ave N. towards Lake Union and a steep slope up from Aurora Ave. towards Queen Anne. Due to the prospective views of Lake Union, most of the residential structures incorporate decks and balconies facing west as a part of their design. The presence of sloped terrain also influence the massing arrangements of the buildings, resulting in designs that include stepping of the structures with the slope. Attention is also given to the spaces in front of the buildings. Landscaping is used to screen the buildings from Aurora Ave. N.; making the adjacent streetscape more aesthetically pleasing to the vehicular traffic and the pedestrian eye.



Landmarks, Green spaces, & Residences

- A** Thomas C. Wales Park, 2401 6th Ave N
- B** Northeast Queen Anne Greenbelt, 1901 Aurora Ave N
- C** Ray Moore Bridge
- D** Lyons Grocery, 2100 Dexter Ave N
- E** Jules Landing, 2100 Westlake Ave N
- F** Swedish Cultural Center, 1920 Dexter Ave N
- G** Portal Apartments, 655 Crockett St
- H** Domaine Apartments, 2483 Birch Ave N
- I** Private Residence, 2010 5th Ave N

Landmarks



**A** Thomas C. Wales Park - Greenspaces



**D** Jules Landing - Public Space Landmark



**B** Northeast Queen Anne Greenbelt - Greenspaces



**E** Swedish Cultural Center - Public Space Landmark



**C** Ray Moore Bridge - Public Space Landmark



**F** Lyons Grocery - Commercial Landmark

Types of Buildings



G Portal Apartments - Multi-Family Residence

Treatments

Balconies



1 Balconies - Multi-Family Residence

Front Spaces



4 Front Spaces - Multi-Family Residence

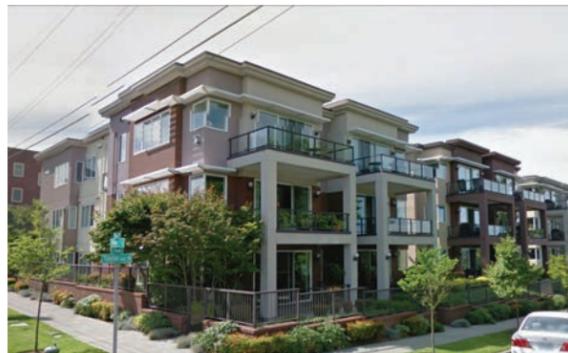
Slope Terrain



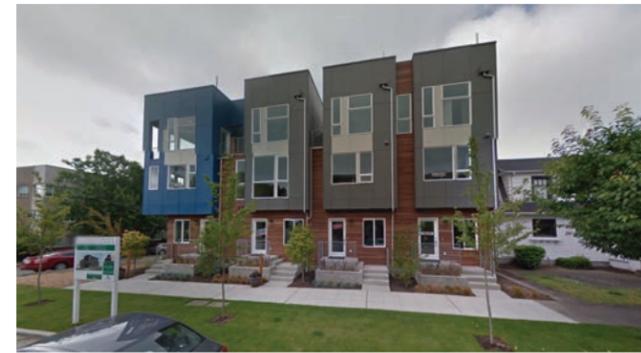
7 Slope Terrain - Multi-Family Residence



H Domaine Apartments - Multi-Family Condominiums



2 Balconies - Condos



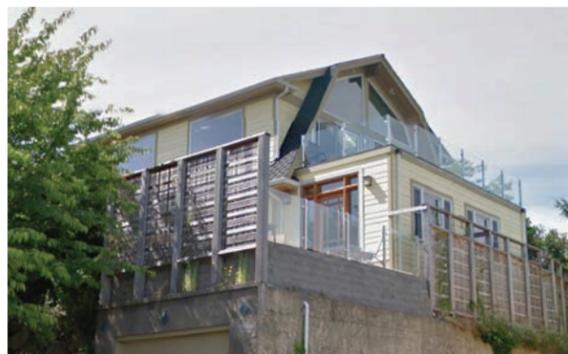
5 Front Spaces - Condos



8 Slope Terrain - Condos



I Private Residence - Single Family



3 Balconies - Single Family Residence



6 Front Spaces - Single Family Residence

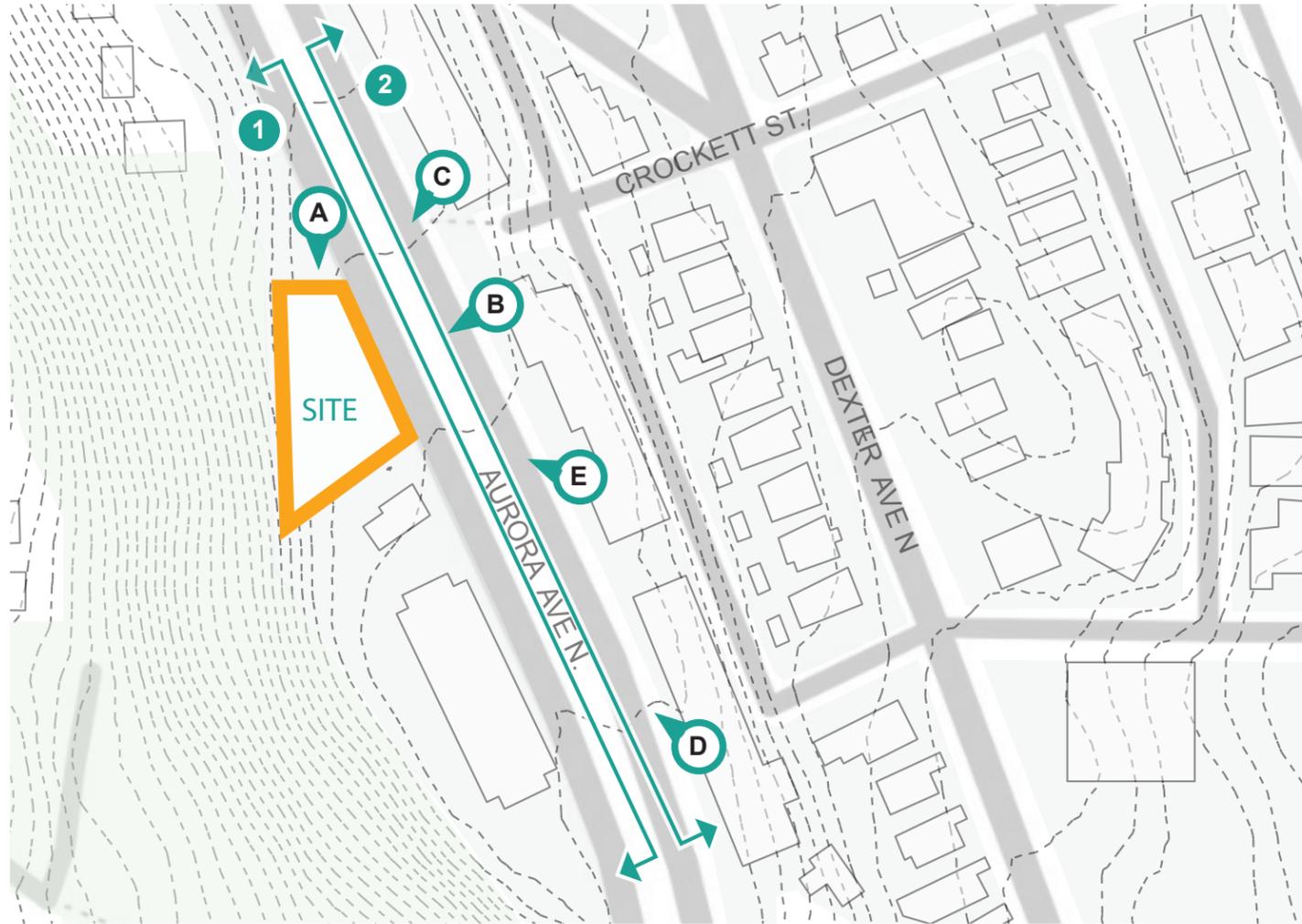


9 Slope Terrain - Single Family Residence

Streetscape Context

Buildings along Aurora Ave. N. are residential, mostly 3-4 story apartment/condominium buildings, mixed with small commercial. There is no street parking on the Aurora Ave N. due to the heavy traffic flow. The parking for the apartment structures across Aurora Ave. N. is typically accessed from a street (other than aurora Ave. N.), or alley, and is in a below Aurora Ave. N. garage.

The street facade on the West side of Aurora Ave N. is unremarkable. Across the street from the site are mainly multi-family apartment complexes. Typically their facade facing Aurora Ave features a more or less blank wall, concentrating major openings toward lake union. w



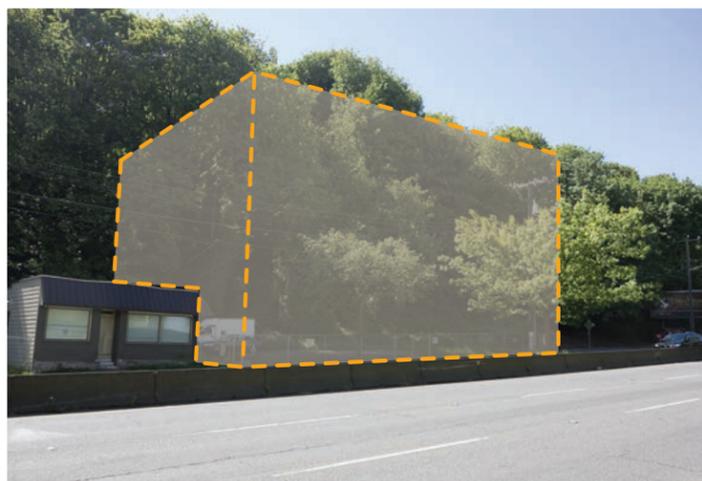
A Facing Southeast



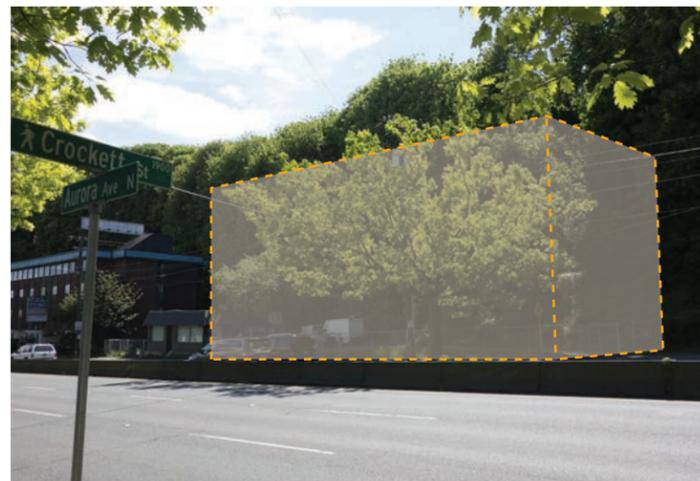
B Facing West



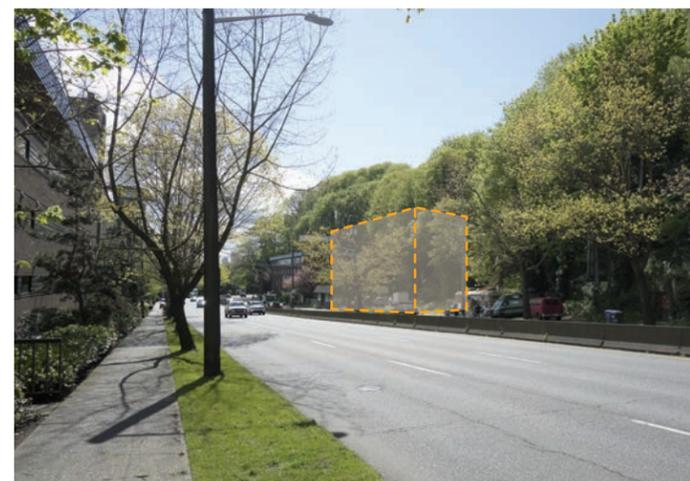
1 Looking West on Aurora Ave N



C Facing Northwest



E Facing Southwest



F Facing South (not on map)



D Facing North



G Aurora Ave N: Traffic Intersection



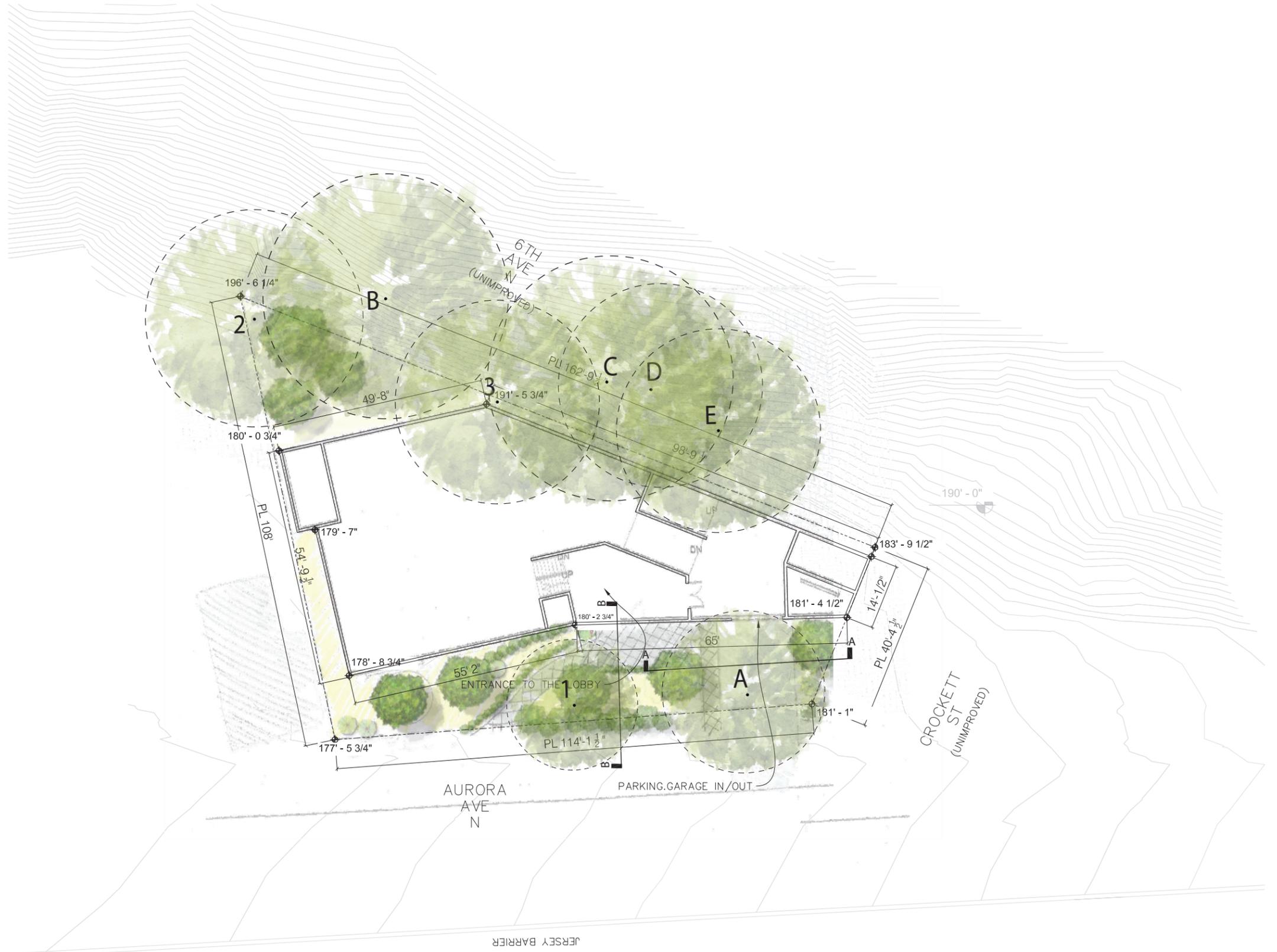
2 Looking East on Aurora Ave N

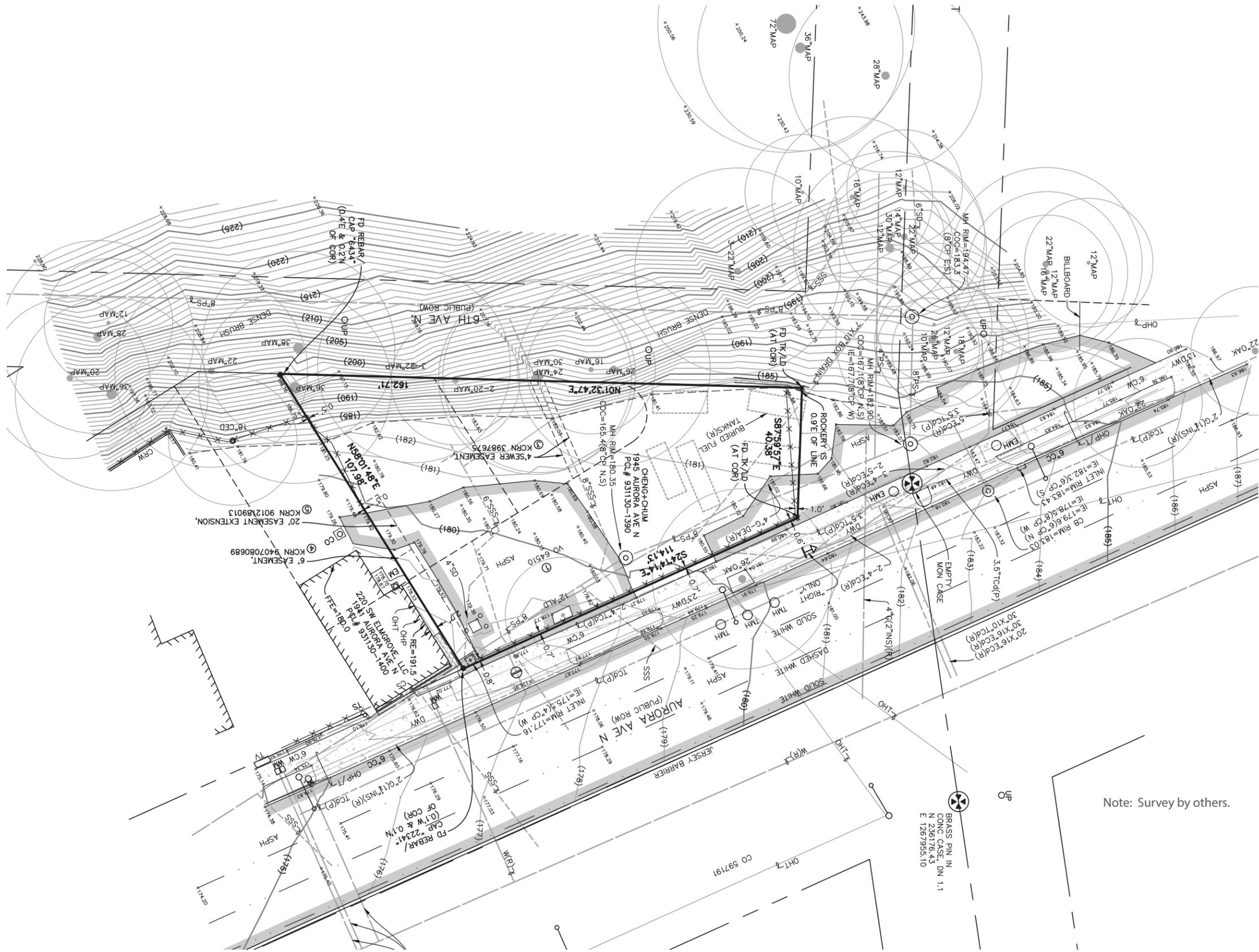
Site Plan Conditions

The site is located between Aurora Ave and non-constructed 6th Ave N. running lengthwise from North to South with views partially blocked by neighboring buildings. The property starts up narrow on the North and gains more depth towards South. The site features a steep slope towards the west property line. The views around the site are limited. To the east the views are limited by the vegetation and sloped terrain. The apartment to the east with its mainly blank wall is the most limiting and results only in partial views of lake union. Upper floor views to the Northeast, East and Southeast are mostly open.

Units are oriented to the East, North, and West towards the most open views. The stairs are to the South and North towards the corners against the steep terrain. The levels that cut into the terrain incorporate the 2-level garage for the occupants.

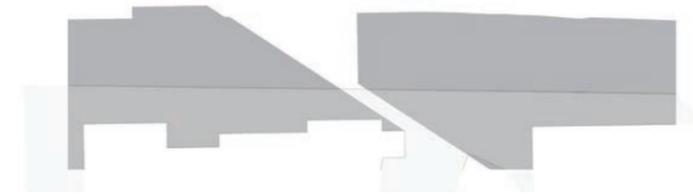
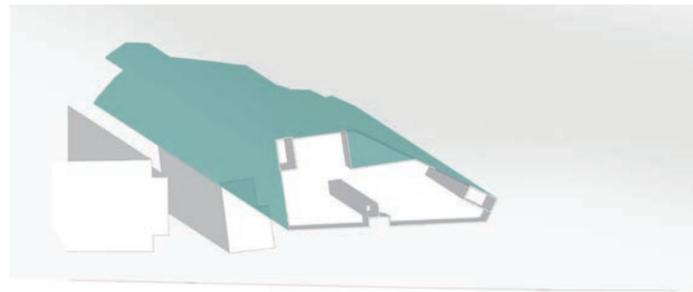
Notes: Numbered trees are on-site; lettered tree are off-site.  
 Trees 1, 3, C, and D to be removed.  
 Trees 2, A, B, and E to be retained  
 See Arborist's report on p. 32





Shadow Studies: Overview

The site primarily has access to the Eastern sun throughout all the seasons of the year. The long shadows cast by the buildings across Aurora Ave. N. do not let much winter sun on to the site. Nevertheless, the project location receives plenty of light and sun.



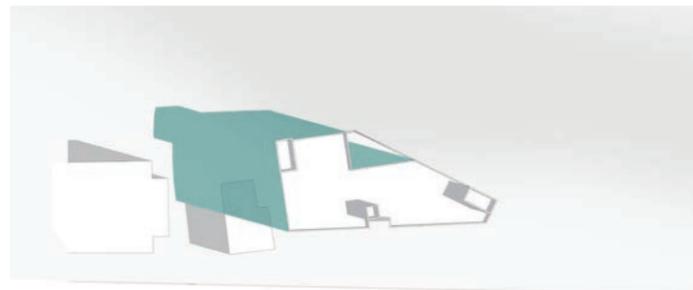
Equinox - March / September 21 at 10am



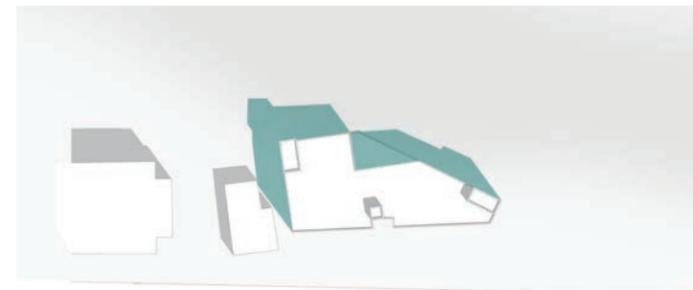
Equinox - March / September 21 at 12pm



Equinox - March / September 21 at 2pm



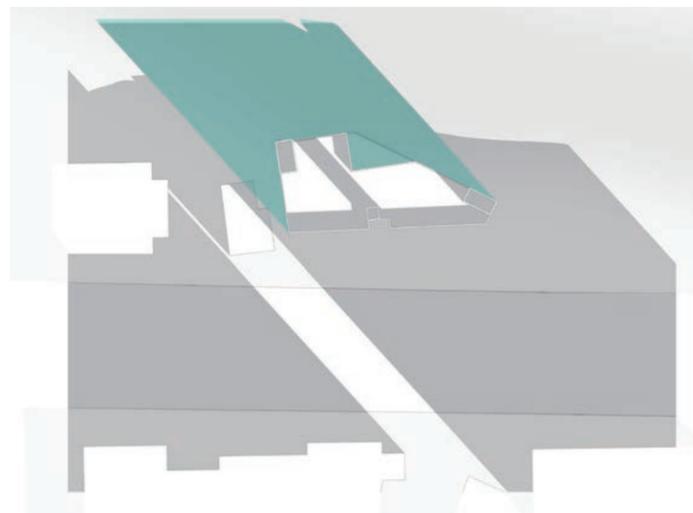
Summer Solstice - June 21 at 10am



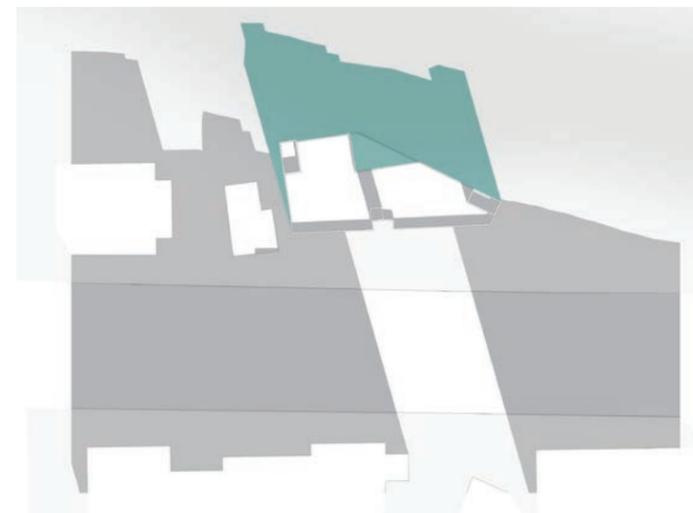
Summer Solstice - June 21 at 12pm



Summer Solstice - June 21 at 2pm



Winter Solstice - December 21 at 10am



Winter Solstice - December 21 at 12pm



Winter Solstice - December 21 at 2pm

SEATTLE MUNICIPAL CODE TITLE 23  
[SMC 23.47A Commercial](#)

[SMC 23.41 Early Project Implementation](#)

012.B DEVELOPMENT STANDARD DEPARTURES  
 Departures may be granted from any Land Use Code standard or requirement, except for the following: resid. density limits, Floor Area Ratios, max. size of use, structure height, storage of solid waste containers, noise and odor stds., reqs. For streets, alleys, and easements per Chapt. 23.53, definitions, and measurements.

Response:  
 Departures are requested at this time. See p. 26.

[SMC 23.47A Commercial](#)

- 004 PERMITTED AND PROHIBITED USES  
 Residential uses in mixed use development permitted outright
- 005 STREET LEVEL USES  
 C.2. Residential Uses may not occupy more than 20% of the street-level street facing facades when facing an arterial
- 008 STREET LEVEL DEVELOPMENT STANDARDS  
 A.1. Applies to structures that contain residential uses in C zones.  
 A.2.b. Blank segments of the street-facing façade between 2' & 8' above the sidewalk may not exceed 20' wide  
 A.2.c. The total blank façade segments may not exceed 40% of the width of the façade of the structure along the street  
 A.3 Street-level facing facades must be located within 10' of the property line, unless as otherwise approved  
 B.2 60% of the street facing façade between 2' & 8' shall be transparent ; view into space, or in live work units into 30" deep display windows  
 B.3 Nonresidential uses must extend an average of at least 30' and a minimum of 15' except if the depth requirements would result in a space greater than 50% of the structures footprint  
 B.3.b Street level non residential uses shall have a floor to floor height of at least 13'  
 D.1 At least one residential use shall have a visually prominent pedestrian entry

Response:  
 Departures from SMC 23.47A.008.A & B.. See p. 26.

- 012 STRUCTURE HEIGHT  
 A.1 The maximum height is 65' per Land Use Map  
 C.2 Open railings, parapets, and fire walls may extend up to 4'-0" above the maximum height.  
 C.4 Rooftop features including elevator and stair penthouses & mechanical equipment may not exceed 25% of the roof area.  
 C.4.F Rooftop features including elevator and stair penthouses & mechanical equipment may extend up to 16' above applicable height limit

- 013 FLOOR AREA RATIO  
 A.3 Above grade parking within or covered by a structure must be included in FAR calculations.  
 C Maximum FAR for single purpose residential outside SAOD is 4.25  
 D. Gross floor area below grade not counted against FAR

- 014 SETBACKS
- 016 LANDSCAPING AND SCREENING STANDARDS  
 A.2 Landscaping must achieve a Green Factor of 0.30 for any new structure over 4 units  
 B.1 Street trees are required per SDOT, existing trees count toward the requirement

- 018 NOISE STANDARDS
- 020 ODOR STANDARDS  
 A. Venting of odors, vapors, smoke, etc. shall be 10'-0" above the finished sidewalk grade, and shall be directed away to the extent possible from residential uses within 50'-0"

- 022 LIGHT AND GLARE STANDARDS  
 A. Exterior lighting shall be shielded from adjacent uses.  
 B. Interior lighting in parking garages shall be shielded.

- 024 AMENITY AREAS  
 A. Residential amenity areas of 5% of the total gross residential floor area including, but not limited to, decks, balconies, terraces, roof gardens, plazas, courtyards, play areas, or sports courts  
 B.1 All residents must have access to at least one amenity space  
 B.2 Amenity spaces may not be enclosed  
 B.4 Common amenity areas must have a minimum horizontal dimension of 10' and be a minimum of 250 sq. Ft.  
 B.6 Private balconies must have a minimum horizontal dimension of 6' and be a minimum if 60 sq. ft.

- 030 REQUIRED PARKING AND LOADING  
 A. Access to parking  
 Response:  
 Access for parking is proposed from Aurora Av. N. 6th Ave. N. and Crockett St. are unimproved.

- 033 TRANSPORTATION CONCURRENCY  
 All uses shall meet the transportation concurrency level-of-service per chapter 23.52

[SMC 23.53 Requirements for Streets, Alleys, and Easements](#)

- 015 IMPROVEMENT REQUIREMENTS FOR EXISTING STREETS IN RESIDENTIAL AND COMMERCIAL ZONES  
 Street improvements required per SDOT standards  
 Response:  
 Right of Way Improvement Exception Requests have been granted for improvements on 6th Ave. N. and Crockett St.

- 030 ALLEY IMPROVEMENTS IN ALL ZONES  
 Alley improvements required per SDOT standards

- 035 STRUCTURAL BUILDING OVERHANGS  
 A.1 8' vertical from sidewalk min.  
 A.2 1' horiz, 2'-6" ht., projection for architectural , or decorative features – eaves, etc.  
 A.4 Window bays/balconies – 8' above sidewalk, max. 3' horiz. Projection, 50% open area, 15' max. length, 2' separation (see additional specific requirements)

Response:  
 None proposed.

[SMC 23.54 Quantity and Design Standards for Off Street Parking](#)

- 015 REQUIRED PARKING  
 A. Min. parking per SLUC 23.54.015,, Tables A and B, except as modified in this section  
 K Bicycle parking required at 1 stall per 4 units for multi-family structures'  
 Table B, PARKING FOR RESIDENTIAL USES:  
 1 space for 2 small efficiency dwelling units (SEDU)  
 Table E, PARKING FOR BICYCLES:  
 General Sales and Services and Eating and Drinking Establishments – 1/12,000 sf long term, 1 /4,000 sf short term; Multi-family – 1 /4 units

Response:  
 20 parking spaces provided for 40 SEDU's

- 030 PARKING SPACE STANDARDS  
 B.1A Minimum medium stalls for residential use (<5 stalls provided))  
 B.2 75% large stalls for nonresidential (<10 stalls provided)

- 030 SOLID WASTE AND RECYCLABLE MATERIALS STORAGE AND ACCESS  
 Table A – 26-50 units - 375 square feet; 0-5,000 sf non-residential – 82 sf

Response:  
 SEATTLE MUNICIPAL CODE TITLE 25

[SMC 25.09.180. Development Standards for Steep slope Areas](#)

- B.2 Exception

Response:  
 Steep slopes on the site are the result of legal grading for Aurora ave. N. We will apply for an exemption

**CS-1 NATURAL SYSTEMS AND SITE FEATURES**

**CS-1: NATURAL SYSTEMS AND SITE FEATURES:**

Use natural systems/features of the site and its surroundings as a starting point for project design

- A. Energy Use
  - A-1. Energy Choices:
- B. Sunlight and Natural Ventilation
  - B-1. Sun and Wind:
  - B-2. Daylight and Shading:
  - B-3. Managing Solar Gain:
- C. Topography
  - C-1. Land Form:
 

Use natural topography and desirable landforms to inform project design.
  - C-2. Elevation Changes:
 

Use the existing site topography when locating structures and open spaces on the site.
- D. Plants and Habitat
  - D-1. On-Site Features:
 

Incorporate on-site natural habitats and landscape elements and connect those features to existing networks of open spaces and natural habitats wherever possible.
  - D-2. Off-Site Features:
 

Promote continuous habitat, where possible, and increase interconnected corridors of urban forest and habitat where possible.
- E. Water
  - E-1. Natural Water Features:
  - E-2. Adding Interest with Project Drainage:

**Response:**

One of the main features of the site is the proximity to the Northeast Queen Anne Greenbelt and unimproved 6th Ave. Nth r.o.w. This results in significant amount of trees growing to the West of the site. The other important feature that has been taken into the account during the design process is the steep terrain located along the west property line.

To minimize interruptions within the adjacent natural habitat, the proposed building steps back where the slope gets too steep. We also intend to leave the 6th Ave. N. r.o.w. undeveloped decreasing potential disruption to the vegetation and habitat.

**CS-2 URBAN PATTERN AND FORM**

**CS-2: URBAN PATTERN AND FORM:**

Strengthen the most desirable forms, characteristics and patterns of the streets, block faces, and open spaces in the surrounding area

- A. Location in the City and Neighborhood
  - A-1. Sense of Place:
 

Emphasize attributes that give a distinctive sense of place. Design the building and open spaces to enhance areas where a strong identity already exists, and create a sense of place where the physical context is less established.
  - A-2. Architectural Presence:
- B. Adjacent Sites, Streets, and Open Spaces
  - B-2. Connection to the Street:
 

Identify opportunities for the project to make a strong connection to the street and public realm.
  - B-3. Character of Open Space:
- C. Relationship to the Block
  - C-1. Corner Sites:
  - C-2. Mid-Block Sites:
 

Look to the uses and scales of adjacent buildings for clues about how to design a mid-block building. Continue a strong street-edge and respond to datum lines of adjacent buildings at the first three floors.
  - C-3. Full Block Sites:
 

Break up long facades of full-block buildings to avoid a monolithic presence
- D. Height, Bulk, and Scale
  - D-1. Existing Development and Zoning:
  - D-2. Existing Site Features:
  - D-3. Zone Transitions:
  - D-4. Massing Choices:
  - D-5. Respect for Adjacent Sites:
 

Respect adjacent properties with design and site

**Response:**

The site is located on an arterial street with heavy traffic flow. Surrounding buildings are trying to respond to this environment where noise and high transportation activity is an issue. Since the building is facing Aurora Ave N. for views and light, the structure is set back to accommodate landscaping solutions, (and miss a drainage easement/pipe) providing a buffer from the street. The treatment in front of the building will serve as a physical barrier between the street and the building, It will, also, provide a pedestrian friendly atmosphere at the street level and will fit better into the surroundings.

The proposed building is taller than the adjacent buildings and the buildings across the street. To break up the facade, a design strategy such as shifting masses in intervals above the street level forward is used.

**CS-3 ARCHITECTURAL CONTEXT AND CHARACTER**

**CS-3: ARCHITECTURAL CONTEXT AND CHARACTER:**

Contribute to the architectural character of the neighborhood

- A. Emphasizing Positive Neighborhood Attributes
  - A-1. Fitting Old and New Together:
 

Create compatibility between new projects, and existing architectural context, including historic and modern designs, through building articulation, scale and proportion, roof forms, detailing, fenestration, and/or the use of complementary materials.
  - A-2. Contemporary Design:
 

Explore how contemporary designs can contribute to the development of attractive new forms and architectural styles; as expressed through the use of new materials or other means.
  - A-3. Established Neighborhoods:
 

In existing neighborhoods with a well-defined architectural character, site and design new structures to complement or be compatible with the architectural style and siting patterns of neighborhood buildings.
  - A-4. Evolving Neighborhoods:
- B. Local History and Culture
  - B-1. Placemaking:
 

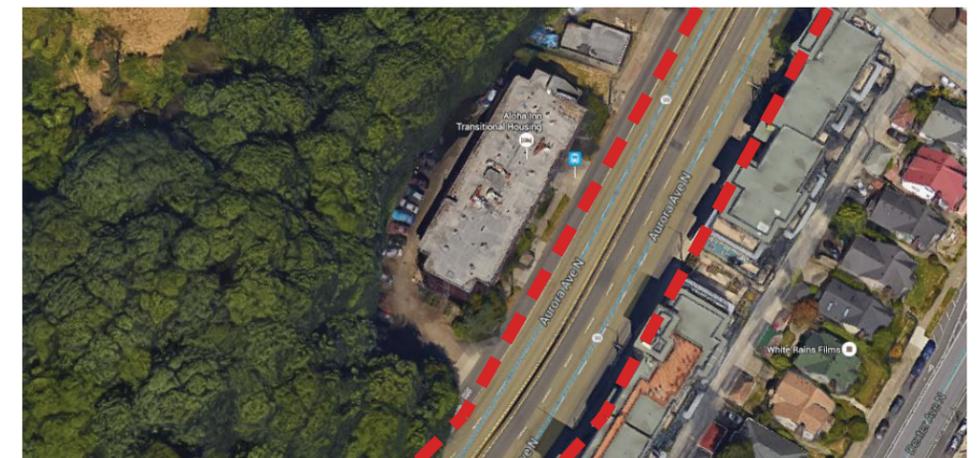
Explore the history of the site and neighborhood as a potential placemaking opportunity.
  - B-2. Historical / Cultural References:
 

Reuse existing structures on the site where feasible as a means of incorporating historical or cultural elements into the new project.

**Response:**

The building will have decks or balconies to fit in with the surrounding buildings, simultaneously creating an extra noise barrier for units. The roof line will remain flat, similarly to the adjacent buildings.

The design picks up on the patterns that are incorporated into the facades of nearby buildings, such as shifting of masses. The design should be simple, and readable, at 40 mph.



**PL-1 CONNECTIVITY**

**PL-1: CONNECTIVITY:**

Complement and contribute to the network of open spaces around the site and the connections among them

- A. Network of Open Spaces
  - A-1. Enhancing Open Space:
 

Design the building and open spaces to positively contribute to a broader network of open spaces throughout the neighborhood.
  - A-2. Adding to Public Life:
 

Seek opportunities to foster human interaction through an increase in the size and quality of project-related open space available for public life.
- B. Walkways and Connections
  - B-1. Pedestrian Infrastructure:
 

Connect on-site pedestrian walkways with existing public and private pedestrian infrastructure, thereby supporting pedestrian connections within and outside the project
  - B-2. Pedestrian Volumes:
 

Provide ample space for pedestrian flow and circulation
  - B-3. Pedestrian Amenities:
 

Opportunities for creating lively, pedestrian oriented open spaces to enliven the area and attract interest and interaction with the site and building should be considered
- C. Outdoor Uses and Activities
  - C-1. Selecting Activity Areas:
 

Concentrate activity areas in places with sunny exposure, views across spaces, and in direct line with pedestrian routes.
  - C-2. Informal Community Uses:
  - C-3. Year-Round Activity:

**Response:**

The design will feature an outdoor amenity space in front of the building that will have all-season planting. This is set back from the main sidewalk to create more privacy and safety. A common roof deck will be provided. to promote pedestrian interaction with the building an inviting detour along the sidewalk has been provided that pedestrians can elect to take. the detour will be visible to people approaching from the north, or continuing in that direction. a convenient bicycle storage will be provided for residence and viitors and all other general amenities which answers of the pedestrians need will be provided such as benches trash cans and landscaping lights to improve safty and ambient.



**PL-2 WALKABILITY**

**PL-2: WALKABILITY:**

Create a safe and comfortable walking environment that is easy to navigate and well connected to existing pedestrian walkways and features

- A. Accessibility
  - A-1. Access for All:
  - A-2. Access Challenges:
- B. Safety and Security
  - B-1. Eyes on the Street:
 

Create a safe environment by providing lines of sight and encouraging natural surveillance.
  - B-2. Lighting for Safety:
 

Provide lighting at sufficient lumen intensities and scales, including pathway illumination, pedestrian and entry lighting, and/or security lights.
  - B-3. Street-Level Transparency:
- C. Weather Protection
  - C-1. Locations and Coverage:
  - C-2. Design Integration:
  - C-3. People-Friendly Spaces:
- D. Wayfinding
  - D-1. Design as Wayfinding:

**Response**

Generally, pedestrian activity at this site on Aurora Ave N. is not very high due to the heavy traffic flow and lack of reasons for walking there.. To guarantee the residents a safe environment, the space in front of the building will be sufficiently filled with light and will provide clear lines of sight.

A departure from street level transparency requirements is being requested.



**PL-3 STREET LEVEL INTERACTION**

**PL-3: STREET LEVEL INTERACTION:**

Encourage human interaction and activity at the street level with clear connections to building entries and edges

- A. Entries
  - A-1. Design Objectives:
  - A-2. Ensemble of Elements:
 

Design the entry as a collection of coordinated elements including the door(s), overhead features, ground surface, landscaping, lighting, and other features.
- B. Residential Edges
  - B-1. Security and Privacy:
  - B-2. Ground-level Residential:
  - B-3. Buildings with Live / Work Uses:
  - B-4. Interaction:
- C. Retail Edges
  - C-1. Porous Edge:
  - C-2. Visibility:
  - C-3. Ancillary Activities:

**Response**

as it was mentioned in PL-1 response the building will have an entrance that will be clearly identified with landscaping, canopies, and lighting. Vegetation and benches and other amenities will be provide to better, safer and more convinient exxperience for all the users. There will be no residential units on the ground level due to the nature of Aurora Ave. N. The space in front of the building will be landscaped and serve as a transition buffer zone from the public to private zone to deduct the noise polution and provide more privacy.



**PL-4 ACTIVE TRANSPORTATION**

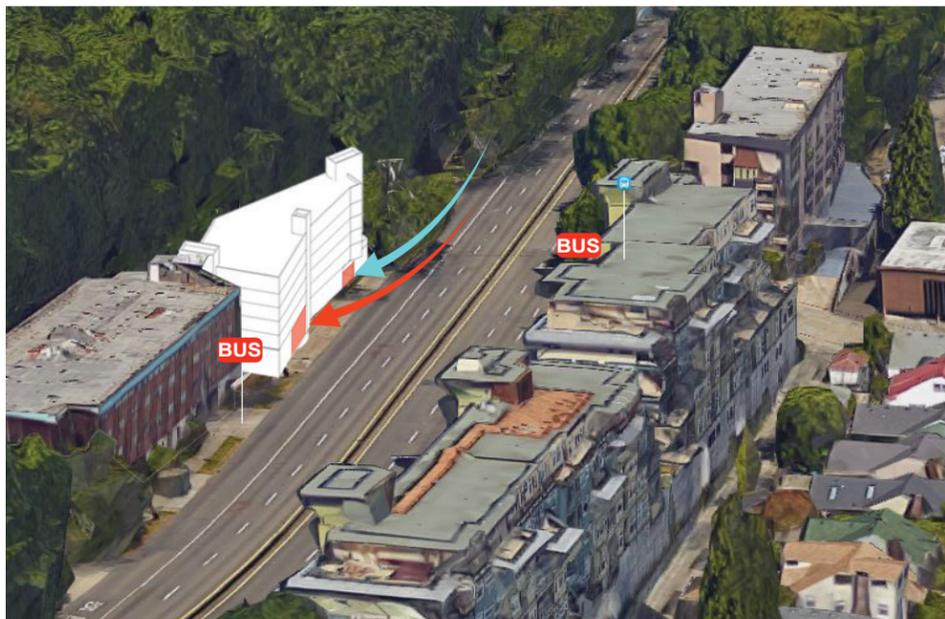
**PL-4: ACTIVE TRANSPORTATION:**

Incorporate design features that facilitate active forms of transportation such as walking, bicycling, and use of transit

- A. Entry Locations and Relationships
  - A-1. Serving all Modes of Travel:
  - A-2. Connections to All Modes:
    - Site the primary entry in a location that logically relates to building uses and clearly connects all major points of access.
- B. Planning Ahead for Bicyclists
  - B-1. Early Planning:
  - B-2. Bike Facilities:
  - B-3. Bike Connections:
- C. Planning Ahead for Transit
  - C-1. Influence on Project Design:
  - C-2. On-site Transit Stops:
  - C-3. Transit Connections:

**Response**

The main entrance to the building will be located off Aurora Ave. N. Aurora Ave. N. serves as a main arterial and provides means of transit routes. The parking entrance will be set back from the property edge for safety reasons.



**DC-1 PROJECT USES AND ACTIVITIES**

**DC-1: PROJECT USES AND ACTIVITIES**

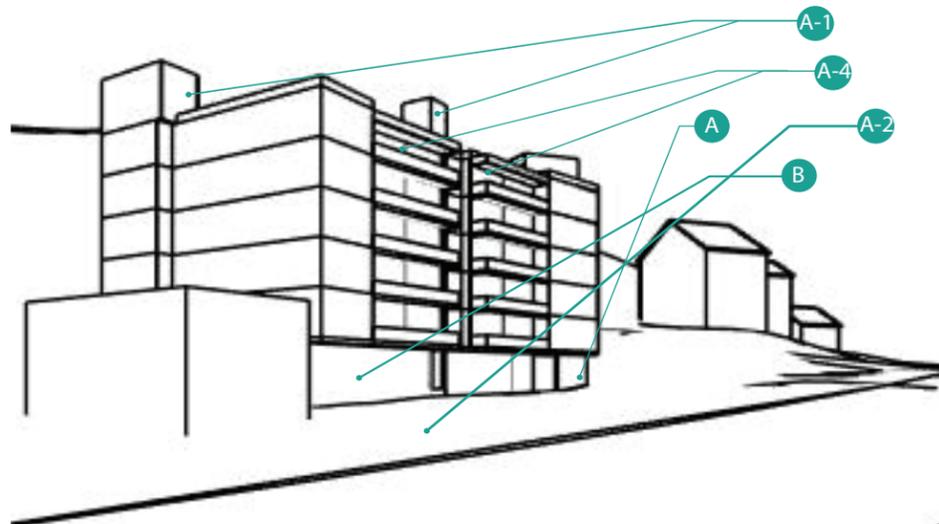
Optimize the arrangement of uses and activities on site

- A. Arrangement of Interior Uses
  - A-1. Visibility:
    - Locate uses and services frequently used by the public in visible/prominent areas, such as entries/along the street front.
  - A-2. Gathering Places:
  - A-3. Flexibility:
  - A-4. Views and Connections:
- B. Vehicular Access and Circulation
  - B-1. Access Location and Design:
  - B-2. Facilities for Alternative Transportation:
- C. Parking and Service Uses
  - C-1. Below-Grade Parking:
  - C-2. Visual Impacts:
  - C-3. Multiple Uses:
  - C-4. Service Uses:

**Response:**

The landscaped place in front of the building entrance may serve as a casual meeting space for the residents.

The parking garage entrance and pedestrian entrance will be off the same street and located adjacent to each other due to the site constraints. The residential entrance will be designed to dominate the other. The parking entrance will be designed to blend and fit with the rest of the facade, however use of certain accent materials will still differentiate the entrance from the blank facade.



**DC-2 ARCHITECTURAL CONCEPT**

**DC-2: ARCHITECTURAL CONCEPT:**

Develop an architectural concept that will result in a unified and functional design that fits well on the site and within its surroundings

- A. Massing
  - A-1. Site Characteristics and Uses:
  - A-2. Reducing Perceived Mass:
    - Use secondary architectural elements to reduce the perceived mass of larger projects.
- B. Architectural and Facade Composition
  - B-1. Façade Composition:
    - Design all building facades—including alleys and visible roofs—considering the composition and architectural expression of the building as a whole. Ensure that all facades are attractive and well-proportioned.
  - B-2. Blank Walls:
- C. Secondary Architectural Features
  - C-1. Visual Depth and Interest:
  - C-2. Dual Purpose Elements:
  - C-3. Fit With Neighboring Buildings:
- D. Scale and Texture
  - D-1. Human Scale:
  - D-2. Texture:
    - Design the character of the building, as expressed in the form, scale, and materials, to strive for a fine-grained scale, or “texture,” particularly at the street level and other areas where pedestrians predominate.
- E. Form and Function
  - E-1. Legibility and Flexibility:
    - Strive for a balance between building legibility and flexibility



**Response:**

The building design carries through a similar architectural expression to some of the nearby buildings. To reduce the perceived mass, the building design strategically uses decks, recessed elements, and highlighted building entries. The most visible facade of the building is the one facing the street. Particular attention will be paid to this side. However, the design parti will be consistent on all sides of the building.

**DC-3 OPEN SPACE CONCEPT**

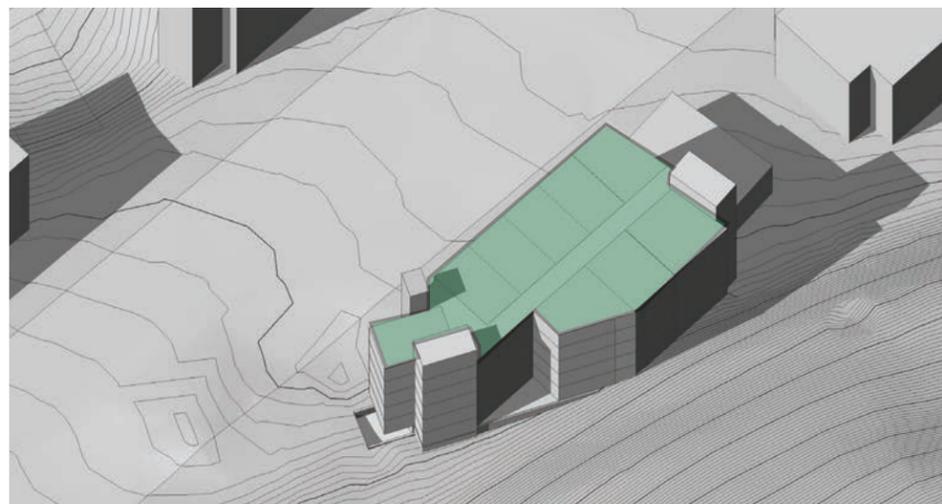
**DC-3: OPEN SPACE CONCEPT:**

Integrate open space design with the building design so that each compliments the other.

- A. Building - Open Space Relationship
  - A-1. Interior / Exterior Fit:
- B. Open Space Uses and Activities
  - B-1. Meeting User Needs:  
Plan the size, uses, activities and features of each open space to meet the needs of expected users, ensuring each space has a purpose and function.
  - B-2. Matching Uses to Conditions:
  - B-3. Connections to Other Open Space:  
Site and design project-related open spaces to connect with, or enhance, the uses and activities of other nearby public open space where appropriate.
  - B-4. Multi-family Open Space:
- C. Design
  - C-1. Reinforce Existing Open Space:  
Where a strong open space concept exists in the neighborhood, reinforce existing character and patterns of street tree planting, buffers or treatment of topographic changes. Where no strong patterns exist, initiate a strong open space concept that other projects can build upon in the future.
  - C-2. Amenities and Features:
  - C-3. Support Natural Ares:

**Response:**

The design features an open space in front of the building that will mainly function as a casual meeting space and a buffer from the heavy traffic flow on Aurora Ave. N.



**DC-4 EXTERIOR ELEMENTS AND FINISHES**

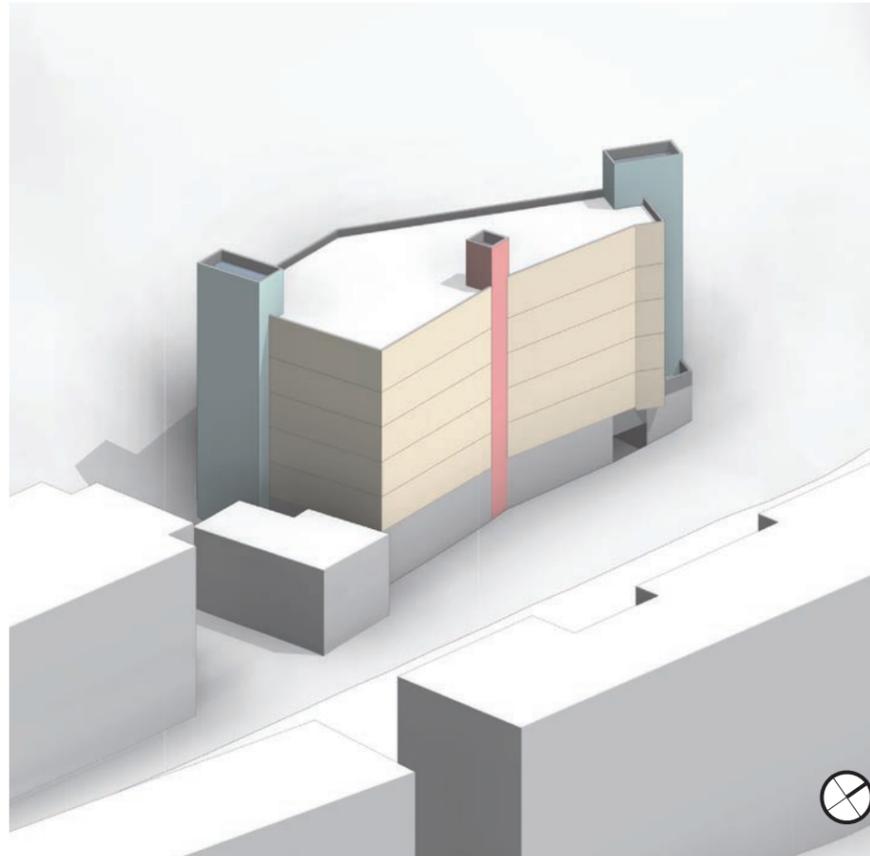
**DC-4: EXTERIOR MATERIALS AND FINISHES:**

Use appropriate and high quality elements and finishes for the building and its open spaces.

- A. Building Materials
  - A-1. Exterior Finish Materials:  
Building exteriors should be constructed of durable and maintainable materials that are attractive even when viewed up close. Materials that have texture, pattern, or lend themselves to a high quality of detailing are encouraged.
  - A-2. Climate Appropriateness:  
Select durable and attractive materials that will age well in Seattle's climate, taking special care to detail corners, edge, and transitions
- B. Signage
  - B-1. Scale and Charcter:
  - B-2. Coordination With Project Design:
- C. Lighting
  - C-1. Functions:
  - C-2. Avoiding Glare:
- D. Trees, Landscape, and Hardscape Materials
  - D-1. Choice of Plant Materials:  
Reinforce the overall architectural and open space design concepts through the selection of landscape materials.
  - D-2. Hardscape Materials:  
Use exterior courtyards, plazas, and other hard surfaces areas as an opportunity to add color, texture, and/or pattern
  - D-3. Long Range Planning:  
Select plants that upon maturity will be of appropriate size, scale and shape to contribute to the site as intended
  - D-4. Place Making:  
Create a landscape plan that helps define spaces with significant elements such as trees
- E. Project Assembly and Lifespan
  - E-1. Deconstruction:

**Response:**

Exterior finish materials will be chosen for their fit into the contemporary design of the project and with the surrounding neighborhood. The predominate exterior materials would be fiber cement panels. Materials will be of durable and of high quality. Color, texture, and pattern will be consistent with the intended design. A building sign will be incorporated into the design. The decks will be framed solid to accentuate their massing.



**Alternative A**

1-1/2 Parking Levels & 5 stories + Roof Amenity	
Unit Count	40
Parking	7,126 sf
Total Floor Area	31,993 sf
Total Residential Floor Area	17,170sf
FAR Proposed	3.41
FAR allowed	4.25
Amenity Area Provided	4,398

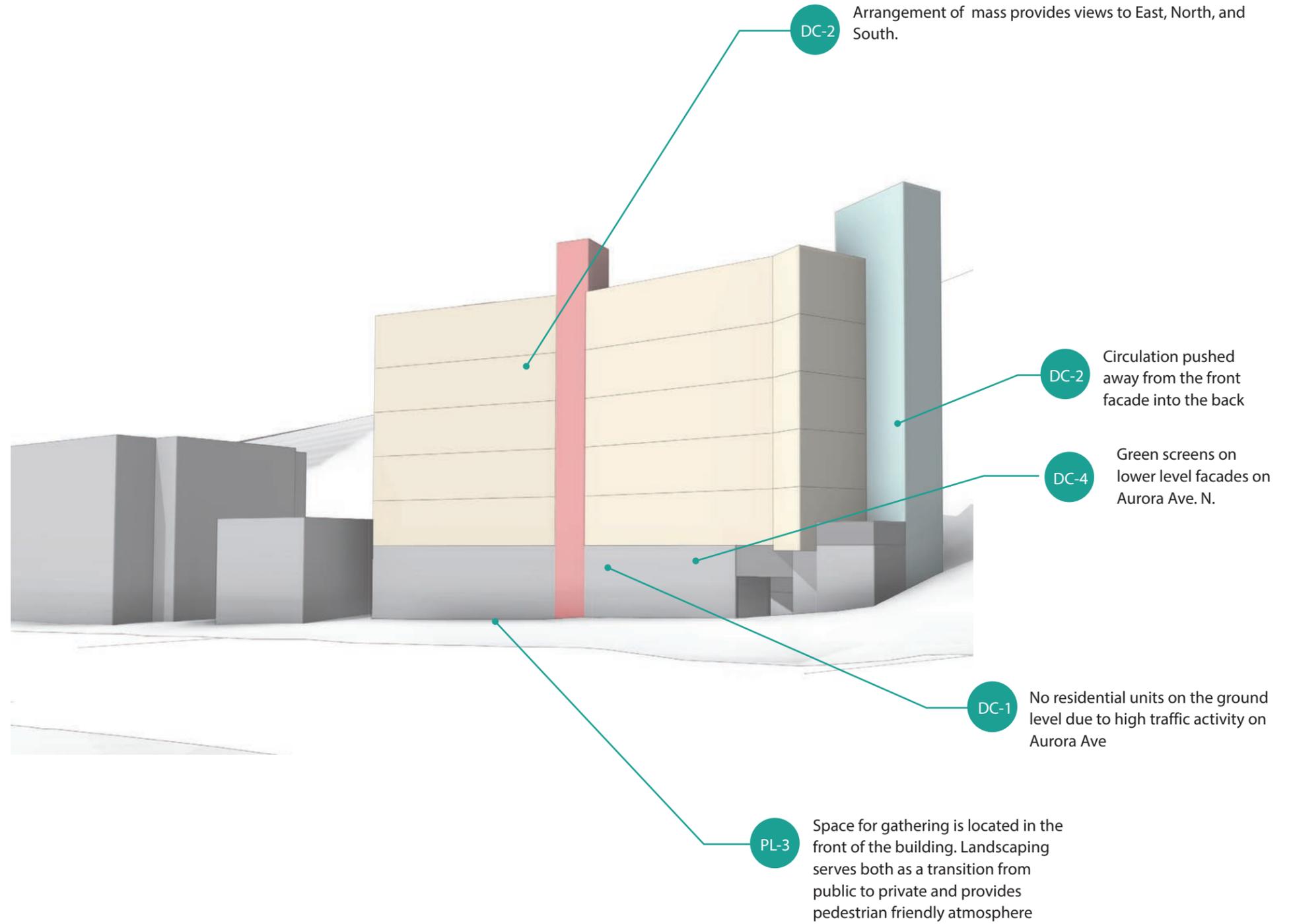
sf	
Roof	
Amenity Area Required	937 sf

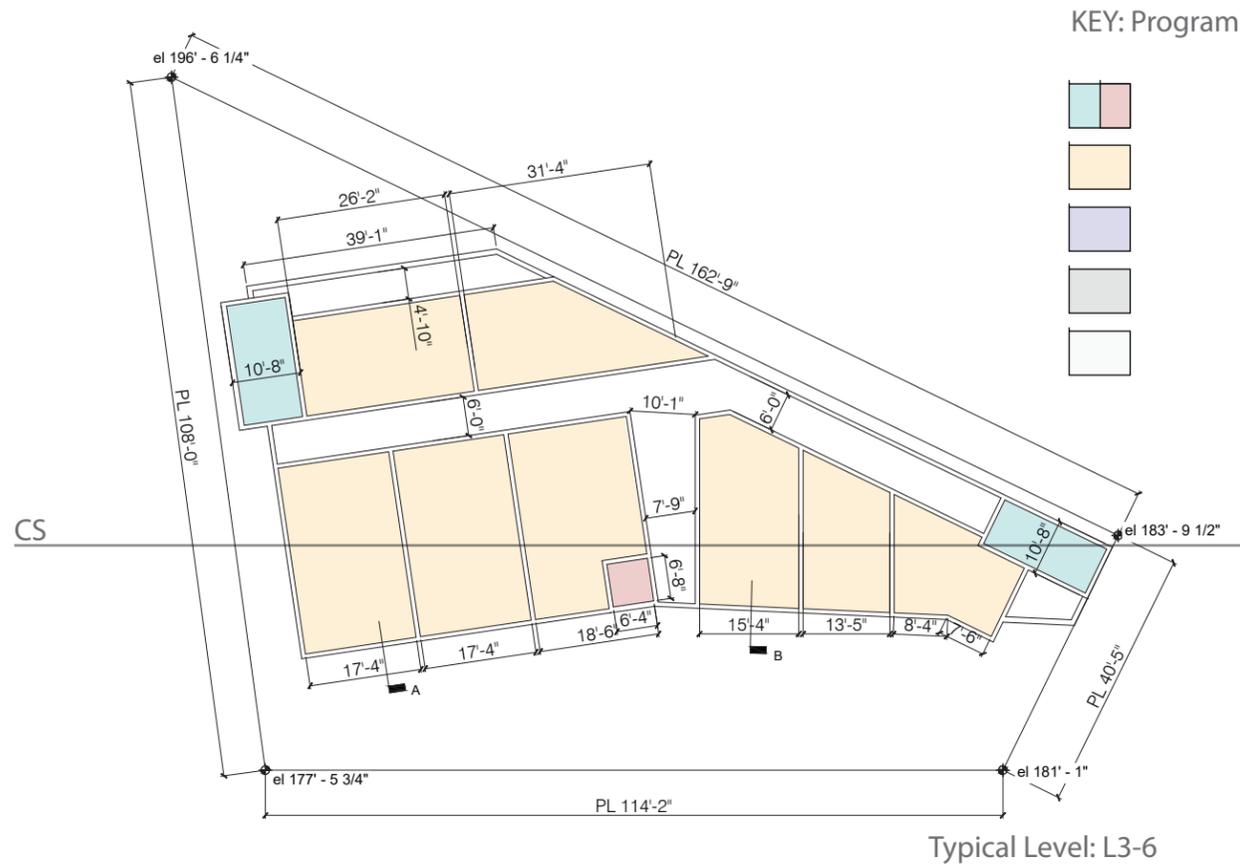
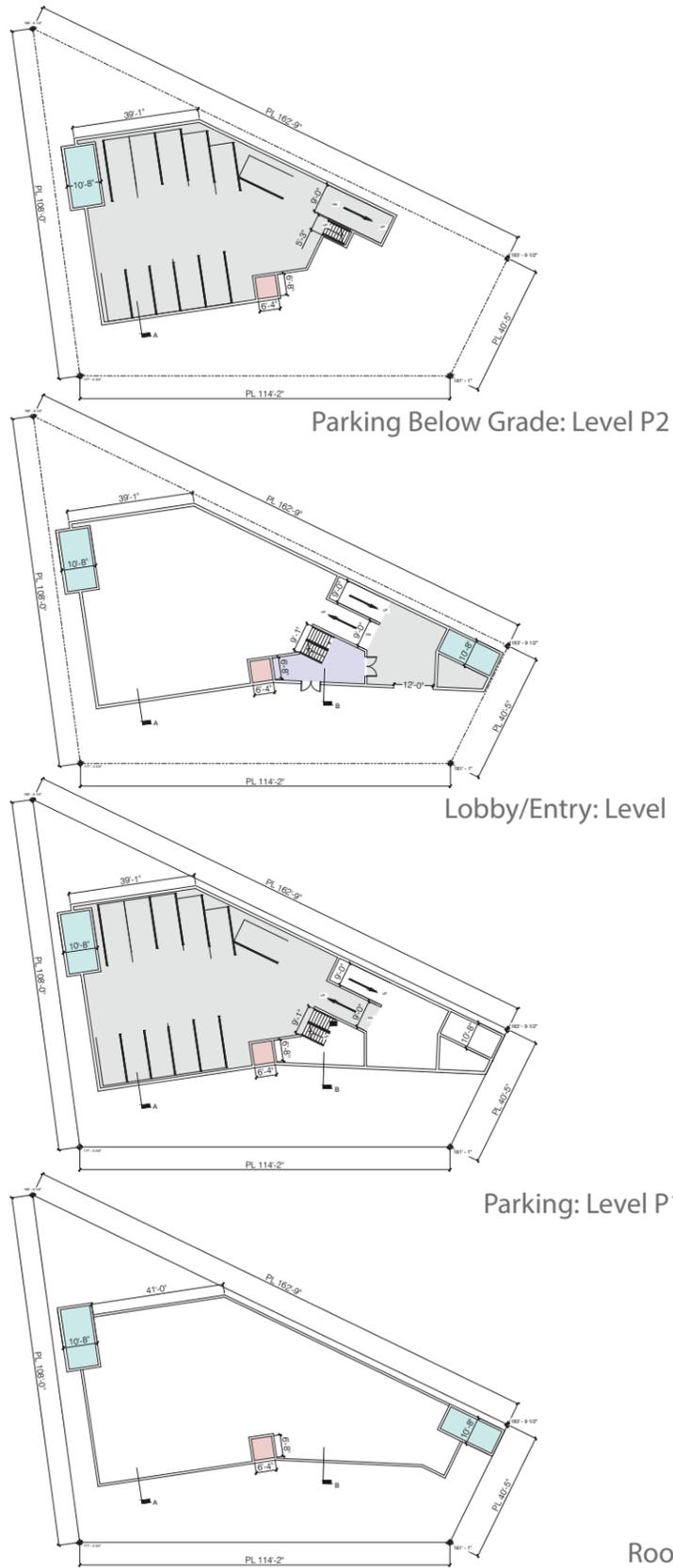
**Pros:**

- Additional open decks for residents on L2 at West
- Units are further away from Aurora Ave
- Simple facade

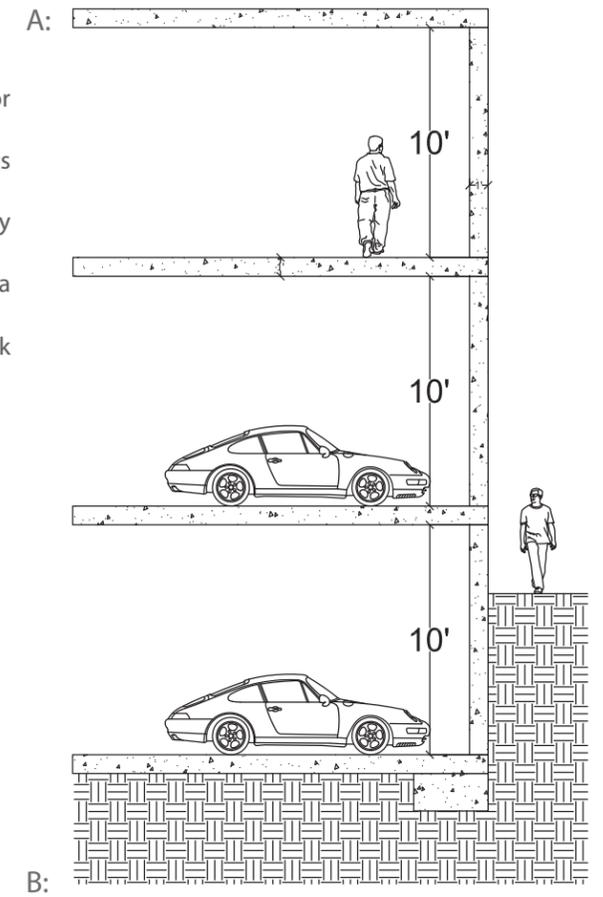
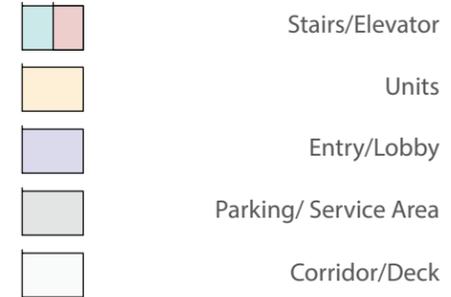
**Cons:**

- Smaller units facing the street
- No private decks
- Requires ECA steep slope variance to build on 30% of sites steep slopes.

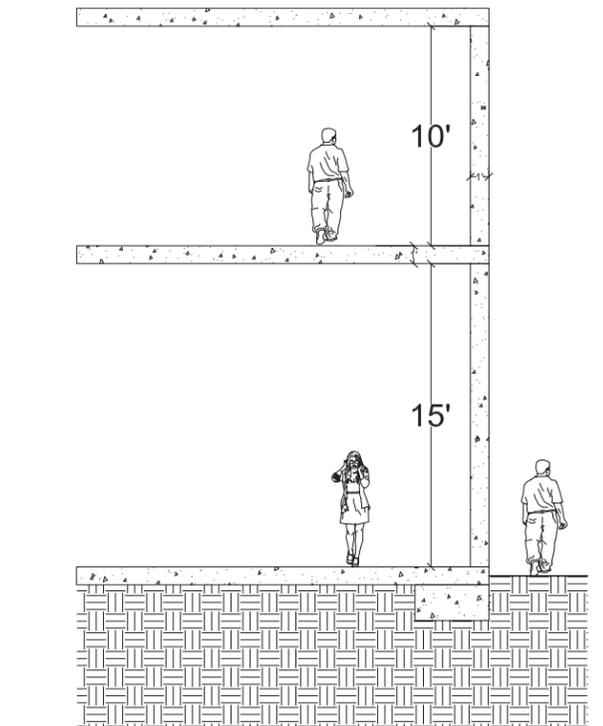
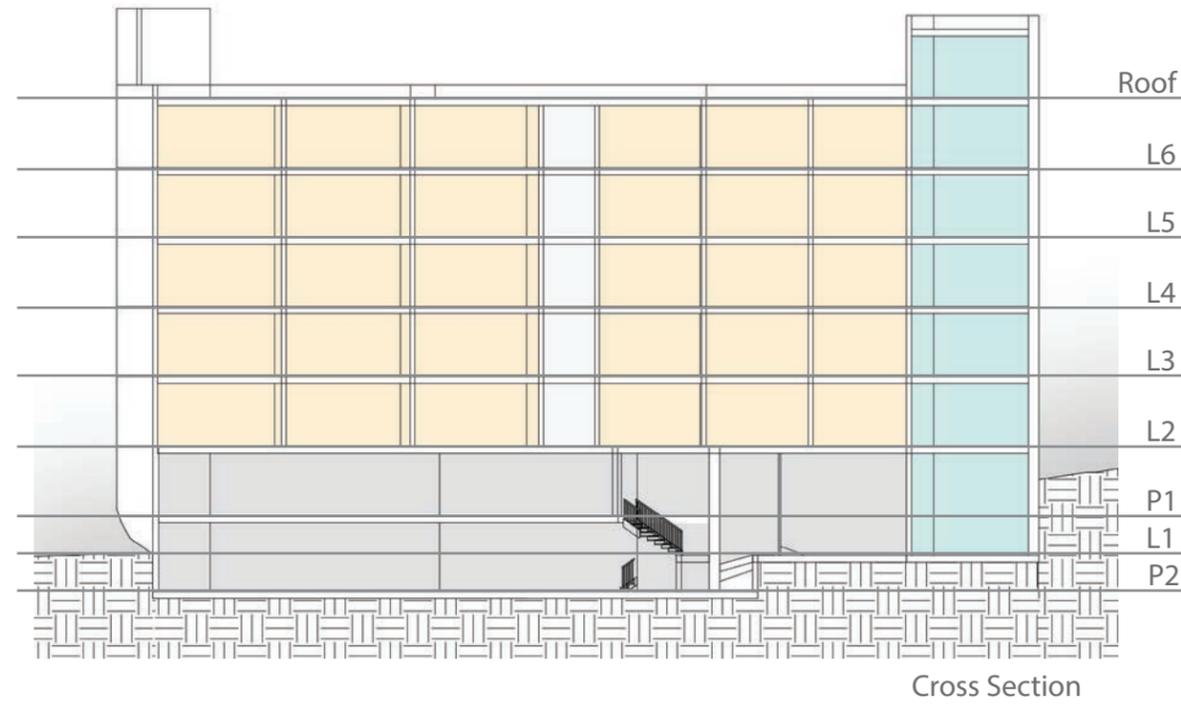


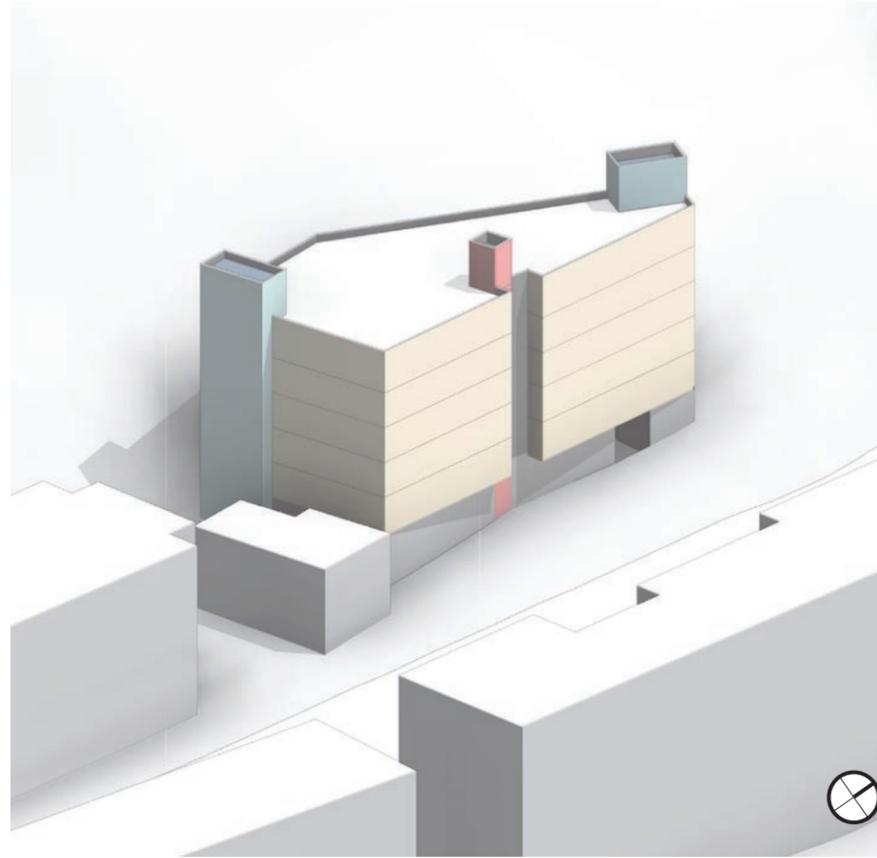


KEY: Program



AURORA AVE.





**Alternative B**

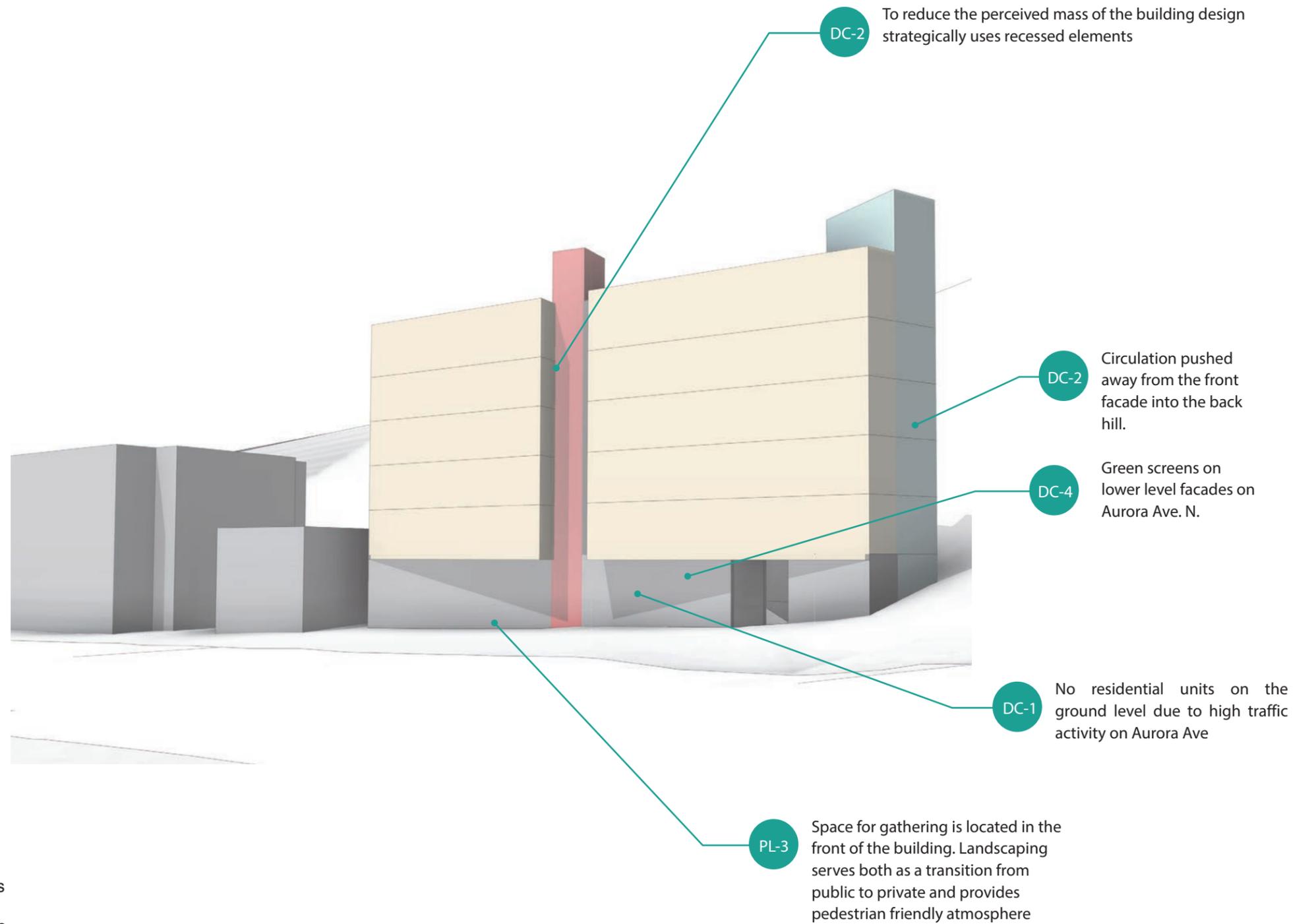
1-1/2 Parking Levels & 5 stories + Roof Amenity	
Unit Count	40
Parking	6,526 sf
Total Floor Area	33,762 sf
Total Residential Floor Area	19,235sf
FAR Proposed	3.59
FAR allowed	4.25
Amenity Area Provided	4,838 sf
	Roof
Amenity Area Required	937 sf

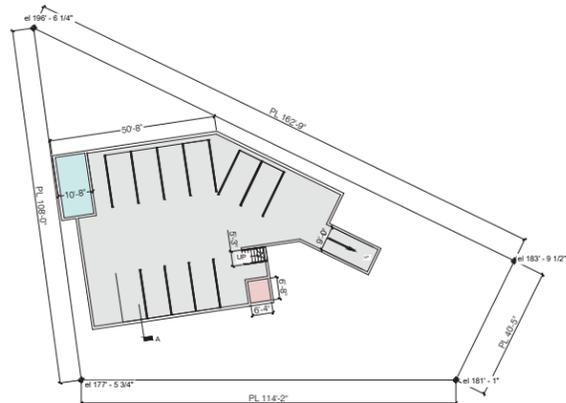
**Pros:**

- Shift of masses reduces the perceived mass of the building
- Bigger units

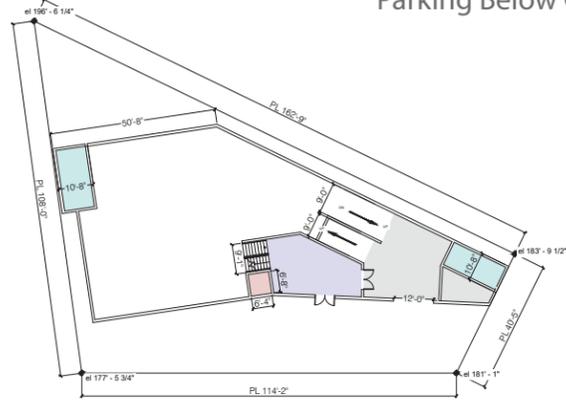
**Cons:**

- No decks
- Less barrier between Aurora Ave and the units due to the shifting of units towards the street and absence of balconies
- Requires ECA steep slope variance to build on 30% of sites steep slopes.

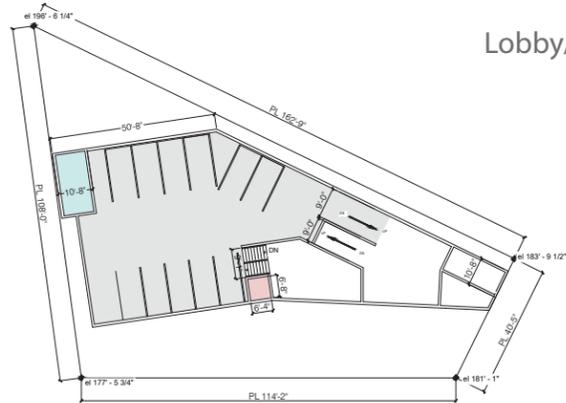




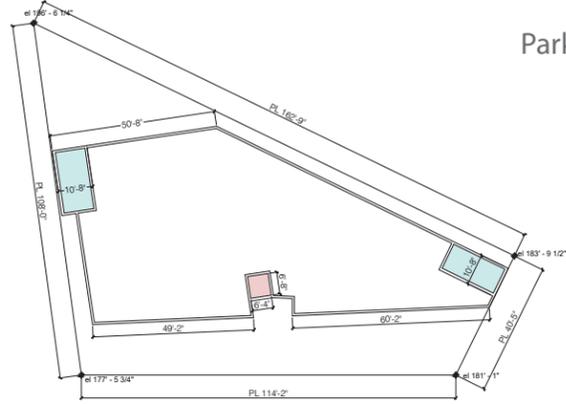
Parking Below Grade: Level P2



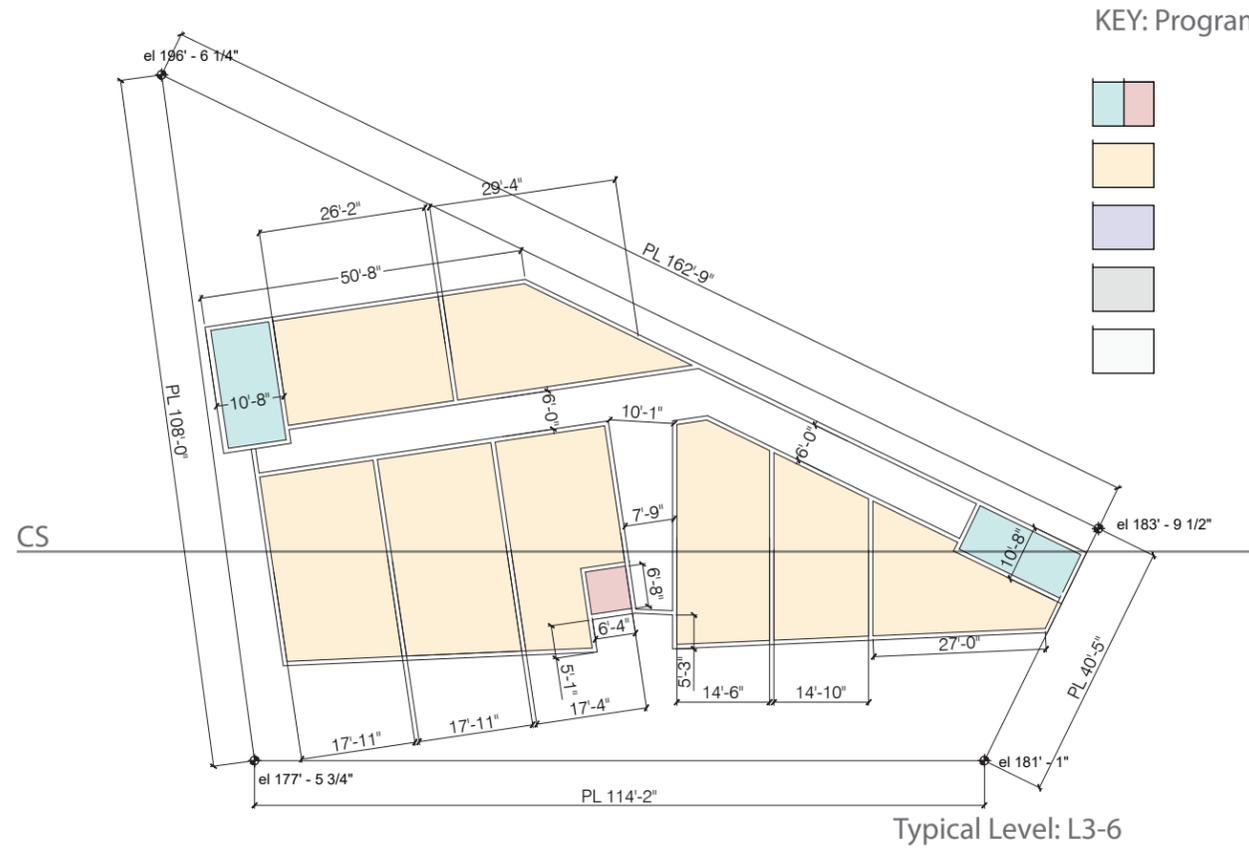
Lobby/Entry: Level 1



Parking: Level P1



Roof

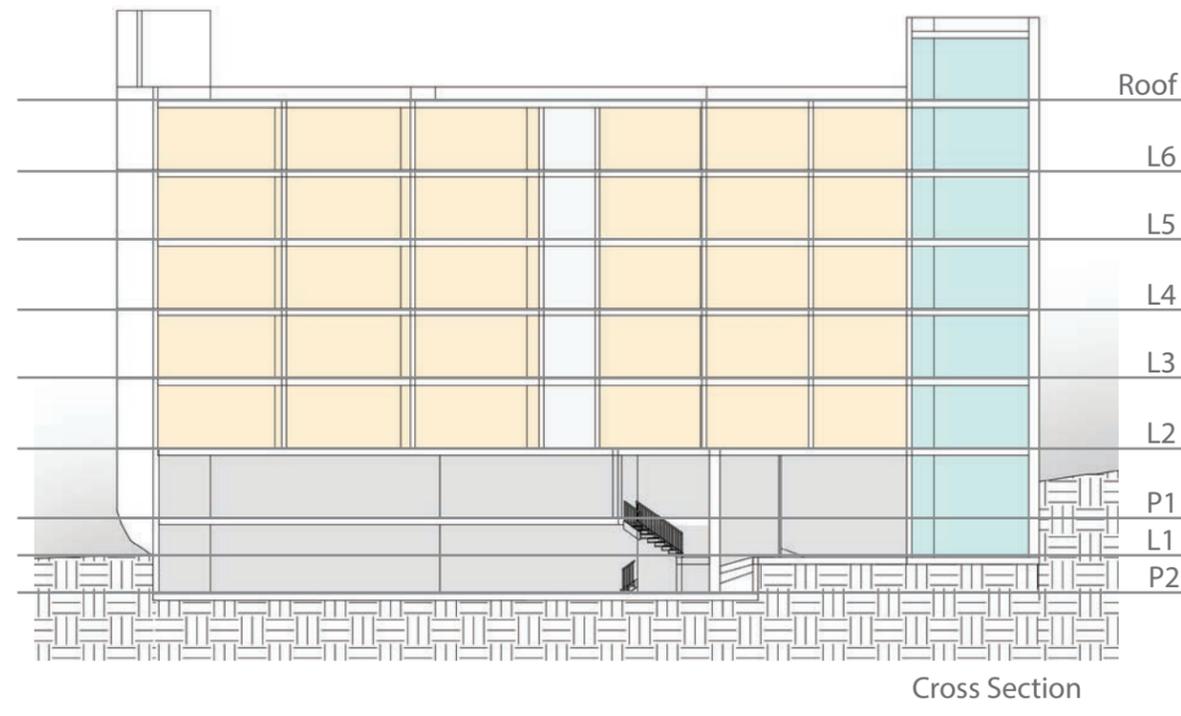
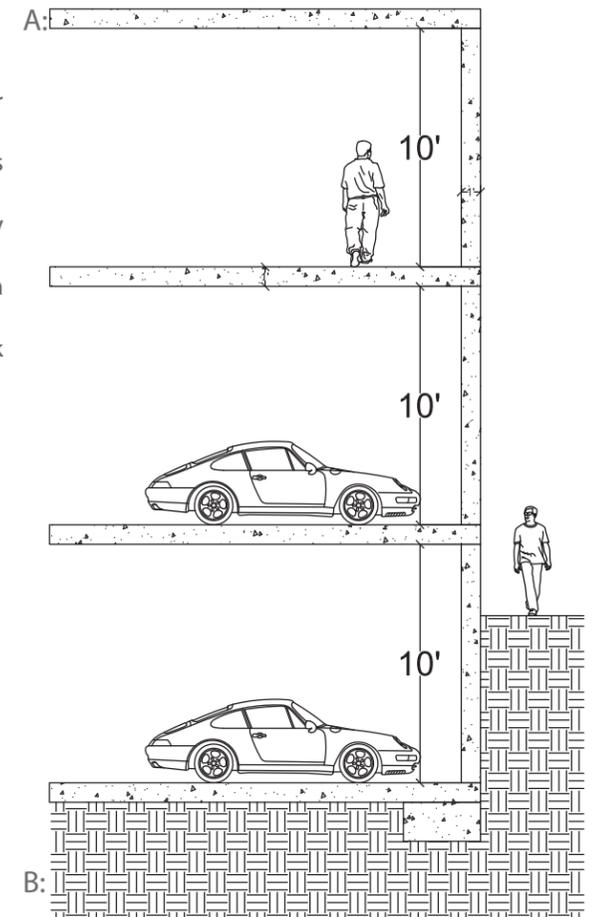


Typical Level: L3-6

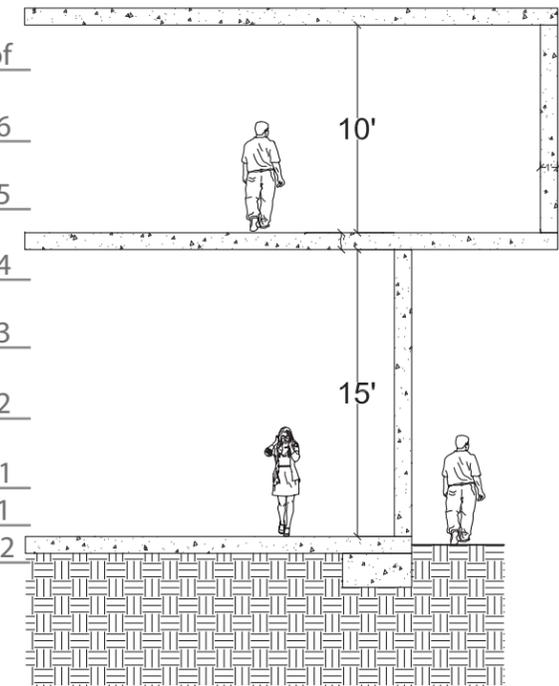
AURORA AVE.

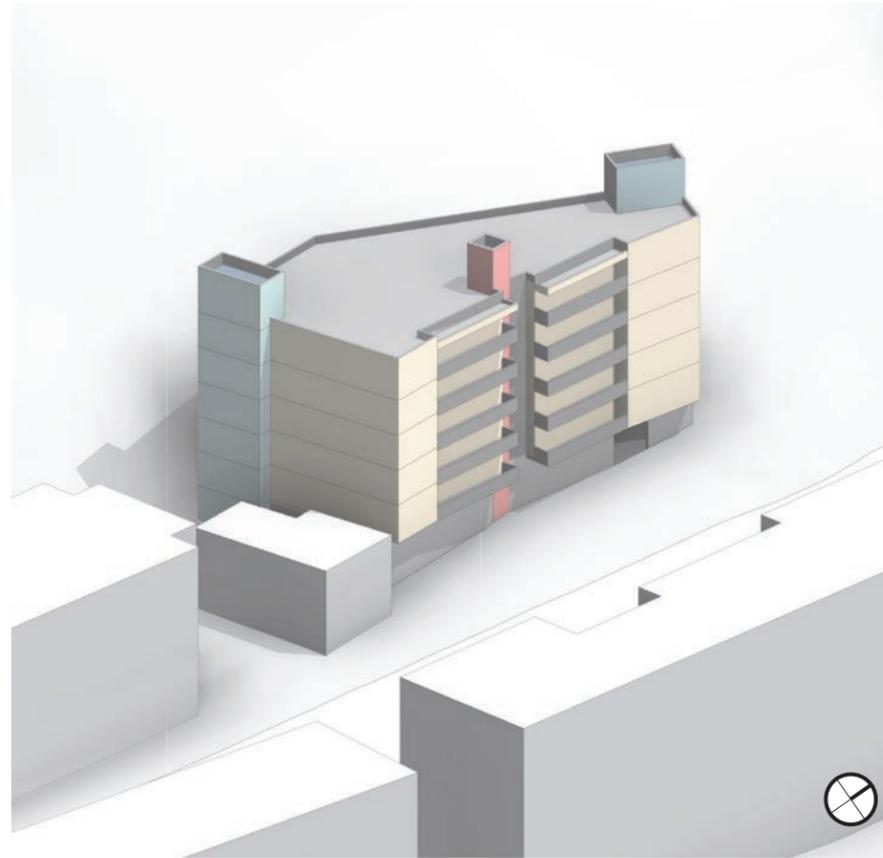
KEY: Program

- Stairs/Elevator
- Units
- Entry/Lobby
- Parking/ Service Area
- Corridor/Deck



Cross Section





**Alternative C (Preferred)**

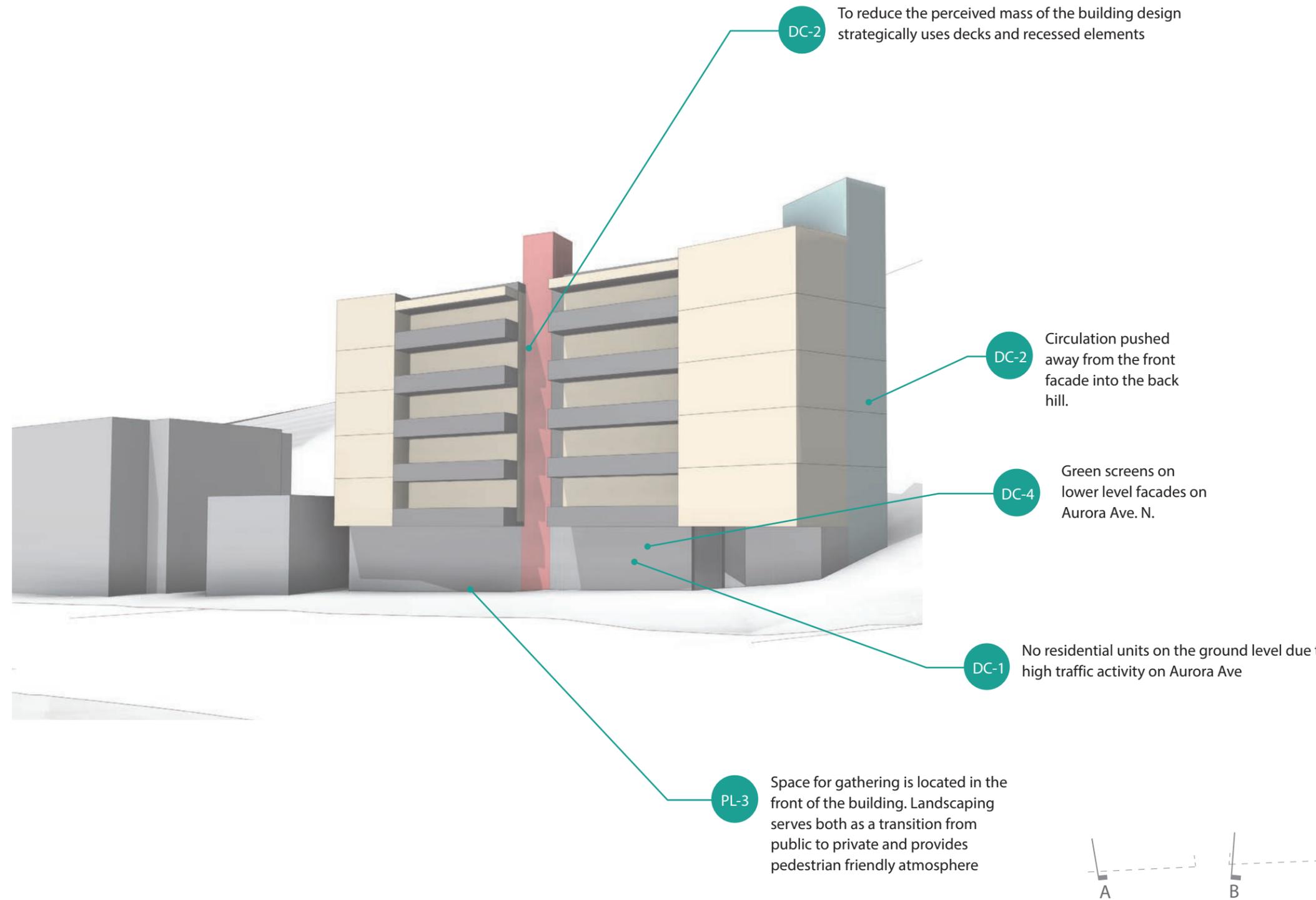
1-1/2 Parking Levels & 5 stories + Roof Amenity	
Unit Count	40
Parking	6,942 sf
Total Floor Area	37,728 sf
Total Residential Floor Area	20,180 sf
FAR Proposed	4.01
FAR allowed	4.25
Amenity Area Provided	6,598 sf
	Roof/Deck
Amenity Area Required	937 sf

**Pros:**

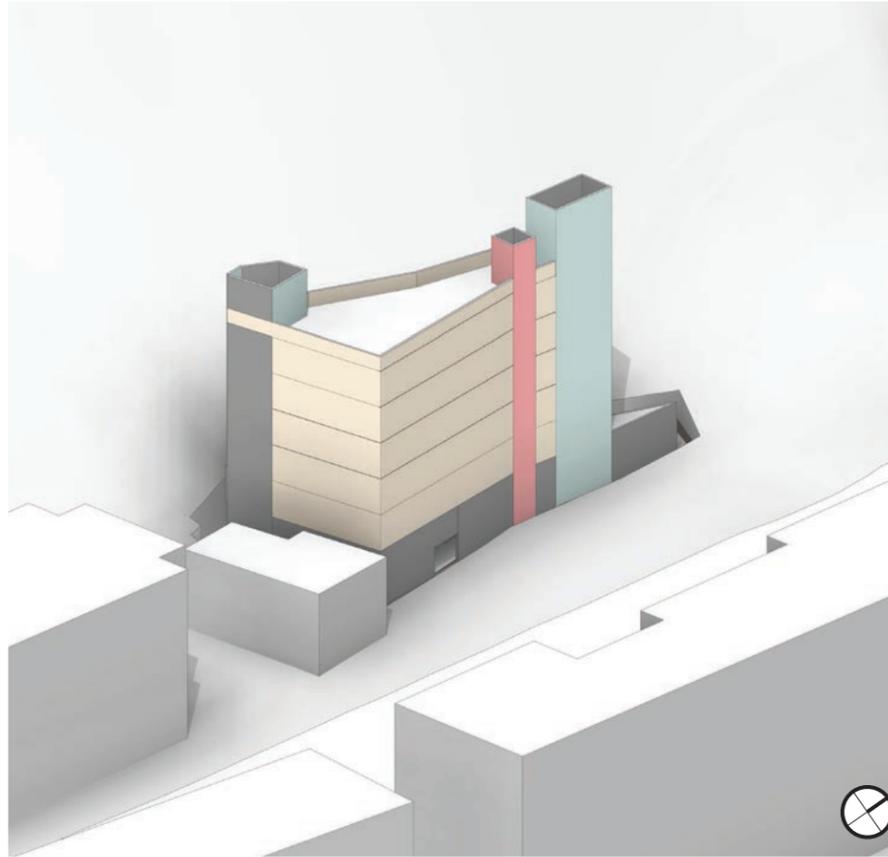
- Balconies facing Aurora Ave create a barrier for noise
- Mass is broken by decks and shift of forms
- Bigger corner units

**Cons:**

- Smaller residential units due to balconies than in Alt B
- Requires ECA steep slope variance to build on 30% of sites steep slopes.







**Alternative D (Code Compliant)**

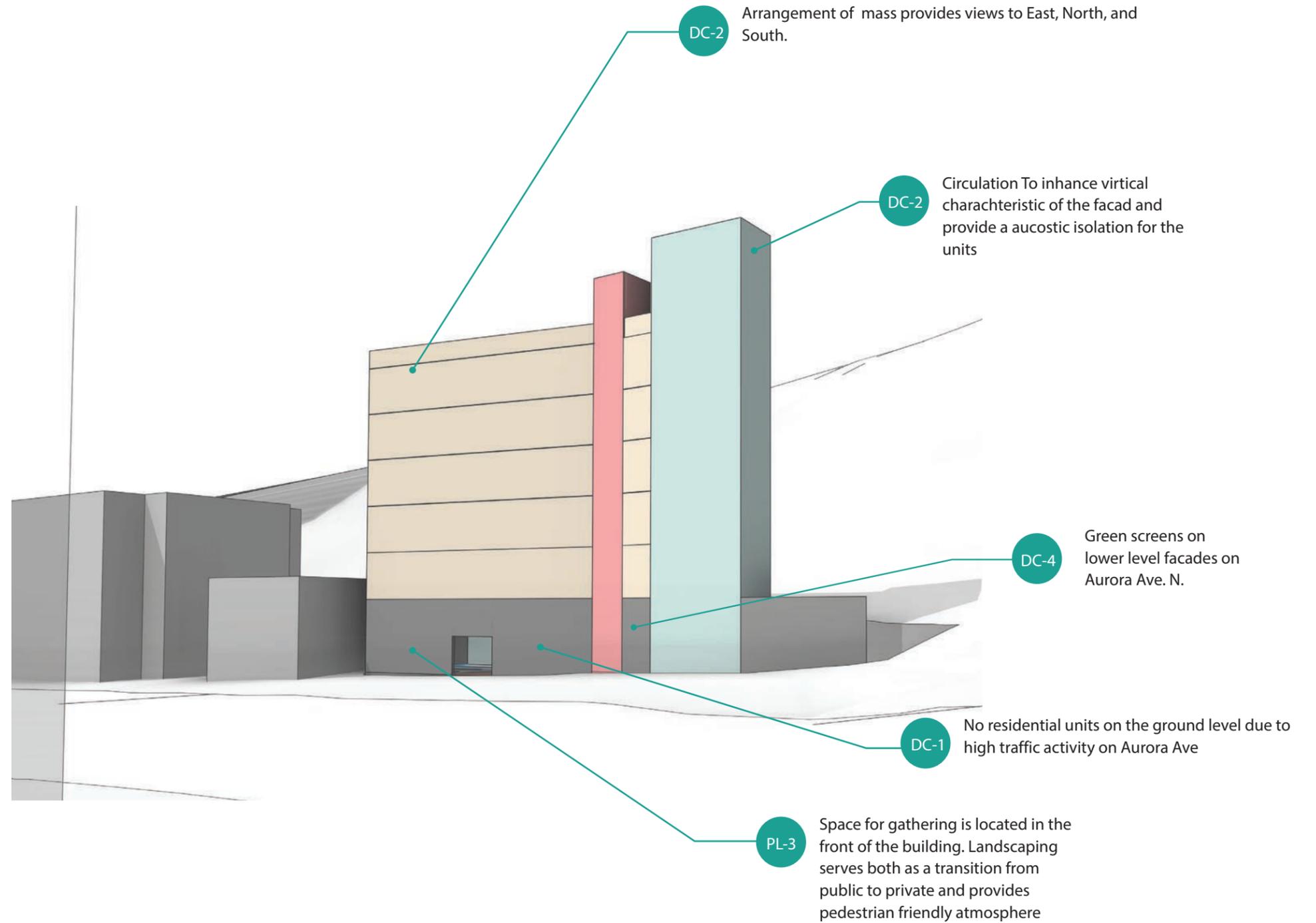
1-1/2 Parking Levels & 5 stories + Roof Amenity	
Unit Count	10
Parking	1,599 sf
Total Floor Area	13,765 sf
Total Residential Floor Area	6,600 sf
FAR Proposed	1.4
FAR allowed	4.25
Amenity Area Provided	1603 sf
Amenity Area Required	937 sf

**Pros:**

- simple facade
- units facing the street

**Cons:**

- Smaller residential unit
- No private decks
- Unefficient FAR



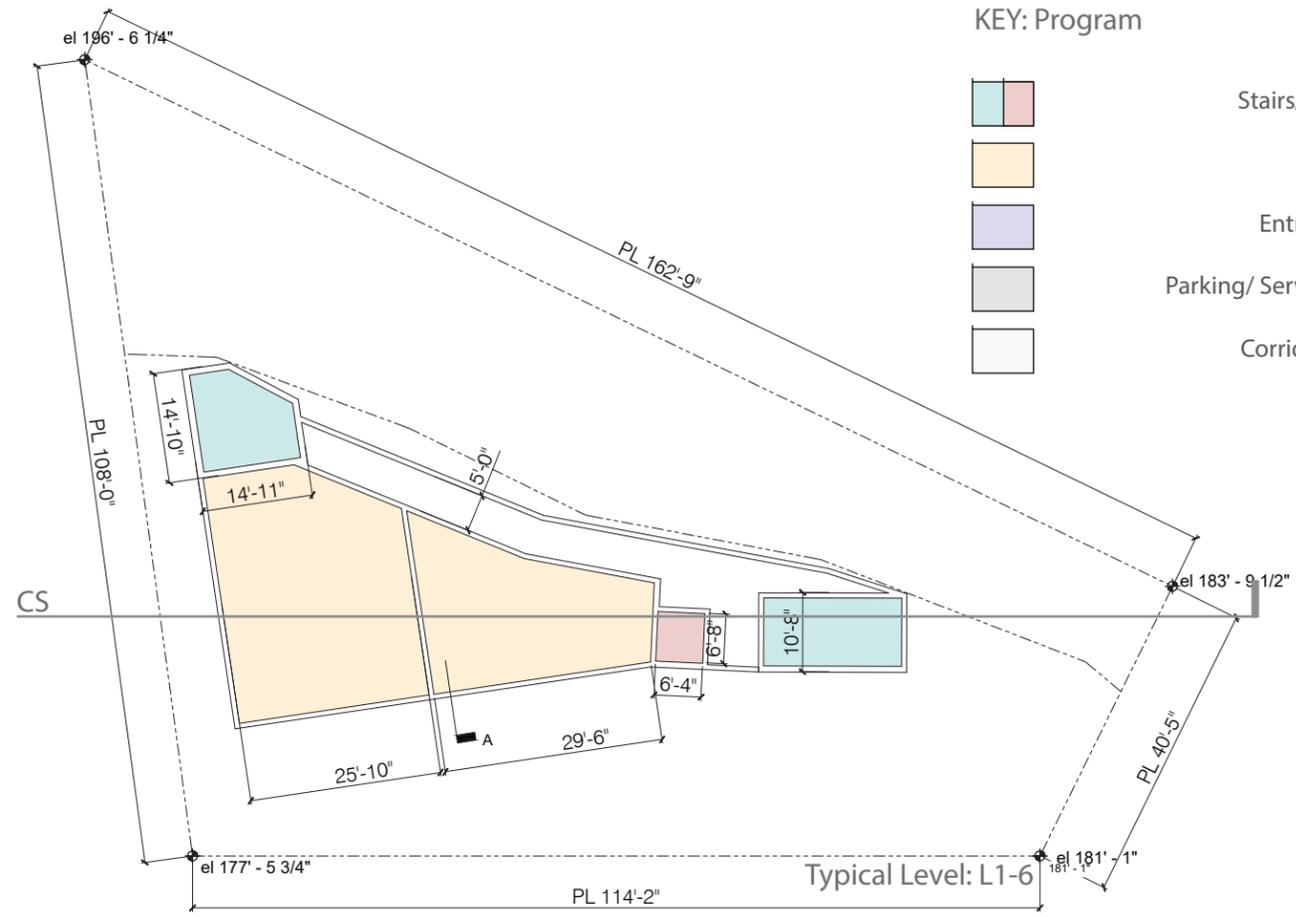
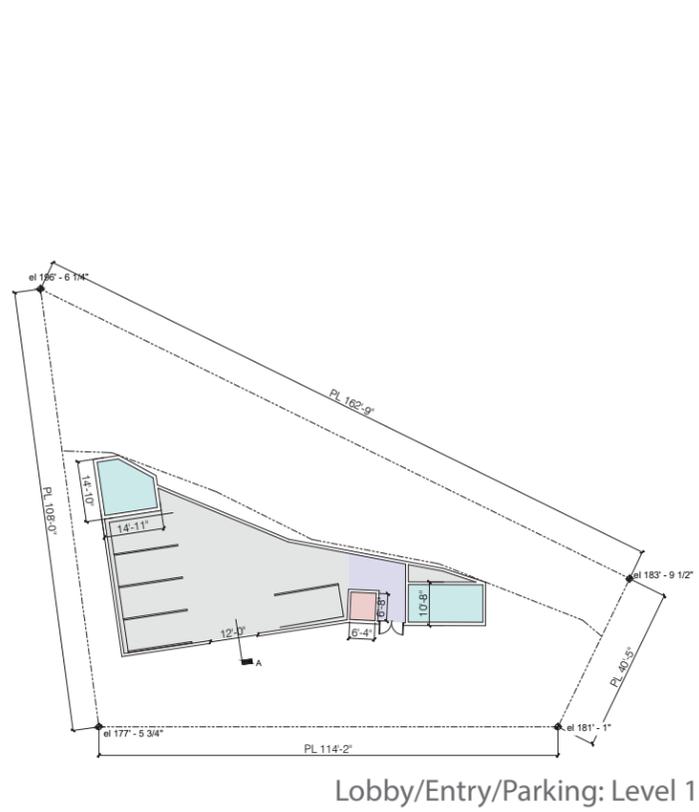
DC-2 Arrangement of mass provides views to East, North, and South.

DC-2 Circulation To enhance vertical characteristic of the facade and provide acoustic isolation for the units

DC-4 Green screens on lower level facades on Aurora Ave. N.

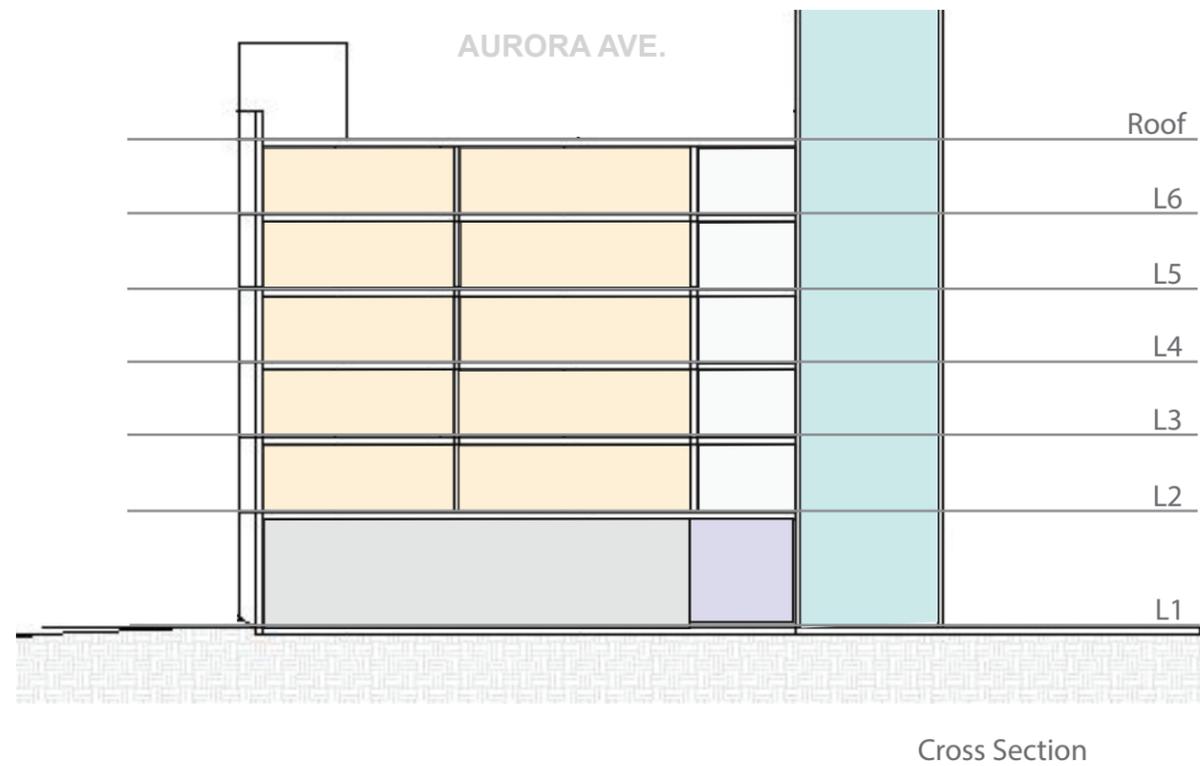
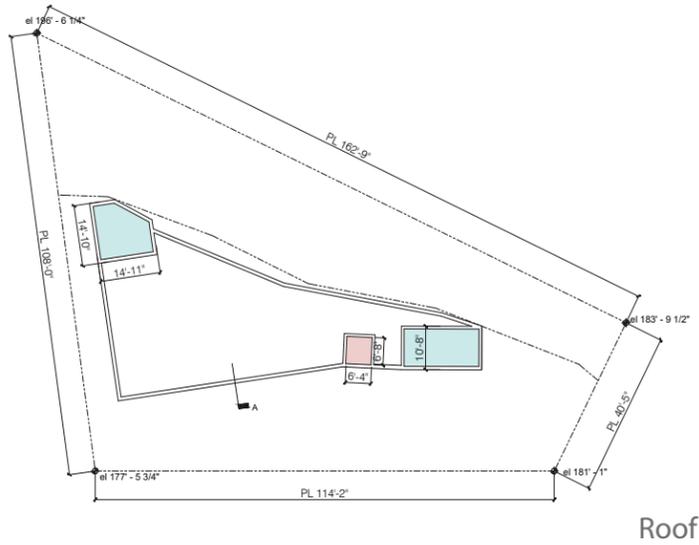
DC-1 No residential units on the ground level due to high traffic activity on Aurora Ave

PL-3 Space for gathering is located in the front of the building. Landscaping serves both as a transition from public to private and provides pedestrian friendly atmosphere

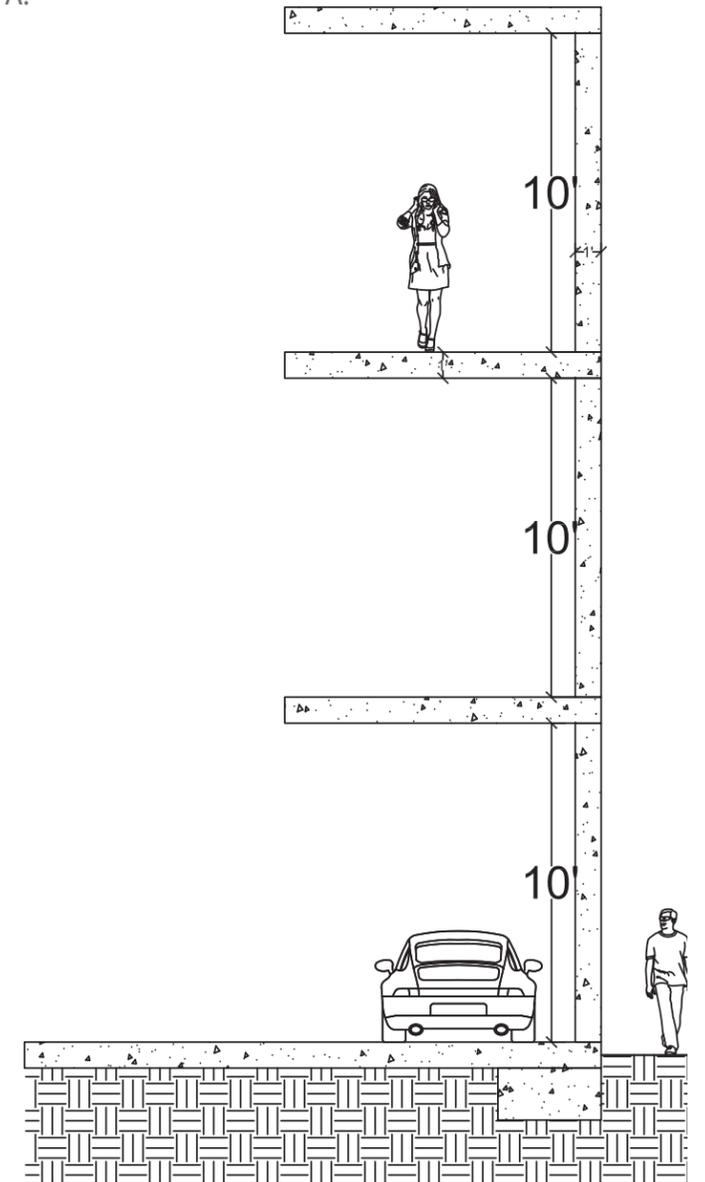


KEY: Program

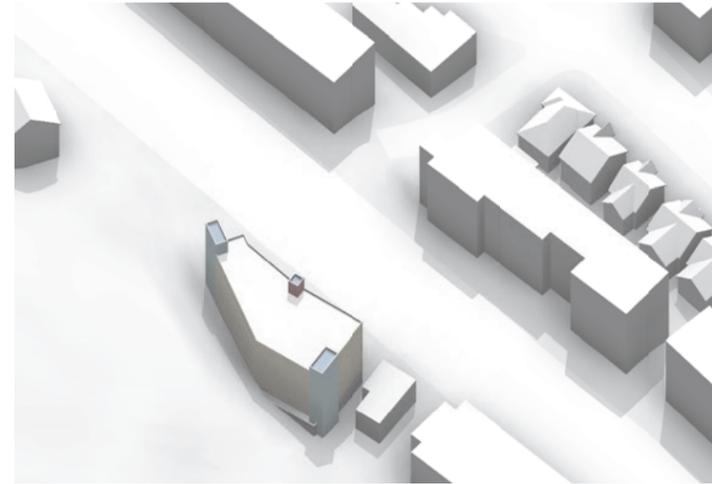
- Stairs/Elevator
- Units
- Entry/Lobby
- Parking/ Service Area
- Corridor/Deck



A:

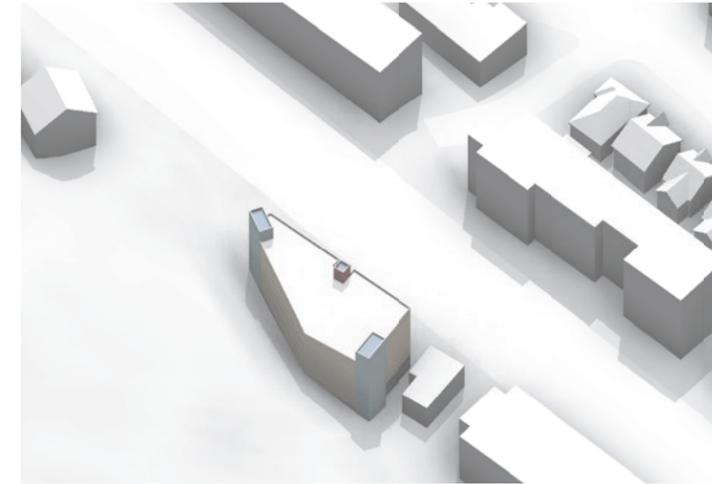


Alternate A



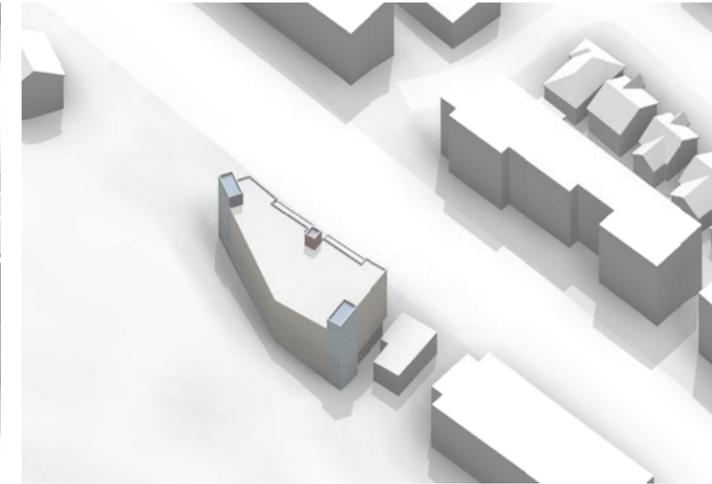
*Aerial View, looking Northeast*

Alternate B



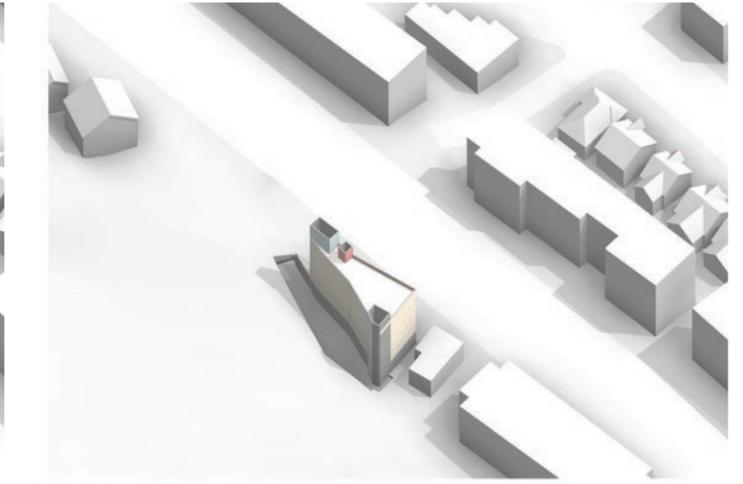
*Aerial View, looking Northeast*

Alternate C (Preferred)

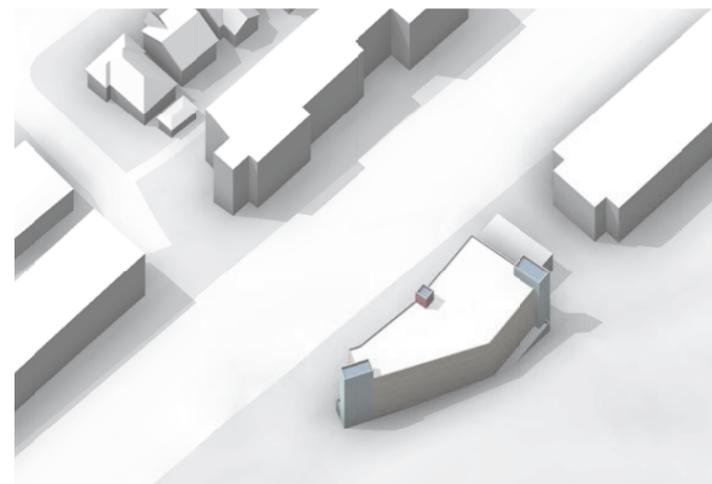


*Aerial View, looking Northeast*

Alternate D



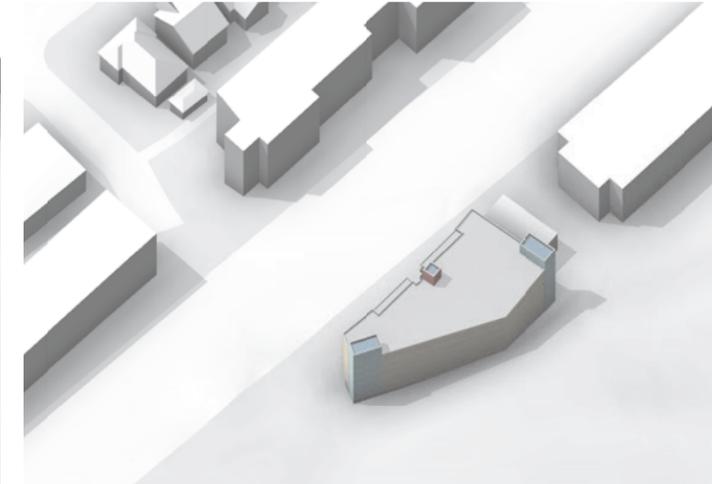
*Aerial View, looking Northeast*



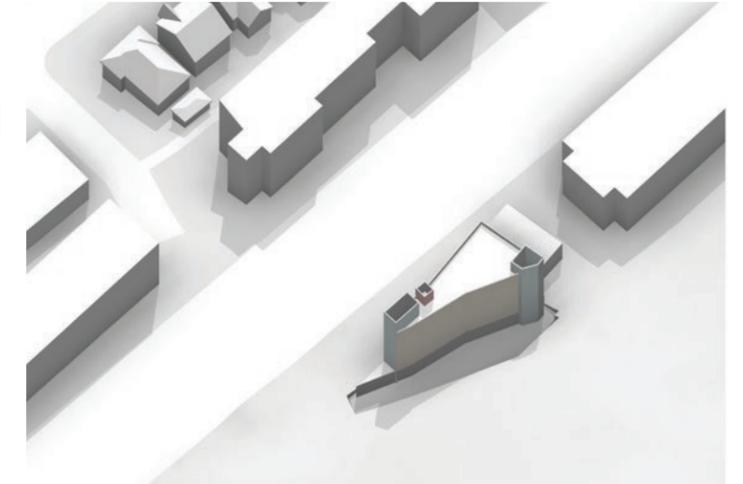
*Aerial View, looking Southeast*



*Aerial View, looking Southeast*



*Aerial View, looking Southeast*



*Aerial View, looking Southeast*

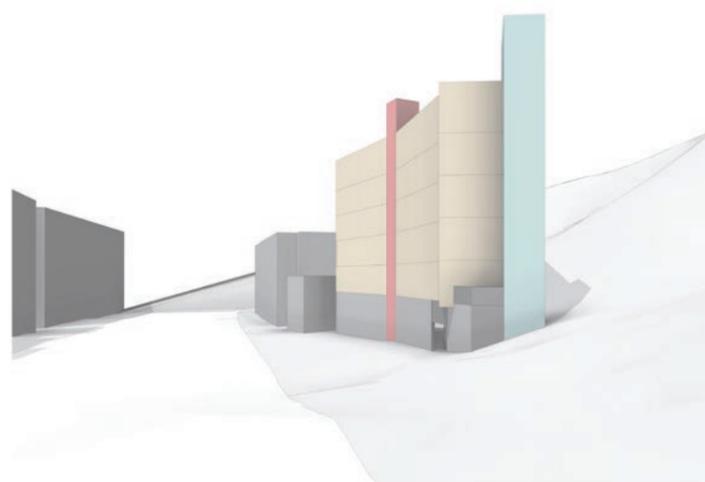
The site is located mid-block running lengthwise from North to South with views partially blocked by neighboring buildings across Aurora Ave. There are views between and around buildings in every direction. All the alternatives have similar views and general massing is similar.

Alternate A

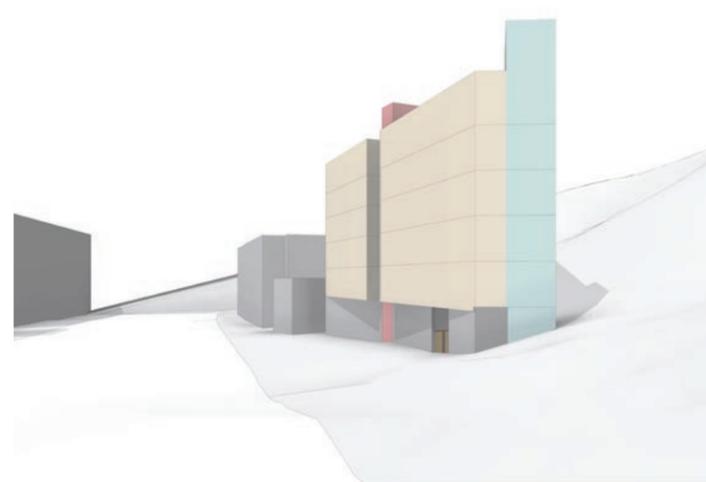
Alternate B

Alternate C (Preferred)

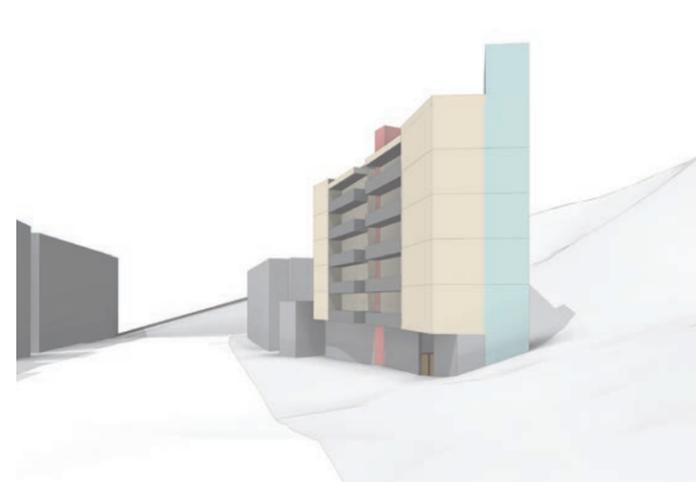
Alternate D



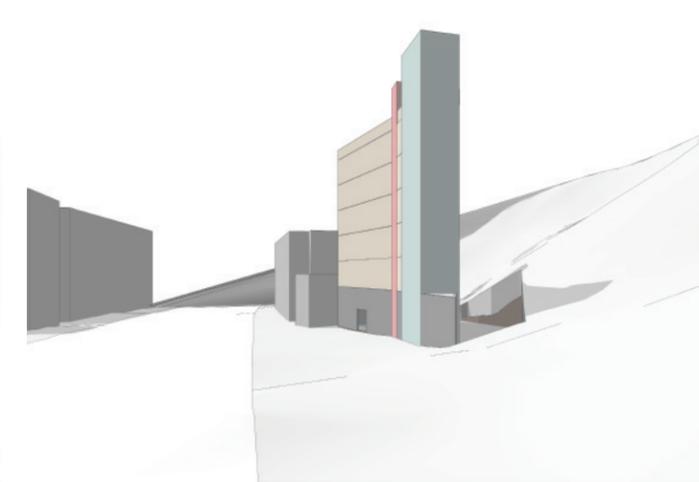
Street View on Aurora Ave N,



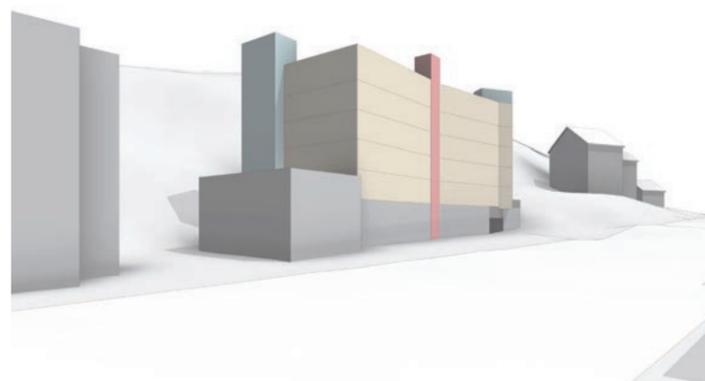
Street View on Aurora Ave N,



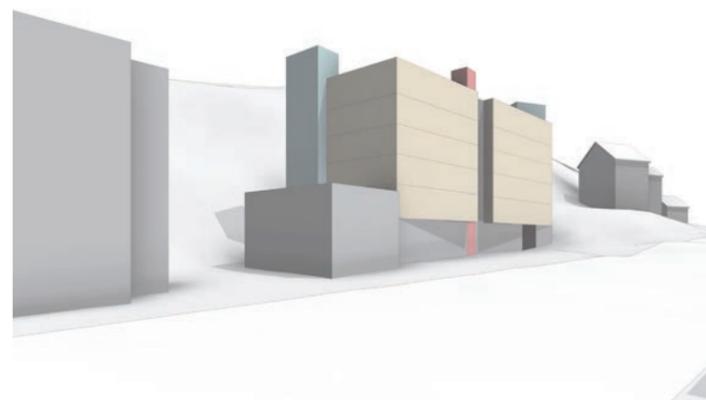
Street View on Aurora Ave N,



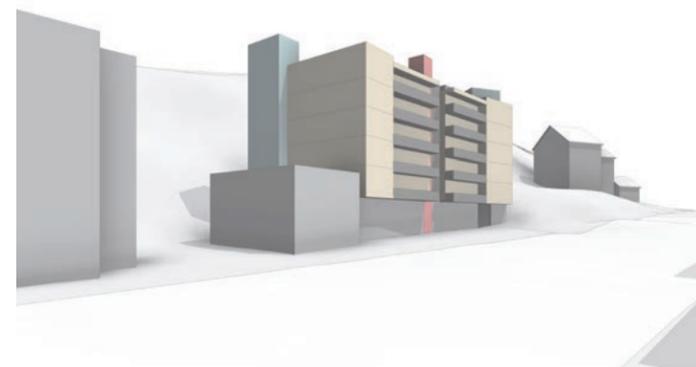
Street View on Aurora Ave N,



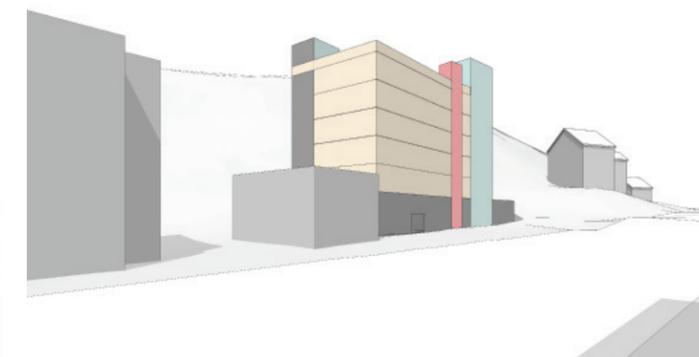
Street View on Aurora Ave N,



Street View on Aurora Ave N,



Street View on Aurora Ave N,



Street View on Aurora Ave N,

The facade is relatively plain. It is set back allowing for the wider space/ drainage easement in front of the building. The garage and pedestrian entrances are accessed from Aurora Ave.

The facade is broken up into two parts with the recess in the middle. Ground level is set back allowing for the wider space and drainage easement in front of the building. The garage and pedestrian entrances are accessed from Aurora Ave.

The facade is broken up into intervals with the balconies and shift of masses. Ground level is set back allowing for the wider space/ drainage easement in front of the building. The garage and pedestrian entrances are accessed from Aurora Ave.

The facade is relatively plain. It is set back allowing for the wider space/ drainage easement in front of the building. The garage and pedestrian entrances are accessed from Aurora Ave.

<u>LAND USE CODE REQUIREMENT</u>	<u>PROPOSAL</u>	<u>JUSTIFICATION</u>
--------------------------------------	-----------------	----------------------

Alternate C

S.M.C. 23.47A.008 Street Level Development Standards

A.2 Blank Facades

- 1 East Facade (Aurora Ave): Allow blank facades at lower levels along Aurora Ave. N.

To deliver design guideline priorities such as PL-3 more privacy and security will be provided with such design solution The blank facade on Aurora will be masked with green screens which enhance the entrance and sense of place.

A.3 Street Level facades within 10' of street lot line

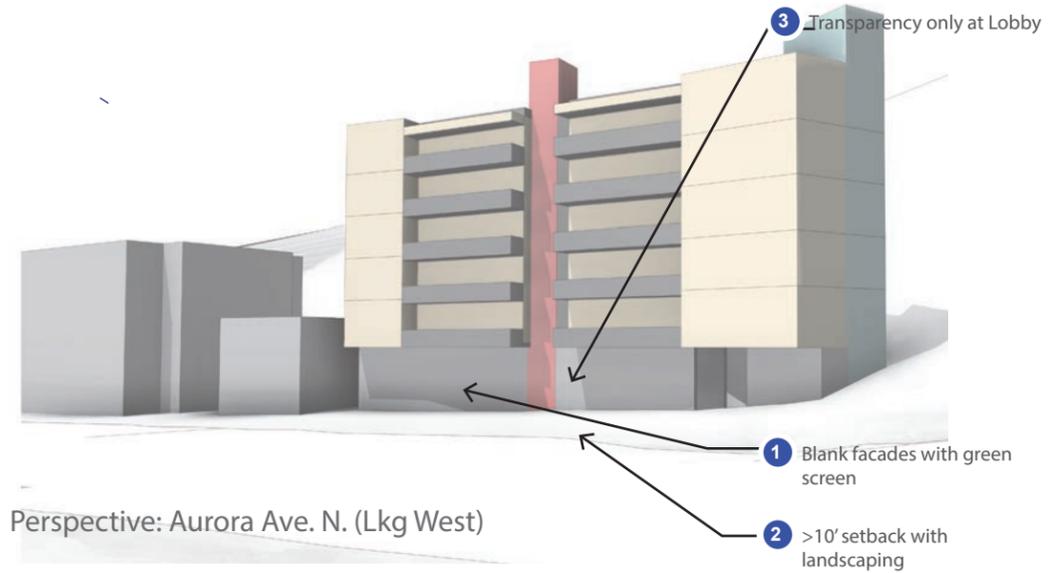
- 2 East Facade (Aurora Ave): Allow greater than 10' ,setback from street lot line at Aurora Ave. N.

Building is setback to required distance from city drain line and easement; allows greater separation from Aurora for units and for parking garage entrance which will provide the opportunity to create enhanced open space and a public area more welcoming to pedestrians and a better transition from Aurora Ave to building entrance.(Refer to guidelines CS-2, PL-1 & PL-2)

B.2 Transparency

- 3 East Facade (Aurora Ave): Allow blank facades at lower levels along Aurora Ave. N.

Blank facades are screened from Aurora Ave. N. by landscaping and green screens to provide more privacy, security and noise isolation; facade transparency serves no purpose in this context.



Parking/Lobby: Levels P1/L1/P2

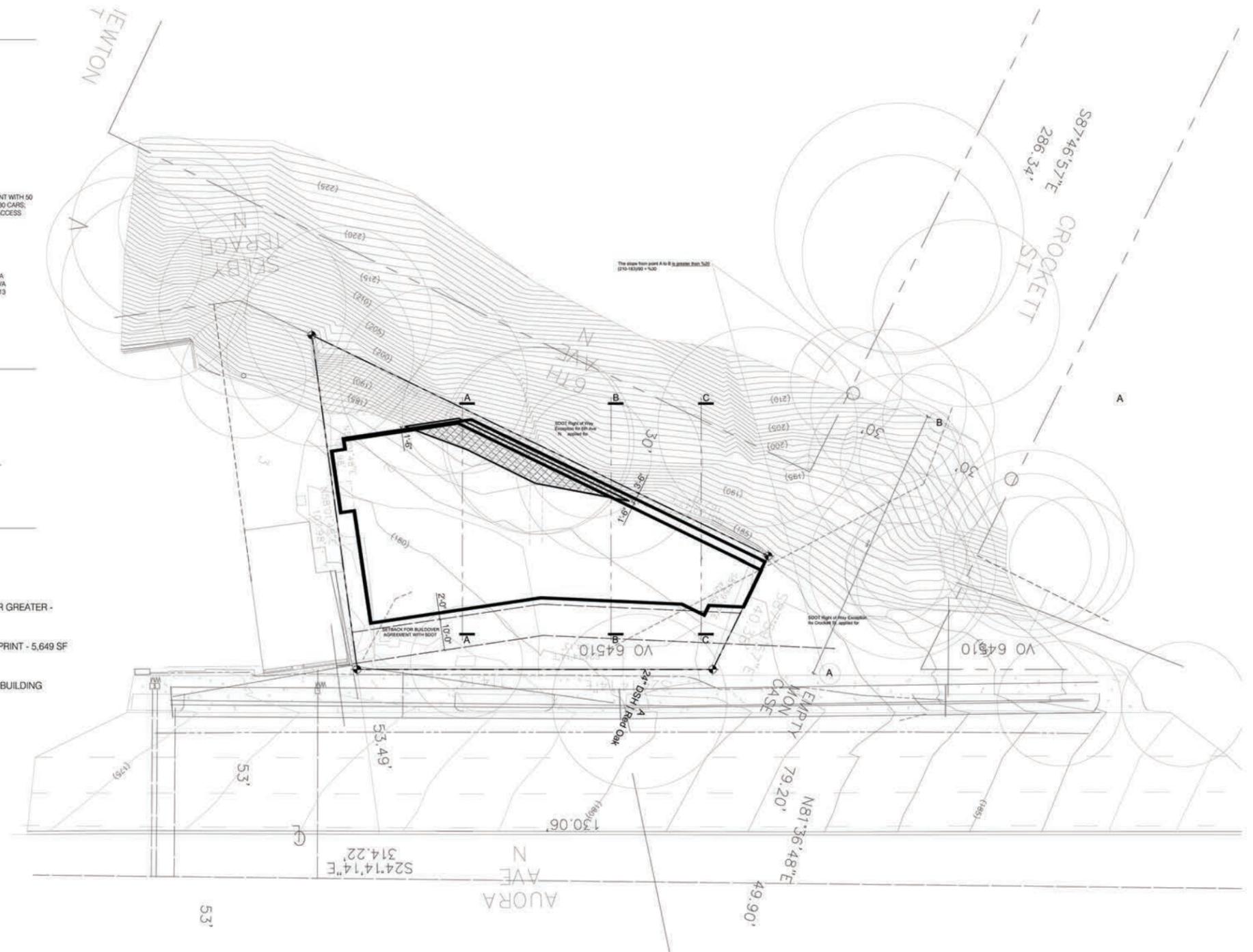
**SITE INFORMATION:**

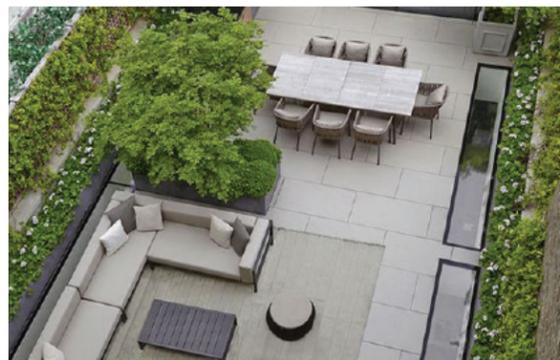
LOCATION: 1945 AURORA AVE N  
SEATTLE, WASHINGTON  
DPD PROJECT #: 3020334  
ZONING: C1-65  
ECA (STEEP SLOPE)  
SITE AREA: 9,392 SQ. FT  
LOT COVERAGE:  
LEGAL DESCRIPTION: SEE A100  
PARCEL #: 9301301390  
PROJECT DESCRIPTION:  
PROPOSAL: NEW CONSTRUCTION OF MULTI-FAMILY APARTMENT WITH 50 DWELLING UNITS, 6 STORIES PLUS BASEMENT, PARKING FOR 30 CARS, LAUNDRY, ME AND STORAGE BELOW GRADE WITH PARKING ACCESS OFF CROCKETT ST.  
PROPOSED OCCUPANCY: PARKING GARAGE S-2  
STORAGE S-1  
RESIDENTIAL R-2  
COMMON: A-3  
TYPE OF CONSTRUCTION: PARKING/Common TYPE IA  
RESIDENTIAL TYPE VA  
SPRINKLERS: NFPA 13  
NO. OF STORES: 1 BSMT + 6 ABOVE GRADE  
NO. OF UNITS: 50 UNITS  
TOTAL BUILDING AREA: 38,000 GSF

**SITE LEGEND**

PROPERTY LINE  
EXISTING CONTOUR LINE 320  
PROPOSED CONTOUR LINE 320  
PROPOSED BUILDING  
BARRIER FREE ACCESS ROUTE  
LANDSCAPED AREA PER LANDSCAPE DWGS

STEEP SLOPE AREAS 40% OR GREATER - 1410 SF (15% OF LOT AREA)  
PROPOSED BUILDING FOOTPRINT - 5,649 SF (60% LOT AREA)  
STEEP SLOPE AREA WITHIN BUILDING FOOTPRINT - 430 SF (30% STEEP SLOPE AREA)





ROOF FURNITURE



ROOF PLANTS



ROOF PAVEMENT



GREEN WALL



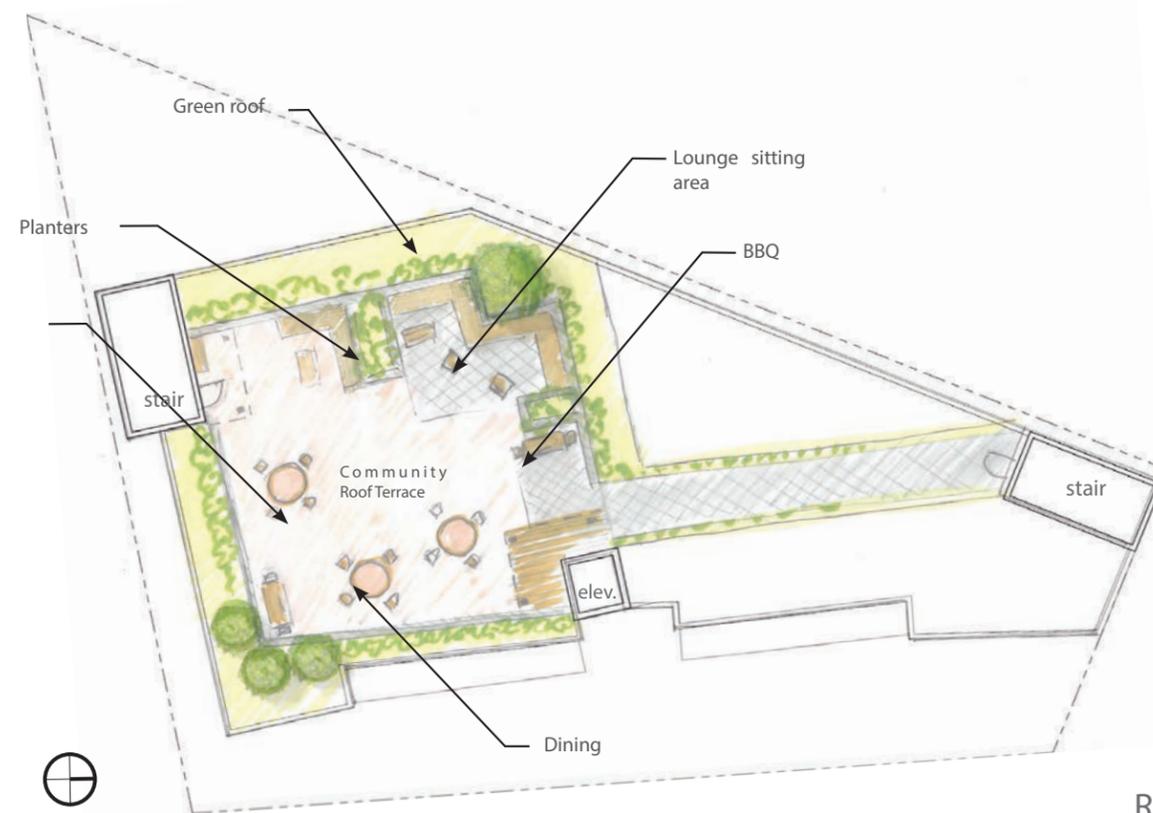
PLANTERS WALLS



GREEN WALL

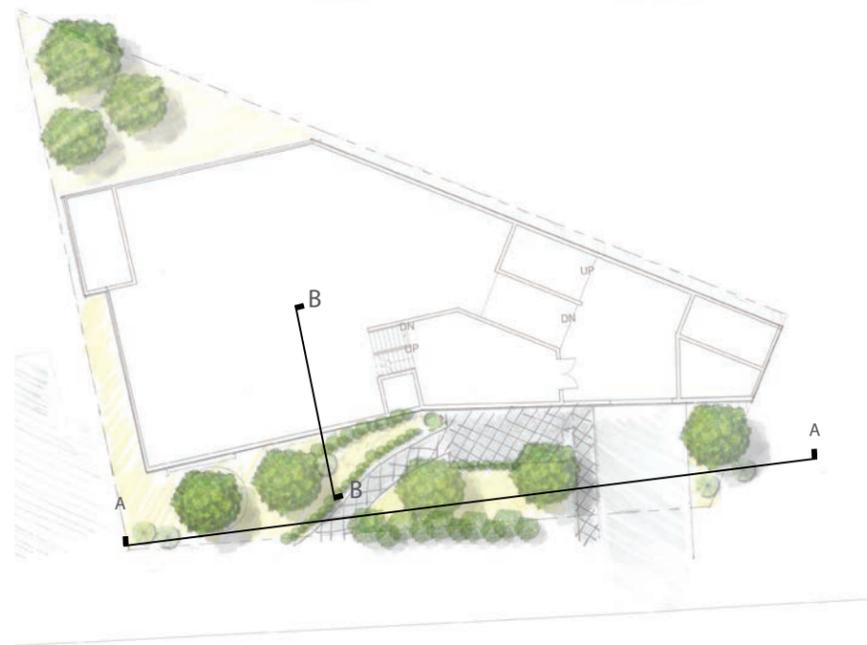


GREEN WALL

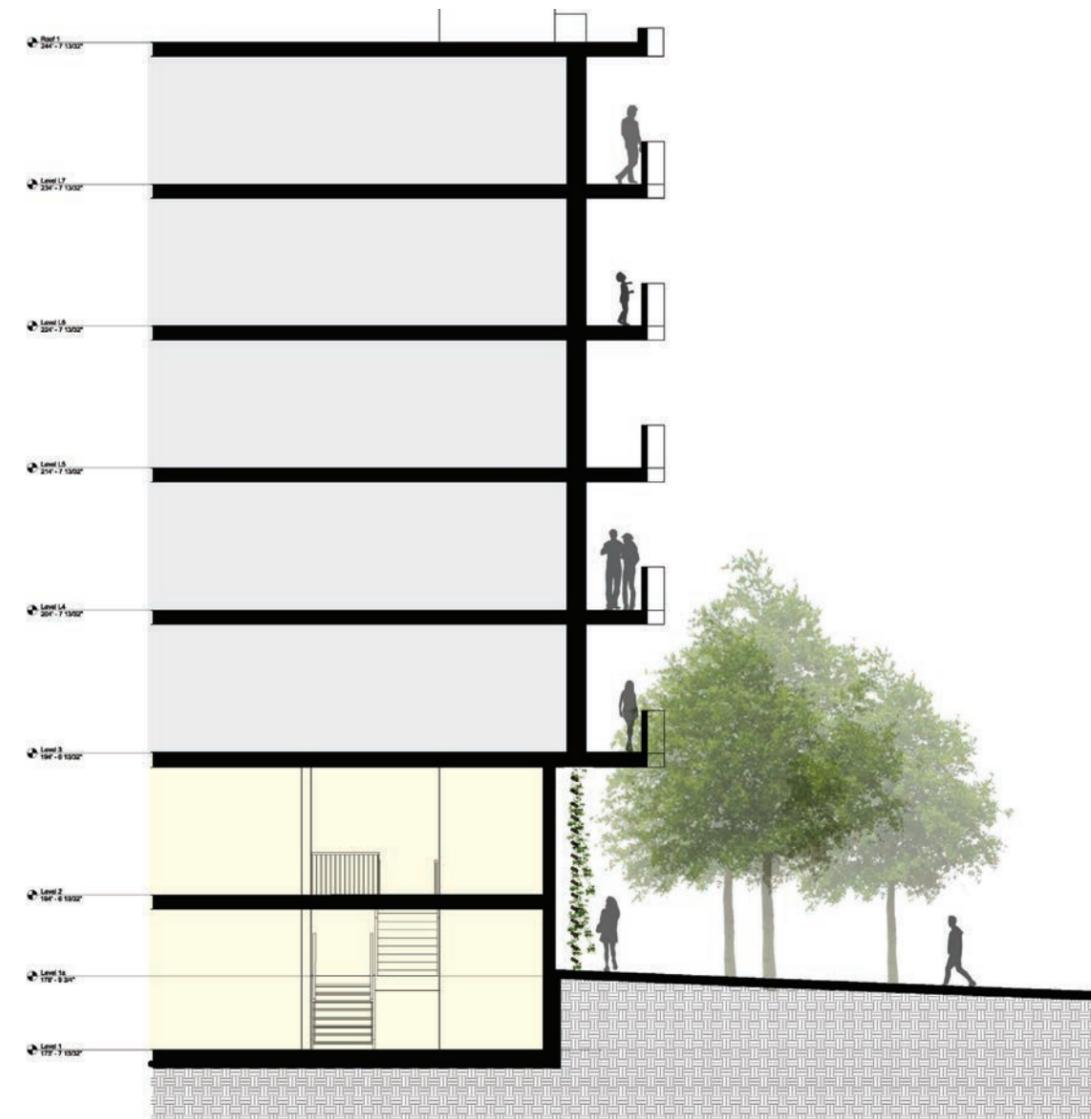


Plan: Landscape Concept

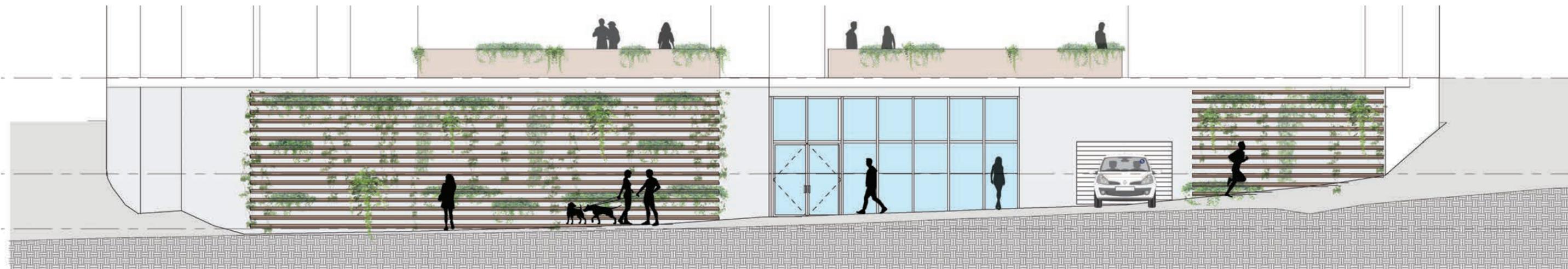




SECTION A-A



SECTION B-B



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PO Box 55162  
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January 25, 2016

Geneva Apartments, LLC  
 3909 51st Ave NE  
 Seattle, WA 98105

**Re:** Arborist Report and Tree Retention Plan  
**Job Site:** 1945 Aurora Ave. N., Seattle, WA

#### **Assignment & Scope of Report**

This report outlines the site inspection that I conducted on December 12, 2015. Included are my findings and tree data collected at the site located at 1945 Aurora Ave N., Seattle, WA. Mr. Cheng-Nan Lin, of Geneva Apartments, LLC, requested these services to acquire information for tree retention standards required by the City of Seattle, Municipal Code Section 25.11 Tree Protection (SMC 25.11), and for project planning.

#### Limits of Assignment

Unless stated otherwise, information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of the inspection and the inspections were limited to visual examination of the subject trees without dissection, excavation, climbing or coring. It must be realized that trees are living organisms and their health and vigor constantly change over time. They are not immune to changes in the site conditions or seasonal variations in the weather. There is no warranty or guarantee expressed or implied that problems or deficiencies of the trees in question may not arise in the future. Additional Assumptions and Limiting Condition can be found in the Appendix A.

#### **Methods**

I conducted my tree inspections and evaluations following the protocol of the International Society of Arboriculture (ISA) for Visual Tree Assessment (VTA) that employs a visual and non-invasive inspection of the overall health and external condition of each tree and site conditions. I also conducted a basic level tree risk assessment, adhering to tree care industry standards, protocols and practices set by the American National Standards Institute (ANSI), and the International Society of Arboriculture (ISA), that employs a 360-degree, ground-based detailed visual and non-invasive inspection of a tree, including tree crown, trunk, trunk flare,

above ground roots and site conditions around the tree in relation to targets. The time frame for tree risk assessment, the period for estimating the likelihood of failure, is 1-5 years. The time frame for risk categorization should not be considered a guarantee period for the risk assessment.

All significant trees, (a tree that is 6.0" in diameter at standard height (DSH), 4.5 feet above grade, pursuant to SMC 25.11, on the site were inspected and assessed for species, size, health and structural condition, critical root zone, and drip line. All significant trees with the potential to be retained and protected were thoroughly inspected and evaluated for their suitability to tolerate the expected construction impacts and for their overall worthiness for long term retention. Collected tree data is provided in Figure 1: Table of Trees.

Trees on adjacent properties (offsite trees) that could potentially be impacted by the project activities or impact the project activities are also listed in the Table of Trees, by letters, and shown on Figure 2: Site Map.

Survey and Site Plan drawings for the project were provided by the client to assist with my assignment.

#### **Observations and Discussion**

##### Site

The site is an undeveloped commercial lot approximately 9,391 square feet in size, on flat terrain. Aurora Ave N borders the east side of the lot and an Environmentally Critical Area (ECA) borders the west side of the lot.

The ECA is steep sloped terrain and covered with invasive plant species English ivy/*Hedera hibernica* and Himalayan blackberry/*Rubus bifrons*. English ivy is growing up the trees and many trees are engulfed by ivy, well into the live crown. There are a few trees that have succumbed to the ivy and have toppled over under its weight.

##### Subject trees

There are three (3) significant trees on the site. Two (2) of the trees are proposed for removal because they are in the construction zone or unsuitable to survive the proposed construction activities. There is one (1) tree which qualifies as an Exceptional tree, pursuant to SMC 25.11 definition, and it will be retained.

There are two (2) offsite trees located along the west side common boundary that are recommend for removal because they are in poor overall health and condition and are unsuitable to tolerate the proposed construction activities and cannot be adequately protected.

There is a 24" DSH Northern red oak/ *Quercus rubra* located in the planting strip along Aurora Ave N, on the east side of the site, that will be retained.

Figure 1: Table of Trees

Tree No.	Species Common&(Scientific)	DSH (in)	Drip (ft)	CRZ (ft)	Cond.	Comments	Remove/Retain
1	Red alder/ <i>Alnus rubra</i>	12"	14'	12'	Good	Unsuitable to retain.	Remove
2	Bigleaf maple( <i>Acer macrophyllum</i> )	36"	18'	36'	Good	Exceptional tree status.	Retain
3	Bigleaf maple( <i>Acer macrophyllum</i> )	18,19	12'	19'	Poor	Defects & decay; unsuitable to retain.	Remove
A	Northern red oak/ <i>Quercus rubra</i>	24"	21'	24'	Good	Offsite; Exceptional tree status.	Retain
B	Bigleaf maple( <i>Acer macrophyllum</i> )	19,20 20	18'	20'	Good	Offsite; Exceptional tree status.	Retain
C	Bigleaf maple( <i>Acer macrophyllum</i> )	30"	12'	30'	Poor	Offsite; Defects & decay; unsuitable to retain.	Remove
D	Bigleaf maple( <i>Acer macrophyllum</i> )	15,11	12'	15'	Fair	Offsite; Defects & unsuitable to retain.	Remove
E	Bigleaf maple( <i>Acer macrophyllum</i> )	24"	14'	24'	Fair	Offsite; Exceptional tree status.	Retain

**Species:** common and scientific names; some trees identified by genera only. **DSH:** means diameter at standard high in inches, measured at 4.5 feet above average ground level. **Dripline:** the radius from the trunk of the tree to furthest branch tip. **CRZ** means critical root zone. CRZ equals one -foot radius from the base of the tree for each inch in DSH. Project tree protection fencing and/or silt fencing is ideally set at least at the CRZ, or up to twice the radial CRZ distance from the tree. **Condition:** means the general overall health and condition of the tree.

On site Tree 1 and Tree 3 are required to be removed to allow the project to be completed as planned. On site Tree 2 qualifies for Exceptional tree status and it has good potential to be retained. The tree is in good overall health and condition and it is likely to tolerate the impacts from construction activities. To assure that impacts are kept to a minimum the recommended tree protection measures described in [Appendix B: Tree Protection Specifications](#) should be followed.

Offsite Tree C and Tree D are both located less than 5 feet from the common boundary on the west side of the lot. The proposed grading activity for the project, along the common boundary, is very likely to occur within the inner root zone of both trees. Tree C has positive indicators, along the butt section of the trunk, of *Kretzschmaria deusta*, a soft rot wood decaying fungus. Decay occurs as a centralized column in roots and trunks, making tree failure more likely. The crown is very asymmetrical and has poor weight distribution, making tree failure more likely. The crown also overextends into the project site. The overall health and condition of the tree is poor. Tree D has codominate trunks and an asymmetrical crown with poor weight distribution, making tree failure more likely. There is some dead wood in the crown. The overall health and condition of the tree is fair.

Both Tree C and D cannot be adequately protected and are unsuitable to tolerate the proposed construction activities and remain as safe and viable trees. Both trees should be removed.

Offsite Tree A, located in the planting strip along Aurora Ave N, qualifies for Exceptional tree status and it has good potential to be retained. The tree has live crown and critical root zone that extends into the subject property that could potentially be impacted by construction activities. The tree is in good overall health and condition and it is likely to tolerate the impacts from construction activities.

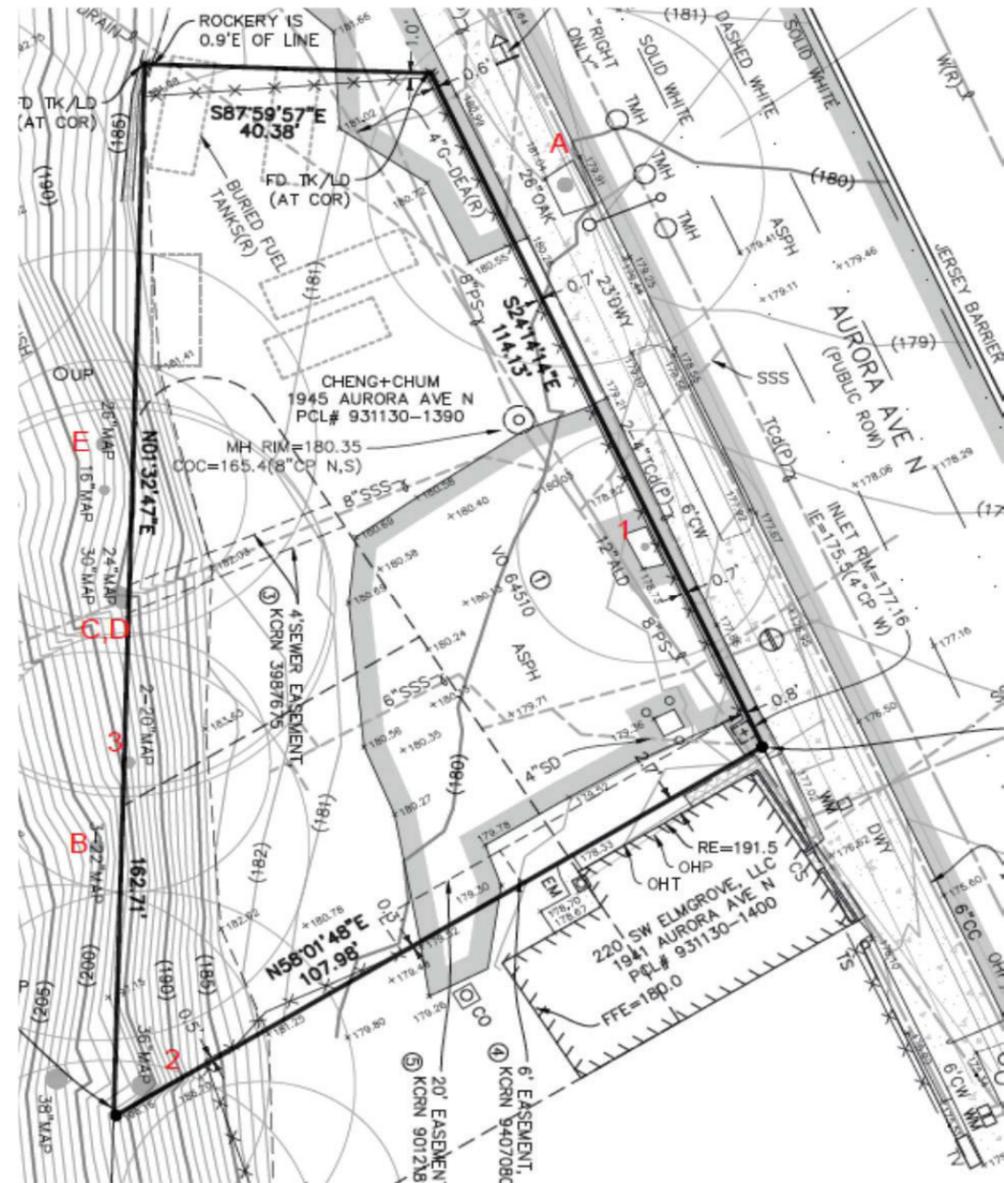
Offsite Tree B is located along the common boundary on the west side of the lot. The tree qualifies for Exceptional tree status and it has the potential to be retained. The tree has live crown and critical root zone that extends into the subject property that could potentially be impacted by construction activities. The tree is in good overall health and condition and it is likely to tolerate the impacts from construction activities.

Offsite Tree E is located along the common boundary on the west side of the lot. The tree qualifies for Exceptional tree status and it has the potential to be retained. The tree has live crown and critical root zone that extends into the subject property that could potentially be impacted by construction activities. The tree is in fair overall health and condition and it is likely to tolerate the impacts from construction activities.

Grading activity immediate to offsite trees should be limited as much as feasible. Disturbances to offsite trees can be avoided or minimized provided that the recommended tree protection measures described in [Appendix B: Tree Protection Specifications](#) are followed.

**Site Map**

Figure 2: Site Map and Tree Locations



**On site trees:**  
 To be removed- Trees 1 and 3.  
 To be retained - Tree 2.

**Offsite trees:**  
 To be removed – Trees C & D  
 Protect – Trees A, B and E

**Conclusions:**

The four (4) trees proposed or recommended for removal will allow the proposed project to go forward, safely, as proposed. The trees that will be retained provide economic and environmental benefits that are an asset to the owner and to the community as a whole and are worthy of the energy required preserving them.

The report and conclusions expressed herein represent the opinion of Michael Woodbury d/b/a M. Woodbury Consulting Arborist. Please contact me should you have questions regarding this report.

Respectfully submitted,  
*Michael A. Woodbury*

Michael A. Woodbury, Consulting Arborist  
 ISA Certified Arborist PN-6545A  
 ISA Tree Risk Assessment Qualified

**Appendix A:** Assumptions & Limiting Conditions

1. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of the information provided by others.
2. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for services.
3. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without prior express written consent of the Consultant.
4. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event or upon any finding to be reported.
5. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by the Consultant as to the sufficiency or accuracy of the information.
6. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring. Consultant makes no warranty or guarantee, express or implied that the problems or deficiencies of the plans or property in question may not arise in the future.
7. Loss or alteration of any part of this Agreement invalidates the entire report.

**Appendix B:** Tree Protection Specifications

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and will possibly die. With proper preparation, often costing little, or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

1. This specification must be followed for all trees that are in close proximity to any clearing and grading limits.
2. Educate all workers on site about tree protection techniques and requirements during preconstruction meetings and by sharing and posting this Tree Protection Specification.
3. After the site has been surveyed and clearing and grading stakes are in place, the project arborist should visit the site to determine the actual placement of tree protection measures based on the potential impact to tree root systems. Final adjustment of clearing limits by the arborist will be made on site prior to construction.
4. Tree Protection Zone (TPZ) fencing or other barriers shall be installed along all clearing limits to protect the Critical Root Zones (CRZ) of trees that are to be preserved. Optimal CRZ areas should be the greater of the drip line or calculated at 1-foot radius for every 1-inch of tree diameter. TPZ fencing shall be a minimum of a 4-foot tall orange plastic fencing anchored with steel stakes or a 6 foot tall chain link fence, depending on the project needs. Alternative barriers may be approved with consent of the project arborist. One entry point into the TPZ to gain access to the tree shall be provided for all trees, especially those surrounded by a chain link fence. Damaged barriers shall be re-established or replaced.
5. The project arborist may require chain link fencing or plywood boxing around trees in certain high traffic areas. The arborist will meet on site with the contractor to determine the specific types of fencing and placement, and the specific clearing instructions for areas near preserved trees. Adjustment of the initial TPZ lay out may be required as construction progresses and should be approved by the project arborist.
6. Post appropriate signage to the fencing to help convey the importance of the CRZ to workers.
7. TPZ fencing shall not be moved without authorization from the project arborist or the site supervisor. All fencing is to be left in place until the completion of the project. Tree protection signage shall be attached to fencing only.
8. A 4 to 6-inch deep layer of coarse arborist woodchips or hog fuel mulch shall be layered over the top of the soil surface. The mulch shall be kept 12-inches away from the base of any tree. Alternative mulch may be used with the prior approval of the project arborist.

9. Work required for removal of unwanted vegetation within the CRZ areas will be hand work only. NO HEAVY EQUIPMENT SHALL BE USED IN THE TPZ.

10. Within the TPZ areas, no parking, materials storage, dumping, or burning is allowed.

11. Do not attach anything to trees using nails, screws, and/or spikes.

12. Any trees adjacent to high traffic areas or building envelopes shall be pruned to attain proper safety and clearance prior to the construction. The project arborist will provide a recommendation using American National Standards Institute ANSI 4300 Standard Practices for Pruning. Use of an International Society of Arboriculture Certified Arborist to perform the recommended work is strongly recommended.

13. When removing trees outside of the TPZ determined to be unacceptable for retention, use methods such as directional felling to avoid damage to trees and other valuable vegetation that is being retained. Small trees and other native vegetation in these areas should be carefully preserved.

14. Tree stumps that are within a TPZ or immediately adjacent to the CRZ of a preserved tree or other vegetation shall be removed by grinding.

15. Where the project arborist has determined that roots of a preserved tree may be encountered during excavation or grading, a Certified Arborist shall be on site to supervise any root pruning and to assess the potential impact of such pruning.

16. Excavation equipment shall have flat front buckets to be used when lowering the grade that may contact roots of a preserved tree.

17. Excavation should occur at perpendicular angles that will reduce the potential to tear and break roots further back towards the tree.

18. Any root greater than 1-inches in diameter that is encountered shall be carefully cut with a sharp tool and not torn with a backhoe. Avoid, when feasible, cutting any root greater than 4 inches in diameter. Roots cut shall be immediately covered with soil or mulch and kept moist. When roots must be exposed around concrete forms before back-filling can occur, cover the roots with wet burlap and a white plastic sheeting.

19. Where access for machinery or any vehicle is required within the CRZ or TPZ of any preserved tree, the soil should be protected from compaction. Acceptable methods include an 18 inch deep layer of wood chips or hog fuel, 1 inch thick plywood, Alturna Mats, or steel sheets be placed over the soil surface.

20. Do not trench for utilities installation or repair, or for irrigation system installation within the TPZ without consent of the project arborist. Alter routes of underground infrastructure or use alternate methods such as pipe boring, air excavation, or HVAC to work around roots.

21. Landscaping specified within the TPZ areas shall be designed to limit disturbance of surface soils and preserved vegetation. No root pruning is permitted. New plants added in these areas should be of the smallest size possible to minimize disturbance.

22. Do not change grade by cutting or filling within the TPZ without consent of the project arborist.

23. Where backfill is required within a CRZ or TPZ area, the project arborist shall determine the amount and type of fill material to be used.

24. Supplemental irrigation for all protected trees is required during the summer months or prolonged periods of dry weather. In the absence of adequate rainfall, apply at least 1 inch of water per week by deep soaking methods. THIS IS MOST IMPORTANT FOR SUCESSFUL TREE RETENTTON.

25. Fertilize trees as necessary with phosphorus, potassium, calcium, magnesium, and other macro- and micro-nutrients as indicated by a soil nutrient analysis test, but wait at least 1- year to apply any nitrogen. Nitrogen shall only be applied according to the American National Standards Institute 4300 (part 2) Standard Practices for Fertilization or the International Society of Arboriculture's Best Management Practice for Fertilization.

26. Monitoring of all trees, especially those exposed to new environmental conditions such as exposure to wind, sun, or deep shade, should be monitored during construction and annually for several seasons following construction to check for adverse changes to the tree health or stability.

#### Additional Tree Protection Measures:

- During excavation roots over 1 inch in diameter can be cleanly cut back to the edge of disturbance using loppers. Roots over 2 inches in diameter shall be cleanly cut with a saws all saw.
- If pruning is needed for clearance, it should be done by a certified arborist or under his/her supervision. The construction crew should not perform the pruning task.
- Other appropriate tree protection measures pursuant to SMC 25.11.