

ENGINE



EVER READY



City of Seattle Neighborhood Fire Station 9

Design Commission Review - Concept Design October 1, 2009

MITHŪN

Fire Station 9

3829 Linden Avenue N

Located along Linden Ave N. between N. 38th Street and 39th Street, in Fremont

Station type - Neighborhood I (the smallest of all stations)

Replacement station - The existing station is in poor condition due to its age. Replacement would be more cost-effective than remodel.

Station 9 will be rebuilt on the site of existing station and expanded from 5,700 sf to approx. 8,300 sf.

Station 9 will continue to provide compressed air fill service for the North end. It will also continue to house one engine company.

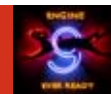
An interim facility will be provided in different location during construction.

Sustainability goal - LEED silver or higher.

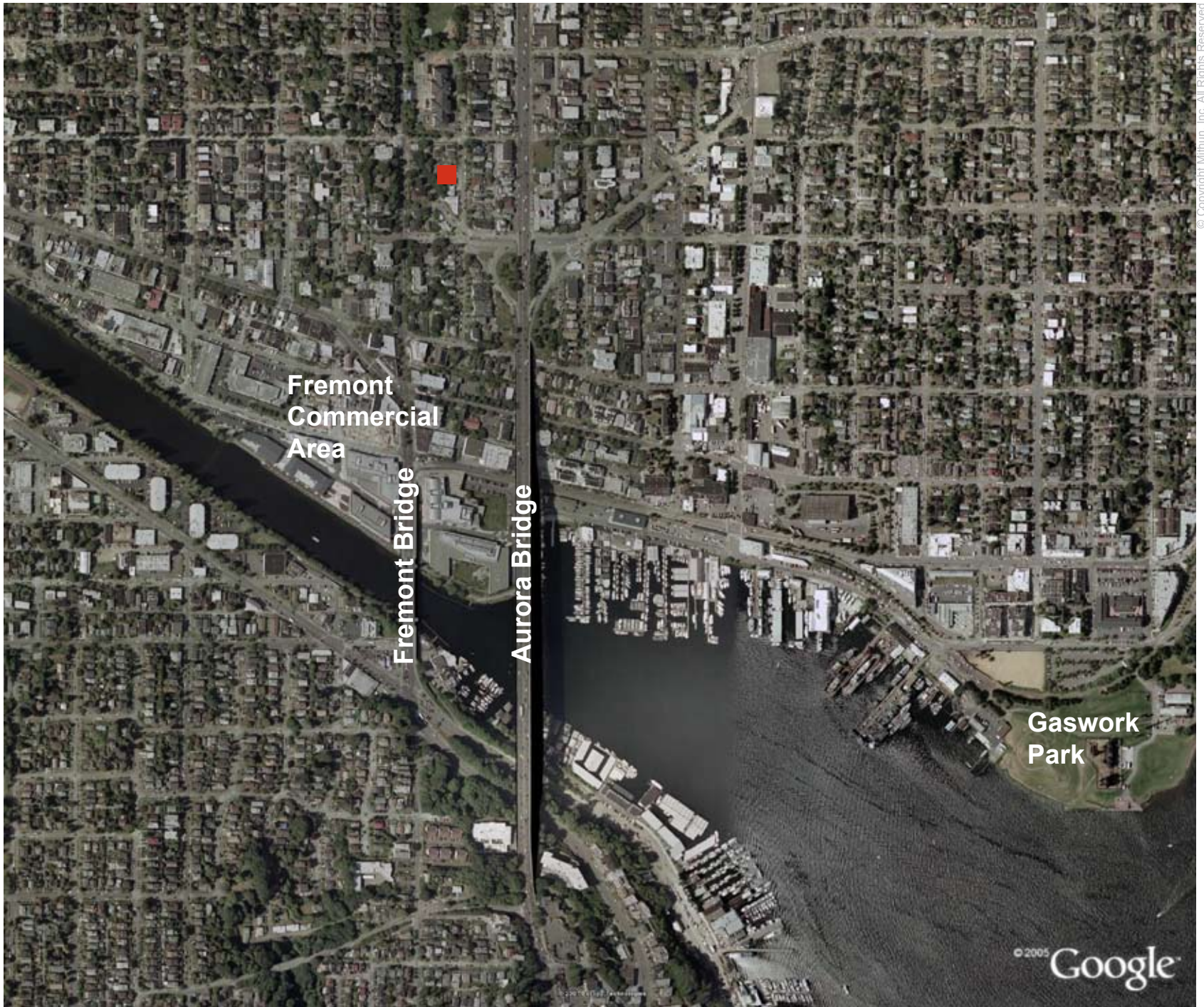
Artist, Peter Reiquam is selected to join the team at the beginning of schematic design.

Currently, just finished pre-design.





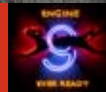


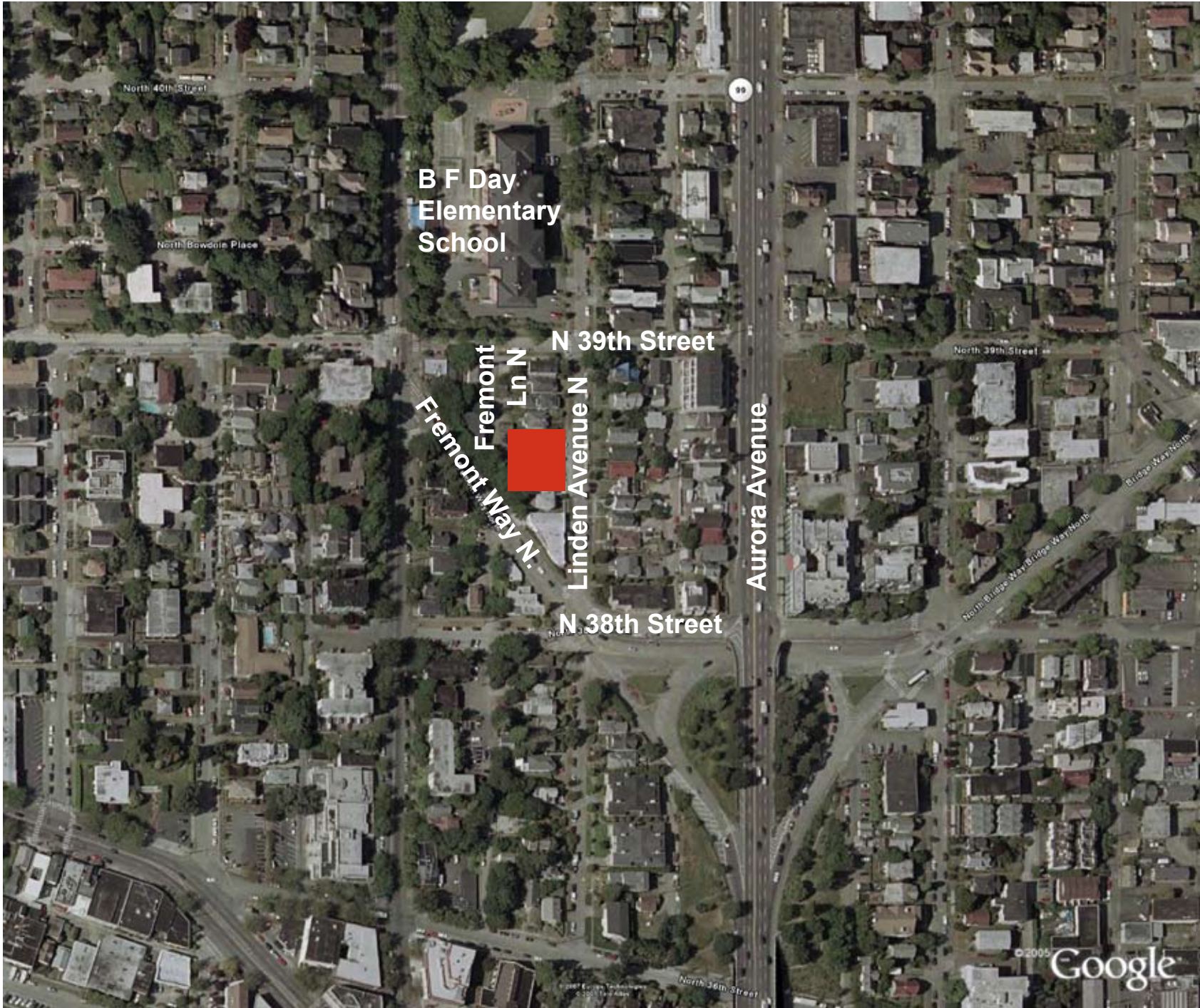


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North

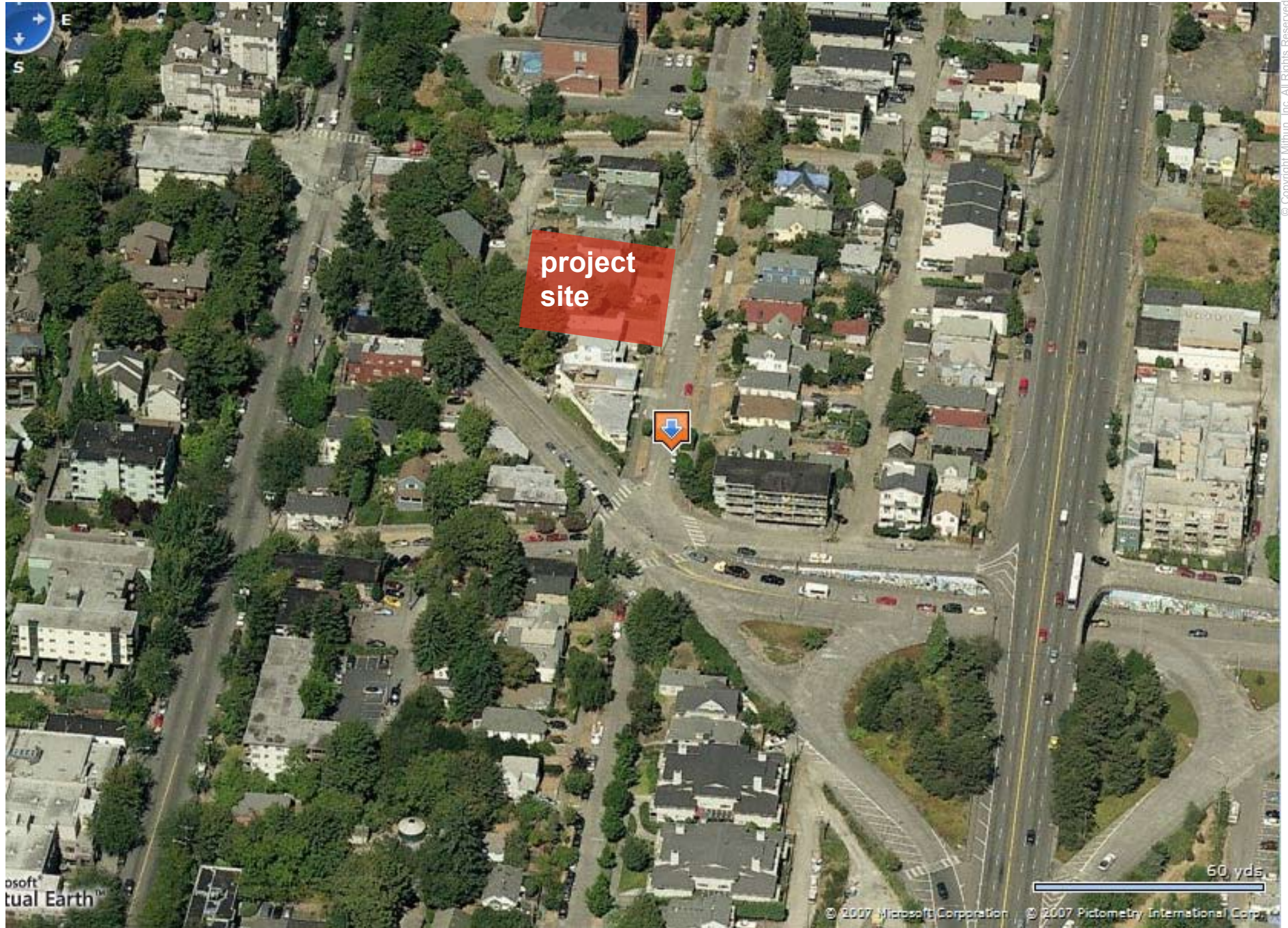




Site Location

Site Analysis





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Surrounded by L1 zone, lowrise 1, residential, multi-family. Maximum structure height, 25'. Adjacent structures almost on lot line.



looking west to Fire Station 9 site & adjacent buildings



art at existing station site





looking east to buildings across street from station site



city view to Southeast



Fremont Lane N at back of site



steep slope with existing trees at back of site

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site access
 pedestrian connection
 site topo
 steep slope
 existing trees
 adjacent structures
 view
 noise
 solar
 wind

existing staff parking
 & staff entry access
 off Fremont Lane N.

existing fire truck
 access off Linden
 Avenue N.

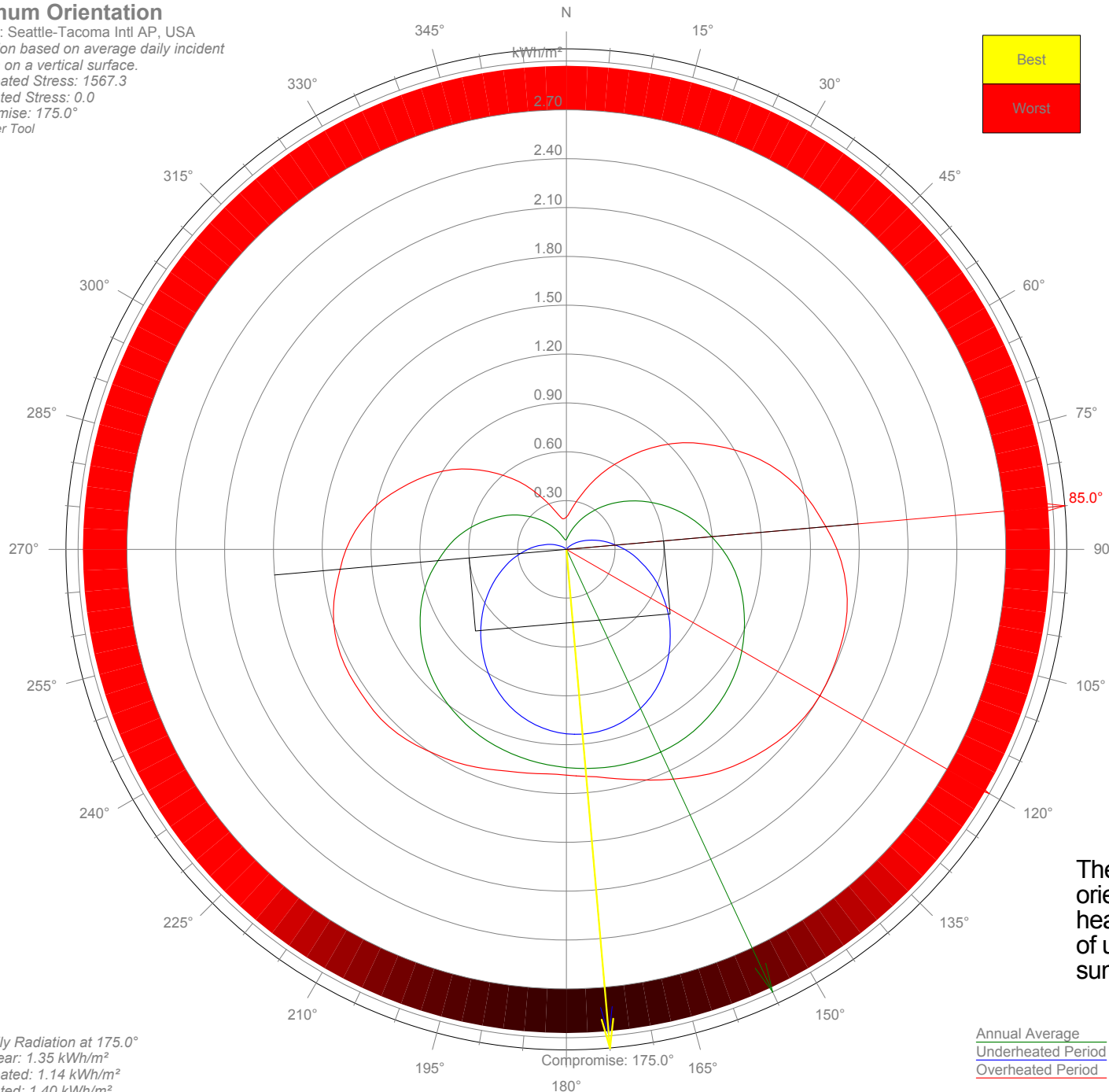
steep slope 15'
 in vertical rise

controlled light



Optimum Orientation

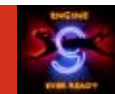
Location: Seattle-Tacoma Intl AP, USA
 Orientation based on average daily incident radiation on a vertical surface.
 Underheated Stress: 1567.3
 Overheated Stress: 0.0
 Compromise: 175.0°
 © Weather Tool



Avg. Daily Radiation at 175.0°
 Entire Year: 1.35 kWh/m²
 Underheated: 1.14 kWh/m²
 Overheated: 1.40 kWh/m²

The most favourable range of orientations for passive solar heating, considering the effects of unwanted solar gains in summer.

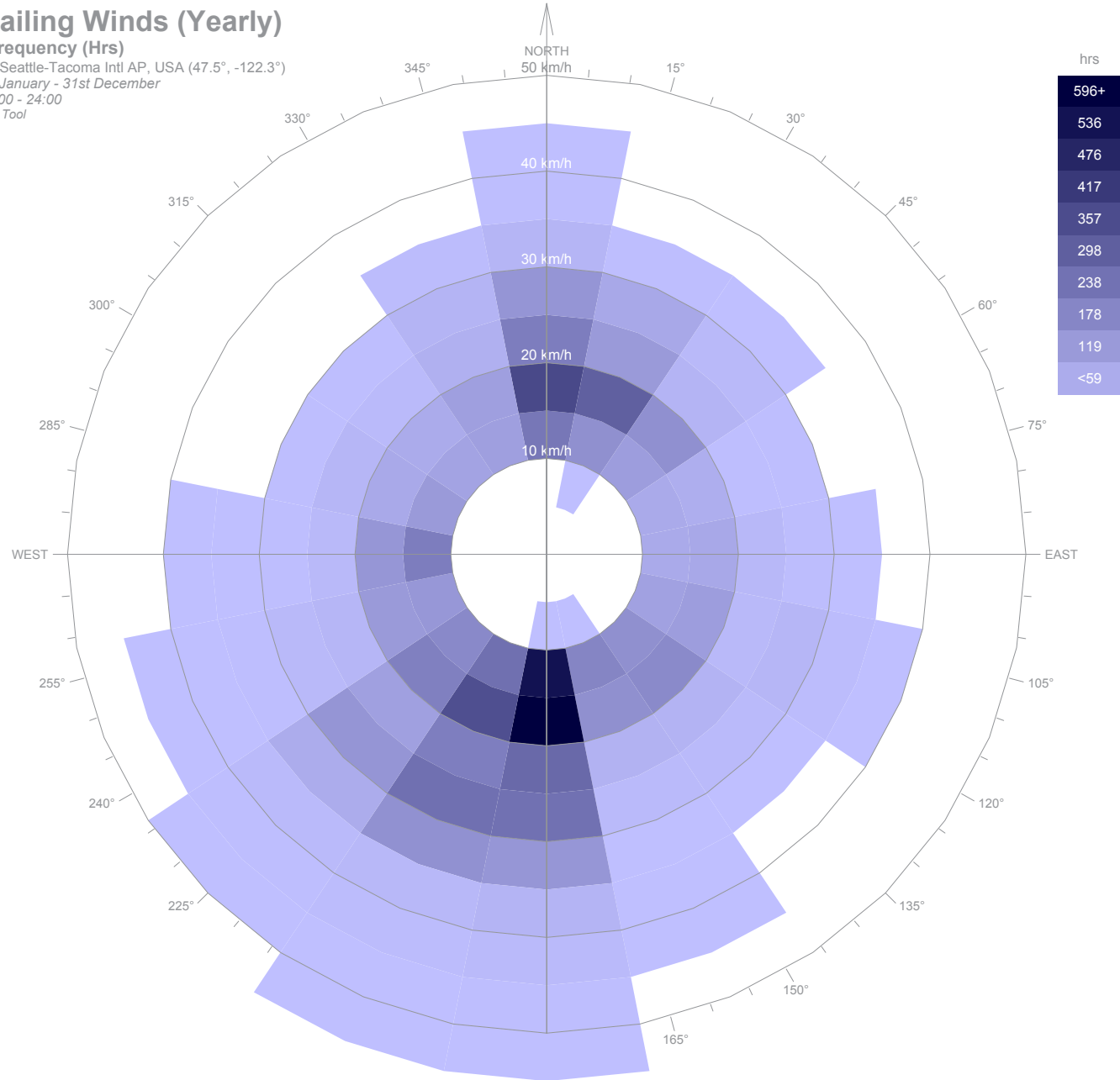
Annual Average
 Underheated Period
 Overheated Period



Prevailing Winds (Yearly)

Wind Frequency (Hrs)

Location: Seattle-Tacoma Intl AP, USA (47.5°, -122.3°)
Date: 1st January - 31st December
Time: 00:00 - 24:00
© Weather Tool

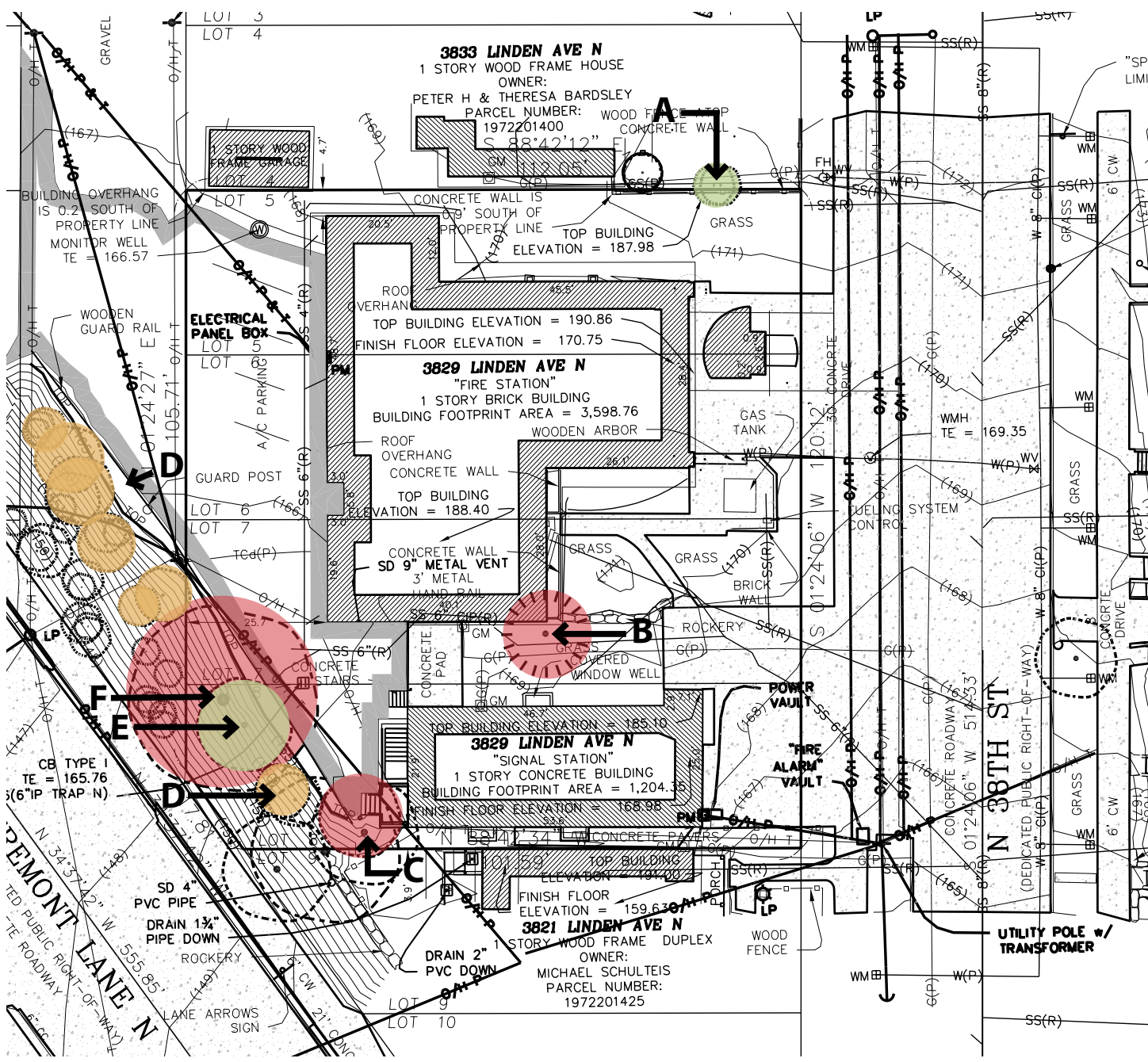


Prevailing wind:
south & southwest

Wind Data

Site Analysis





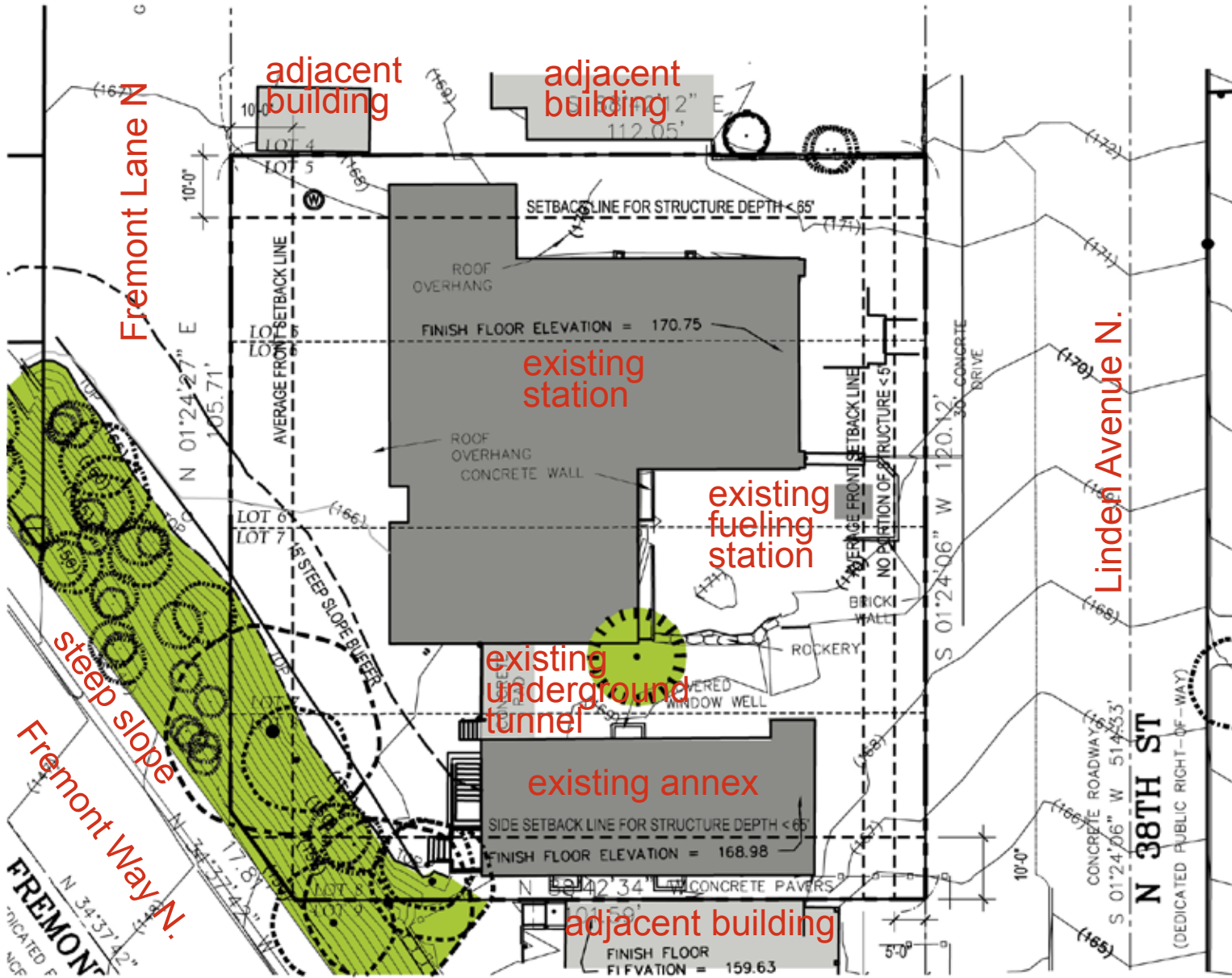
- A *Acer macrophyllum* (big-leaf maple)
Located on adjacent property - topped w/ some girdling by a bird-feeder. Overhangs property by 10' +/- . May need to do some branch pruning during construction. Observe and coordinate during construction.
- B *Chamaecyris pisifera* (sawara cypress)
Not exceptional - REMOVE.
- C *Acer macrophyllum* (big-leaf maple)
REMOVE - demolition of building and stairs will damage root collar. Comply with DPD requirements for steep slope removal, grind stump. Replace on a 2:1 basis, evergreen Douglas Fir, hand planted, 4' height acceptable.
- D *Acer macrophyllum* (big-leaf maple)
Need to hire an arborist to EVALUATE trees along edge of site that may be impacted during demolition of existing building, demolition of existing asphalt, and construction of new building. Structural roots may be extending to the existing building foundation.
- E *Acer macrophyllum* (big-leaf maple)
RETAIN, care should be taken not to damage when taking down adjacent tree.
- F *Acer macrophyllum* (big-leaf maple)
Hazard tree - REMOVE ASAP due to large rotted trunk hanging over street below. Leave stump with 5'-6' snag for habitat. Consult with SDOT tree crew supervisor, Joe Markovich, 206/684-4121. Fire station is responsible for tree removal as it is within the property; may contract with the city.

● RETAIN
● EVALUATE
● REMOVE
 North

On-site meeting with city forester

Existing Tree Evaluation Site Analysis





Challenges & Constraints

Public facility in residential zone
zoning restrictions

Response to Fremont community

Steep slope
steep slope area & 15' steep slope buffer at southeast corner

Limited visibility
only front elevation facing Linden Ave. N. visible, neighbor buildings on lot lines

Site slope
5% slope from North to South,
4% slope from East to West

Site Challenges

Site Analysis





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always ready

action!

brave

strong

teamwork



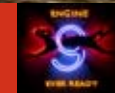
emergency!

saving lives

rescue!

quick response time

speed





eclectic

self-proclaimed center of the universe



Design Inspiration

Conceptual Design



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City of Seattle Neighborhood Fire Station 9
Design Commission Review - Concept Design
10.1.2009

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"Fremont is a state of mind . . . an Imagi-Nation based on the freedom to dream."
-- Fremont's 1994 proclamation of independence



quirky

artsy



whimsical



In Seattle's hippest district, the art is public and life is fun.



working-class roots
Design Inspiration



Design Criteria from City of Seattle Fire Station Program Manual

General Design Criteria

OPERATIONS FIRST

safe working & living environment

maintaining security

cost effectiveness

design excellence

building flexibility

Sustainable goal:

min. LEED silver

Site Design Criteria

External Site Criteria

Minimize impacts on neighborhood

(noise, traffic, view, scale, sunlight, pedestrian & vehicular safety, etc.)

Separation between public & non-public areas

Internal Site Criteria

Maintain desirable site amenities

Operational safety & efficiency

Apparatus & vehicle routes & turning requirements

Public "front door" obvious & welcoming

Fire Station 9 Program

on-duty personnel: 5

assigned personnel: 6

Apparatus Bays: 2, engine & air fill

Site program

Apparatus Bay apron

(min. 25' depth from bay doors to back of side walk)

Staff parking, 5 min.

Trash/recycle area

Outdoor Beanery Area

Building program

Core & operation support

Administration area

Crew area

Equipment & circulation

Vertical circulation

Fire station 9 firefighters input

All sleeping rooms on 1st floor

Rest of crew spaces & outdoor beanery area on 2nd floor

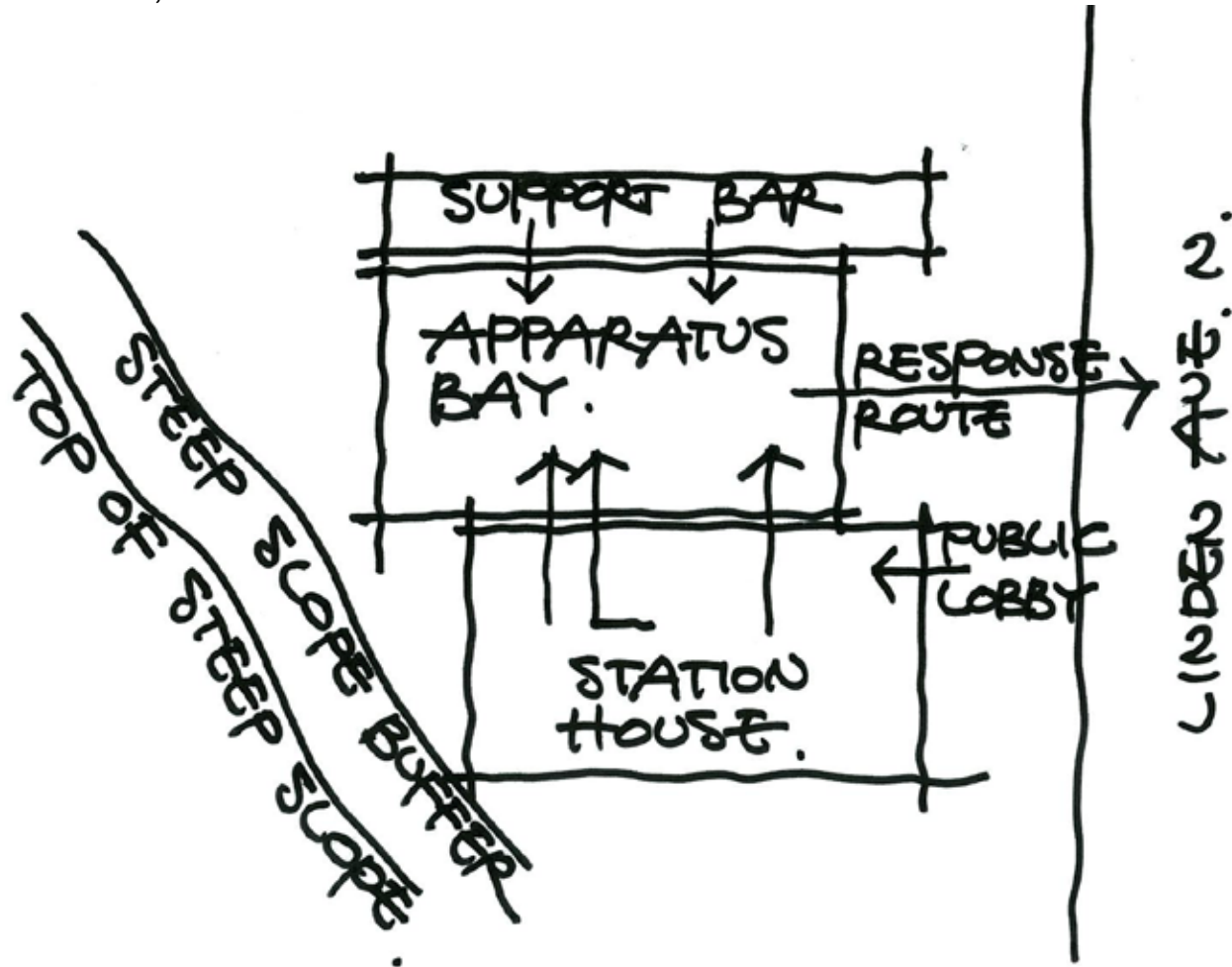


Fire Station 9 Mascot - EVER READY cat with 9 long lives

Design Concept

BE EVER READY

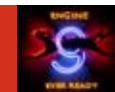
provide an **EVER READY** station to firefighters,
functional, efficient & comfortable.



Concept Diagram



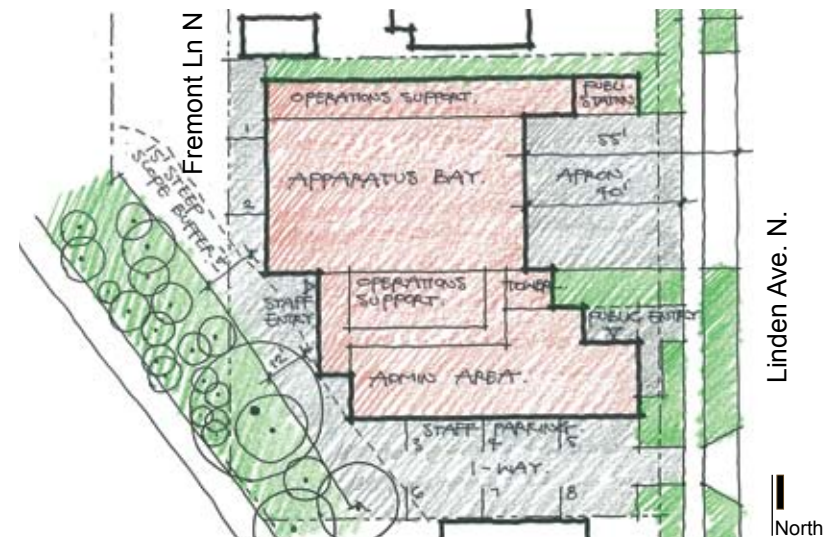
Design Concept



Site is too tight for Drive-through Apparatus Bay & rear apron.
Fire Truck Access from Fremont Lane N. does not work.



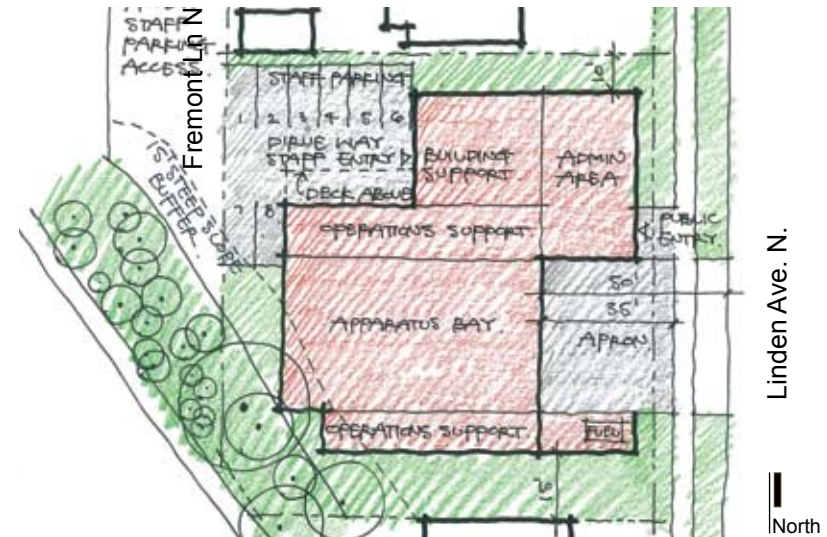
Option 1a Apparatus Bay & Support Bar @North Station House & Staff parking @South



Option 1b Apparatus Bay & Support Bar @North Station House & Staff parking @South



Option 2 Apparatus Bay & Support Bar @North Station House @South
Staff parking @North
Building footprint in steep slope buffer



Option 3 Apparatus Bay & Support Bar @South Station House & staff parking @North
Building footprint in steep slope buffer
Less Apron depth

Site Plan Options



Response to site & program

Apparatus Bay is located at north to maximize apron depth.

Station house is located at south to maximize southern exposure.

Building footprint & path to staff entry are away from steep slope buffer.

Staff parking & entry are located at back of station.

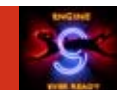
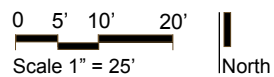
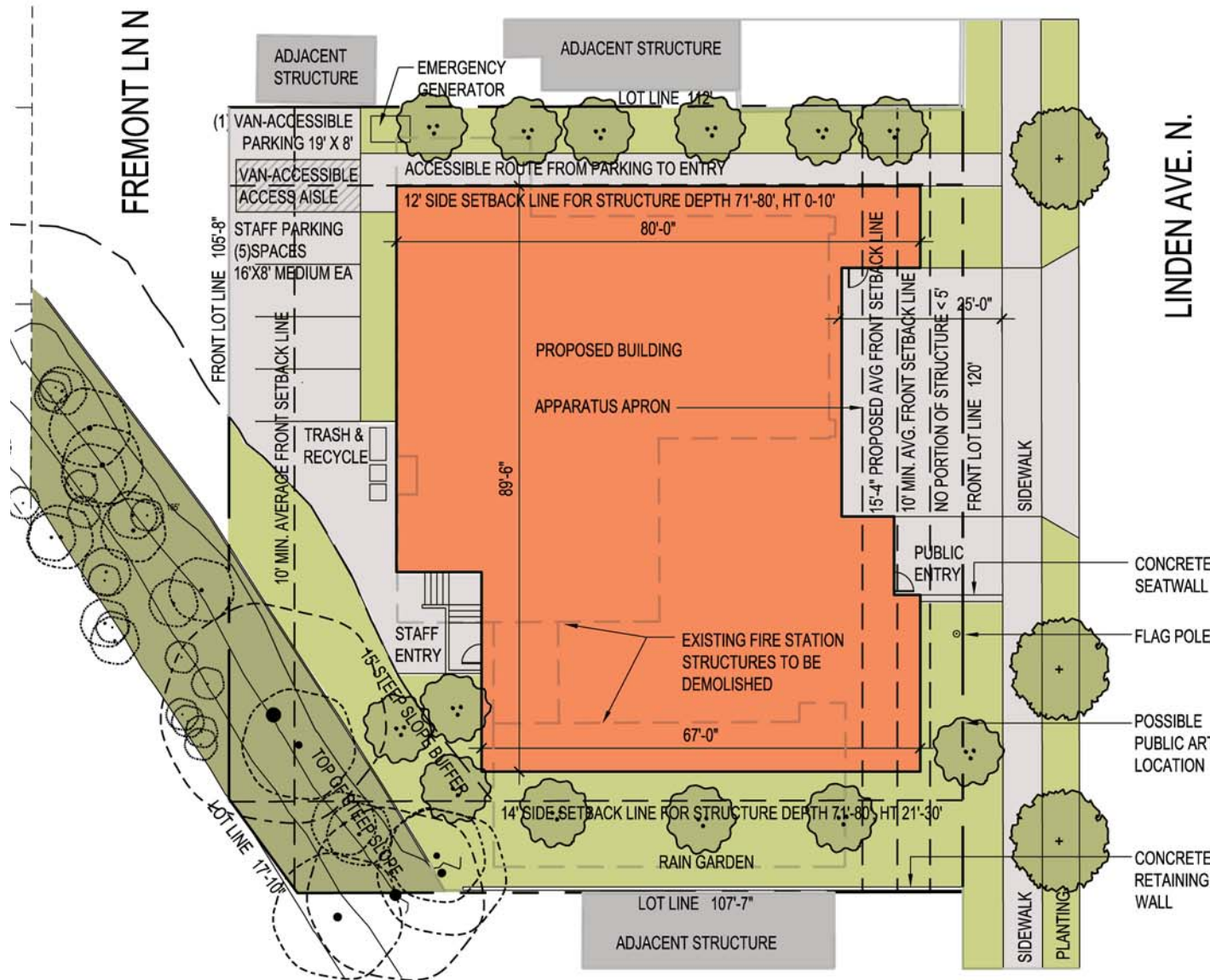
Public entry with public art is located along Linden Ave. N.

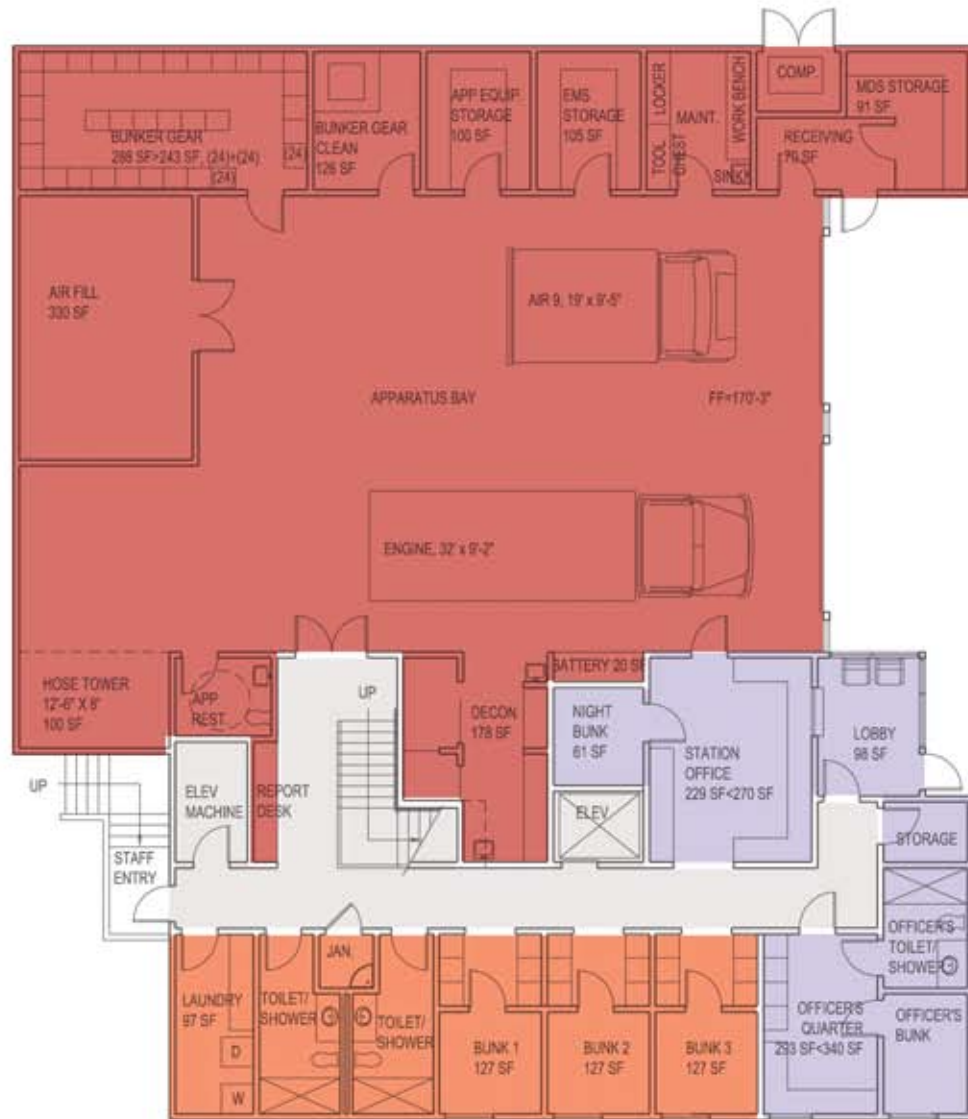
Public entry is recessed to maximize sightline from Apparatus Bay.

To reduce the appearance of bulk, the front facade is modulated, landscaping is provided in front of the building & the proposed average front setback is 15', 5" more than 10' min. average front setback requirement.

Native planting connects to natural steep slope area.

Intercept limited amounts of water through rain gardens.





Response to program

Compact building footprint is away from steep slope buffer.

All operation support spaces are accessed directly from Apparatus Bay.

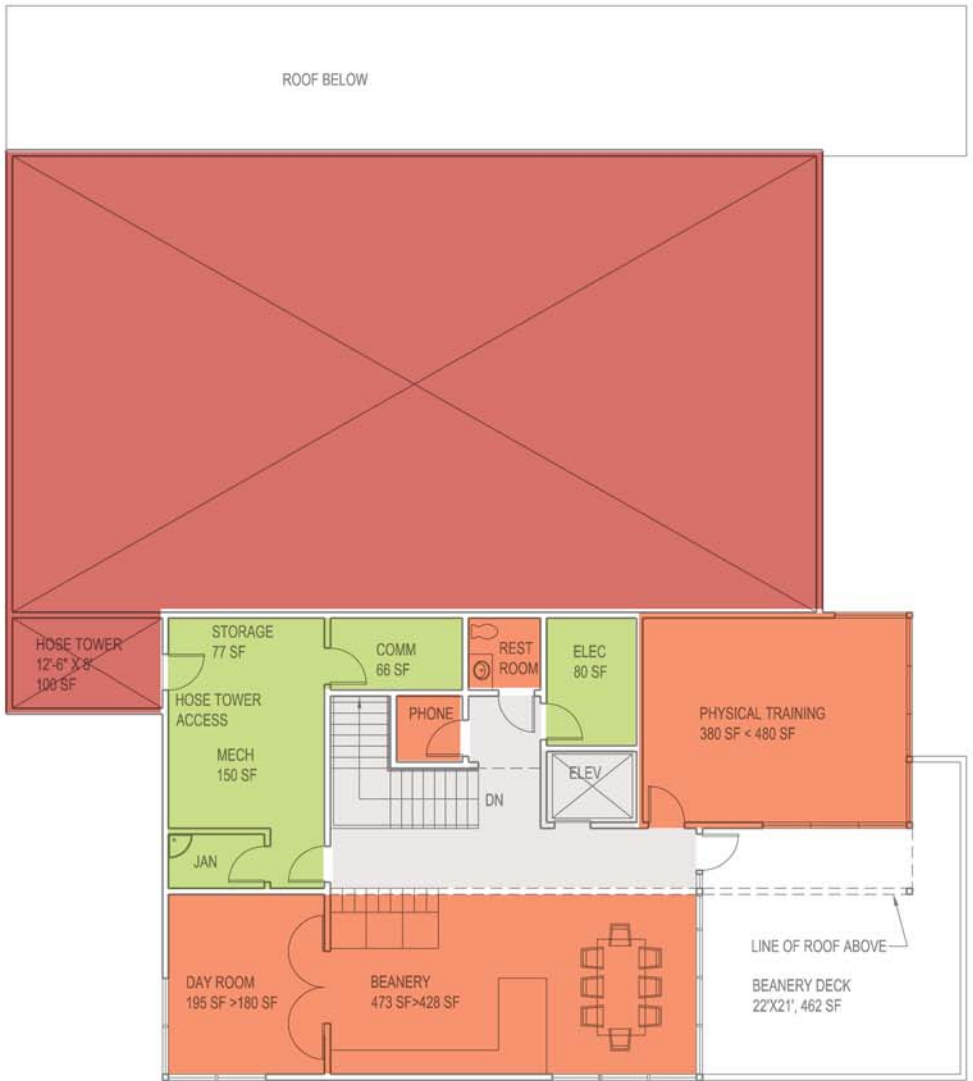
All sleep rooms are located on 1st floor for quick response time.

Rest of crew spaces & outdoor beanery area are located on 2nd floor to take advantage of city view & stay away from traffic noise from Fremont Way N.

Extra wide “L” shaped open stair is designed for quick response time with visual connection & min. turns.

Public Lobby & Physical Training are more visible while the rest spaces are more private.





■ OPERATIONS
 ■ ADMINISTRATION
 ■ CREW AREA
 ■ EQUIPMENT
 ■ CIRCULATION

Response to program

Compact building footprint is away from steep slope buffer.

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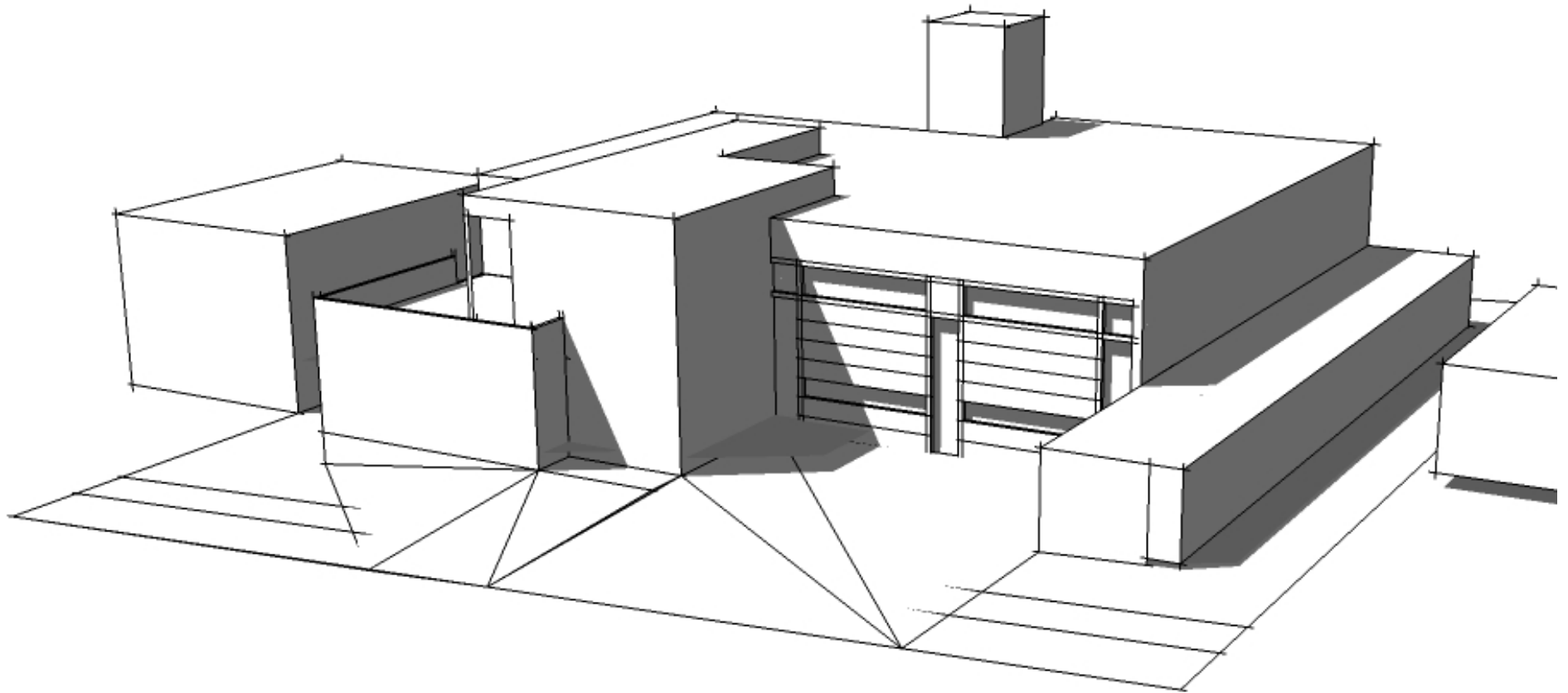
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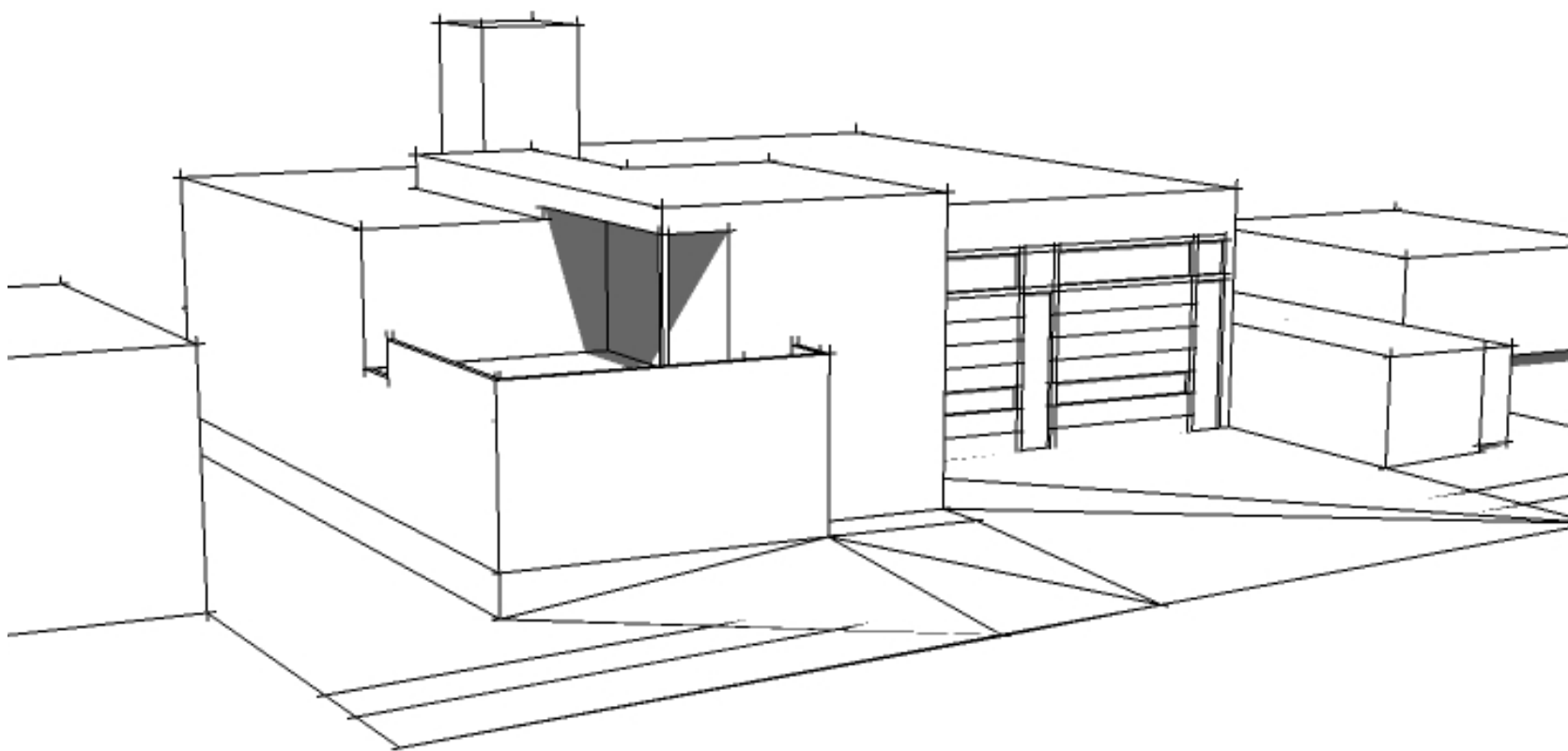
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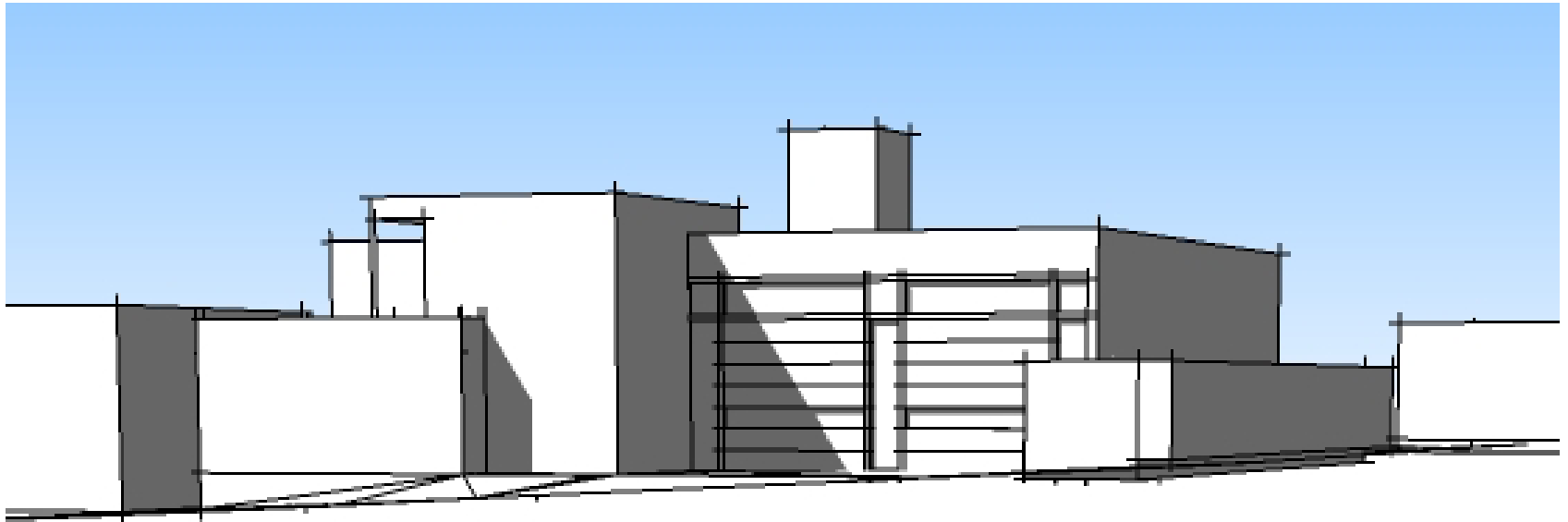
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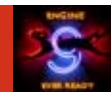
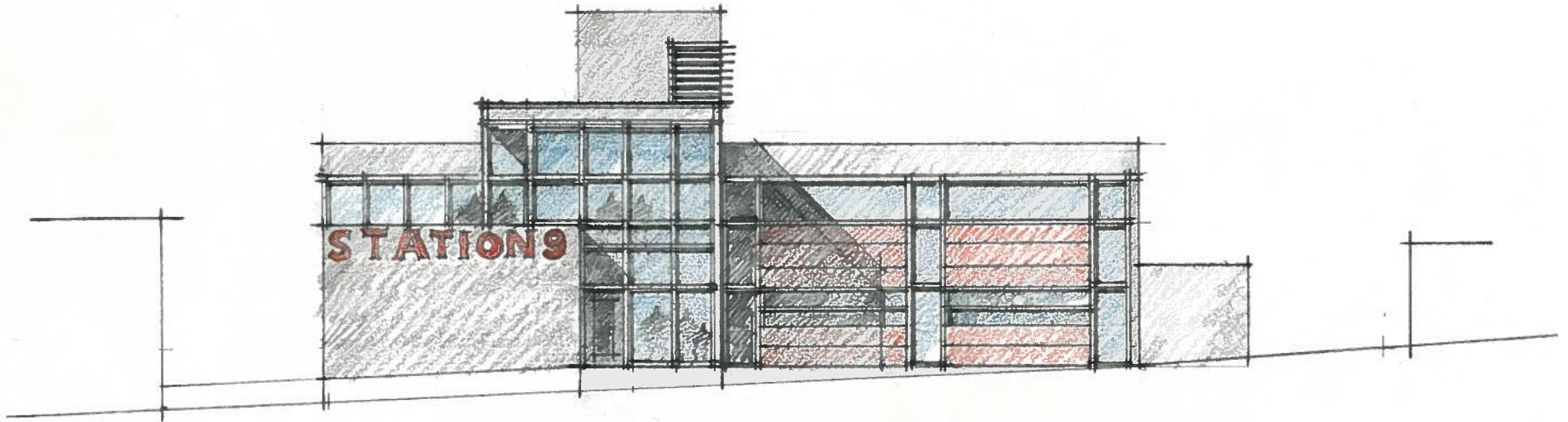




Massing Study 3

Conceptual Design





Key Sustainable Strategies

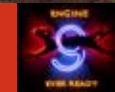
Rain garden, natural daylighting, high performance

- Site**
 - Urban site
 - Secured Bike storage to encourage biking
 - Pedestrian access to public transportation
 - Preferred parking for fuel efficient cars
 - Reduced Heat Island (low albedo roofing)
 - Reduced light pollution through fixture locations and cut-off valances
- Water Efficiency**
 - Water efficient landscaping(Native plants,Engineered soil)
 - High efficiency drip irrigation
 - Reduced potable water consumption(Dual flush toilets, low flow fixtures)
- Energy & Atmosphere**
 - High efficiency HVAC system to ensure nearly 17.5% better than code
 - Building system commissioning and one year post occupancy commissioning
 - CFC free equipment
- Materials & Resources**
 - Recycling collection area
 - Minimum of 75% of construction/demolition waste recycled
 - 20% Recycled content materials(Steel/rebar/gyp board/rubber flooring)
 - 10-20% Local/Regional materials w/i 500mi
- Indoor Environment Quality**
 - Non-smoking facility
 - Indoor air quality plan being administered by contractor throughout construction process
 - Low VOC finishes(Paints,Sealants/Adhesives, Carpets, etc.)
 - Controllability of lighting and HVAC systems
 - Operable windows for natural ventilation
 - Daylight & views provided in inhabited spaces
- Innovation**
 - Green Housekeeping practice program
 - Sustainable Education program





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*"Landing Zone" 2008
Paine Field Community Park, Everett*

Artist, Peter Reiquam is selected to join the team at the beginning of schematic design.

Artist Work Example

Conceptual Design 30



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City of Seattle Neighborhood Fire Station 9
Design Commission Review - Concept Design 10.1.2009

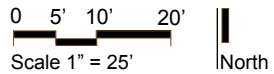
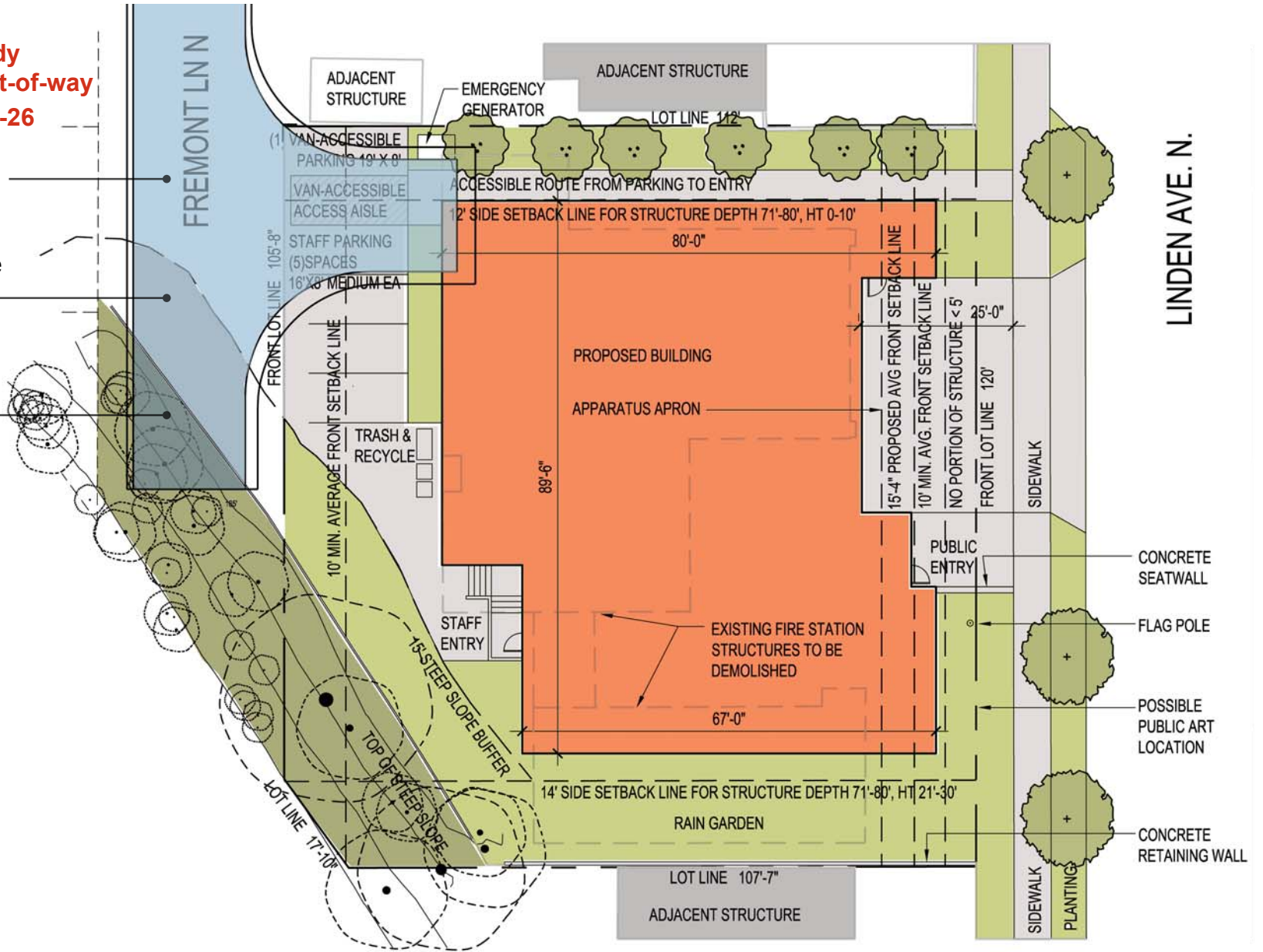
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	Seattle Municipal Code Requirements	Departure request	Decision type
Departure No.1 Parking quantity	Parking quantity per SMC 23.45.098 Requirement for fire stations is not shown on Chart A, B or C of 23.54.015.	To meet the program needs, 5 spaces are proposed for staff parking, 1 space per staff.	Director determination based on the requirements for the most comparable use per SMC 23.54.015. H.
Departure No.2 Right of Way	Fremont Lane N. Right of Way improvement per SMC 23.53.015	No Right of Way improvement along Fremont Lane N. is proposed due to steep slope area and site constraints.	Director rule in consultation with Director of Transportation during MUP to waive or modify requirements.
Departure No.3 Parking location	Parking location per SMC 23.45.098 B. "Parking areas and facilities may not be located in the required front setback." Proposed staff parking at Fremont Lane N. is not allowed in the required front setback unless it is determined to be an undeveloped street per 23.40.030 and a front setback is not required.	To meet the program needs, the proposed staff parking is located in the required front setback along Fremont Lane N.	Type I or II Directors rule during MUP. Or if 23.40.030 does not apply to the site, Type V Council decision during MUP to waive or modify development standard for City facilities per SMC 23.45.106.
Departure No.4 Structure width & depth	Structure width & depth per SMC 23.45.094 A.1. Maximum width with modulation or landscape option in Lowrise 1 zone is 75'. B. "The maximum depth of institutional structures shall be 65% of lot depth." 72.8'	To meet the program needs & steep slope buffer requirement, the proposed width is 89'-6"; depth is 80'. To reduce the appearance of bulk, the front facade is modulated , landscaping is provided & the proposed average front setback is 15', 5' more than 10' minimum average front setback requirement.	Type V Council decision during MUP to waive or modify development standard for City facilities per SMC 23.76.004A.
Departure No.5 Landscaping of required setbacks	Landscaping of required setbacks per SMC 23.45.096 E.1. "Institutions shall provide landscaping for setbacks which abut a street."	Landscaping is not provided for front setback at Fremont Lane N. due to conflict with meeting steep slope buffer requirement & the program needs to provide staff parking, staff entry access, trash & recycle area.	Type V Council decision during MUP to waive or modify development standard for City facilities per SMC 23.45.106.
Departure No.6 Noise	Noise per SMC 23.45.100 A.2."Institutions which are the origin or destination of emergency vehicles which emit noise specifically exempted by Chapter 25.08 shall be located only on an arterial street as designated in Chapter 11.18 of the Seattle Municipal Code (Traffic Code). Access to emergency entrances for such institutions shall also be located on the arterial."	The existing and proposed emergency access is not located on an arterial street; the steep slope prohibits access to the site. This development standard can not be met on this site due to site constraints and program needs.	Type V Council decision during MUP to waive or modify development standard for City facilities per SMC 23.45.106.
Departure No.7 Curb cuts	Curb cuts per SMC 23.54.030 F.2.b. 25' curb cut is allowed.	To meet the program needs & steep slope buffer requirement, the proposed curb cut is 48' for 5 parking spaces along Fremont Lane	Type V Council decision during MUP to waive or modify development standard for City facilities per SMC 23.45.106, C.



Turnaround study per Seattle Right-of-way Manual Figure 4-26

- Turnaround area
- Turnaround area in 15' steep slope buffer
- Turnaround area in steep slope area



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discussion

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