

Seattle Design Commission

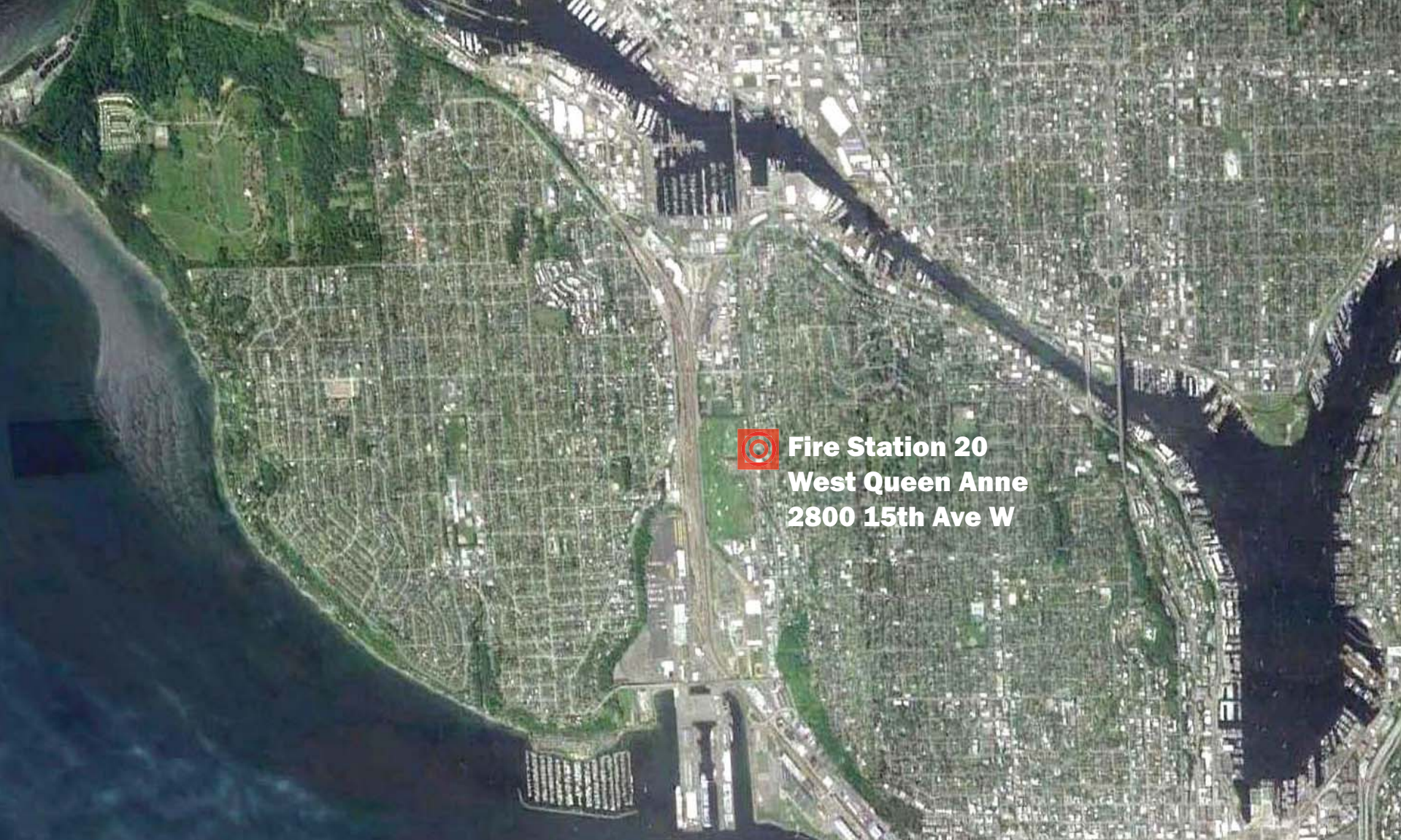
Fire Station 20

Schematic Design

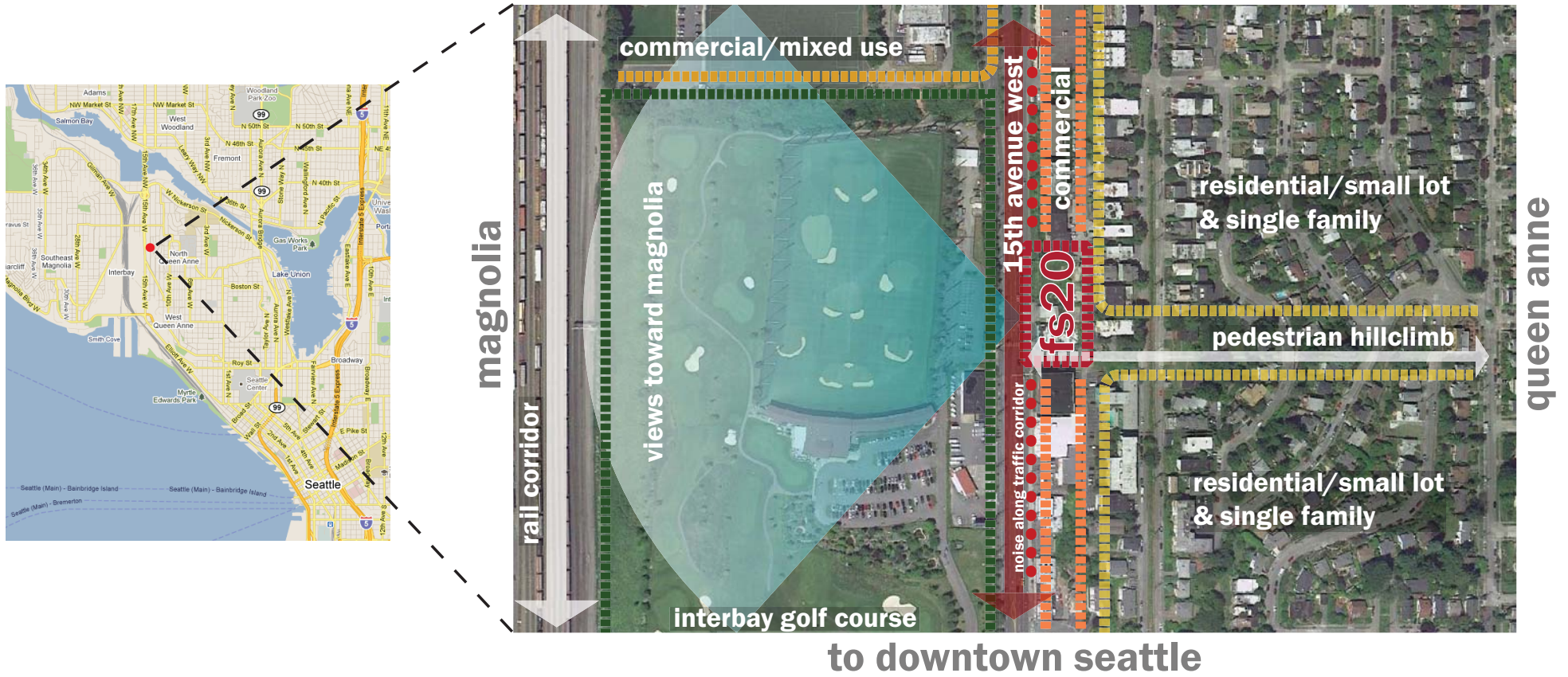
6 October 2011



site



site context



site photos



15th Ave West looking across to Fire Station 20 site



West Armour and alley running north from site corner

site photos



Alley looking southwest



Looking south along 15th Ave. West



U-haul located across 15th Ave from station site



Looking south from adjacent property

design goals

Provide for public safety

Meet fire station program

efficient operations, quick response times, firefighter comfort areas for decompression after events

Create a civic building

differentiate from adjacent storage facilities and multifamily housing, provide landscaped environment

Implement sustainable strategies

LEED Silver at minimum, pursue opportunities to achieve higher performance

sustainable strategies

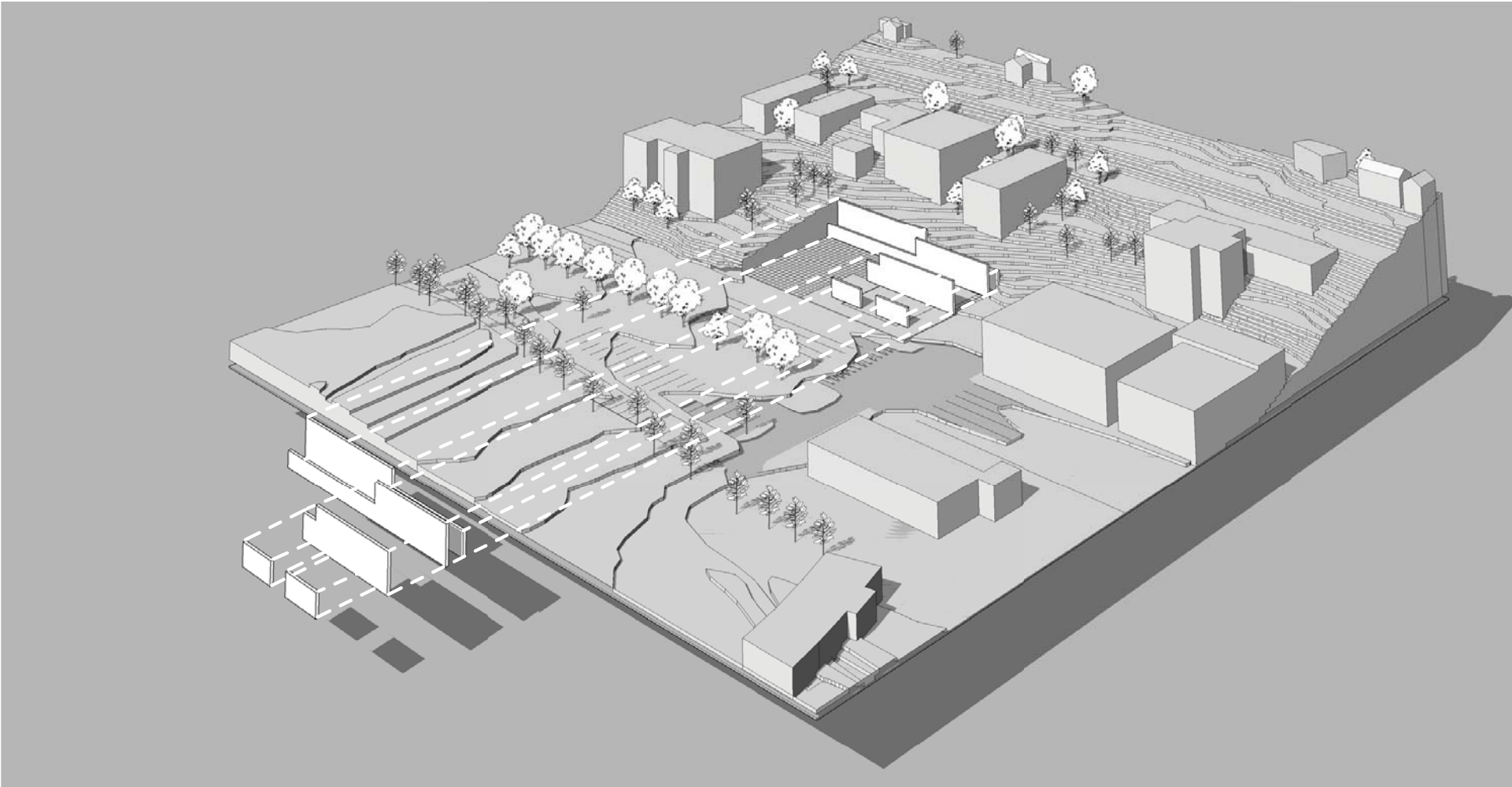
Fire Station 20

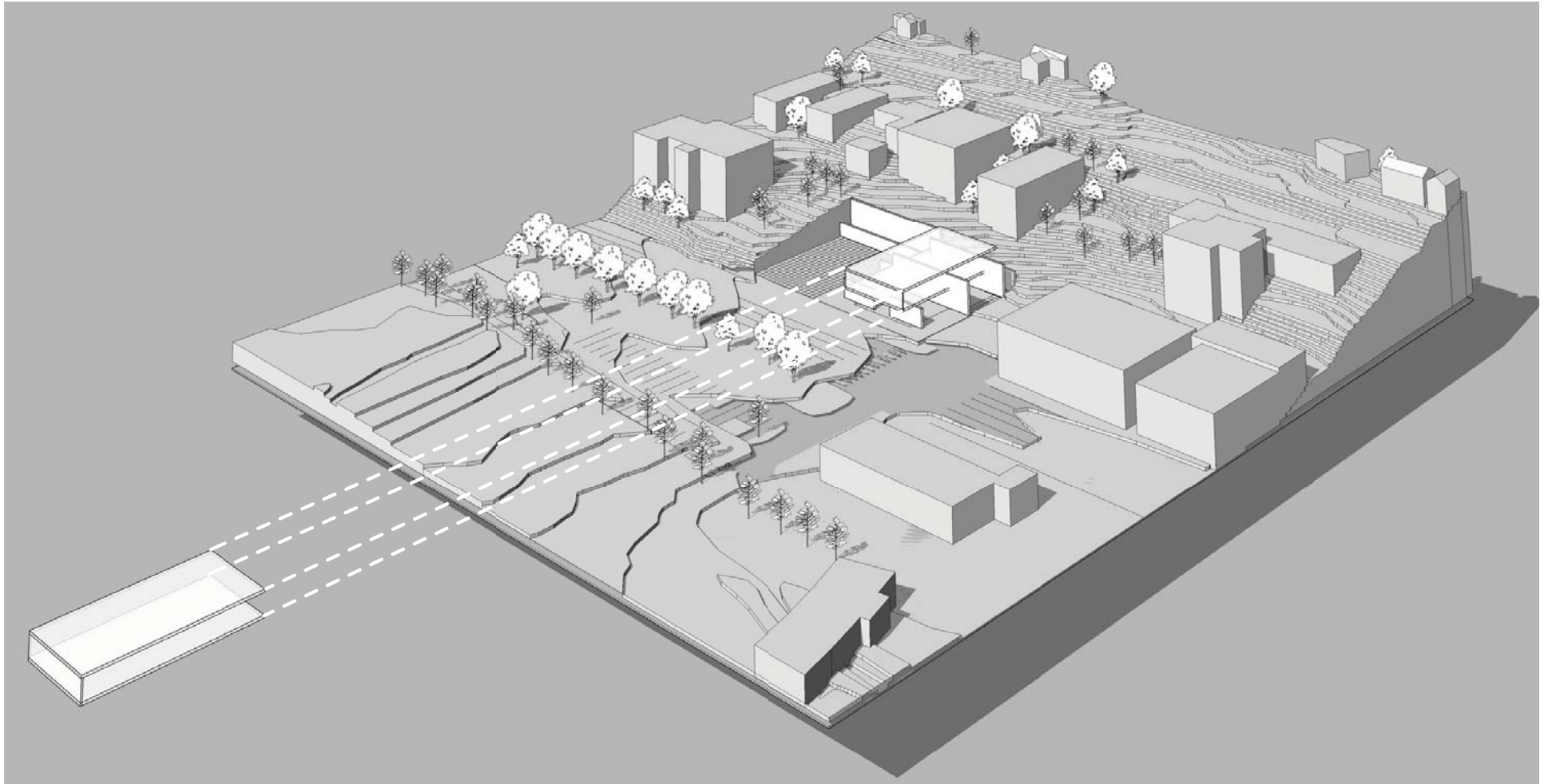
Preliminary LEED Gold Path

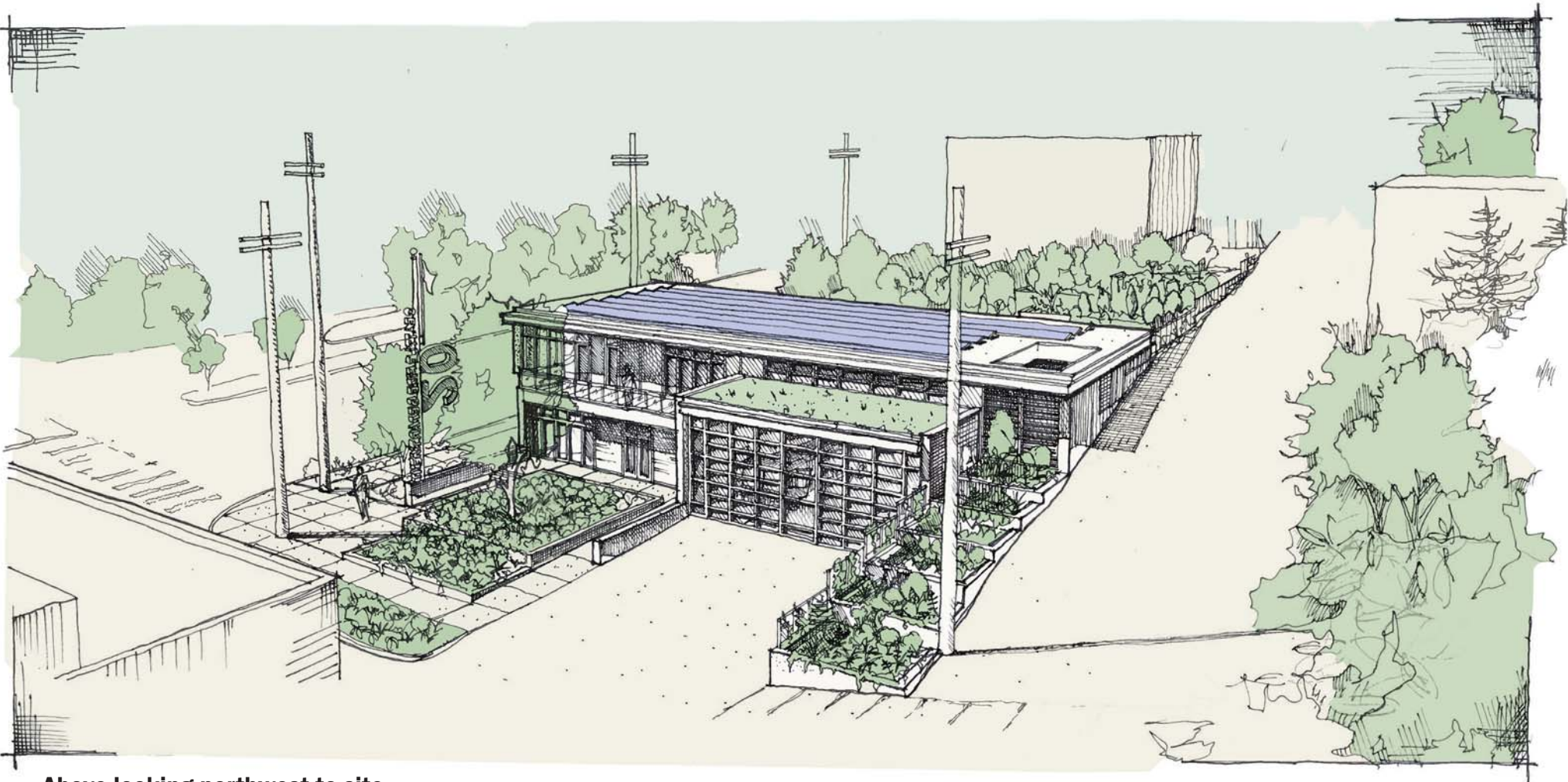
21		5		Possible Points: 26					
Y	?	N				Y	?	N	
Y			Prereq 1	Construction Activity Pollution Prevention					
1			Credit 1	Site Selection	1	2			Credit 4 Recycled Content 1 to 2
			Credit 2	Development Density and Community Connectivity	5				Credit 5 Regional Materials 1 to 2
		1	Credit 3	Brownfield Redevelopment	1		1		Credit 6 Rapidly Renewable Materials 1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6				Credit 7 Certified Wood 1
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1	11	4		Indoor Environmental Quality Possible Points: 15
		3	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	Y			Prereq 1 Minimum Indoor Air Quality Performance
2			Credit 4.4	Alternative Transportation—Parking Capacity	2	Y			Prereq 2 Environmental Tobacco Smoke (ETS) Control
1			Credit 5.1	Site Development—Protect or Restore Habitat	1		1		Credit 1 Outdoor Air Delivery Monitoring 1
1			Credit 5.2	Site Development—Maximize Open Space	1		1		Credit 2 Increased Ventilation 1
1		1	Credit 6.1	Stormwater Design—Quantity Control	1		1		Credit 3.1 Construction IAQ Management Plan—During Construction 1
1			Credit 6.2	Stormwater Design—Quality Control	1		1		Credit 3.2 Construction IAQ Management Plan—Before Occupancy 1
1			Credit 7.1	Heat Island Effect—Non-roof	1		1		Credit 3.4 Low-Emitting Materials—Adhesives and Sealants 1
1			Credit 7.2	Heat Island Effect—Roof	1		1		Credit 4.2 Low-Emitting Materials—Paints and Coatings 1
1			Credit 8	Light Pollution Reduction	1		1		Credit 4.3 Low-Emitting Materials—Flooring Systems 1
							1		Credit 4.4 Low-Emitting Materials—Composite Wood and Agrifiber Products 1
4	5	1	Water Efficiency Possible Points: 10				1		Credit 5 Indoor Chemical and Pollutant Source Control 1
Y			Prereq 1	Water Use Reduction—20% Reduction			1		Credit 6.1 Controllability of Systems—Lighting 1
2	2		Credit 1	Water Efficient Landscaping	2 to 4		1		Credit 6.2 Controllability of Systems—Thermal Comfort 1
	2		Credit 2	Innovative Wastewater Technologies	2		1		Credit 7.1 Thermal Comfort—Design 1
2	1	1	Credit 3	Water Use Reduction	2 to 4		1		Credit 7.2 Thermal Comfort—Verification 1
							1		Credit 8.1 Daylight and Views—Daylight 1
							1		Credit 8.2 Daylight and Views—Views 1
16	14	5	Energy and Atmosphere Possible Points: 35				3	3	Innovation and Design Process Possible Points: 6
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems			1		Credit 1.1 Innovation in Design: Green Education Plan 1
Y			Prereq 2	Minimum Energy Performance			1		Credit 1.2 Innovation in Design: Green Housekeeping Plan 1
Y			Prereq 3	Fundamental Refrigerant Management			1		Credit 1.3 Innovation in Design: Exemplary Perf in MRC2 1
10	4	5	Credit 1	Optimize Energy Performance	1 to 19		1		Credit 1.4 Innovation in Design: Green Power 1
7			Credit 2	On-Site Renewable Energy	1 to 7		1		Credit 1.5 Innovation in Design: Exemplary Per in Mrc4 or c5 1
2			Credit 3	Enhanced Commissioning	2		1		Credit 2 LEED Accredited Professional 1
2			Credit 4	Enhanced Refrigerant Management	2		2		Regional Priority Credits Possible Points: 4
		3	Credit 5	Measurement and Verification	3		1		Credit 1.1 Regional Priority: SSc4.2 Bikes 1
2			Credit 6	Green Power	2		1		Credit 1.2 Regional Priority: SSc4.4 Parking 1
							1		Credit 1.3 Regional Priority: EAc1 - 48% 1
7		7	Materials and Resources Possible Points: 14				1		Credit 1.4 Regional Priority: EAc2 - 13% 1
Y			Prereq 1	Storage and Collection of Recyclables			1		
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3		1		
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1		1		
2			Credit 2	Construction Waste Management	1 to 2		1		
		2	Credit 3	Materials Reuse	1 to 2				
64	28	18	Total Possible Points: 110						

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

diagrams & concepts







Above looking northwest to site



Looking northeast to site from 15th Ave



Looking east to site from across 15th Ave

design review comments and response

Provide a better civic presence on 15th Ave. Include more windows on 15th Ave. and reconsider the siting of the building so that the most public parts of the station – the trucks and common areas – are on 15th Ave. Show the programmatic, siting, and vehicular circulation studies that led to the proposed site design. In particular, show the studies with the apparatus bay directly on 15th Ave.

- Additional windows added on 15th Ave façade
- More public spaces have been oriented to face 15th Avenue: station office, officer’s office and training room
- FAS provided information requested by Design Commission: Test To Fit Study and Transportation Impact Analysis (TIA).
- TIA states, “the drive-through configuration, with a full signal with preemption at the 15th Avenue W and W Armour Street intersection would perform most efficiently, with the least impact on traffic operations, and with the least potential for vehicle/vehicle or vehicle/pedestrian conflicts.”

Strengthen the relationship of the east side of the building and site to neighborhood. Make a better connection to alley; consider placing parking there.

- Evaluated locating parking on the alley - there is not sufficient room per city standards
- Schematic design strengthens connection between building and retaining walls
- Vertigrow green screens added to retaining walls along the alley to increase green factor

Provide a more balanced approach to the cutting and filling of the hill slope. Review the siting and orientation of the building and study options for parking in the alley. Although the commission appreciates the sustainability measures taken, cutting into hillside is not sustainable and developing a green wall as proposed isn't going to solve the problem.

- Hillside has been softened by addition of stepped site walls and planting areas

Strengthen the topographic analogy in the building and expand it to include the site. In particular, the topographic analogy should read better from the west side of the building, through stepping of the massing and selectively pulling walls out from the building to reinforce how the building connects to the landscape.

- Connection between building and site walls has been increased, both at the hillside cut as well as on the west side of the site, through a series of stepped and low walls

Treat the roof as a façade as well as a living roof. Due to the topography, the roof will be seen by the neighbors to the east. Refine the design with this view in mind. Consider using green roofs and photo voltaic panels in conjunction with one another; they are compatible sustainability strategies.

- Understanding the roof as a “fifth facade” is a fundamental component of the concept
- PV and greens roofs are being used together in the overall composition of the roof plane
- Use of PVs and green roof on the upper roof plane was evaluated - requirements for access around the solar panels limit space for green roof
- Given issues with maintenance and operations related to green roofs design provides for green roofs where significant contiguous areas are available

Use a gate and a fence that is substantial, civic and well designed.

- Gate is being developed as a substantial ornamental iron element
- Fence along east facade has been replaced by Vertigrow green wall

Engage the artist early in the design process. The fence may be a place for art but do not presume that; the art could be elsewhere or incorporate the whole site.

- Los Angeles artist Rob Ley is the artist
- WebEx meeting with FAS, architect and artist was held in June
- Rob Ley is in Seattle this week to meet with the project team and participate in the Station 20 open house this Sunday

Provide a holding area for transit riders at the bus stop on 15th Ave. near the apparatus bay and driveway. Provide audio and visual cues for pedestrians on 15th Ave. near the gate.

- Metro and Rapid Ride indicate that bus stop is used primarily for people exiting the bus
- Site plan provides generous paved area at the bus stop
- Visual clue consists of textured transition between sidewalk and apparatus driveway apron, acoustic clue consists of a klaxon (bell) on the south façade

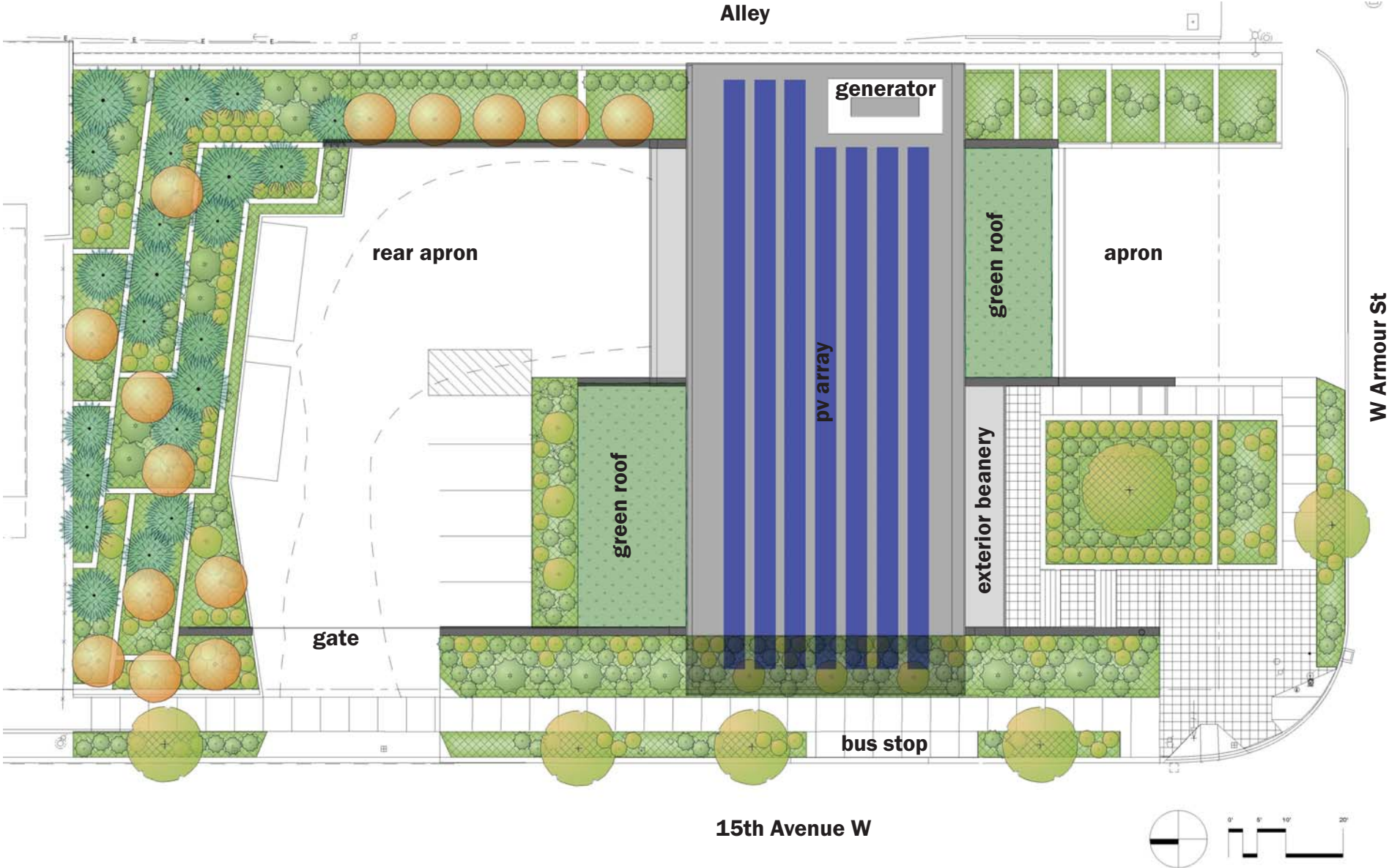
Use surfaces for the parking and pedestrian areas that will reduce stormwater runoff such as pervious pavement, and permeable paver material such as paving blocks, open celled paving grids and plastic lattices.

- Natural drainage systems are a fundamental component of the concept
- Pervious paving will be coordinated with cisterns, use of graywater for irrigation and SFD operation and maintenance requirements

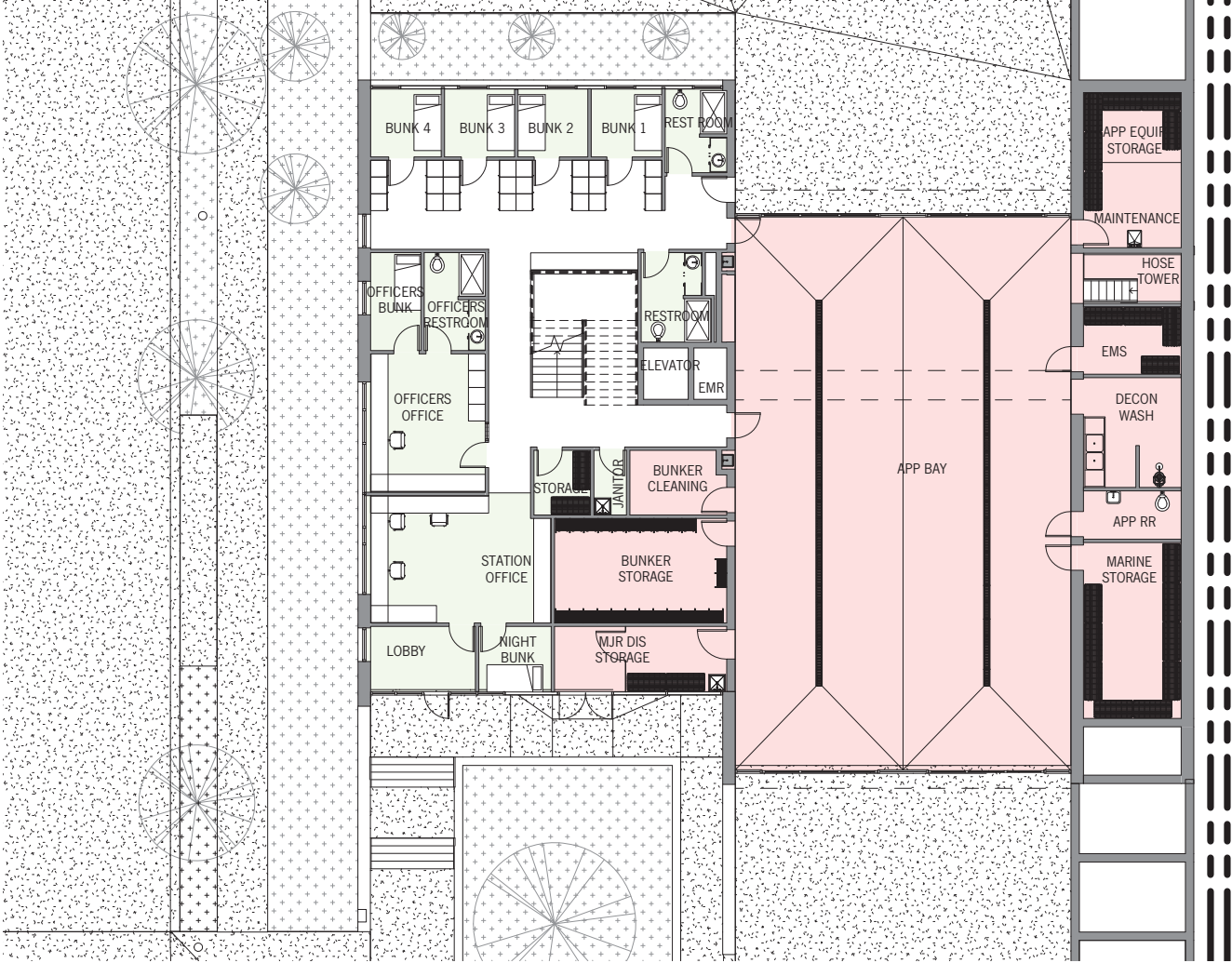
Study the effects of the bus stop and its relationship to the civic presence of the building. Also study the vehicular conflicts between the bus stop (volume and headway between buses) and movements into and out of the proposed driveway on 15th Ave.

- Metro bus and Rapid Ride stops will be designated by a system standard signage
- Hard surface entrance and exit areas will be provided per Rapid Ride guidelines
- Transportation Impact Analysis evaluated potential conflicts between the proposed driveway and the bus stop
- Drive-through configuration allows apparatus to wait for both buses and pedestrians to clear the area before entering the driveway

site plan



first floor plan

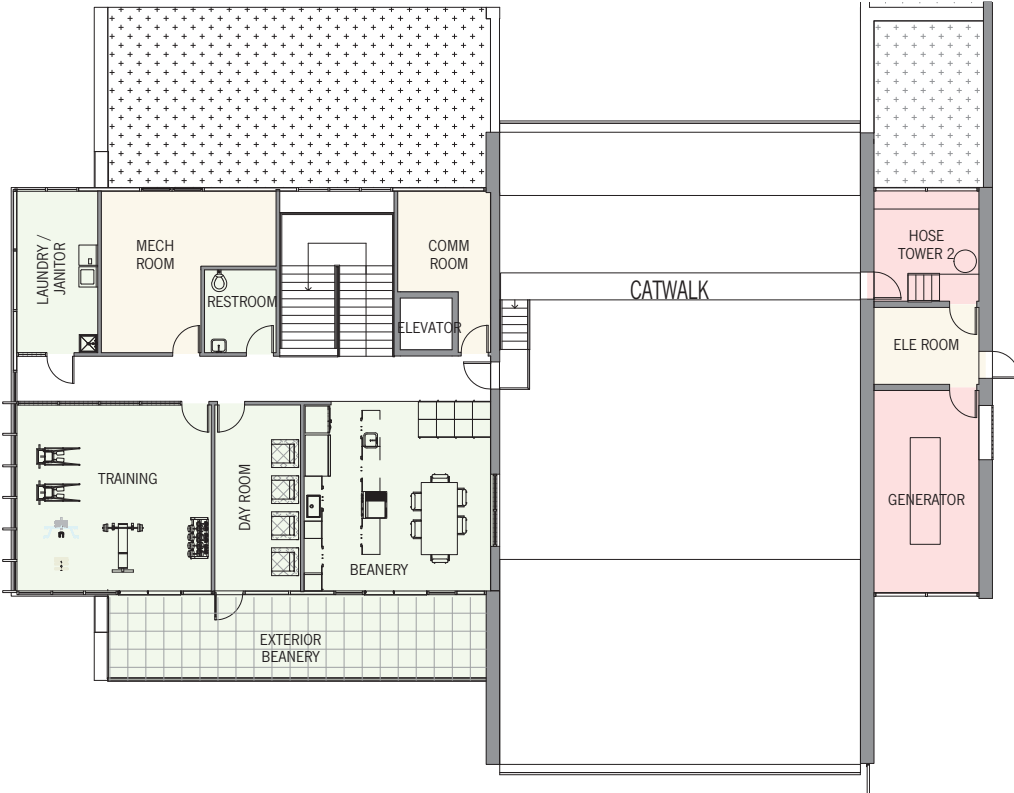


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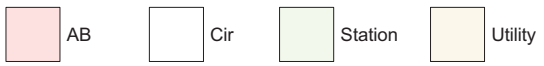
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second floor plan



Color Legend



north and west elevations



north elevation

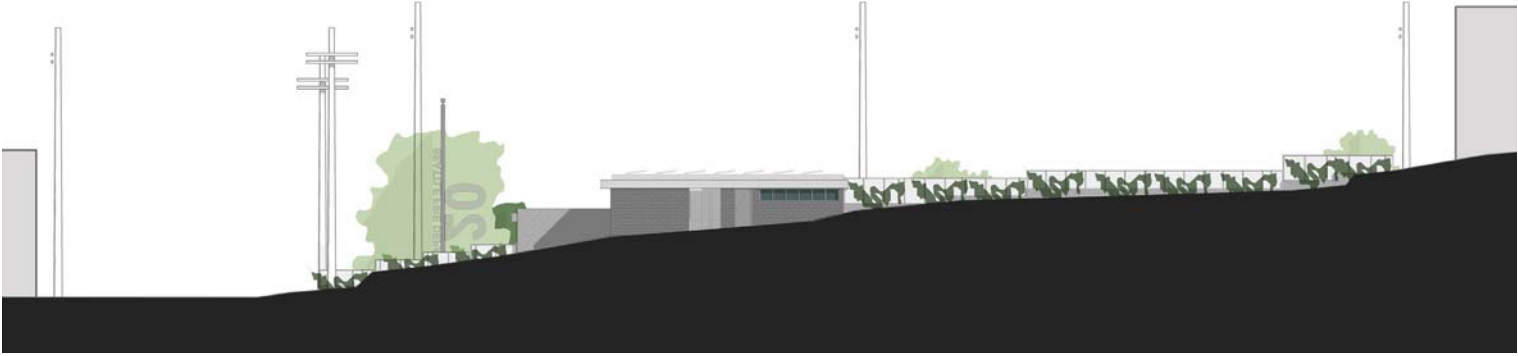


west elevation

south and east elevations



south elevation



east elevation

landscape

EVERGREEN TREES



PORT ORFORD CEDAR



COLUMNAR SCOTCH PINE



ARBUTUS

DECIDUOUS TREES



VINE MAPLE



WESTERN REDBUD



PACIFIC SUNSET MAPLE

EVERGREEN SHRUBS



YEDDO HAWTHORN



SARCOCOCCA, SWEET BOX



LONGLEAF MAHONIA



CEANOTHUS



EVERGREEN HUCKLEBERRY

DECIDUOUS SHRUBS



HEAVENLY BAMBOO



ANTHONY WATERER SPIREA



REGENT SERVICEBERRY

GROUND COVERS



KINNIKINICK



WILD STRAWBERRY



SEDUM 'AUTUMN FIRE'



SALAL

FERNS



SWORD FERN

VINES



CLIMBING HYDRANGEA



EVERGREEN CLEMATIS



BOSTON IVY

FIRE STATION # 20
PLANT MATERIAL

art: Rob Ley



Serial Departure

Commissioned by Materials and Applications, Los Angeles, CA,

Architecture is based, historically, on a logic of stacking and assembling, but how does bending, as an operation, change our understanding of shingling and framing? Serial Departure represents a starting point, with respect to research, towards a responsive and possibly reactive architecture. The project began with an interest in a technique of steam-bending wood. This interest led to the methodical research of historical precedents including glass slumping, ship-building, and Thonet/Eames furniture.

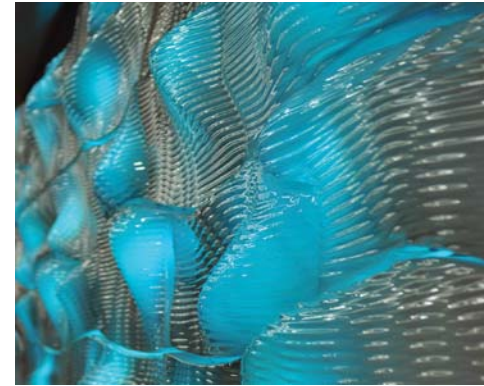
By projecting digital information onto an adjustable fabrication bed, a system emerges in which curves developed in the software could be precisely replicated with a piece of wood. A variable jig composed of a pegboard and adjustable cams allows for the production of an almost unlimited number of unique curvatures, moving beyond the limitations of one mold equals one form. More interesting is that this same process allows for material feedback into the digital model. If at any point, the curvature exceeds the bending capacity of the wood, the computer model is adjusted to match the maximum profile the wood is able to bear. In this way, a feedback loop is created as information flows from the digital, to the analog, and back into the digital.

*Formed Acrylic, Stainless Steel,
Low Energy LED backlighting
45' L x 11' H x 6' W*

Rob Ley Serial Departure ley@urbanaarch.com www.urbanaarch.com



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Lumenscape

Commissioned by City of Los Angeles Department of Cultural

Lumenscape is a large-scale art installation located at the Solar Building above the Wilshire & Western Rail Station in Los Angeles. An undulating environment of shifting light, the piece activates the entry wall at the top of the public stairway and serves as a luminous gateway in relation to the underground subway and the intense speed of the nearby traffic intersection.

The project explores the potential of haptic sensations within the normally reserved public space by offering textural surfaces and scales that provoke visual and tactile exploration. This installation creates a sophisticated animation for the new transit-oriented KOAR development project, which combines the Metro station entryway, retail shops, and residential units. The materials included recycled acrylic and aluminum, and the softly changing lights are low-energy LED fixtures.

*Thermo-Formed Acrylic, Stainless Steel,
Low Energy LED backlighting
42' L x 11' H*

Rob Ley Lumenscape ley@urbanaarch.com www.urbanaarch.com



Rob Ley Lumenscape ley@urbanaarch.com www.urbanaarch.com

art: Rob Ley



Reef

Commissioned by Storefront for Art & Architecture, New York, NY,

Reef investigates the role emerging material technology can play in the sensitive reprogramming of architectural and public spaces. Shape Memory Alloys (SMAs), a category of metals that change shape according to temperature, offer the possibility of efficient, fluid movement without the mechanized motion of earlier technologies.

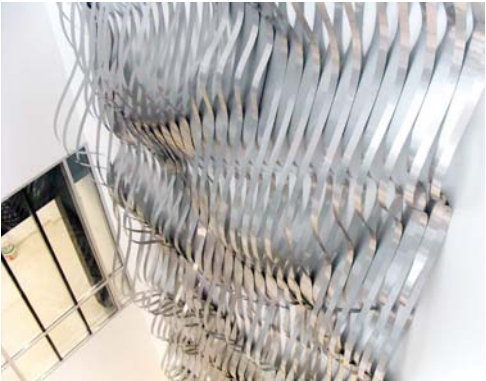
Operating at a molecular level, this motion panels that of plants and lower level organisms that are considered responsive but not conscious. A field of sunflowers as they track the sun across the sky or a reef covered with sea anemones, offer image of the type of motion this technology affords. Its use in practical applications has been limited to the medical and aerospace fields as well as novelty toys - the super exclusive vs. the trite. Despite the potential of this technology, there have been few serious attempts to test its possibilities at the scale of architectural environments. Reef's unique exploration of technology shifts from the biomimetic to the biomimetic while liberating and extending architecture's capacity to produce a sense of willfulness.

Fiber Reinforced Plastic, Recycled Aluminum
37' L x 8' H x 7' W

Rob Ley Reef ley@urbanaarch.com www.urbanaarch.com



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Draper

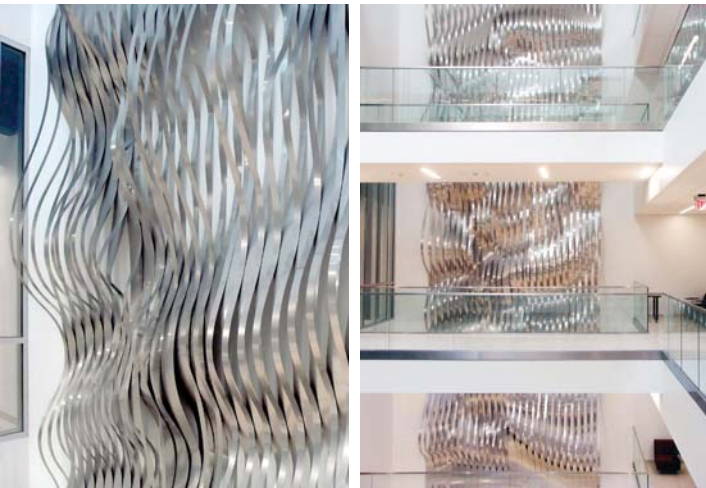
Commissioned by Florida State University, Tallahassee, FL, 2011

A permanent installation for the Visual Arts Department building at Florida State University.

Composed of hundreds of unique stainless steel strips, the project is an experiment in how mass and gravity, along with an experimental force-feedback fabrication technique can create a carefully tuned lattice structure. At 75' in height, the project passes through 5 separate floors and sub-departments of the school, offering each level a unique view of the piece and its floor its own distinct identity.

Recycled Stainless Steel
75' H x 18' W x 4' D

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