

BORA

PORTLAND STATE UNIVERSITY
4th + Montgomery Programming Study

Final Report
April 11, 2017



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EXECUTIVE SUMMARY

PROJECT BACKGROUND

Portland State University (PSU) is planning to develop the ¾ block at 4th and Montgomery, adjacent to PSU's Urban Plaza. The project includes four partners:

- PSU's Graduate School of Education (GSE)
- Oregon Health Sciences University's (OHSU) and PSU's School of Public Health (SPH)
- Portland Community College's (PCC) Dental Sciences Program and Dental Clinic
- City of Portland office space

The property is owned by the Portland Development Commission (PDC). PDC has agreed to convey the land to PSU for development, with an agreement that the project will include a certain amount of tax generating retail space.

Per previous agreement, each partner will own the following approximate amount of space:

- PSU GSE: 60,000 sf
- OHSU/PSU SPH: 60,000 sf
- PCC Dental Program: 30,000 sf
- City of Portland Office: 30,000 sf
- Retail: 15,000 sf

The intent of this programming effort was to work with the partners and PDC to develop a building program that identifies more precise areas and types of space needed for each. In addition, the intent was to define adjacencies and relationships in order to create a concept design for the project that will inform a rough order of magnitude for the cost estimate.

PROJECT PROCESS

This programming and concept design process was structured around a series of six work sessions with the project executive committee (EC). The EC was made up of representative from each partner as well as PDC. In addition, a series of separate meetings with each partner institution were conducted to gather and confirm the appropriately detailed level of program information as well as generic test fits for their spaces.

The design team held a series of subject related charrettes with their consultant team in order to identify a general approach to the site development and building systems.

Once the program was established, a site approach determined and general building systems identified, a concept design was developed and refined as part of the EC work sessions. A cost package was assembled and estimated by a cost estimator.

The program, concept design and cost information presented in this report have been presented to and approved by the EC.

SUMMARY OF KEY FINDINGS

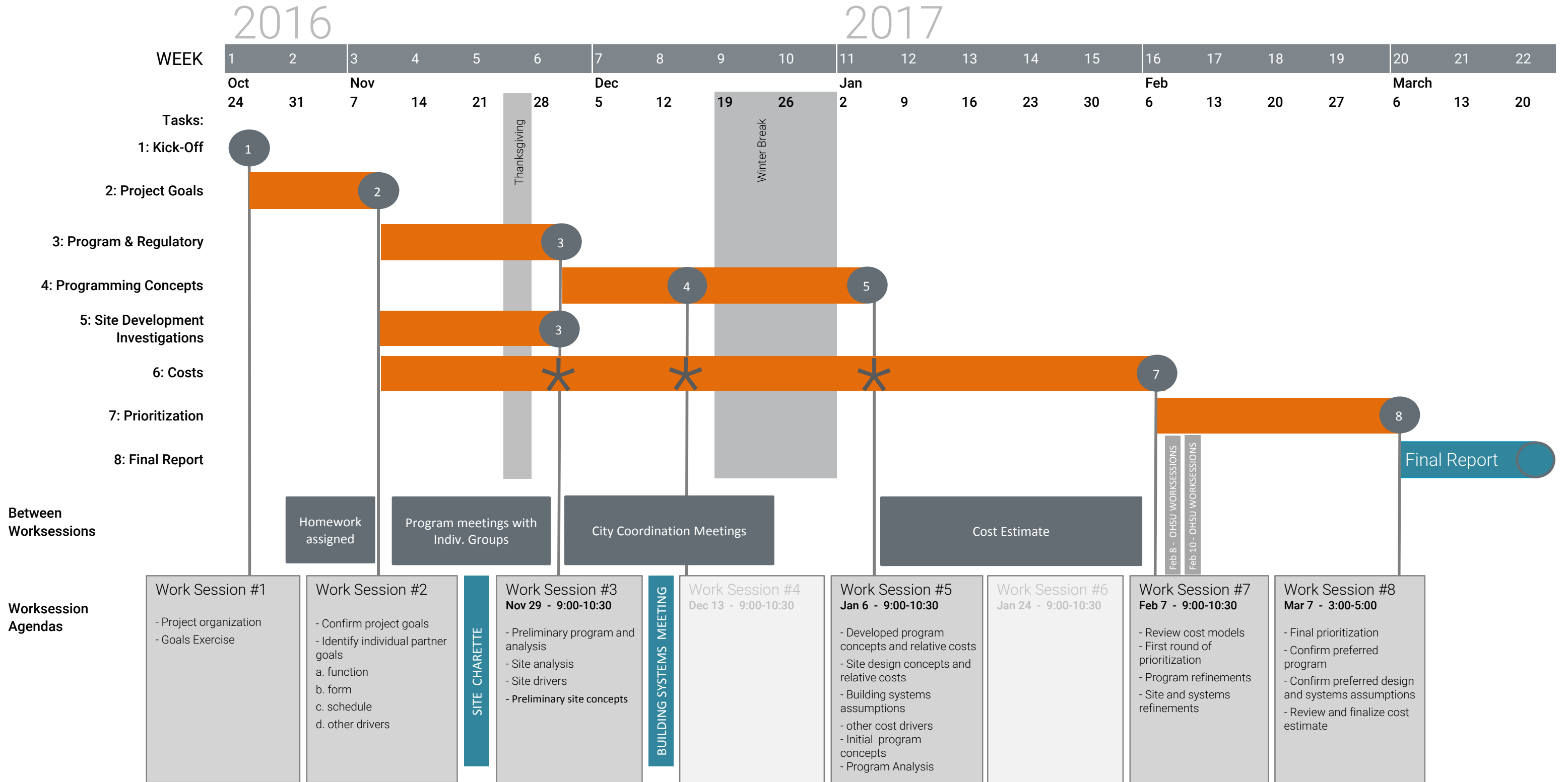
The site and its allowable development potential can accommodate a building that provides for the program requested by the partners. The site supports a building concept that meets the partner's goals (included later in this report) with a convincing connection to the physical and experiential life of Portland State University.

Each partner will be able to accommodate their program within their previously determined space allowance. The OHSU/PSU SPH desired program is slightly greater than the allowance but they have indicated that they will be able to make necessary reductions.

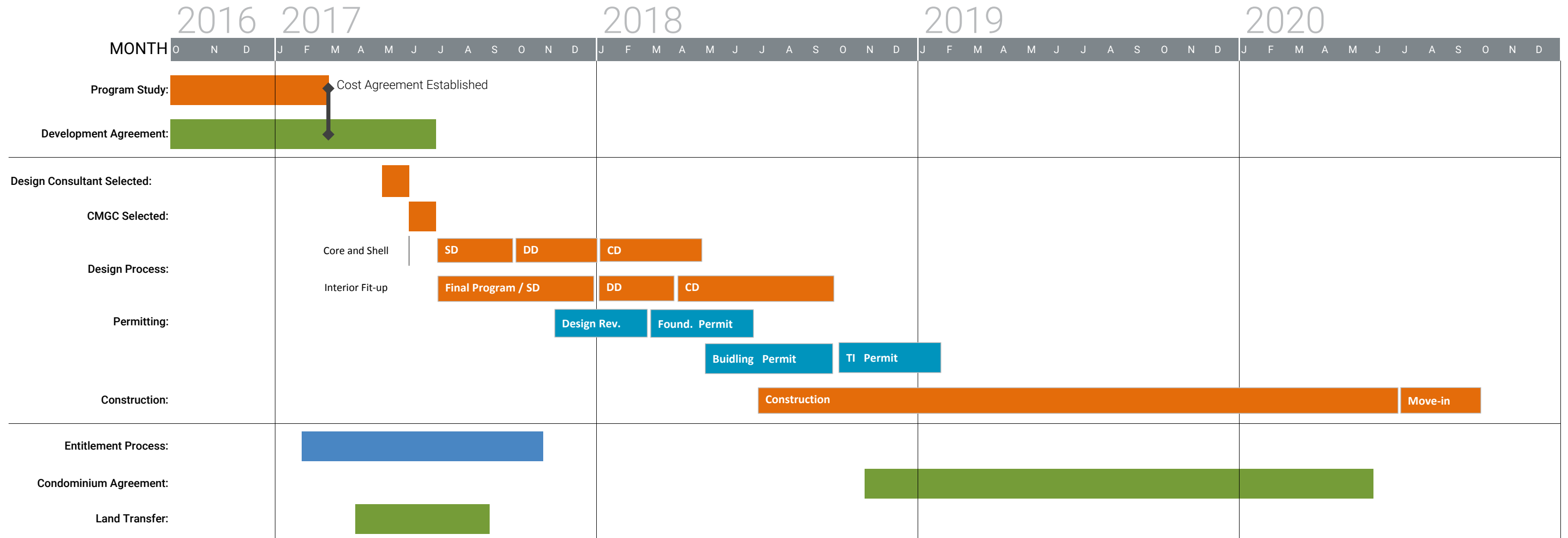
Consistent with the project goals, the program includes a significant amount of shared classroom and informal collaboration space. The classroom capacity was determined from a campus wide utilization analysis combined with the specific needs of the partners. The shared space is allocated proportionally to each partner, the methodology for which is included in this report.

The estimated cost for the project, per this program and concept design – with a reasonable and standard amount of contingency – is slightly higher than the project budget. The EC has indicated that they are comfortable with the cost and budget at this time (the cost and budget analysis is included in this report).

SCHEDULE Programming Study



SCHEDULE Overall Project



PROJECT GOALS

FUNCTION: (PROGRAM AND ACTIVITIES)

The project shall accommodate the needs of the four partners and the following programs:

- PSU Graduate School of Education
- PCC: The Dental Sciences program and Dental Clinic.
- City of Portland: Office environments (to be determined)
- OHSU/PSU: School of Public Health
- Retail or Commercial Office space
- Other program and possible space needs:
 - PCC/PSU transfer office: showcase ongoing educational opportunities at PSU by providing space for advisors and transfer student lounge space. This would support a better transition and completion success of PCC students to PSU.
 - PCC: Bachelor's completion program for Dental Hygiene with PSU
 - Conference Center for large meetings and events.

The program shall capitalize on opportunities for partnership activities as well as use of shared space including:

- PCC/PSU Bachelor's completion program for Dental Hygiene
- City of Portland/PSU shared space for building research and living lab (i.e. green roof)

FORM: (BUILDING QUALITIES)

The building shall be designed to:

- Advanced sustainability criteria (City of Portland's Green Building Policy)
- Meet age-friendly design criteria (agefriendlyportland.com)
- Current seismic code (non-essential facility)
- support and enhance existing and emerging urban design initiatives (Montgomery Green Street, Pedestrian environment of U-District and South Downtown.)
- Create retail space that is right sized and appropriately designed to be cost effective and efficient to operate, and brings life to the building and convenience for users.
- Provide workplace and academic environments that are safe, secure, healthy and productive: maximize general access to natural light, good air quality, access to views and exterior amenities. Promote healthy activity by providing bike parking, open and accessible stairways and rejuvenation spaces
- Provide workplace and academic environments that support emerging work styles: efficient use of space, promote social interaction, collaboration, and community. Consider shared meeting rooms, lounges and kitchens; these could be the primary spaces for collaboration between the building partners.
- Promote productive work through efficient work rooms and storage space.
- Ensure future flexibility through cost efficient systems selections.

BUDGET:

- The project shall be developed within the specified budget, making good use of public resources.
- The building solution should minimize long-term maintenance and operations costs.

SCHEDULE:

- The design phase will start July 2017
- The building will open for use in September 2020

PROGRAM SUMMARY

PSU Graduate School of Education	33,807	DNSF
OHSU/PSU School of Public Health	40,075	DNSF
PCC Dental Sciences Program and Dental Clinic	19,907	DNSF
City of Portland	22,943	DNSF
PSU/PCC Transfer Office	2,000	DNSF

Building Common Space

	Total SF
Lobby	2,100
Conference Center	2,440
Bike Room	1,900
Showers/Lockers	750
Shipping/Receiving/Trash	800
Fire Water Storage Tank	300
Fire Command Center	209
Storage	500
	8,999 NSF

Teaching Space (GSE & SoPH)

	Qty	SF/Rm	Total SF
Classrooms/Seminar - XL	1	1,780	1,780
Classrooms/Seminar - LG	1	1,418	1,418
Classrooms/Seminar - MD	3	1,054	3,162
Classrooms/Seminar - SM	4	860	3,440
Computer Lab	1	862	862
STEM Classroom	1	1,482	1,482
Circulation and Lounges	1	4,628	4,628
			16,772 NSF

Retail / Creative Office

	Qty	SF/Rm	Total SF
Retail 1	1	973	973
Retail 2	1	980	980
Retail 3	1	1,010	1,010
Retail 4	1	2,540	2,540
Ground Floor Lobby	1	596	596
Creative Office	1	5,136	5,136
			11,235 NSF

BUILDING NET SF	155,738
25% Grossing Factor	38,934
BUILDING TOTAL GROSS SF	194,672

PROGRAM PSU Graduate School of Education

DEAN'S OFFICE		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Dean)	1	180	180	
	Enclosed Offices (Chair)	1	100	100	
	Enclosed Offices (Faculty)	4	100	400	
	Open Workstation	15	64	976	
Conference/Seminar Rooms	Small Conference	1	150	150	Hold six people
	Dean's Conference	1	450	450	Hold 25 people
Support	Copy/Mail	1	100	100	
	Workroom	1	250	250	
	Storage	1	400	400	
	Faculty & Staff Lounge/Kitchen	1	1,600	1,600	
DEAN'S OFFICE - Subtotal		28		4,806	

MCS & ROSS		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Faculty)	12	100	1,200	
	Open Workstation	8	64	512	
Conference/Seminar Rooms	Small Conference	2	150	300	Hold six people
Support	Copy/Mail	1	100	100	
	Storage	1	130	130	
MCS & ROSS - Subtotal		25		2,442	

ED LEADERSHIP & POLICY		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Chair)	1	100	100	
	Enclosed Offices (Faculty)	14	100	1,400	
	Open Workstation	1	64	82	
	Open Workstation - Adjuncts (1 per 5)	19	13	247	
Conference/Seminar Rooms	Small Conference	2	150	300	Hold six people
Support	Copy/Mail	1	100	100	
ED LEADERSHIP & POLICY - Subtotal		39		2,429	

TECH SERVICES		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Faculty)	2	100	200	
	Open Workstation	3	64	192	
Conference/Seminar Rooms	Small Conference	1	150	150	Hold six people
Teaching Space	Resource Room / Maker Space	1	450	450	
	Reading Room	1	450	450	
Support	Storage	1	300	300	
	Tech Workroom	1	450	450	
	Video Recording	1	75	75	
TECH SERVICES - Subtotal		12		2,467	

SPECIAL EDUCATION		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Chair)	1	100	100	
	Enclosed Offices (Faculty)	16	100	1,600	
	Open Workstation	21	64	1,344	
	Open Workstation - Adjuncts	6	13	78	1 per 5 adjunct faculty - 2 workstations
Conference/Seminar Rooms	Small Conference	3	150	450	Hold six people
	Large Conference	1	300	300	Hold 15 people
Teaching Space	Universal Design Lab	1	200	200	
	Reading Clinic	1	200	200	
	Infant/Toddler/Preschool	1	200	200	
Support	Copy/Mail	1	100	100	
	Storage	1	150	150	
SPECIAL EDUCATION - Subtotal		54		4,922	

CURRICULUM & INSTRUCTION		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Chair)	1	100	100	
	Enclosed Offices (Faculty)	30	100	3,000	
	Open Workstation	3	64	192	
	Open Workstation - Adjuncts	48	13	624	1 per 5 adjunct faculty - 10 workstations
Conference/Seminar Rooms	Small Conference	2	150	300	Hold six people
Support	Copy/Mail	1	100	100	
CURRICULUM & INSTRUCTION - Subtotal		86		4,516	

OCCD		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Faculty)	6	100	600	
	Open Workstation	25	64	1,600	
Conference/Seminar Rooms	Small Conference	1	150	150	Hold six people
	Large Conference	1	300	300	Hold 15 people
Support	Copy/Mail	1	100	100	
	Storage	1	400	400	
	Tech Storage	1	50	50	
	Imaging	1	100	100	
OCCD - Subtotal		38		3,500	

COUNSELING CLINIC		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	Waiting area for 8 people
Workspaces	Open Workstation	1	64	64	
	Copy/Mail	1	100	100	Can be an alcove
Support	Private Gender Neutral Bathroom	1	64	64	
	Clinic Office	4	64	256	Shared by 9 clinic employees
	Clinic Group Room	1	360	360	Hold 18 people, serves as classroom and breakroom
Support	Small Counseling Room	4	80	320	Hold four people
	Medium Counseling Room	3	100	300	Hold six people
	Observation Room	1	300	300	Hold 14 people
COUNSELING CLINIC - Subtotal		17		1,964	

Department Net SF	27,046
25% - Internal Circulation	6,761
Department Gross SF	33,807

PROGRAM OHSU/PSU School of Public Health

CLINICAL TRIALS		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	3	100	300	
	Open Workstation - Adjunct & Admins	10	48	480	Space for 2 workstations at each (Study Coordinator - Space for 3 workstations)
Conference/Meeting Spaces	Clinical Visit Rooms	5	130	650	1 exam table, 1 small table, 2 chairs, & sink - per room
Support	Storage	1	180	180	Locking door and locking filing cabinets along the wall
	Phlebotomy Room	1	200	200	3 phlebotomy chairs, 1 workstation, sink, curtained off space with exam table and ECG machine. One dimension to accommodate distance for 20' eye exam.
	Phlebotomy Waiting Room	1	160	160	To accommodate 8 people max.
	Lab	1	150	150	Sink & toilet for sample processing
CLINICAL TRIALS - Subtotal		22		2,120	

HSMP		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	6	100	600	
	Open Workstation - Adjunct & Admins	16	48	768	
	Open Workstation - GRAs	24	8	192	
Conference/Meeting Spaces	Touchdown Meeting	1	100	100	
HSMP - Subtotal		47		1,660	

HEALTH SERVICES		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	7	100	700	
	Open Workstation - Adjunct & Admins	25	48	1,200	Adjuncts primary assignments are elsewhere, hoteling.
Conference/Meeting Spaces	Touchdown Meeting	1	100	100	
Support	Storage	3	200	600	
HEALTH SERVICES - Subtotal		36		2,600	

EPIDEMIOLOGY		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Faculty)	16	100	1,600	
	Open Workstation - Adjunct & Admins	21	48	1,008	Adjuncts primary assignments are elsewhere, hoteling.
	Open Workstation - GRAs	6	24	144	
Conference/Meeting Spaces	Touchdown Meeting	3	100	300	
Support	Secure Server Room	1	200	200	Shared resource
	Interview Rooms	3	100	300	
	Exam Rooms	2	80	160	
	Help Desk	2	48	96	
EPIDEMIOLOGY - Subtotal		55		4,008	

BIO STATISTICS		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	25	100	2,500	
	Open Workstation - Adjunct & Admins	34	48	1,632	
	Open Workstation - GRAs	3	24	72	
Conference/Meeting Spaces	Touchdown Meeting	6	100	600	Needed for TA office hours
BIO STATISTICS - Subtotal		68		4,804	

HEALTH PROMOTION		Quantity	SF/Room	Total SF	Notes
Lobby/Welcome	Reception	1	200	200	
Workspaces	Enclosed Offices (Faculty)	36	100	3,600	
	Open Workstation - Adjunct & Admins	25	48	1,200	
	Open Workstation - GRAs	13	24	312	
	Advisors Offices	4	100	400	
Conference/Meeting Spaces	Touchdown Meeting	6	100	600	
HEALTH PROMOTION - Subtotal		85		6,312	

ESHH		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	8	100	800	
	Open Workstation - Adjunct & Admins	5	48	240	
	Open Workstation - GRAs	3	24	72	
ESHH - Subtotal		16		1,112	

PRIMARY HEALTHCARE		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	4	100	400	
	Open Workstation - Adjunct & Admins	6	48	288	
	TLC Satellite Office	1	120	120	
Conference/Meeting Spaces	Touchdown Meeting	4	100	400	2 acoustically sound/technology rich for recording classes
PRIMARY HEALTHCARE - Subtotal		15		1,208	

EARLY ASSESSMENT		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Offices (Faculty)	3	100	300	
	Open Workstation - Adjunct & Admins	5	48	240	
EARLY ASSESSMENT - Subtotal		8		540	

DEAN'S OFFICE		Quantity	SF/Room	Total SF	Notes
Workspaces	Enclosed Office (Dean)	1	180	180	
	Enclosed Offices (Assoc. Dean)	5	100	500	
	Enclosed Offices (Faculty)	3	100	300	
	Open Workstation - Adjunct & Admins	11	48	528	
Conference/Meeting Spaces	Dean's Conference Room	1	250	250	
DEAN'S OFFICE - Subtotal		21		1,758	

CENTRAL RESOURCES		Quantity	SF/Room	Total SF	Notes
Workspaces	Central GRA Workstations	18	36	648	Hoteling for GRAs/TAs at all units
Conference/Meeting Spaces	Small Meeting	6	150	900	
	Medium Meeting	4	300	1,200	
	Large Meeting	2	625	1,250	
Support	Copy Center	1	120	120	
	Student/Faculty Hub/Kitchenette	1	500	500	
	Kitchenette/Coffee Station	2	60	120	
	Secure Server Room	1	200	200	
	Open Collaboration	1	1,000	1,000	
CENTRAL RESOURCES - Subtotal		36		5,938	

Department Net SF	32,060
25% - Internal Circulation	8,015
Department Gross SF	40,075

PROGRAM PCC Dental Sciences Program and Dental Clinic

DENTAL CLINIC/ADMISSIONS	Quantity	SF/Room	Total SF	Notes
Lobby/Welcome				
Waiting Area	30	20	600	30 seat capacity, small childrens area
Reception Desk	1	60	60	1 Workstations (check in/check out - cashier function)
Workroom	1	120	120	Copy/Fax/Office Supply Storage/ Patient Charts
Dental Clinic				
Chairs/Stations	26	115	2,990	11-6 x 10-0 per station footprint, between each station will be cabinetry for stroage and a sink, 1 chair to have video capability for demos and student evaluations, 1 intraoral xray machine contained in cabinet between 2 chairs.
Chairs/Stations ADA	3	127	381	10%, Side transfer, 11-6 x 11-0, outfitted like typical station
Demo Area	20	15	300	Open area for students to gather outside of the chair area but within the clinic
Instructor Stations	5	40	200	Line of sight to chair area, distributed throughout the clinic
Sink Station	1	20	20	Station for patients to brush their teeth
Storage Room	1	80	80	Dental Supplies and student instrument storage, gown and coat storage
Clinic Coordinator Office	1	90	90	Adjacent to Clinic and Radiology Lab, Locked Door
Sterilization Processing	1	220	220	Located near Clinic and Labs, two workflows that serve both. Pass through windows for instruments (clean and dirty) and pass through lockers for students personal instruments that have been sterilized, undercounter refrigerators, undercounter sterilizer
Patient Toilet	2	55	110	Near waiting area, gender neutral
DENTAL CLINIC/ADMISSIONS - Subtotal	92		5,171	

LABS	Quantity	SF/Room	Total SF	Notes
Radiography Lab				
Intraoral Xray	7	100	700	Lead lined walls between suites, vision glass into Xray from corridor
Panorama Xray	1	100	100	Lead lined walls between suites, vision glass into Xray from corridor
Storage	1	60	60	Mostly cabinet storage
Demo Area	1	360	360	15 seat capacity [confirm], 24 SF per station, could be standard classroom
Instructor Stations	2	40	80	
Dental Materials/Simulation				
Bench Area	1	500	500	Sound attenuation,ventilation and dust collection, vacuum and compressed air, natural gas connections, vibration from machinery/tools 20 seats minimum, 25 SF per station. 10-20 Simulators (1 each station preferred or in between each station), undercounter refrigerators, natural gas connection at each station
Instructor/Demo Area	1	100	100	Camera, projection, large table for students to gather around, sink
Dental Technology Lab				
Bench Area	1	625	625	Sound attenuation,ventilation and dust collection, vacuum and compressed air, natural gas connections, vibration from machinery/tools 25 seat capacity, 25 SF per station, natural gas connection at each station
Enclosed Office	1	80	80	acoustic separation from Lab
Ovens Lab	1	150	150	Large hood/hoods over Ovens, piped Med Gas (O2, Air, V)
Porcelain Lab	1	150	150	could be combined with Ovens lab
Instructor Stations	2	40	80	
Soiled Hold	1	50	50	For trash, linen and bio haz waste prior to leaving the floor
Student Lockers	1	150	150	half size, 50 count, hanging rod for lab coats, near laundry
LABS - Subtotal	22		3,185	

CLASSROOM/STUDENT SUPPORT	Quantity	SF/Room	Total SF	Notes
Classrooms				
Classrooms	2	600	1,200	25 seat capacity, tables and chairs, could double as space for all faculty meetings
Large Classroom	1	1,200	1,200	50 seat capacity, individual chairs with tablet arm. Used 3 days per week at 1 hour and 2 days per week for half the day
Computer Lab	1	700	700	25 seat capacity, could double as classroom
Support				
Student Lockers	1	200	200	half size, 100 count, hanging closet for lab coats, near laundry
Student Restrooms	2	55	110	gender neutral
Student Lounge	1	300	-	Lounge can be common with building
Student Gown Laundry	1	100	100	stackable washer and dryer for student gowns, rod for hanging, counter for basket
Lactation Room	1	80	-	Common to building
CLASSROOM/STUDENT SUPPORT - Subtotal	10		3,510	

CONFERENCE/DENTAL OFFICES	Quantity	SF/Room	Total SF	Notes
Conference				
Testing Room	3	90	270	1 capacity for student test accommodations
Meeting Room	2	150	300	3-5 seat capacity
Medium Conference	1	350	350	12-15 seat capacity
Dental Offices/Staff				
Admin Assistant	1	80	80	1 Workstation at Clinic Reception/Waiting Area
Director's Private Office	1	120	120	prefer view to outdoors, near waiting area & faculty open office
Dental Faculty Open Office	1	768	768	12 Workstations @ 64 SF per
Part-time Faculty Office	1	200	200	5 person capacity
Staff Lockers	1	150	150	20 lockers
Staff Restroom	1	55	55	near office area
Staff Lounge	1	60	60	Coffee bar within office area, "lounge area" could be shared with PSU faculty
CONFERENCE/DENTAL OFFICES - Subtotal	13		2,353	

SUPPORT	Quantity	SF/Room	Total SF	Notes
Support Services				
Med Gas Room	1	TBD	-	In mechanical room, O2, Air and Vacuum
Dust Collector	1	TBD	-	In mechanical room
Vaccum/Compressor Room	1	TBD	-	In mechanical room
SUPPORT - Subtotal	3		-	

Department Net SF	14,219
Net/Gross Multiplier - 1.4	5,688
Department Gross SF	19,907

PROGRAM City of Portland

CITY OF PORTLAND	Quantity	SF/Room	Total SF	Notes
Lobby/Welcome				
Reception	1	500	500	
Workspaces				
Enclosed Offices (Small)	70	120	8,400	
Open Workstation	104	36	3,744	
Conference/Seminar Rooms				
Touchdown Room	9	60	540	
X-Small (<150 sf)	6	120	720	
Small (150-249 sf)	5	220	1,100	
Medium (250-350 sf)	3	320	960	
Large or X-Large (>350)	2	420	840	
Support				
Copy/Mail	2	75	150	
Kitchen	1	400	400	
Lounge	5	100	500	
Storage	1	250	250	
Server/IT	1	250	250	
CITY OF PORTLAND - Subtotal	210		18,354	

Department Net SF	18,354
25% - Internal Circulation	4,589
Department Gross SF	22,943

Overview:

Located in the heart of downtown Portland, the 4th and Montgomery site is part of a vibrant urban fabric, surrounded by PSU campus buildings, mixed use residential buildings, office buildings, parks, and plazas.

While adjacent to the MAX lines and the Tri-Met Bus Mall along 5th and 6th Avenues, the site is impacted most by the Portland Streetcar line that follows the site's North and East boundaries. The streetcar creates a pedestrian-friendly transit environment, strengthening the active uses at the ground floor of the building.

The site is near one of Portland Streetcar's most iconic stops at the PSU Urban Center and Urban Plaza. This open space acts as a gateway and entry point to the campus, thriving with activity for students, businesses, and the greater community.

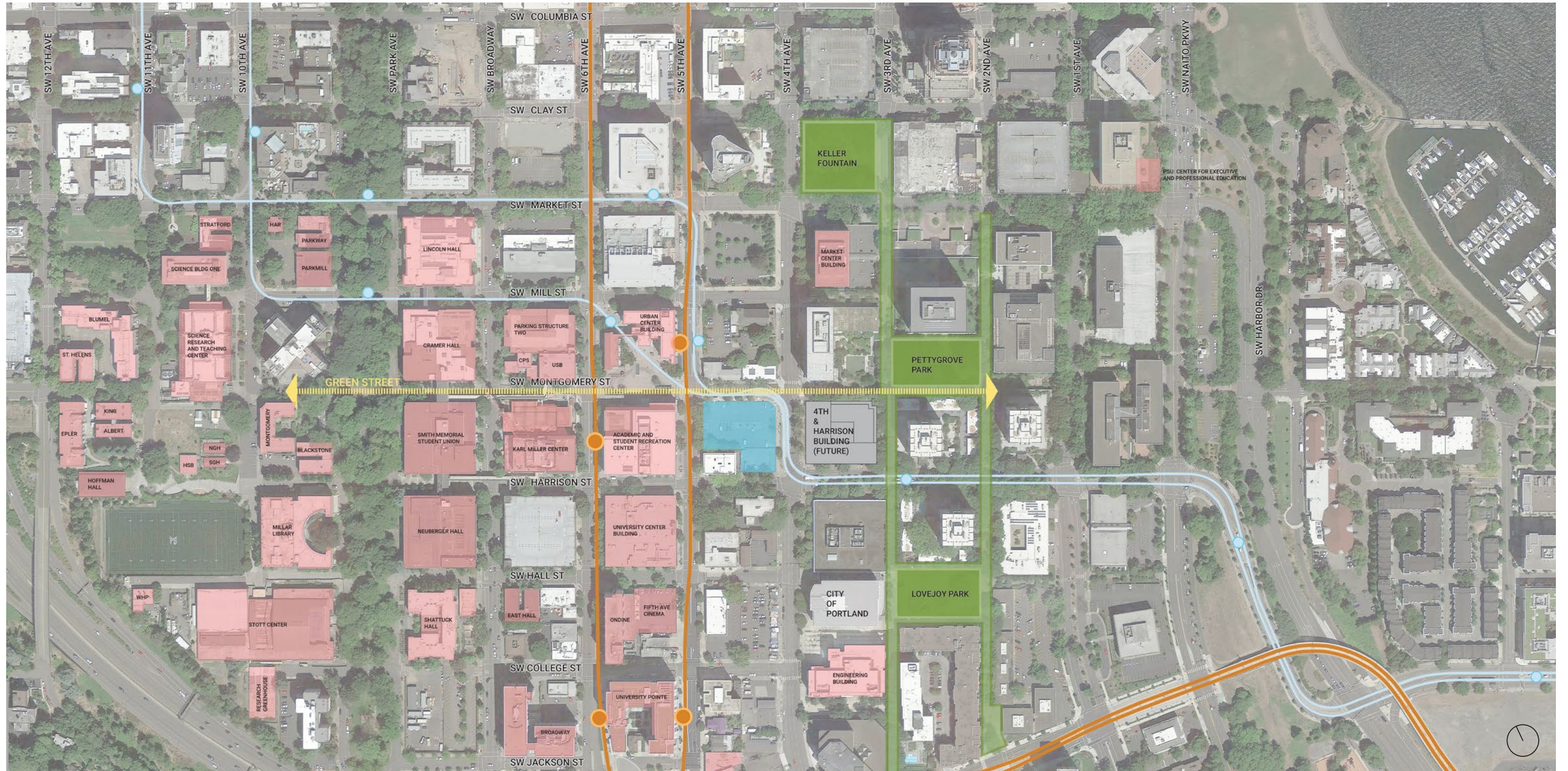
Montgomery Green Street:

The site also has the benefit of being part of the Montgomery Green Street Blocks, a planning effort undertaken by PDC, BES, PSU, and Gerding Edlen Development. The plan identifies Montgomery Street as a key pedestrian corridor between SW 11th Ave and SW 2nd Ave.

The 2009 Green Street plan encourages the integration of stormwater planters, water features, and other green elements in order to create a continuous pedestrian-friendly East/West connection between the West Hills and the Willamette River.



SITE AND CONTEXT PSU Campus



SITE AND CONTEXT Existing / Planned Projects



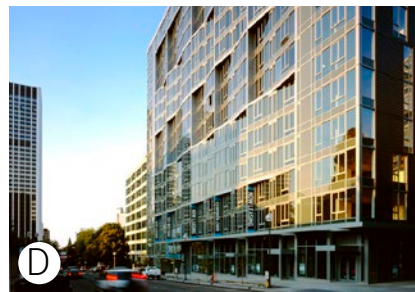
Harrison Court Apartments
Stories: 3 stories
Program: Apartments



PSU Urban Center
Stories: 7 stories
Program: Education, Retail



Downtown Value Inn
Stories: 2 stories
Program: Hotel, Retail



Cyan PDX
Stories: 16 stories
Program: Apartments, Retail



Academic and Student Recreation Center
Stories: 6 stories,
Program: Education, Recreation, Retail



The Collective On 4th
Stories: 15 stories
Program: Apartments, Retail



University Center Building
Stories: 4 stories,
Program: Education, Health



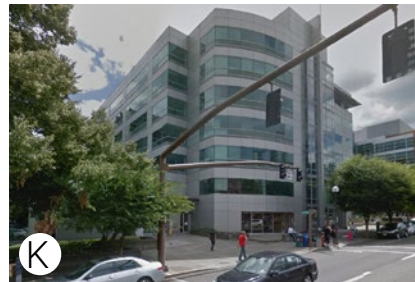
US Bank
Stories: 1 story
Program: Bank



Fourth Avenue Building
Stories: 9 stories, +/- 120 ft tall
Program: Education



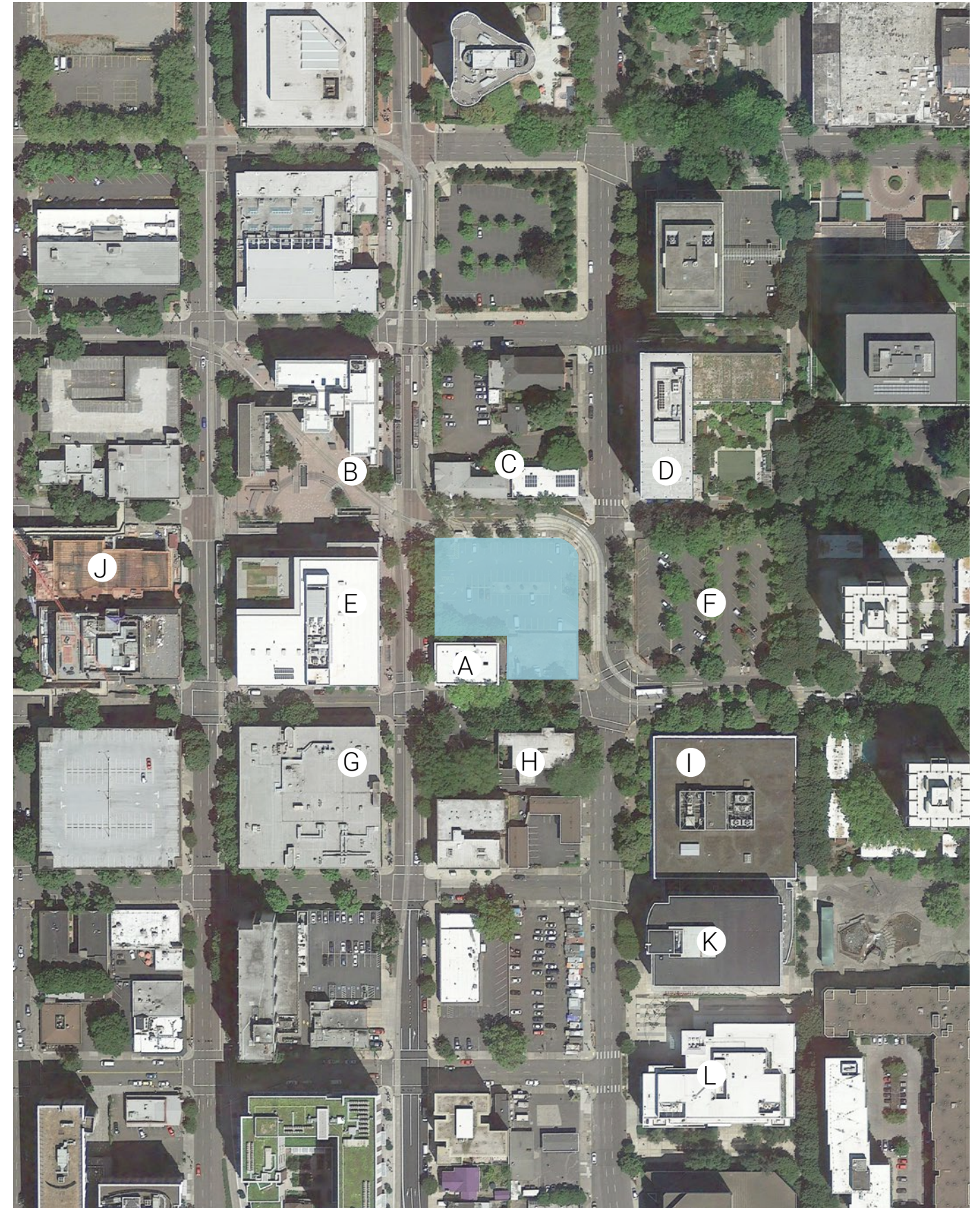
Karl Miller Business School
Stories: 6 stories
Program: Education, Retail



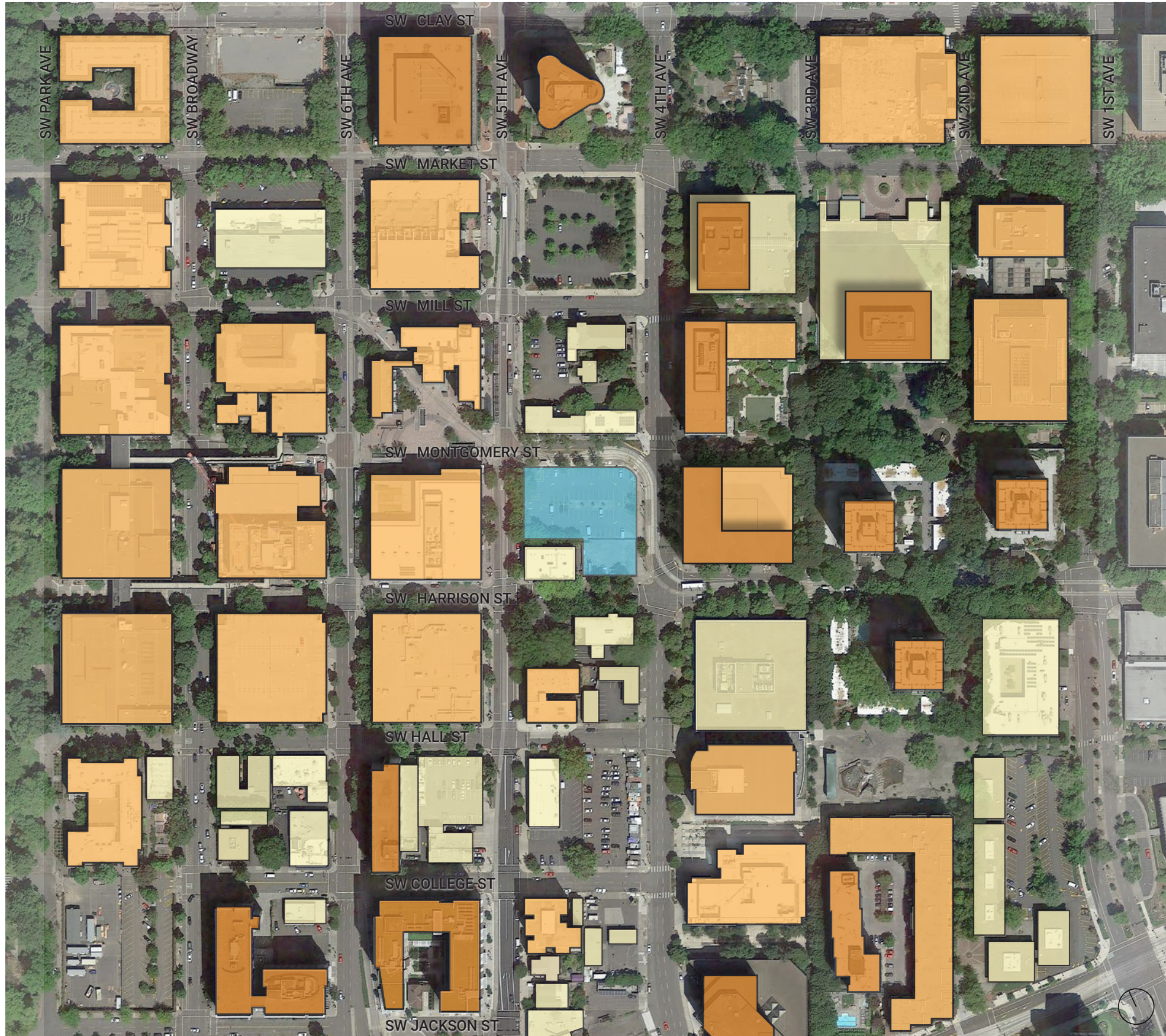
City Of Portland
Stories: 7 stories,
Program: Offices, Retail







PSU Engineering
Stories: 7 stories,
Program: Education, Retail



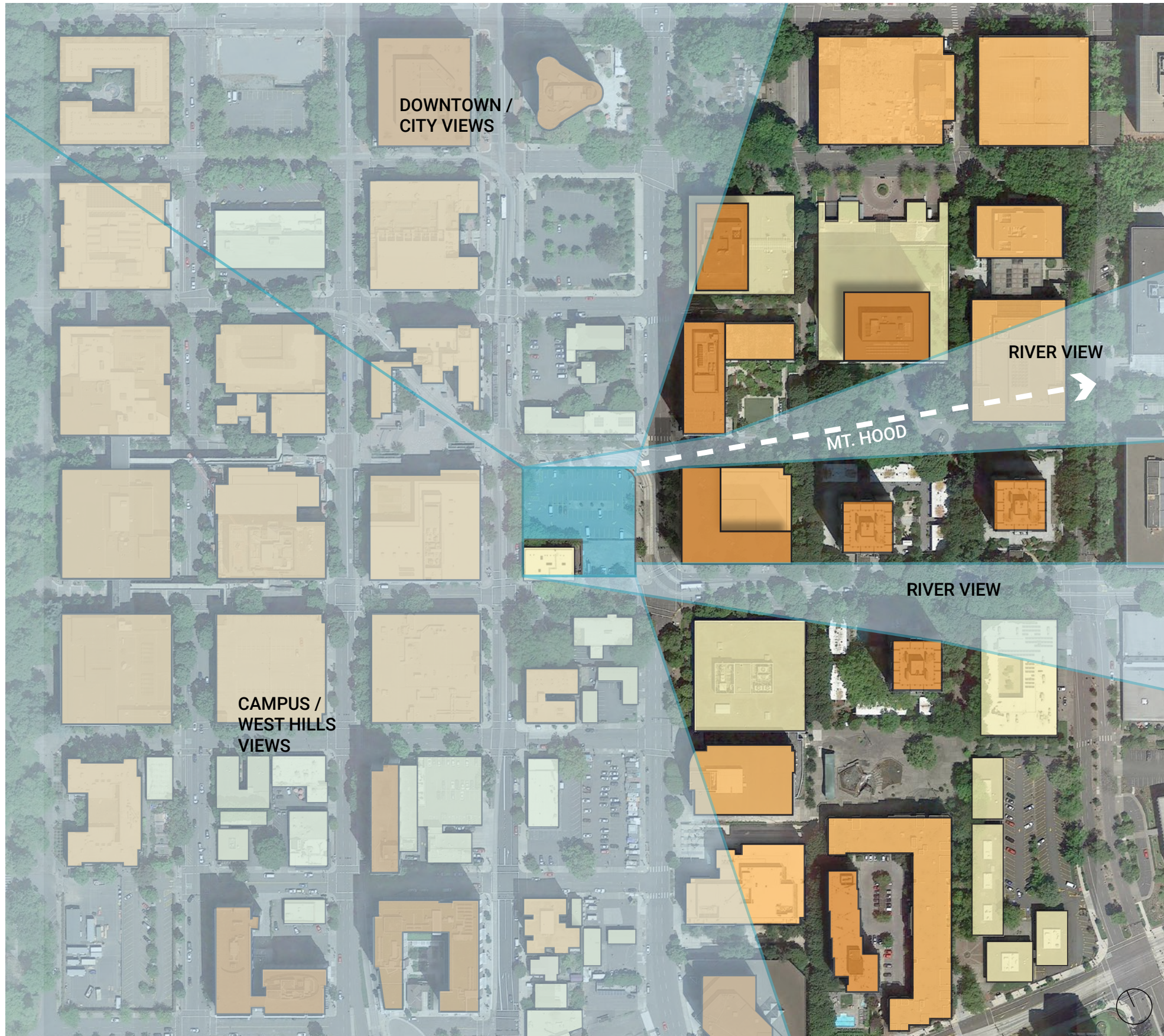
SITE AND CONTEXT Building Heights



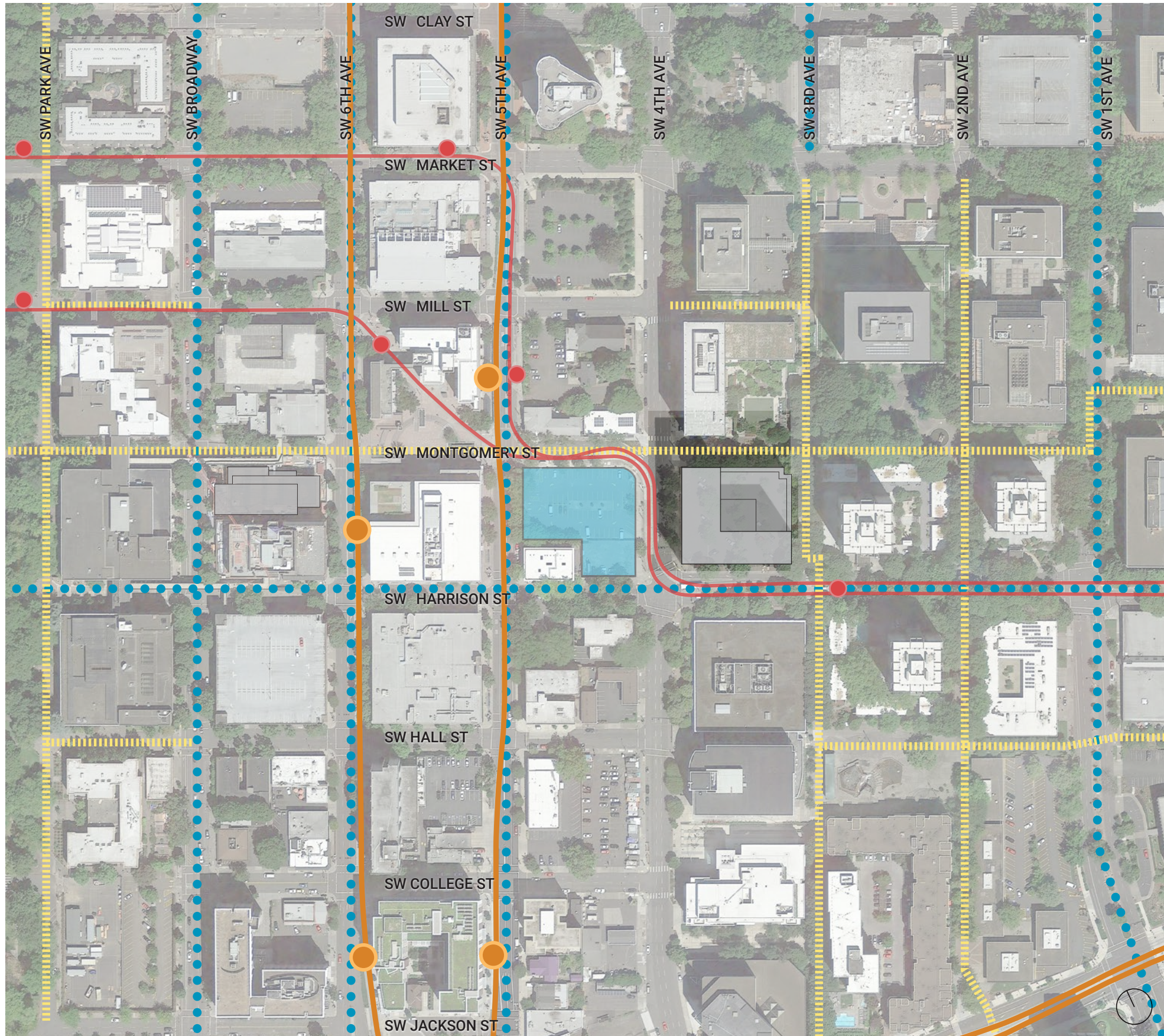
BUILDINGS

-  100' or Taller
-  Between 50' and 100'
-  From 0' to 50'
-  Building Site

SITE AND CONTEXT Views

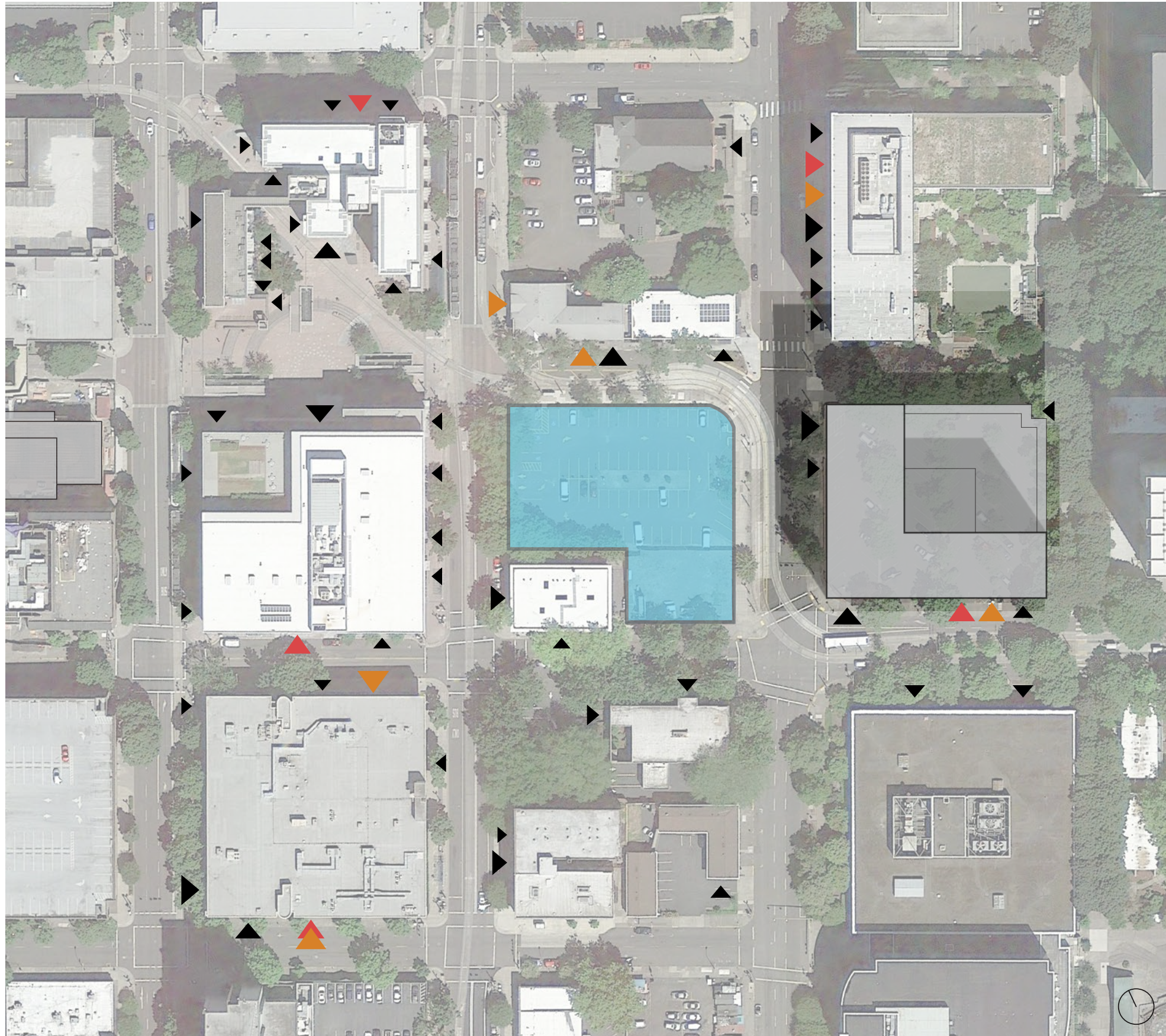






SITE AND CONTEXT Transportation



- Bike Route
- - - - - Pedestrian Route
- Streetcar Tracks
- MAX Tracks
- Streetcar Stop
- MAX Stop
- Building Site

SITE AND CONTEXT Entries



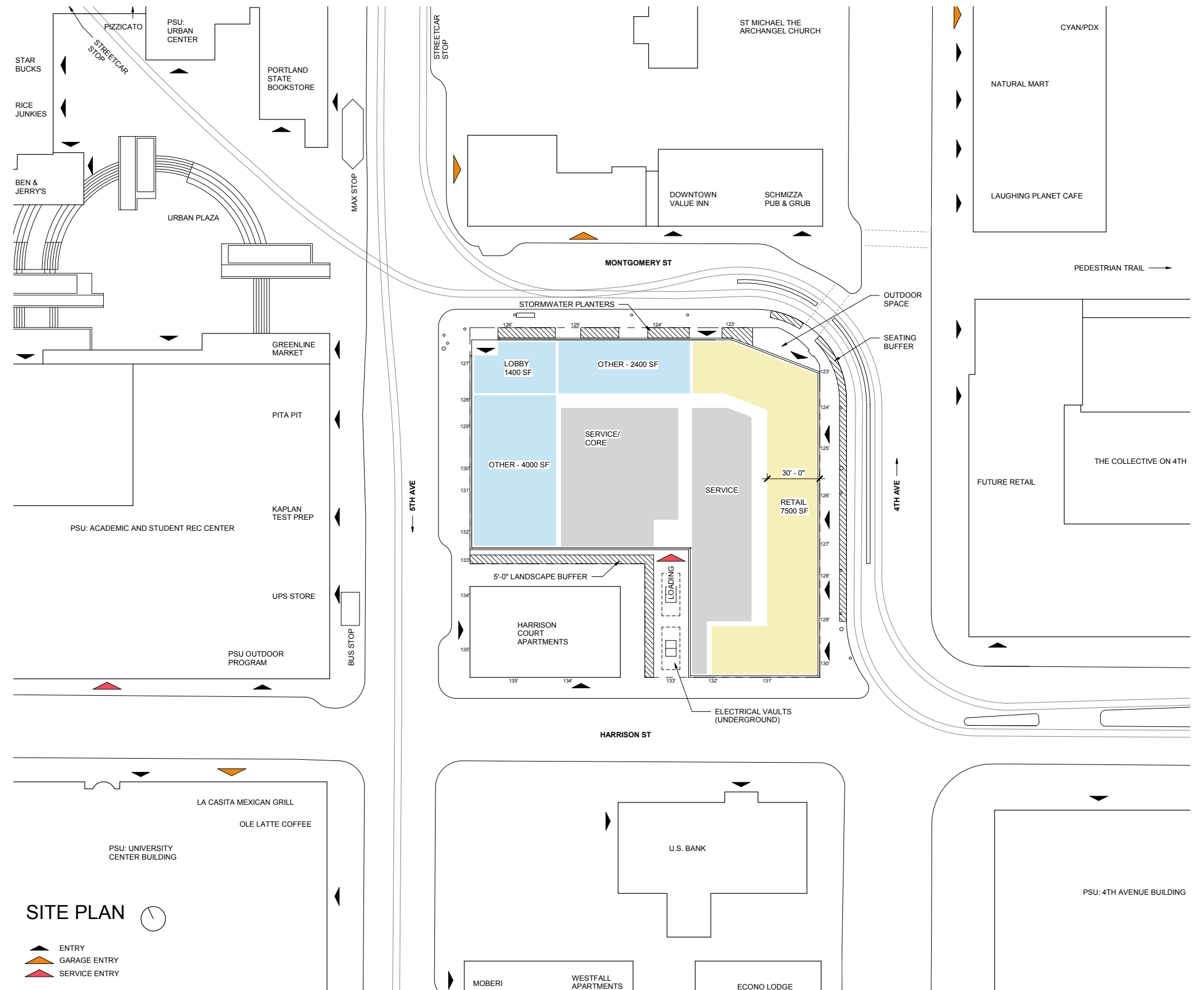
-  Building Site
-  Building Entry
-  Service Entry
-  Garage Entry

SITE AND CONTEXT Photographs



SITE DEVELOPMENT Site Charrette

- Main building entry adjacent to Urban Plaza gateway
- Carved main entry porch at NW Corner
- Loading off of Harrison St
- Retail locations recommended on 4th Ave
- Possibility of outdoor space at NE Corner in response to chamfered property line
- Seating or planting buffer along 4th Ave to mitigate streetcar impact
- Major pedestrian flow along 4th Ave and Montgomery St
- Stormwater planter along Montgomery St
- City required "Active Use" on ground floor along 5th Ave and Montgomery St



Concept:

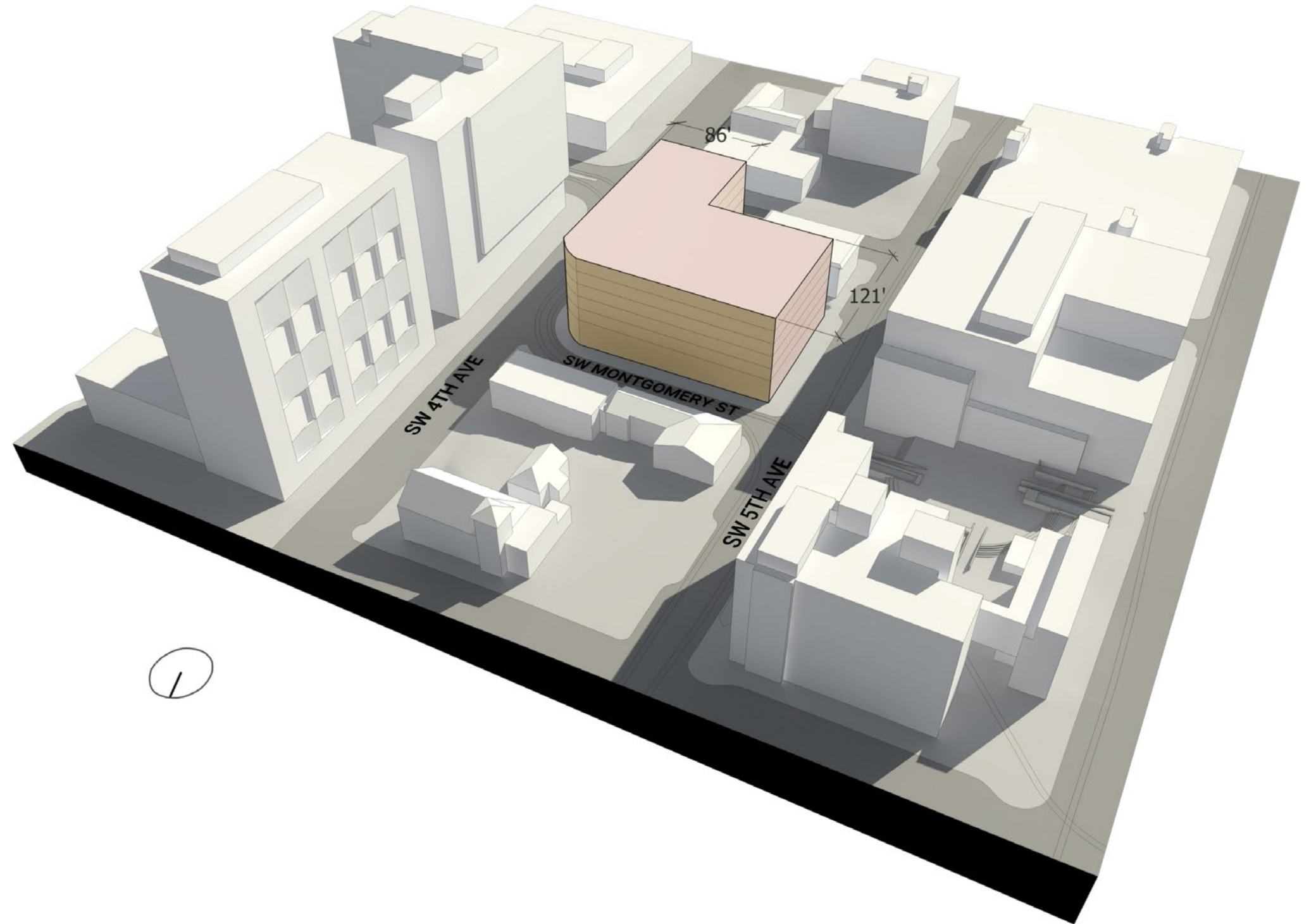
Maximize the area of each floor with a wide floor plate depth

Pros:

- Minimizes building skin costs.
- Minimizes vertical circulation costs.

Cons:

- Spaces near the center will not have access to natural light
- Difficulty separating different institutions on large floors



6 Levels

Podium Level: 30,740 sf

Tower Levels: 30,740 sf

184,440 SF

6:1 FAR Utilization- 92.3%

Concept:

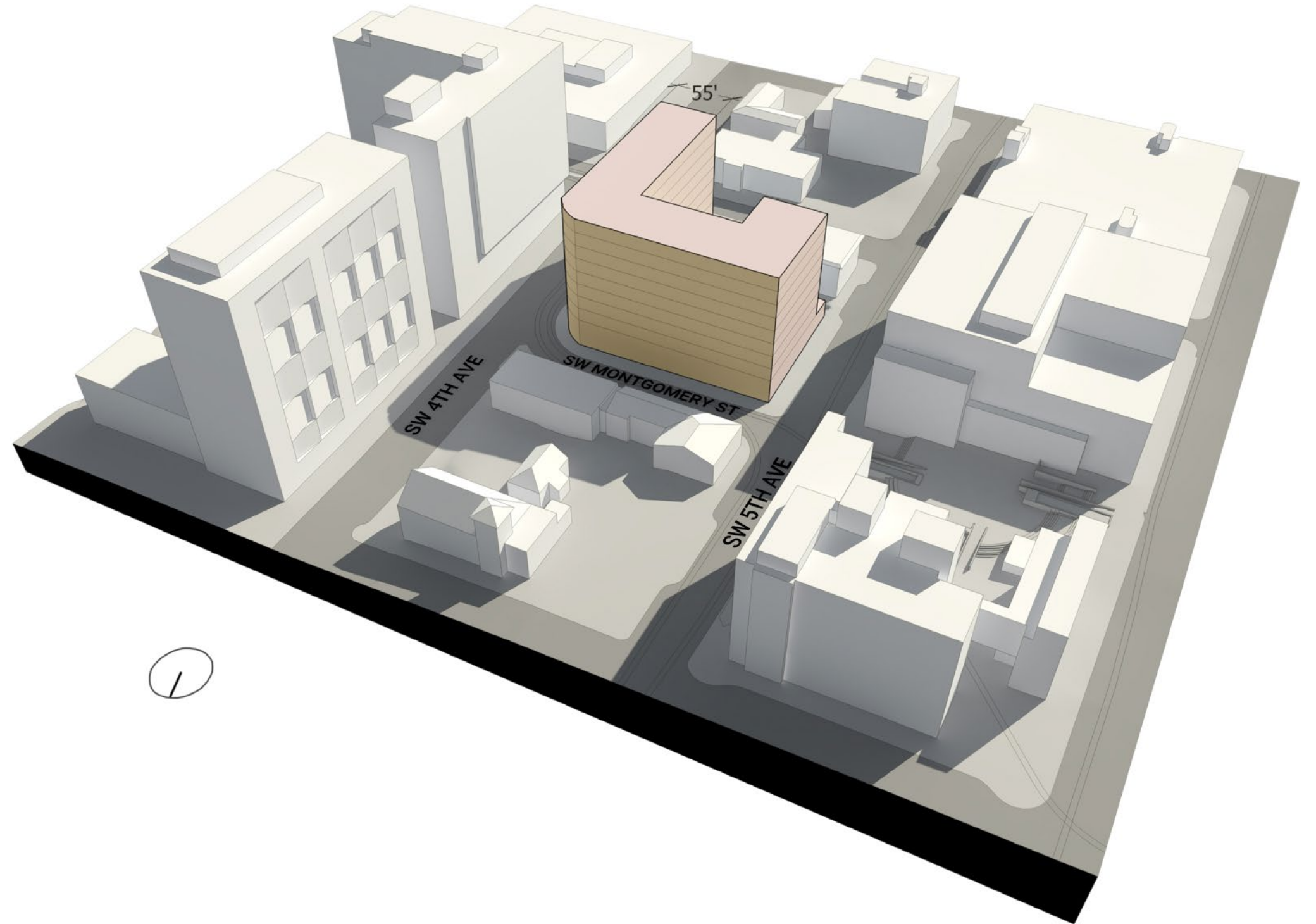
Maximize the amount of windows on each floor with a narrow floor plate depth

Pros:

- Generous amounts of natural light
- Works well for enclosed offices with windows

Cons:

- Maximizes building skin costs
- Requires lots of walking for collaboration on a single floor
- Difficult to fit large classrooms effectively
- Difficult to create meaningful hubs of activity



9 Levels

Podium Level: 30,740 sf

Tower Levels: 21,134 sf

199,812 SF

6:1 FAR Utilization- 100%

Concept:

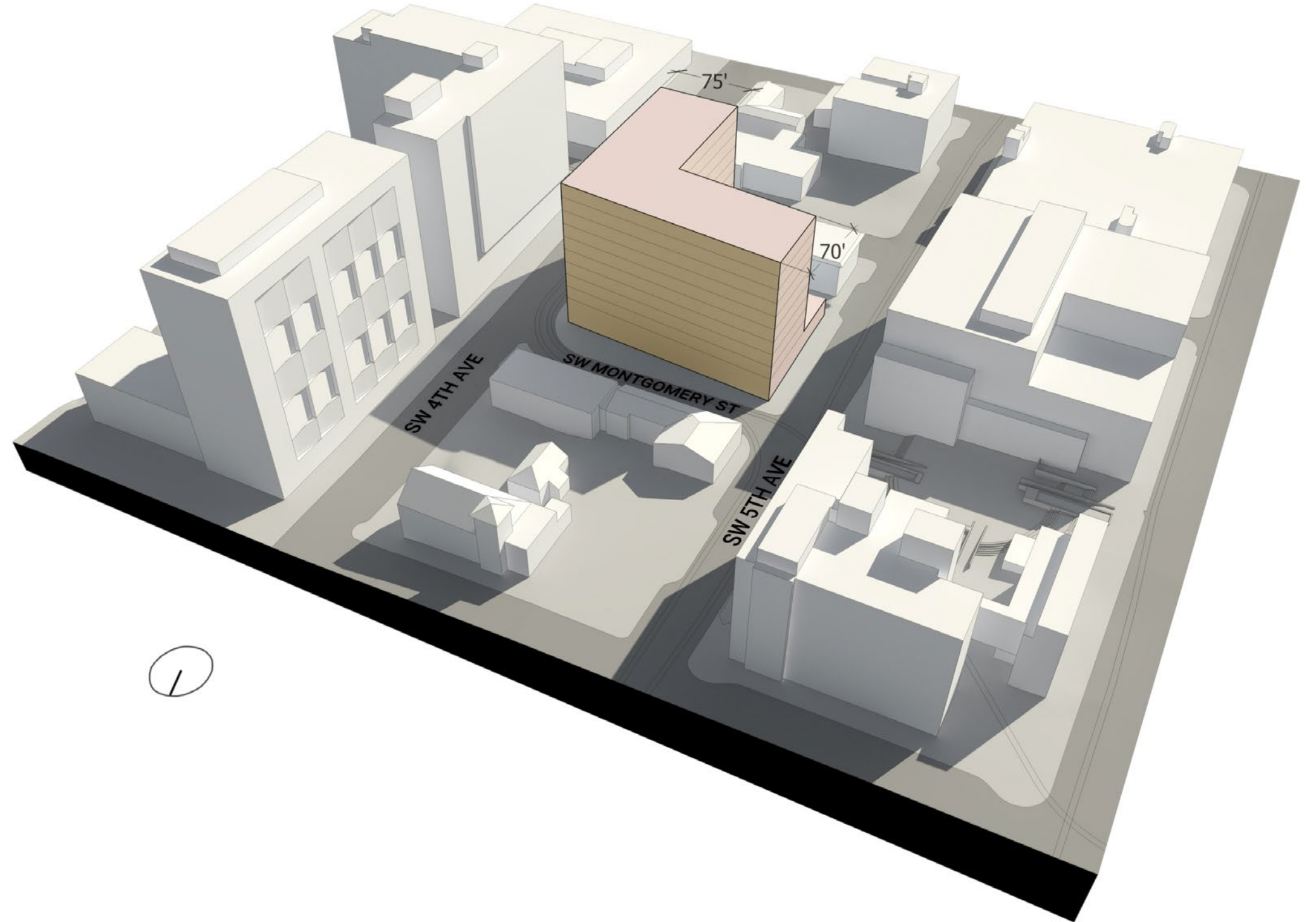
Utilize the site's natural "L" shape with a moderate floor plate depth

Pros:

- Balance of daylight, skin, and program depth
- Workable for open office, enclosed office, and classroom layouts

Cons:

- Focal point of building is away from urban plaza
- North/South leg of the "L" has poor views and solar exposure



10 Levels

Podium Level: 30,621 sf

Tower Levels: 22,498sf

233,103 SF

7:1 FAR Utilization - 100%

Concept

East/West bar building with a moderately wide floor plate

Pros

- Minimizes building skin costs
- Allows focal point of building to relate to Urban Plaza
- Effective solar orientation
- Effective distribution of programs
- Maximizes quality of views
- Efficient and effective vertical communication

Cons

- Some internal spaces might not receive daylight

PREFERRED CONCEPT

This concept was chosen by the executive committee because of its simplicity and efficiency. It follows the template of a classic office building with a 200' x 100' floor plate. The team continued to refine and explore the potential of this East/West bar building as it relates to its rich urban context and diverse programmatic requirements.

9 Levels

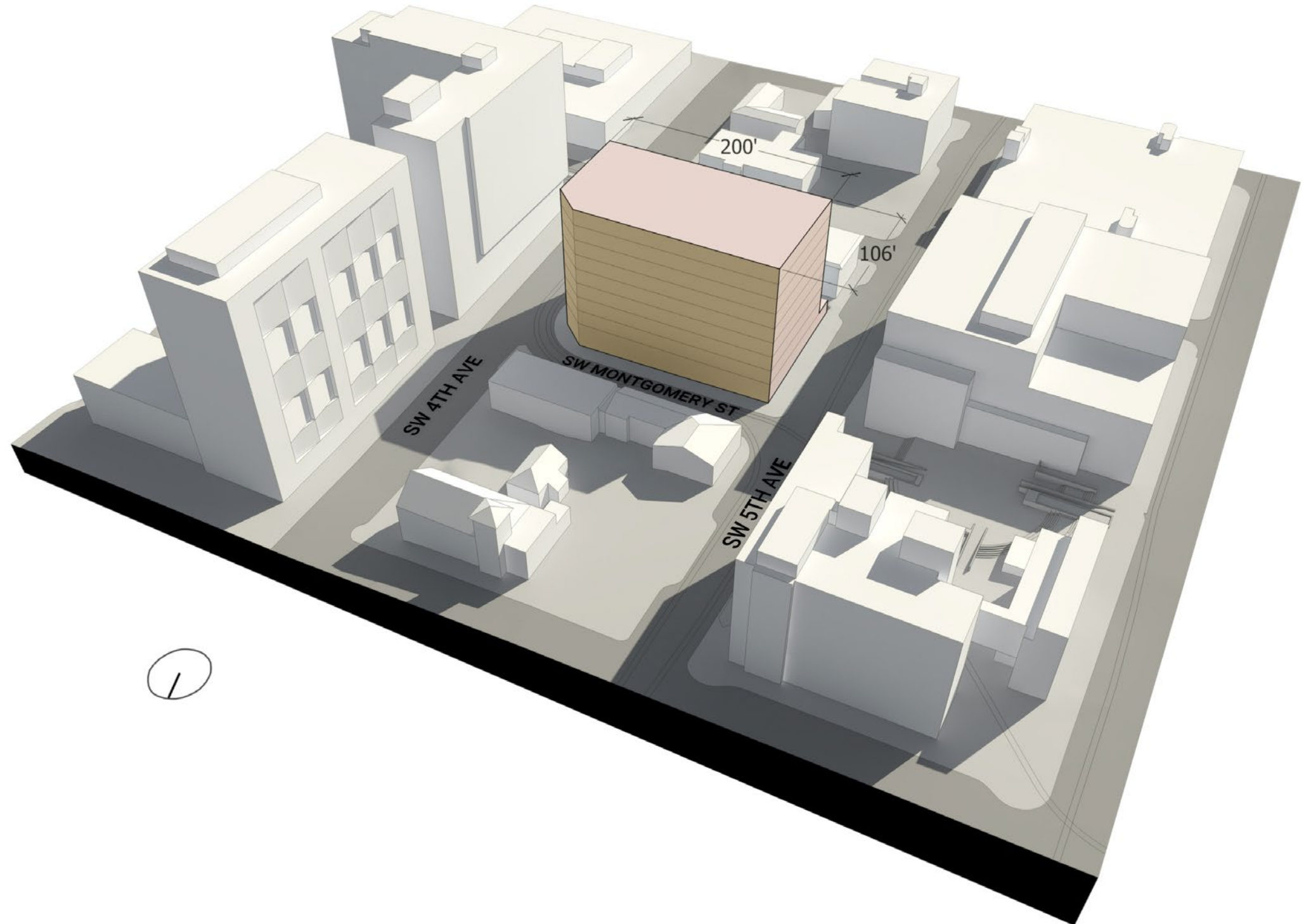
Podium Level: (1) 30,621 sf

Tower Levels: (8) 21,000 sf

198,621 SF

6:1 FAR Utilization- 99%

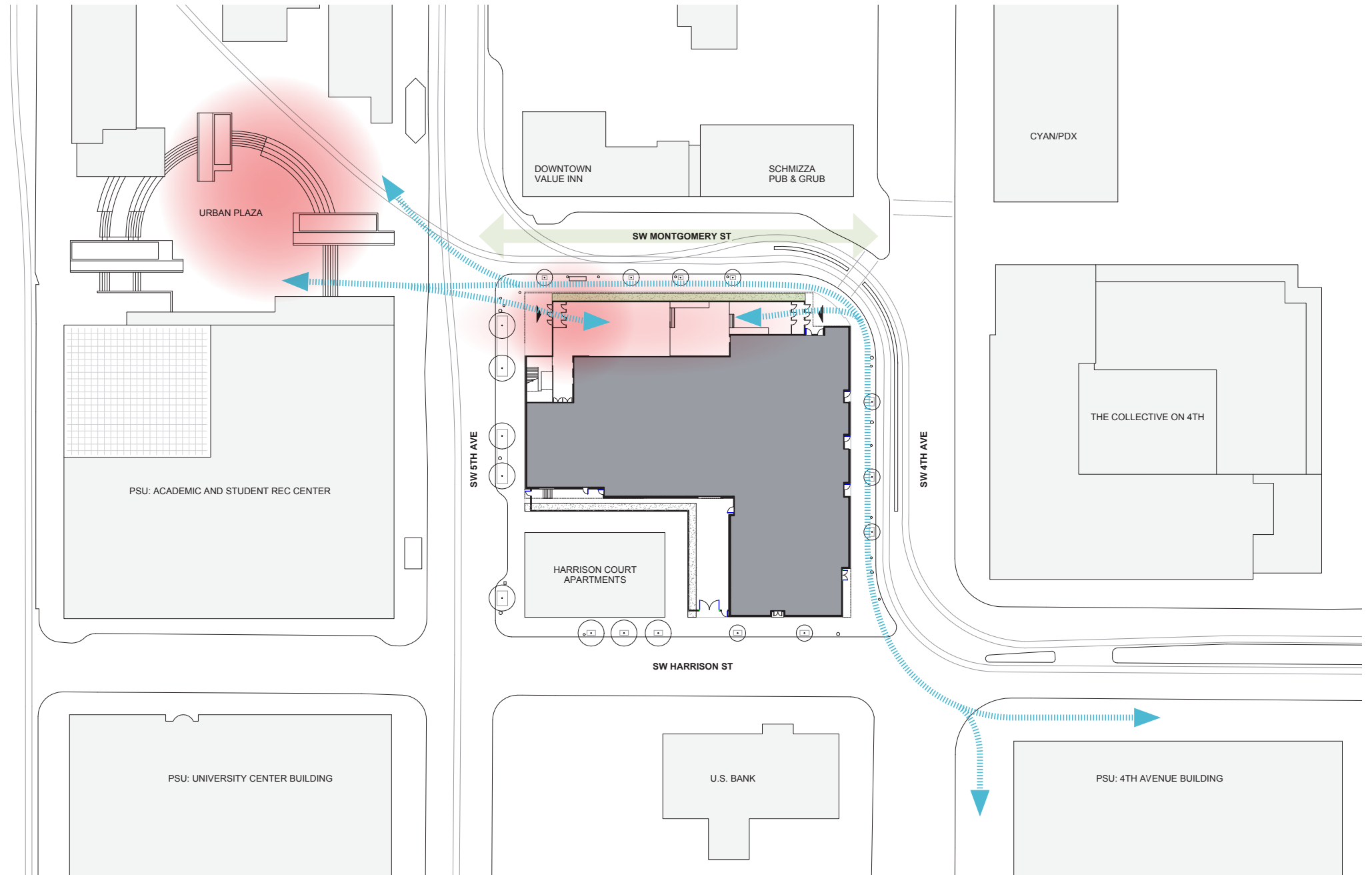
BORA



CAMPUS CONNECTION / ANCHOR CORNER Site Plan Diagram

The building connects to and extends PSU's gateway and transportation hub: Urban Plaza. The building's public ground floor has a series of stepped platforms that follow the grade of Montgomery St. These serve as places for inter-disciplinary interaction, informal learning, coffee, relaxing, or studying. The lobby provides a space for the educational energy embodied in the building to organically cultivate itself into the greater community.

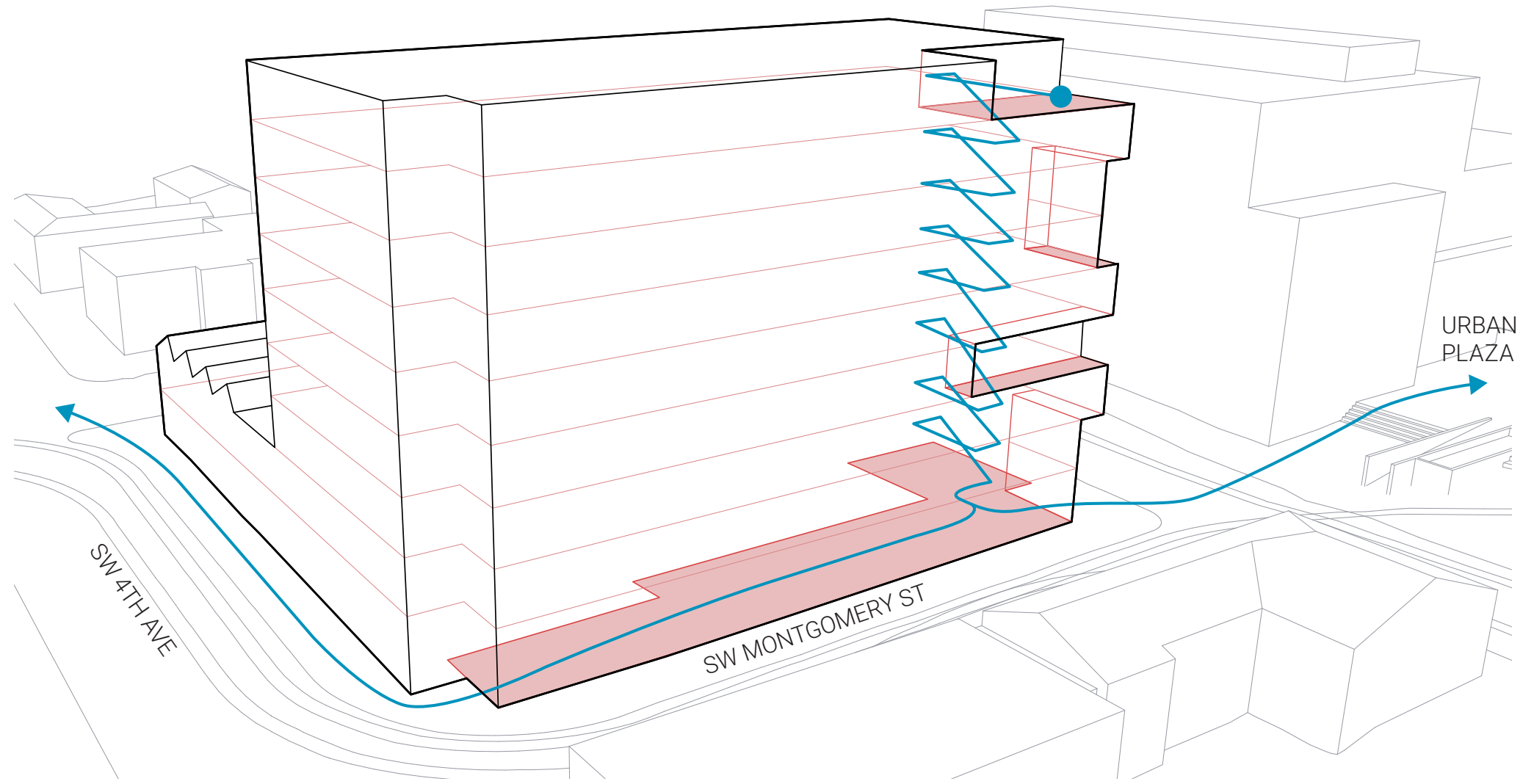
The main stairway is on the exterior of the building, inviting use and providing campus views back to Urban Plaza. Throughout all of the building's floors, the NW corner becomes the focal point of each institution's program.



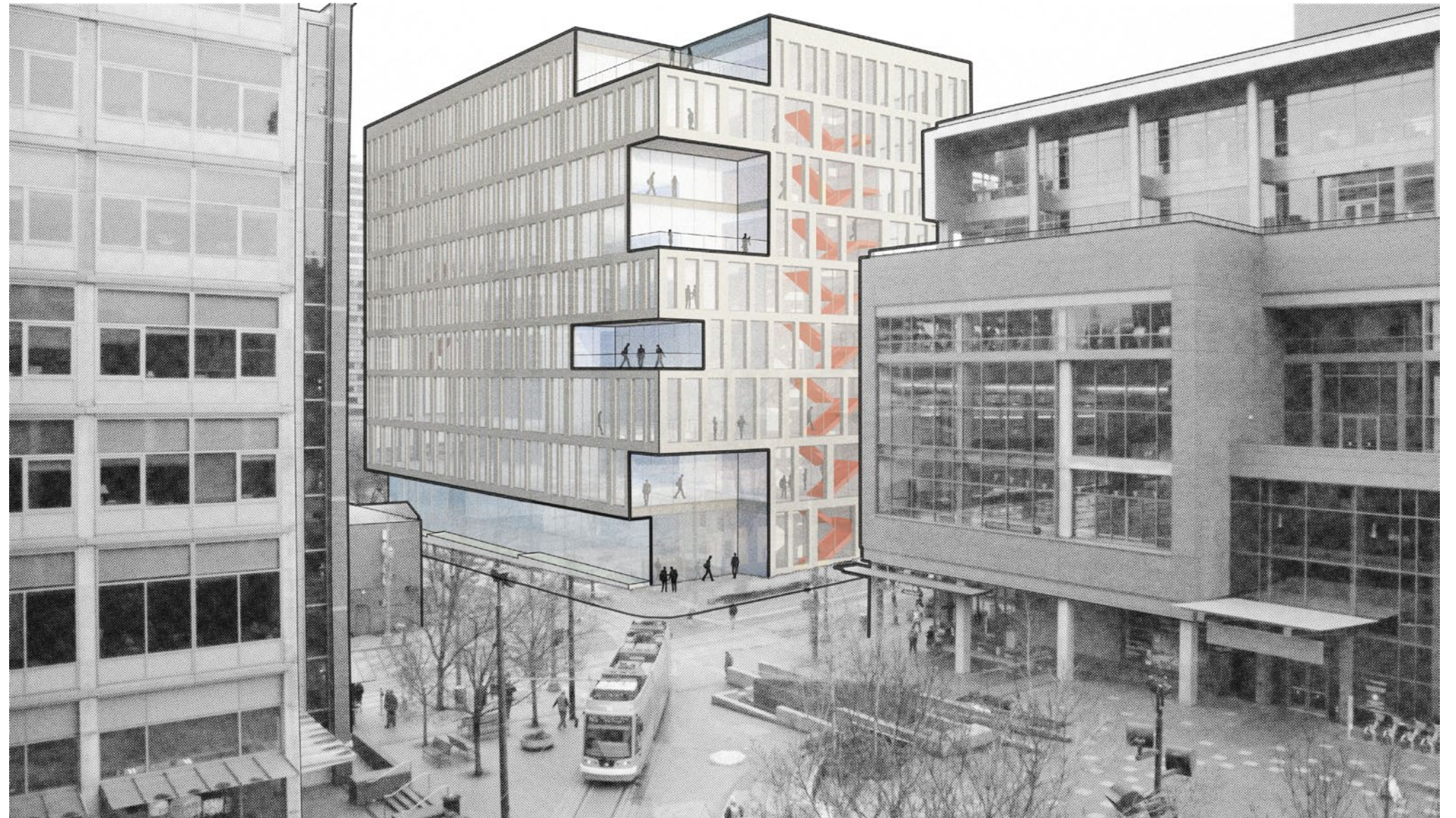
The linear lobby has an entrance off of 4th Ave, and invites pedestrians into the building from both ends. The Montgomery Green Street blends into the building's interior, adding a destination and amenity to the campus Green Street corridor.

A series of terraces, lounges, and stairs vertically animate the NW corner of the building with the vibrant energy of Urban Plaza. Stacking the hubs on each floor encourages vertical circulation and activates gathering spaces higher in the building.

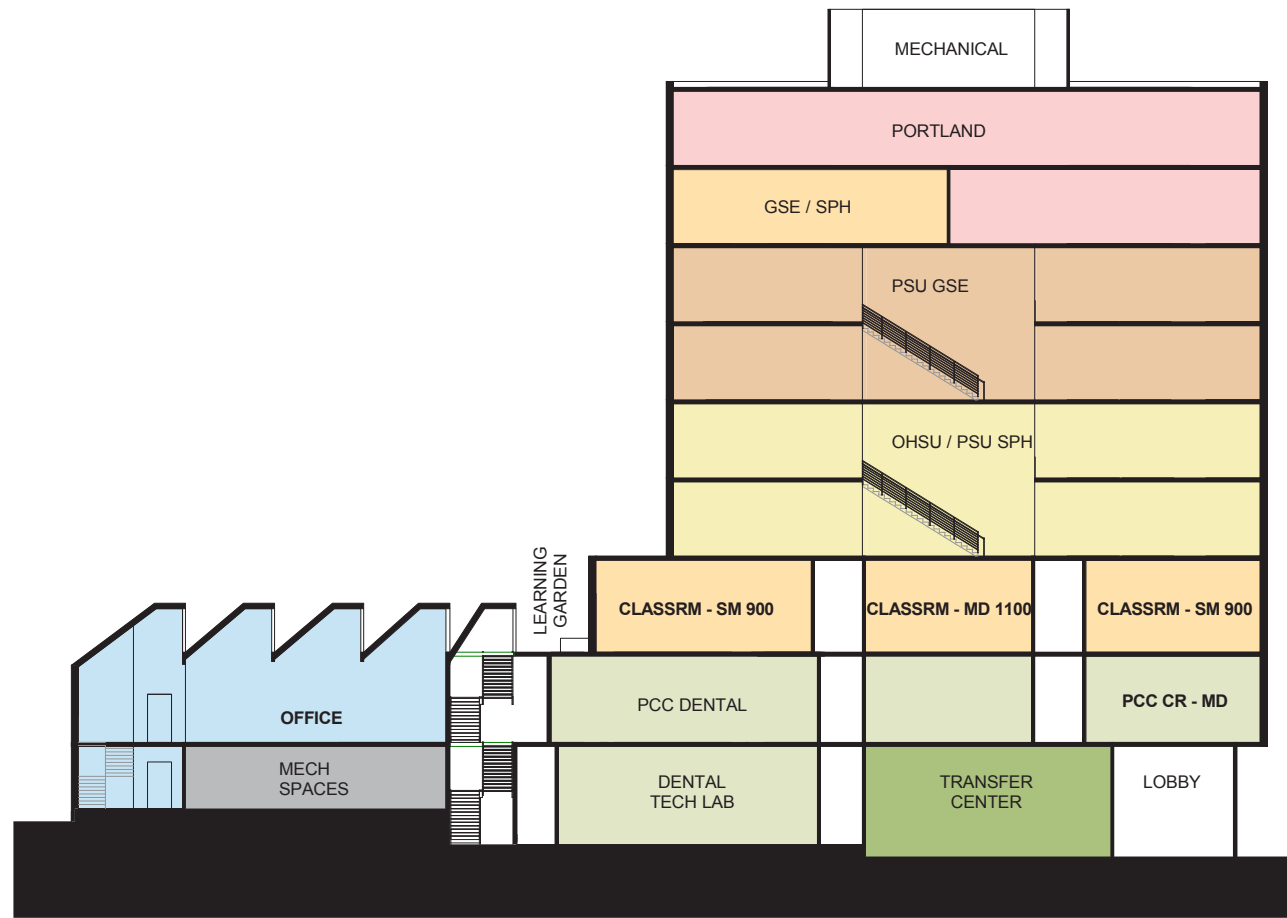
On the building's top floor, a shared public terrace provides inspiring views of the university and downtown.



The building completes the plaza and strengthens the pedestrian experience of the campus. It celebrates human activity through the movement of the stair and the adjacent social spaces within.

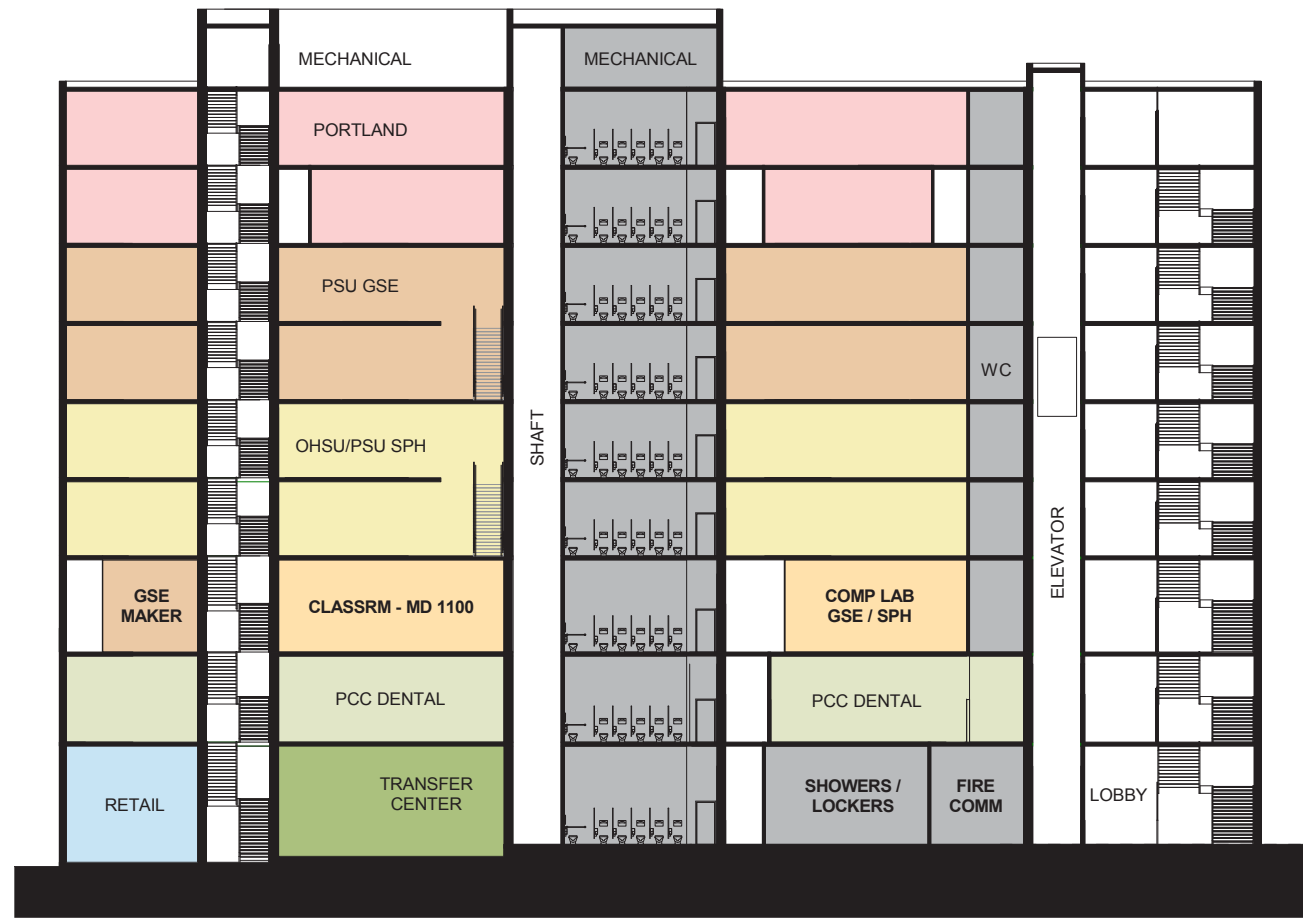


SECTION DIAGRAMS



North / South Section

0' 8' 16' 32'
 SCALE: 1/32" = 1'-0"



East / West Section

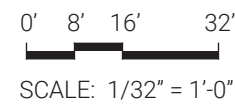


TEST FIT DIAGRAMS

- MAJOR VERTICAL PENETRATION
1,561 SF
- FLOOR SERVICE AREA
9,806 SF
- BASE BUILDING CIRCULATION
6,813 SF
- WALL THICKNESS
372 SF
- OCCUPANT AREA - RETAIL
7,000 SF
- OCCUPANT AREA - PCC
1,531 SF
- OCCUPANT AREA - PSU / PCC TRANSFER CENTER
2,094 SF

TOTAL: **28,276 SF**

Level 1

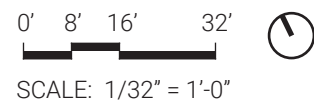


TEST FIT DIAGRAMS

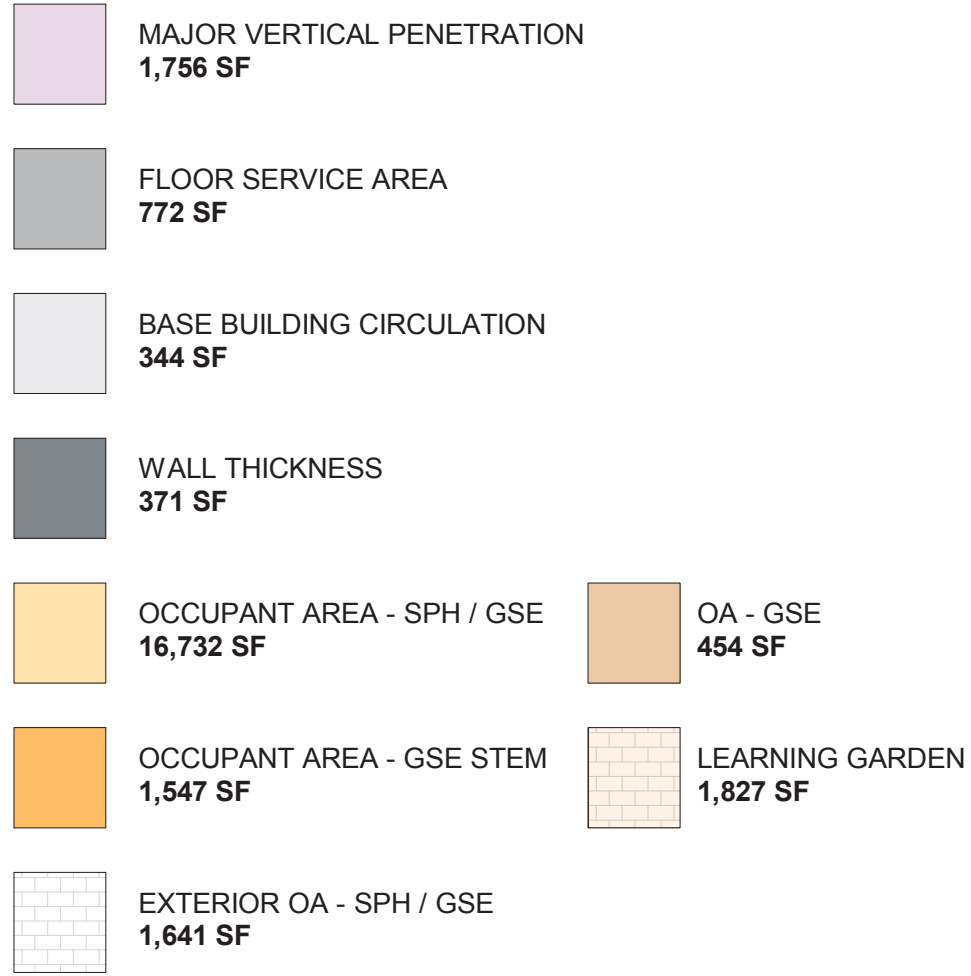
- MAJOR VERTICAL PENETRATION
1,874 SF
- FLOOR SERVICE AREA
772 SF
- BASE BUILDING CIRCULATION
344 SF
- WALL THICKNESS
440 SF
- OCCUPANT AREA - PCC
20,987 SF
- OCCUPANT AREA - RETAIL
5,135 SF

TOTAL: **29,553 SF**

Level 2

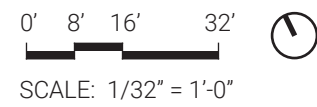


TEST FIT DIAGRAMS



TOTAL: **21,975 SF** (INTERIOR ONLY)

Level 3

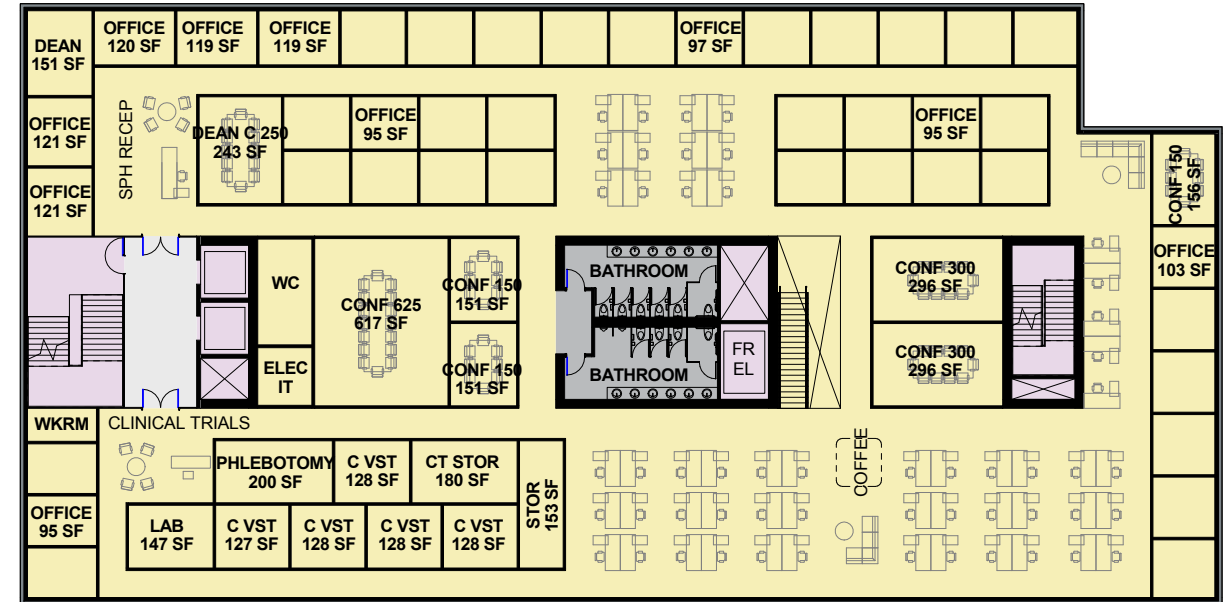


TEST FIT DIAGRAMS

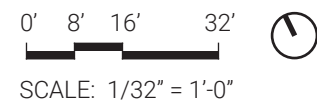
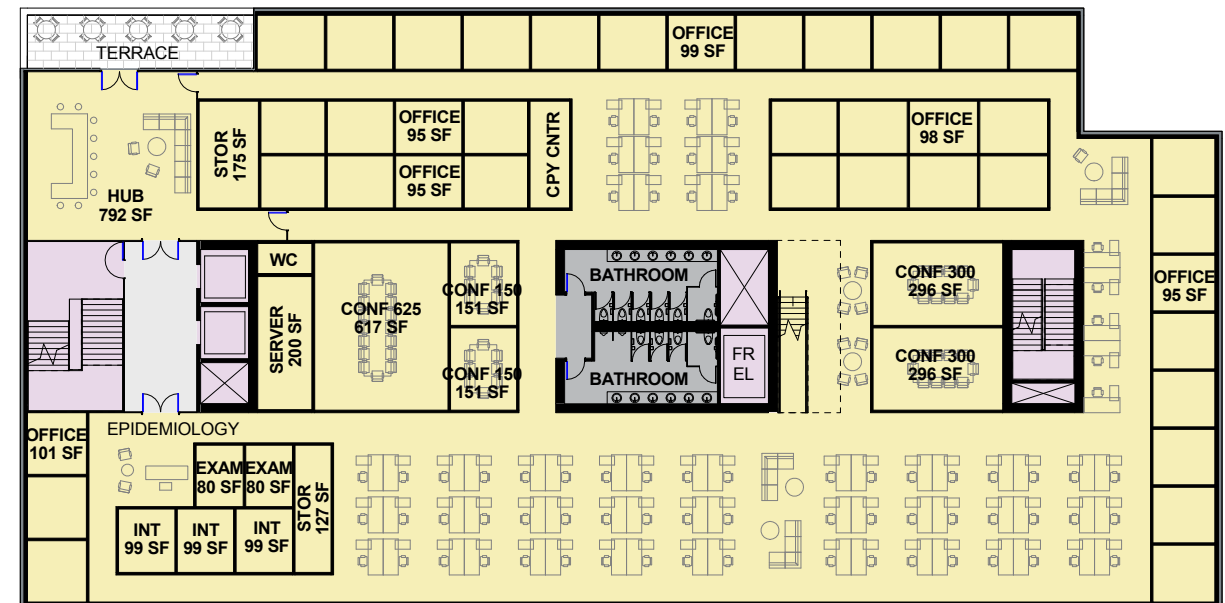
- MAJOR VERTICAL PENETRATION
1,445 SF (LEVEL 4)
1,445 SF (LEVEL 5)
- FLOOR SERVICE AREA
772 SF (LEVEL 4)
772 SF (LEVEL 5)
- BASE BUILDING CIRCULATION
344 SF (LEVEL 4)
344 SF (LEVEL 5)
- WALL THICKNESS
334 SF (LEVEL 4)
349 SF (LEVEL 5)
- OCCUPANT AREA - OHSU/PSU SPH
16,245 SF (LEVEL 4)
16,619 SF (LEVEL 5)
- EXTERIOR OCCUPANT AREA - OHSU/PSU SPH
360 SF (LEVEL 4)

TOTAL: 19,140 SF (LEVEL 4 INTERIOR ONLY)
19,528 SF (LEVEL 5)

Level 5



Level 4

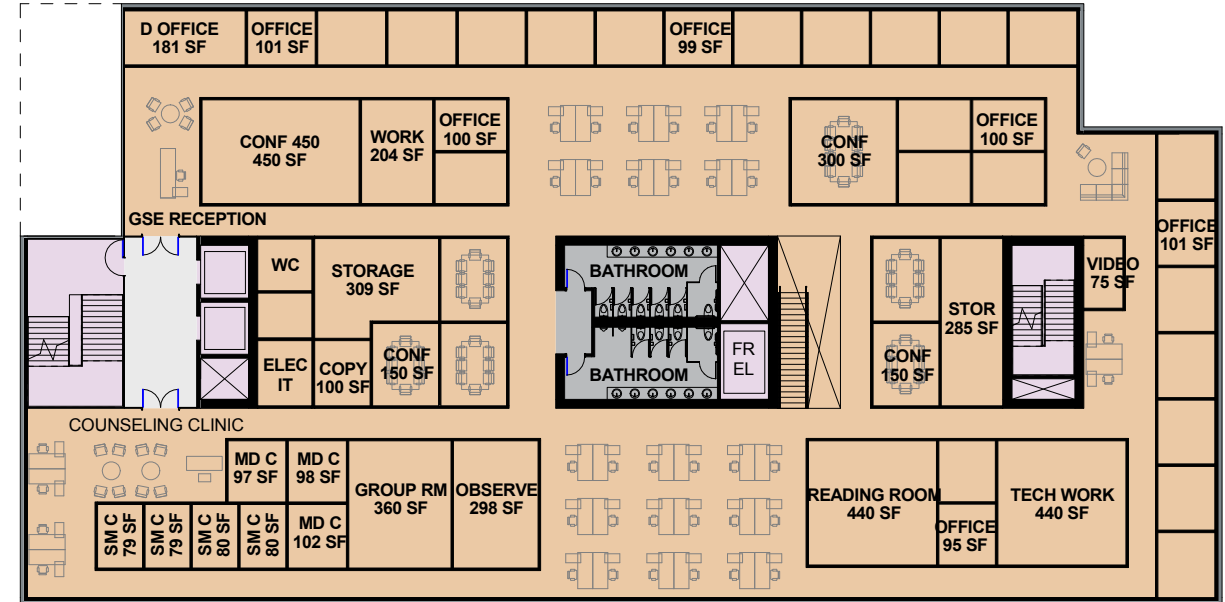


TEST FIT DIAGRAMS

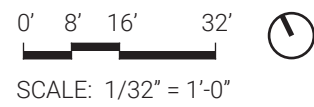
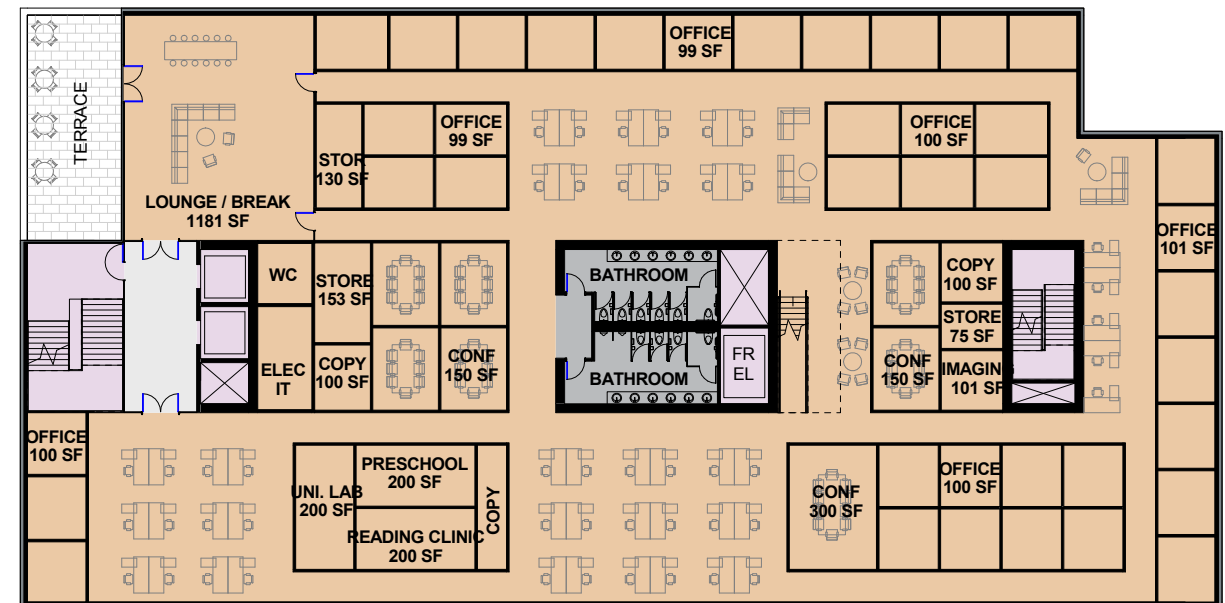
- MAJOR VERTICAL PENETRATION
1,445 SF (LEVEL 6)
1,445 SF (LEVEL 7)
- FLOOR SERVICE AREA
772 SF (LEVEL 6)
772 SF (LEVEL 7)
- BASE BUILDING CIRCULATION
344 SF (LEVEL 6)
344 SF (LEVEL 7)
- WALL THICKNESS
349 SF (LEVEL 6)
330 SF (LEVEL 7)
- OCCUPANT AREA - PSU GSE
15,991 SF (LEVEL 6)
15,991 SF (LEVEL 7)
- EXTERIOR OCCUPANT AREA - PSU GSE
628 SF (LEVEL 6)

TOTAL: **18,900 SF** (LEVEL 6 INTERIOR ONLY)
18,882 SF (LEVEL 7)

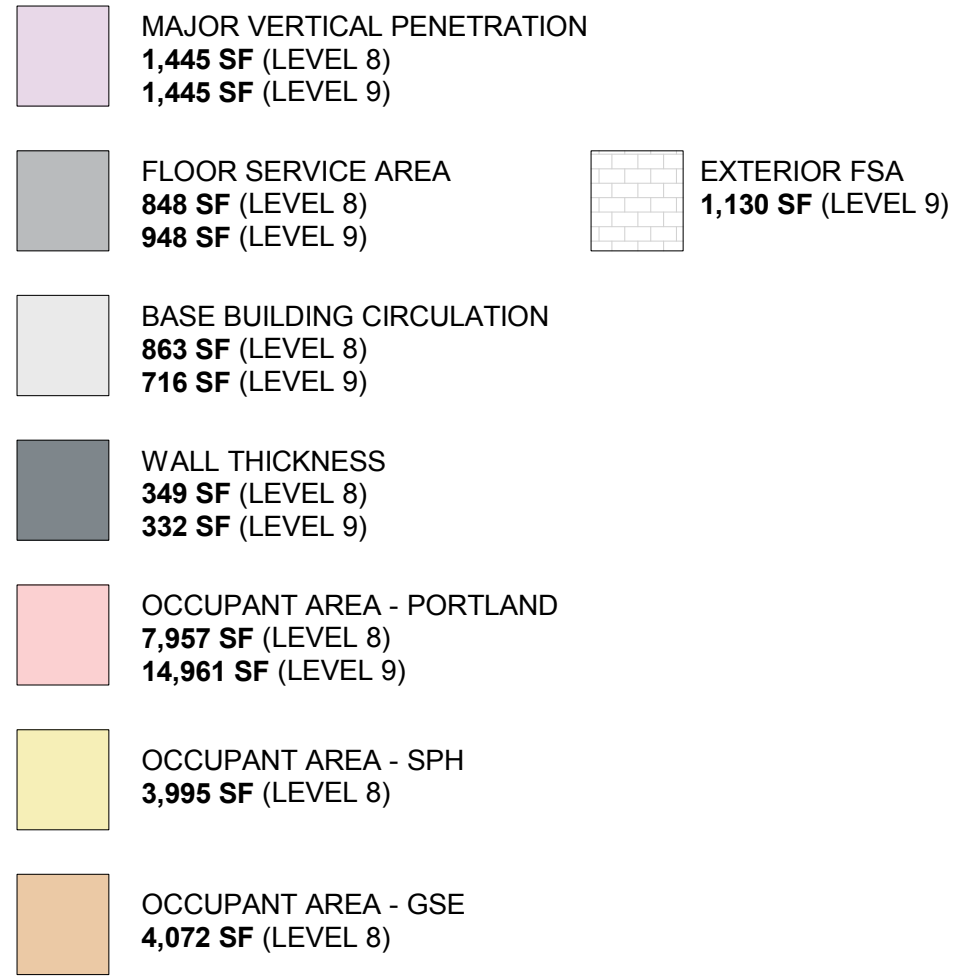
Level 7



Level 6

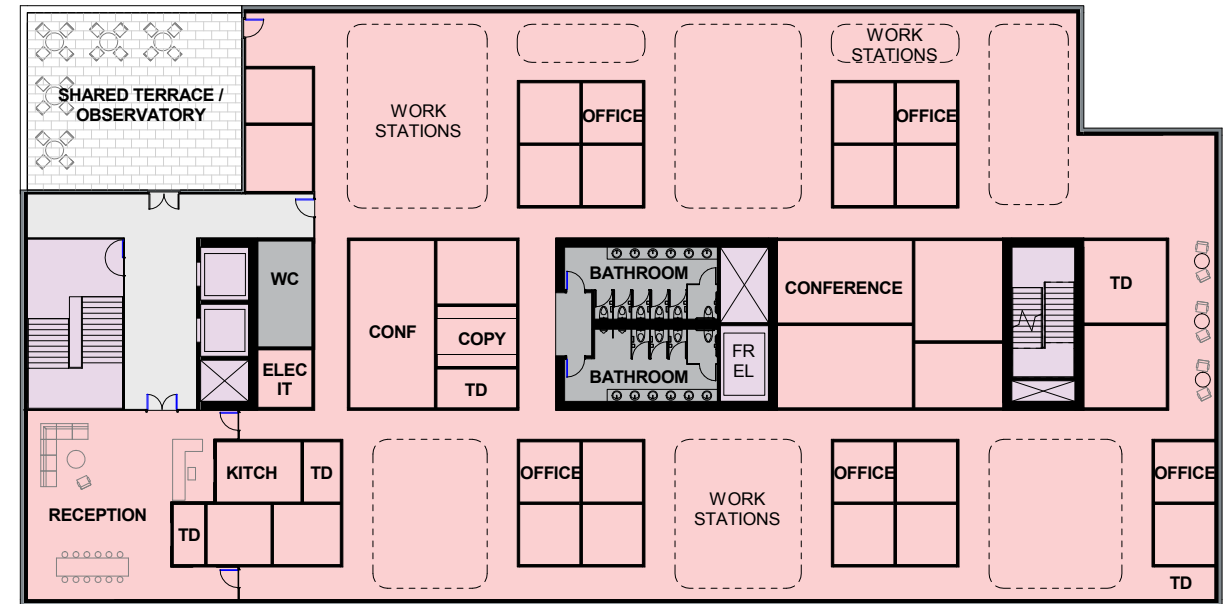


TEST FIT DIAGRAMS

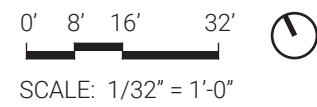
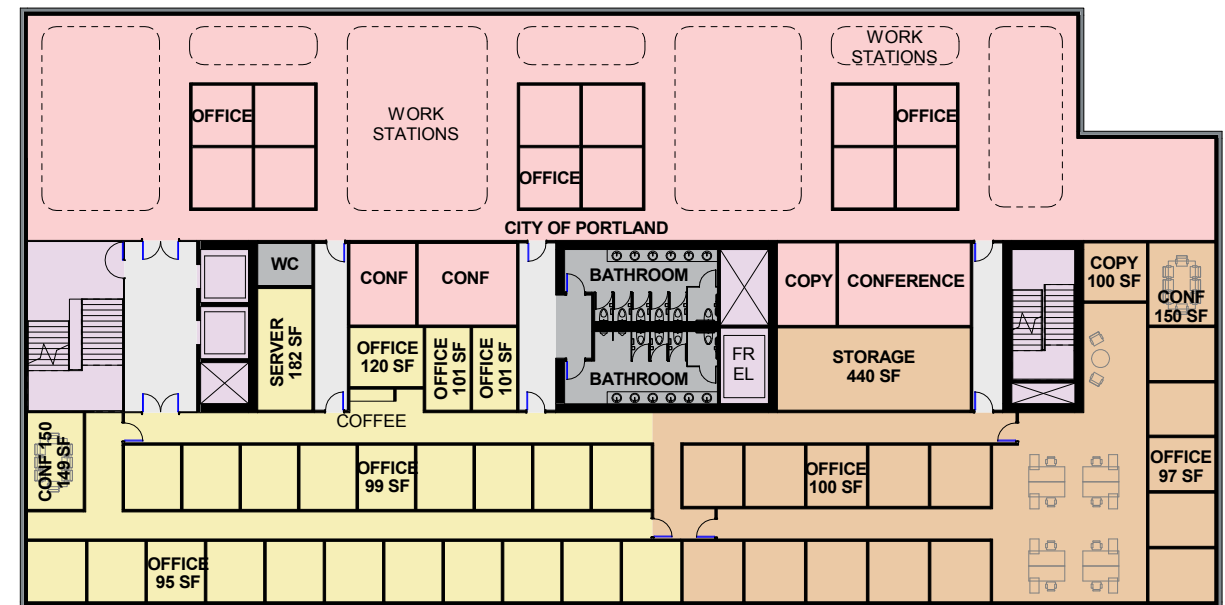


TOTAL: **19,528 SF** (LEVEL 8)
18,402 SF (LEVEL 9 INTERIOR ONLY)

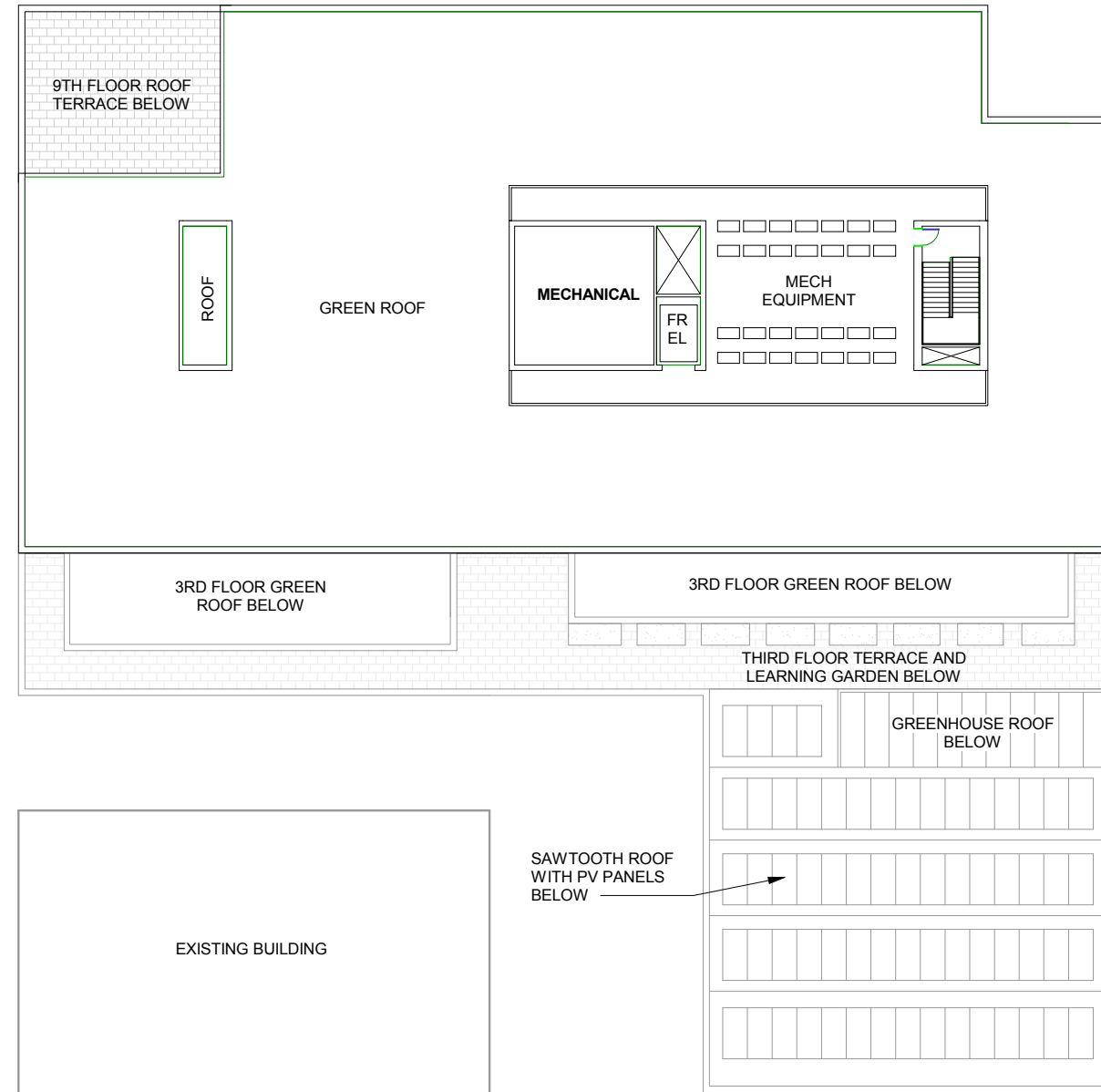
Level 9



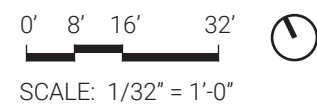
Level 8



TEST FIT DIAGRAMS



Roof



- **Occupant Area (OA):** Program Spaces, Internal Circulation
- **Floor Service Area (FSA):** Restrooms, Electrical/IT Rooms, Showers, Lockers, Building Services, Bike Rooms, etc.
- **Base Building Circulation (BBC):** Elevator Lobby, Lobby, Shared Hallways
- **Major Vertical Penetration (MVP):** Stairs, Elevators, Shafts, Openings
- **Square Footage:** OA + Pro Rata Share of (FSA + BBC + MVP)
- **Pro Rata Share:** $\frac{\text{Program OA}}{\text{Total Building OA}}$ (Expressed as %)

COST Target Project Budget (Based on \$500/sf)

Partner	Size	Amount
SPH	60,000 sf	\$30,000,000
GSE	60,000 sf	\$30,000,000
PCC	30,000 sf	\$15,000,000
Portland	30,000 sf	\$15,000,000
Retail	15,000 sf	\$7,500,000
Total Baseline	197,000 sf	\$97,500,000
Additional Program		
GSE STEM	2,000 sf	\$1,000,000
PSU/PCC Transfer Center	2,000 sf	\$1,000,000
Grand Total	199,000 sf	\$99,500,000

COST Square Footage Summary (Based on Test Fit Design)

Occupant Areas	Square Footage (OA)	Percentage	Pro Rata Share of (FSA + BBC + MVP)	Total SF
SPH	45,225 sf	30.1%	13,162 sf	58,387 sf
GSE	44,873 sf	29.8%	13,060 sf	57,933 sf
PCC	22,518 sf	15.0%	6,554 sf	29,072 sf
PSU/PCC Transfer Center	2,094 sf	1.4%	609 sf	2,703 sf
Portland	22,918 sf	15.2%	6,670 sf	29,588 sf
Retail	11,235 sf	7.5%	3,270 sf	14,505 sf
GSE STEM	1,547 sf	1.0%	450 sf	1,997 sf
Total OA:	150,410 sf	100%	43,775 sf	194,185 sf

Total (FSA + BBC + MVP): 43,775 sf

Total Building Area: 194,185 sf

COST March 7, 2017 Estimate

Sitework	\$1.95 Million
Building Shell & Core	\$47.92 Million
Building Fit-out	\$22.24 Million
<hr/>	
Subtotal	\$72.11 Million
Escalation (8%)	\$5.77 Million
Total Construction	\$77.88 Million
Soft Costs (34%)	\$26.48 Million
<hr/>	
Total Project	\$104.36 Million (\$537.43/sf)

COST By Partner

Partner	Target (@ \$500/sf)	Current Estimate (@ \$537.43/sf)
SPH	\$30.0 Million (60,000 sf)	\$31,379,000 (58,387 sf)
GSE	\$30.0 Million (60,000 sf)	\$31,134,000 (57,933 sf)
PCC	\$15.0 Million (30,000 sf)	\$15,624,000 (29,072 sf)
PSU/PCC Transfer Center	\$1.0 Million (2,000 sf)	\$1,453,000 (2,703 sf)
Portland	\$15.0 Million (30,000 sf)	\$15,901,000 (29,588 sf)
Retail	\$7.5 Million (15,000 sf)	\$7,796,000 (14,505 sf)
GSE STEM	\$1.0 Million (2,000 sf)	\$1,073,000 (1,997 sf)
Total	\$99,500,000 (199,000 sf)	\$104,361,000 (194,185 sf)

APPENDIX

COST ESTIMATE

M / E / P NARRATIVE

STRUCTURAL NARRATIVE

ENGINEERED AGGREGATE PIER FEASIBILITY ASSESSMENT

DETAILED PROGRAM

- PSU GSE
- OHSU/PSU SPH
- PCC
- CITY OF PORTLAND

COST ESTIMATE OVERVIEW

Corrections and Updates:

After reviewing test fit diagrams with the executive committee, the elevator counts have been altered from both the test fit diagrams and the cost estimate. The committee would like a bank of 3 passenger elevators in the main elevator lobby instead of the 2 that are shown in the test fit diagrams. These elevators will be gurney-sized and large enough for most pieces of furniture, allowing the executive committee to eliminate the freight elevator.

An additional correction was made to the cost estimate with regards to the PCC Dental Clinic fit-out. The cost estimate shows an additional line item for sinks and cabinets, however the clinic fit-out cost of \$140/sf includes sinks and cabinets within that allowance.

Summary Of Changes To Included Estimate:

SITework	\$ 1,954,220
BUILDING	
SHELL & CORE (RLB ESTIMATE)	\$ 48,471,702
FIT-OUT (RLB ESTIMATE)	\$ 22,417,537
REMOVE DENTAL CLINIC SINKS AND CABINETS	(\$ 178,267)
REMOVE FREIGHT ELEVATOR & UPDATE STOP COUNTS	(\$ 553,245)
<hr/>	
SUBTOTAL	\$ 72,111,947
ESCALATION (8%)	\$ 5,768,956
<hr/>	
TOTAL CONSTRUCTION	\$ 77,880,903



PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Our Reference: PDX21156-2

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

GFA: Gross Floor Area
 Rates Current At February 2017

Location Summary

Location	GFA SF	Cost/SF	Total Cost
A SITEWORK			
A1 On -Site			1,954,220
A2 Off-Site			Excl.
A - SITEWORK			\$1,954,220
B BUILDING			
B1 SHELL & CORE	195,831	247.52	48,471,702
B2 FIT-OUT			22,417,537
ESTIMATED NET COST	195,831	\$371.97	\$72,843,459
MARGINS & ADJUSTMENTS			
Escalation (1Q2019)		8 %	\$5,827,477
ESTIMATED TOTAL COST	195,831	\$401.73	\$78,670,936

PSU 4th & Montgomery Study
Concept Estimate Rev 1

Location Summary

GFA: Gross Floor Area
Rates Current At February 2017

Location	GFA SF	Cost/SF	Total Cost
A SITEWORK			
A1 On -Site			1,545,022
A2 Off-Site			Excl.
A - SITEWORK			\$1,545,022
B BUILDING			
B1 SHELL & CORE	195,831	195.69	38,322,115
B2 FIT-OUT			17,723,485
ESTIMATED NET COST	195,831	\$294.08	\$57,590,622
MARGINS & ADJUSTMENTS			
Solar (excluded)	0 %		\$0
General Conditions	7.5 %		\$4,319,297
Bonds & Insurances	2.85 %		\$1,764,433
Overhead & Profit	4 %		\$2,546,974
Design Contingency	10 %		\$6,622,133
Escalation (1Q2019)	8 %		\$5,827,477
ESTIMATED TOTAL COST	195,831	\$401.73	\$78,670,936

PSU 4th & Montgomery Study
Concept Estimate Rev 1

Elements/Divisions Summary

Gross Floor Area: 195,831 SF
Rates Current At February 2017

Description	%	Cost/SF	Total Cost
A1010 Standard Foundations	0.9 %	\$3.63	\$710,750
A1020 Special Foundations	0.4 %	\$1.53	\$300,000
A1030 Slab on Grade	0.2 %	\$0.94	\$184,795
B1010 Floor Construction	8.1 %	\$32.60	\$6,384,633
B1020 Roof Construction	1.3 %	\$5.28	\$1,034,095
B2010 Exterior Walls	4.7 %	\$18.88	\$3,697,816
B2020 Exterior Windows	5.1 %	\$20.30	\$3,974,795
B2030 Exterior Doors	0.1 %	\$0.49	\$95,600
B3010 Roof Coverings	1.8 %	\$7.15	\$1,400,480
C2010 Stair Construction	0.0 %	\$0.20	\$39,166
D1010 Elevators & Lifts	2.2 %	\$8.73	\$1,710,000
D2010 Plumbing Fixtures	3.6 %	\$14.35	\$2,810,175
D2040 Rain Water Drainage	0.4 %	\$1.65	\$323,121
D3020 Heat Generating Systems	8.7 %	\$35.00	\$6,854,085
D4010 Sprinklers	0.9 %	\$3.55	\$695,200
D5010 Electrical Service & Distribution	2.6 %	\$10.50	\$2,056,226
D5020 Lighting and Branch Wiring	4.5 %	\$18.25	\$3,573,916
D5030 Communications & Security	3.1 %	\$12.65	\$2,477,262
F1020 Integrated Construction	22.5 %	\$90.50	\$17,723,485
G1010 Site Clearing	0.1 %	\$0.39	\$77,352
G1030 Site Earthwork	0.2 %	\$0.73	\$142,150
G2010 Roadways			Excl.
G2040 Site Development	1.2 %	\$4.73	\$925,520
G9090 Other Site Systems & Equipment	0.5 %	\$2.04	\$400,000
GC General Conditions	5.5 %	\$22.06	\$4,319,297
IN Insurances and Bonds	2.2 %	\$9.01	\$1,764,433
OH Overhead and Profit	3.2 %	\$13.01	\$2,546,974
EC Estimating Contingency	8.4 %	\$33.82	\$6,622,133
EL Escalation	7.4 %	\$29.76	\$5,827,477
ESTIMATED TOTAL COST		\$401.73	\$78,670,936

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Location Elements/Divisions Item

A SITEWORK

A1 On -Site

Rates Current At February 2017

Description	Unit	Qty	Rate	Total
G1010 Site Clearing				
1 Site clearance / demo of existing surface parking etc	SF	51,568.00	1.50	77,352
Site Clearing				\$77,352
G1030 Site Earthwork				
2 Preparation of grading for slab	SF	28,430.00	5.00	142,150
Site Earthwork				\$142,150
G2040 Site Development				
3 Hardscape and softscape around building footprint including sidewalks	SF	23,138.00	40.00	925,520
Site Development				\$925,520
G9090 Other Site Systems & Equipment				
4 Utilities and connections	Item			100,000
6 Below grade electric vaults	EA	2.00	150,000.00	300,000
Other Site Systems & Equipment				\$400,000
ON -SITE				\$1,545,022

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Location Elements/Divisions Item

A SITEWORK

A2 Off-Site

Rates Current At February 2017

Description	Unit	Qty	Rate	Total
G2010 Roadways				
5 Half-way improvements etc	Item			Excl.
Roadways				Excl.
OFF-SITE				Excl.

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Location Elements/Divisions Item

GFA: 195,831 SF Cost/SF: \$195.69
 Rates Current At February 2017

B1 SHELL & CORE

Description	Unit	Qty	Rate	Total
A1010 Standard Foundations				
7 Conventional foundation system	SF	28,430.0	25.00	710,750
Standard Foundations			\$3.63/SF	\$710,750
A1020 Special Foundations				
67 Aggregate pier foundation system comprising 30" piles 12'-15' below foundations (quote from Geotech Foundation Company)	Item			300,000
Special Foundations			\$1.53/SF	\$300,000
A1030 Slab on Grade				
8 4" thick slab on grade	SF	28,430.0	6.50	184,795
Slab on Grade			\$0.94/SF	\$184,795
B1010 Floor Construction				
9 Steel framed structure (13lbs/sf)	T	1,088.110	4,200.00	4,570,062
10 W composite deck with 3" concrete topping	SF	167,401.0	8.50	1,422,909
11 Allowance for CIP concrete shear walls	SF	195,831.0	2.00	391,662
Floor Construction			\$32.60/SF	\$6,384,633
B1020 Roof Construction				
12 Structural steel framing to low roof ((saw-tooth)	T	37.550	4,600.00	172,730
13 Structural steel framing to high roof	T	147.550	4,200.00	619,710
14 W Decking to roofs with concrete topping	SF	28,430.0	8.50	241,655
Roof Construction			\$5.28/SF	\$1,034,095
B2010 Exterior Walls				
15 Exterior brick envelope	SF	40,323.0	27.50	1,108,883
16 Mechanical screen including support	SF	2,640.0	75.00	198,000
17 Parapet / flashing at roof	LF	753.0	110.00	82,830
18 Balcony / handrail at terraces	LF	246.0	400.00	98,400
19 Canopies, features etc to facade	SF	40,323.0	2.50	100,808
20 Drwall on furring with sheathing, membranes, insulation, air barriers etc	SF	60,377.0	15.00	905,655
21 Metal panel system	SF	20,054.0	60.00	1,203,240
Exterior Walls			\$18.88/SF	\$3,697,816
B2020 Exterior Windows				
22 Glazing system (assumed 30% storefront)	SF	30,188.0	90.00	2,716,920
23 Glazing system (assumed 10% curtain wall)	SF	10,063.0	125.00	1,257,875
Exterior Windows			\$20.30/SF	\$3,974,795
B2030 Exterior Doors				
24 Glass doors, double	Pr	13.0	6,500.00	84,500
25 Glass doors, single	EA	3.0	2,700.00	8,100

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Location Elements/Divisions Item

GFA: 195,831 SF Cost/SF: \$195.69
 Rates Current At February 2017

B1 SHELL & CORE (continued)

Description	Unit	Qty	Rate	Total
26 Exit doors	EA	2.0	1,500.00	3,000
Exterior Doors			\$0.49/SF	\$95,600
B3010 Roof Coverings				
27 SBS modified bituminous membrane roof	SF	28,430.0	16.00	454,880
28 Green roofs	SF	19,131.0	40.00	765,240
29 Pedestal paving	SF	6,680.0	27.00	180,360
Roof Coverings			\$7.15/SF	\$1,400,480
C2010 Stair Construction				
30 Feature and exist stairs	SF	195,831.0	0.20	39,166
Stair Construction			\$0.20/SF	\$39,166
D1010 Elevators & Lifts				
31 Passenger elevators	Stop	30.0	45,000.00	1,350,000
32 Freight elevator	Stop	9.0	40,000.00	360,000
Elevators & Lifts			\$8.73/SF	\$1,710,000
D2010 Plumbing Fixtures				
33 Plumbing fixtures and pipework	SF	195,831.0	14.35	2,810,175
Plumbing Fixtures			\$14.35/SF	\$2,810,175
D2040 Rain Water Drainage				
34 Rainwater system	SF	195,831.0	1.65	323,121
Rain Water Drainage			\$1.65/SF	\$323,121
D3020 Heat Generating Systems				
35 Water cooled VRF / VRV (option 4)	SF	195,831.0	35.00	6,854,085
Heat Generating Systems			\$35.00/SF	\$6,854,085
D4010 Sprinklers				
36 Sprinkler system--Includes fire pumps in fire water storage tank	SF	195,831.0	3.55	695,200
Sprinklers			\$3.55/SF	\$695,200
D5010 Electrical Service & Distribution				
37 Service and distribution	SF	195,831.0	10.50	2,056,226
Electrical Service & Distribution			\$10.50/SF	\$2,056,226
D5020 Lighting and Branch Wiring				
38 Lighting, branch and controls	SF	195,831.0	18.25	3,573,916
Lighting and Branch Wiring			\$18.25/SF	\$3,573,916
D5030 Communications & Security				
39 Telephone / Data	SF	195,831.0	3.50	685,409
40 Security	SF	195,831.0	1.75	342,704
41 Emergency power	SF	195,831.0	1.00	195,831
42 Fire alarm	SF	195,831.0	2.00	391,662

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Location Elements/Divisions Item

GFA: 195,831 SF Cost/SF: \$195.69
 Rates Current At February 2017

B1 SHELL & CORE (continued)

Description	Unit	Qty	Rate	Total
59 PA/Clock system	SF	195,831.0	2.65	518,952
60 AV (Backbone only)	SF	195,831.0	1.75	342,704
61 A/V (By PSU)	Item			Excl.
Communications & Security			\$12.65/SF	\$2,477,262
SHELL & CORE			\$195.69/SF	\$38,322,115

PSU 4th & Montgomery Study
 Concept Estimate Rev 1

Location Elements/Divisions Item

Rates Current At February 2017

B2 FIT-OUT

Description	Unit	Qty	Rate	Total
F1020 Integrated Construction				
43 Retail	SF	16,500.0	40.00	660,000
64 Retail; grease interceptors	EA	8.0	20,000.00	160,000
65 Retail; ducting for kitchen hood	EA	7.0	4,500.00	31,500
66 Retail; 200amp panels	EA	7.0	10,000.00	70,000
44 Lobby / welcome / collab	SF	4,550.0	150.00	682,500
45 Workspaces	SF	63,819.0	75.00	4,786,425
46 Conference rooms	SF	20,388.0	110.00	2,242,680
47 Support	SF	15,394.0	60.00	923,640
48 PCC dental exam / labs	SF	9,983.0	140.00	1,397,620
62 PCC dental exam sink and cabinets	EA	29.0	4,500.00	130,500
63 PCC dental infrastructure (sound, dust, vacuum etc)	SF	9,983.0	50.00	499,150
49 PSU; counseling clinic	SF	2,455.0	100.00	245,500
50 Circulation	SF	30,973.0	70.00	2,168,110
51 Teaching space	SF	17,875.0	120.00	2,145,000
52 PSU; UTS spaces	SF	1,587.0	100.00	158,700
53 PCC transfer office	SF	2,500.0	100.00	250,000
54 PCC radiography program	Item			Excl.
55 Conference center	SF	2,750.0	150.00	412,500
56 Building common space	SF	8,000.0	70.00	560,000
57 Dental / lab equipment (OFCI)	SF	9,983.0	20.00	199,660
			Integrated Construction	\$17,723,485
			FIT-OUT	\$17,723,485

4th and Montgomery Early MEP Narrative

4th and Montgomery PSU Building

Prepared for:

Bora Architects

Prepared by:

Robert Matteson, CPD, LEED AP | Managing Principal

April 7, 2017



MECHANICAL

HVAC

A. General

1. Codes and Standards State of Oregon:
 - a. 2014 OMSC - Oregon Mechanical Specialty Code
 - b. 2014 OSSC - Oregon Structural Specialty Code
 - c. 2014 OEESC - Oregon Energy Efficiency Specialty Code
 - d. 2014 OPSC - Oregon Plumbing Specialty Code
 - e. 2011 Oregon Reach Code
 - f. ASHRAE Standard 62.1-2010 – Ventilation for Acceptable Indoor Air Quality
 - g. ASHRAE Standard 55-2010 – Thermal Environmental Conditions for Human Occupancy
 - h. ASHRAE Standard 90.1-2010: Energy Standard for Buildings Except Low-Rise Residential Buildings
 - i. ADA or Uniform Federal Accessibility Standards
 - j. National Fire Protection Association (NFPA) Standards
 - k. USGBC LEED Green Building Rating System for New Construction (LEED-NC)
2. Building Automation System: Shell and core systems will be controlled by the DDC system. The DDC system will interface with the fire alarm system, smoke control system, and lighting control system. Controls: The DDC system shall be BACnet compatible and be provided to control and monitor all HVAC equipment and systems. Valve and damper actuation will be electric type. The control system will perform all required control functions, including optimization of equipment and system performance, reliability, equipment life and energy consumption. Control zoning is anticipated to average one thermal control zone per 1000 square feet.
3. Life Safety: See architectural for life/safety requirements. See electrical for fire alarm.
4. HVAC Design Conditions:
 - a. Outside: Summer = ASHRAE 1 percent; 87 degrees F DB/65 degrees F WB and Winter ASHRAE 99 percent; 26 degrees F.
 - b. Inside: Summer = 75 degrees F; Winter = 70 degrees F.
 - c. Additional Conditions: Humidity is not controlled, other than moisture removed in cooling mode, with exception of IT areas.

- d. HVAC system capacity will not be less than 125 percent of heating and 100 percent of the cooling loads calculated under the above conditions.
- e. Ventilation to Include:
 - 1) 100 percent outside air for economizer free cooling.
 - 2) Minimum outside air to meet ASHRAE standard 62.1-2010.
- 5. HVAC building Load and System Capacity Assumptions.
 - a. For purposed of this high level narrative, we have made some assumptions related to general building system capacities for conceptual planning and cost estimating purposes and shall be used on studying the feasibility and comparison of the conceptual system alternatives listed in this narrative. However, all conceptual capacities listed in this narrative shall be verified and established by the A/E design team during the subsequent conceptual system analysis and building design phase, including all building area and capacities listed below:
 - b. Building size is anticipated to be 10 stories with potential rooftop penthouse and consisting of approximately 211,000 total square feet.
 - c. Total building Cooling capacity:
 - 1) Estimated at approximately 500 tons for occupied tenant spaces.
 - a. Estimated chilled water flow rate associated with applicable system options are estimated at 1000 GPM (gallons per minute). The main chilled water supply and return sizing shall be approximately 8”.
 - 2) Estimated tenant telecom/ IT 24/ 7/ 365 cooling needs are approximately 100 tons.
 - a. Estimated tenant data/ telecom/ IT 24/ 365 chilled water cooling flow rate associated with applicable system options are estimated at 200 GPM (gallons per minute). The main chilled water supply and return sizing shall be approximately 3”
 - d. Total building heating capacity:
 - 1) Estimated at approximately 6,000,000 Btuh/ hr. serving space heating and ventilation.
 - 2) Estimated heating water flow rate associated with applicable system options are estimated at 600 GPM (gallons per minute at a 20 degree delta T). The main heating water supply and return sizing shall be approximately 6”.

B. HVAC System Options:

- 1. The system options are developed using a “core and shell” approach. The following system write up describes details associated with the shell and core system. A complete narrative of the future tenant improvements scope has not fully been described in detail as part of this narrative, but should be included in the estimate as a separate scope and cost item.

- 2. In order to provide the best matched mechanical system for the building, as well as provide maximum flexibility in preparing construction costs for the project, five separate system options are being included for consideration. Each option could include additional performance enhancements that optimize energy performance; increase occupant comfort levels and utilize features of the architectural to enhance the system performance, but are not expanded in this early narrative. The following system options are a general listing of potential conceptual alternatives, however there could be additional variations explored during the formal pre-design and/ or schematic design phase. These preliminary alternatives have been assembled and utilized for conceptual planning and cost estimating purposes. However, all conceptual system alternatives and/ or the combination of the alternatives as listed in this narrative shall be established, verified and confirmed by the A/E design team during the subsequent conceptual system analysis and building design process.
 - a. **Option-1:** Central packaged rooftop Variable Air Volume (VAV) system and separate condenser water system for data/telecom cooling needs.
 - b. **Option-2:** Water cooled VAV unit per floor with central condenser water system, hydronic heating water and associated cooling tower and boiler system.
 - c. **Option-3:** Chilled water VAV unit per floor with central chilled and heating system and associated chillers, boilers, cooling towers and separate condenser water system for data/telecom cooling needs.
 - d. **Option-4:** Water cooled VRF/VRV system.
 - e. **Option-5:** Chilled water VAV air handling unit per floor with central chilled water system connection and boilers with heating water system.
 - 1) **Option 5B:** This option includes the approach that the chilled water system serving the 4th and Montgomery building is connected to remaining system capacity of the existing FAB building. The new 8” chilled water supply and return systems shall be routed through the tunnel connector below the street between the FAB and 4th and Montgomery building. However, this option would eliminate the N+1 capacity currently existing within the FAB building. 24/ 7/ 365 chilled water for IT cooling shall be provided by the FAB chilled water system and/ or a new standalone fluid cooler and condenser water system shall be provided in the 4th and Montgomery building. Heating water serving the HVAC systems throughout the building will be provided via high efficiency condensing gas boilers, variable flow pumping to air handling unit heating coils, terminal unit heating coils, and unit heaters.
 - 2) **Option 5A:** This option includes installation of a 500 ton chiller and associated cooling tower in the new 4th and Montgomery building. In addition, 8” chilled water supply and return piping shall be routed through the tunnel connector below the street between the FAB and 4th and Montgomery building. This option will provide the client with redundancy and diversity as well as provides the 24/ 7/ 365 chilled water for IT cooling within the 4th and Montgomery building. Heating water serving the HVAC systems throughout the building will be provided via high efficiency condensing gas boilers, variable flow pumping to air handling unit heating coils, terminal unit heating coils, and unit heaters.

C. HVAC System Option-1 ;Central packaged rooftop Variable Air Volume:

1. HVAC (Shell and Core) - Office Spaces:
 - a. Two approximate 250-ton central packaged rooftop Variable Air Volume (VAV) units with modulating natural gas heat installed on concrete, sound-attenuating "tubs." Air distributed in vertical shafts through medium pressure ductwork to VAV boxes. Medium pressure supply ducts will be routed on each floor to two fan-powered boxes at the end of each run for freeze protection. Return air will be routed through the return air plenum and into shafts with fire smoke damper assembly. Future terminal units will be parallel fan-powered with ECM motors and hydronic
 - b. Toilet Core Exhaust System: General building exhaust and toilet room exhaust will be ducted up through exhaust shafts to rooftop exhaust fans.
 - c. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections.
2. An elevator and stair pressurization system will be provided per fire marshal requirements. The system on/off/auto status will be controlled at the building fireman's control panel. Stairwell and elevator pressure range will be as required by IBC.
3. Step-Down Transformer Room Cooling: Water-cooled air conditioning units will cool the transformer rooms utilizing a two-pipe cooling water loop for heat rejection. Optional system solution includes air cooled split system.
4. Elevator Machine Rooms: Elevator machine rooms will be provided with a water-cooled air conditioning unit to maintain the minimum/maximum temperatures required by code and the equipment manufacturer. Optional system solution includes air cooled split system.
5. HVAC (Shell and Core) – Retail Spaces:
 - a. Air Conditioning System: Condenser water piping will be stubbed out with valves for future water source heat pumps located in retail spaces. 350 SF/ton will be allocated for cooling capacity. Outside air and exhaust louvers will be provided. Optional system solution includes VRF air cooled system.
6. Central Plant (Heating Plant):
 - a. Three 2-million BTUH condensing boilers as well as associated duplex pumping assembly and distribution piping systems will serve terminal unit heating loads.

D. HVAC System Option-2; Water cooled VAV unit per floor with central condenser water:

1. HVAC (Shell and Core) - Office Spaces:
 - a. An approximate 60-ton water cooled VAV unit with airside economizer and power exhaust with VFD will be provided for each office level. Medium pressure supply ducts will be routed to two fan-powered boxes at the end of each run for freeze protection. Return air will be routed through the return air plenum.

Future terminal units will be parallel fan-powered with ECM motors and hydronic heat

- b. Toilet Core Exhaust System: General building exhaust and toilet room exhaust will be ducted up through exhaust shafts to rooftop exhaust fans.
- c. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections.

2. Elevator and Stairwell Pressurization System: An elevator and stair pressurization system will be provided per fire marshal requirements. The system on/off/auto status will be controlled at the building fireman's control panel. Stairwell and elevator pressure range will be as required by IBC.
3. Step-Down Transformer Room Cooling: Water-cooled air conditioning units will cool the transformer rooms utilizing a two-pipe cooling water loop for heat rejection. Optional system solution includes air cooled split system.
4. Elevator Machine Rooms: Elevator machine rooms will be provided with a water-cooled air conditioning unit to maintain the minimum/maximum temperatures required by code and the equipment manufacturer. Optional system solution includes air cooled split system.
5. Step-Down Transformer Room Cooling: Water-cooled air conditioning units will cool the transformer rooms utilizing a two-pipe cooling water loop for heat rejection. Optional system solution includes air cooled split system.
6. HVAC (Shell and Core) – Retail Spaces:
 - a. Air Conditioning System: Condenser water piping will be stubbed out with valves for future water source heat pumps located in retail spaces. 350 SF/ton will be allocated for cooling capacity. Outside air and exhaust louvers will be provided. Optional system solution includes VRF air cooled system.
7. Central Plant (Heating And Condenser Water Plant):
 - a. A 500-ton, two-cell cooling tower will serve all AC-unit loads and three 2-million BTUH condensing boilers will serve all heating loads. A ton plate and frame heat exchanger and pumps will decouple the open tower.

E. HVAC System Option-3; VAV unit per floor w/ central chilled and heating system:

1. HVAC (Shell and Core) - Office Spaces:
 - a. This system utilizes one 60 ton chilled water floor by floor air handler on each level to provide ducted air to hydronic VAV terminal units. Medium pressure supply ducts will be routed to two fan-powered boxes at the end of each run for freeze protection. Return air will be routed through the return air plenum. Future terminal units will be parallel fan-powered with ECM motors and hydronic heat.
 - b. Toilet Core Exhaust System: General building exhaust and toilet room exhaust will be ducted up through exhaust shafts to rooftop exhaust fans.

- c. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections.
- 2. Elevator and Stairwell Pressurization System: An elevator and stair pressurization system will be provided per fire marshal requirements. The system on/off/auto status will be controlled at the building fireman’s control panel. Stairwell and elevator pressure range will be as required by IBC.
- 3. Step-Down Transformer Room Cooling: Provide separate/standalone condenser water system to feed transformer room cooling needs. Water-cooled air conditioning units will cool the transformer rooms utilizing a two-pipe cooling water loop for heat rejection. Optional system solution includes air cooled split system.
- 4. Elevator Machine Rooms: Provide separate/standalone condenser water system to feed elevator machine room cooling needs Elevator machine rooms will be provided with a water-cooled air conditioning unit to maintain the minimum/maximum temperatures required by code and the equipment manufacturer. Optional system solution includes air cooled split system.
- 5. HVAC (Shell and Core) – Retail Spaces: Provide separate/standalone condenser water system to feed retail spaces cooling and heating needs. Condenser water piping will be stubbed out with valves for future water source heat pumps located in retail spaces. 350 SF/ton will be allocated for cooling capacity. Outside air and exhaust louvers will be provided. Optional system solution includes VRF air cooled system.
- 6. Central Plant:
 - a. Cooling Plant: The building will be cooled by high efficiency, variable speed water-cooled centrifugal chillers located in an enclosed mechanical room on the roof of the building. Condenser water will be piped to the chillers from open cell cross flow cooling towers located on the adjacent roof. Partial redundancy will be provided by creating a cooling plant with two chillers and two towers. Chillers will be sized to match the loads in an approximate 40 percent - 60 percent configuration. Chilled water will be distributed via variable speed/variable flow primary pumps to all building equipment requiring chilled water.
 - b. Heating Plant: Heating water serving the HVAC systems throughout the building will be provided via high efficiency condensing gas boilers located in an enclosed mechanical room at the roof. Heating water will be distributed via variable flow secondary pumping to air handling unit heating coils, terminal unit heating coils, and unit heaters and all building components requiring heat.
 - c. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections.

F. HVAC System Option-4; Water cooled VRF/VRV system:

- 1. HVAC (Shell and Core) - Office Spaces:
 - a. Water cooled variable refrigerant volume (VRV/VRF) units including indoor water-cooled condensers and indoor fan coils. The condensing units will be connected to fan coils via refrigerant line sets, distribution boxes, and isolation valves per line set to fan coil and for future connection at the distribution boxes empty ports. Provide isolation valves on each refrigeration connection to the distribution box. It is anticipated that the condensers will be capable of being installed in the mechanical room of each floor. Install two condensing units per floor for freeze protection. All additional future fan coil units will be installed as part of the tenant improvements.
 - b. Toilet Core Exhaust System: General building exhaust and toilet room exhaust will be ducted up through exhaust shafts to rooftop exhaust fans.
 - c. Future Tenant Data/Telecom Cooling: VRF water cooled condensing units will be connected to fan coil units, via refrigerant line sets, distribution boxes, and isolation valves serving the tenant data/telecom rooms, providing 24/7 heat rejection for use in heating the office spaces.
- 2. Elevator and Stairwell Pressurization System: An elevator and stair pressurization system will be provided per fire marshal requirements. The system on/off/auto status will be controlled at the building fireman’s control panel. Stairwell and elevator pressure range will be as required by IBC.
- 3. Step-Down Transformer Room Cooling: VRF water cooled condensing units will be connected to fan coil units, via refrigerant line sets, distribution boxes, and isolation valves serving the transformer rooms, providing 24/7 heat rejection for use in heating the office spaces.
- 4. Elevator Machine Rooms: VRF water cooled condensing units will be connected to fan coil units, via refrigerant line sets, distribution boxes, and isolation valves serving the transformer rooms, providing 24/7 heat rejection for use in heating the office spaces.
- 5. HVAC (Shell and Core) – Retail Spaces: Provide condenser water system to feed retail spaces cooling and heating needs. Condenser water piping will be stubbed out with valves for future water source heat pumps located in retail spaces. 350 SF/ton will be allocated for cooling capacity. Outside air and exhaust louvers will be provided.
- 6. Central Plant (Heating and Cooling Plant):
 - a. Provide two-cell cooling tower to provide heat rejection from the water cooled VRF condensing units and condensing boilers in order to maintain consistent temperature in the condenser water system as connected to the water cooled VRF condensing units.

G. HVAC System Option-5A; Chilled water VAV unit per floor with chilled water supply from the existing PSU FAB building and building mounted heating and condenser water system.

- 1. HVAC (Shell and Core) - Office Spaces:
 - a. This system option utilizes one 50 ton chilled water floor by floor air handler on each level to provide ducted air to hydronic VAV terminal units. Medium

pressure supply ducts will be routed to two fan-powered boxes at the end of each run for freeze protection. Return air will be routed through the return air plenum. Future terminal units will be parallel fan-powered with ECM motors and hydronic heat.

- b. Toilet Core Exhaust System: General building exhaust and toilet room exhaust will be ducted up through exhaust shafts to rooftop exhaust fans.
 - c. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections.
 - d. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections. Optional system includes chilled water fan coils, since the connection to the FAB provides an uninterrupted source of 24/ 7/365 chilled water supply.
2. Elevator and Stairwell Pressurization System: An elevator and stair pressurization system will be provided per fire marshal requirements. The system on/off/auto status will be controlled at the building fireman's control panel. Stairwell and elevator pressure range will be as required by IBC.
 3. Step-Down Transformer Room Cooling: Provide separate/standalone condenser water system to feed transformer room cooling needs. Water-cooled air conditioning units will cool the transformer rooms utilizing a two-pipe cooling water loop for heat rejection. Optional system solution includes air cooled split system. Optional system includes chilled water fan coils, since the connection to the FAB provides an uninterrupted source of 24/ 7/365 chilled water supply.
 4. Elevator Machine Rooms: Provide separate/standalone condenser water system to feed elevator machine room cooling needs Elevator machine rooms will be provided with a water-cooled air conditioning unit to maintain the minimum/maximum temperatures required by code and the equipment manufacturer. Optional system solution includes air cooled split system. Optional system includes chilled water fan coils, since the connection to the FAB provides an uninterrupted source of 24/ 7/365 chilled water supply.
 5. HVAC (Shell and Core) – Retail Spaces: Provide separate/standalone condenser water system to feed retail spaces cooling and heating needs. Condenser water piping will be stubbed out with valves for future water source heat pumps located in retail spaces. 350 SF/ton will be allocated for cooling capacity. Outside air and exhaust louvers will be provided. Optional system solution includes VRF air cooled system.
 6. Central Plant:
 - a. Cooling Plant: The building chilled water needs shall be supplied from the existing PSU FAB building located across the street. The scope for connection to the FAB building will include the following:

- 1) Connect new 8" chilled water supply and return piping to the existing main riser distribution system located within the FAB building and route new insulated piping under the street in the tunnel connector to the new 4th and Montgomery building. The new system will include a new tertiary secondary pumping station located in the FAB building to accommodate the chilled water pumping requirement for the new 4th and Montgomery building and allow the existing FAB building chilled water pumps to remain in operation without modification or replacement. Install new control valves and pressure and flow balancing valves as well as flow and temperature monitoring station at connection to the existing FAB building chilled water system and provide connection to both the FAB building and 4th and Montgomery control and energy management systems in order to monitor and control the central plant equipment located in the FAB building as well as the distribution systems for both buildings.
- 2) Heating Plant: Heating water serving the HVAC systems throughout the building will be provided via high efficiency condensing gas boilers located in an enclosed mechanical room at the roof. Heating water will be distributed via variable flow secondary pumping to air handling unit heating coils, terminal unit heating coils, and unit heaters and all building components requiring heat.

H. **HVAC System Option-5B;** 500 ton chiller and boiler and cooling tower in the new building and 8" chilled water supply through the tunnel from the FAB building.

1. HVAC (Shell and Core) - Office Spaces:
 - a. This system option utilizes one 60 ton chilled water floor by floor air handler on each level to provide ducted air to hydronic VAV terminal units. Medium pressure supply ducts will be routed to two fan-powered boxes at the end of each run for freeze protection. Return air will be routed through the return air plenum. Future terminal units will be parallel fan-powered with ECM motors and hydronic heat.
 - b. Toilet Core Exhaust System: General building exhaust and toilet room exhaust will be ducted up through exhaust shafts to rooftop exhaust fans.
 - c. Provide separate standalone 24/ 7/ 365 condenser water loop to feed the future Tenant Data/Telecom/ IT equipment rooms, including rooftop fluid cooler, duplex pumping assembly, distribution piping and flow and temperature metering at each tenant connection. Provide 1-1/2-inch condenser stubouts and valves to each floor for future tenant connections. Optional system includes chilled water fan coils, since the connection to the FAB provides an uninterrupted source of 24/ 7/365 chilled water supply.
2. Elevator and Stairwell Pressurization System: An elevator and stair pressurization system will be provided per fire marshal requirements. The system on/off/auto status will be controlled at the building fireman's control panel. Stairwell and elevator pressure range will be as required by IBC.
3. Step-Down Transformer Room Cooling: Provide separate/standalone condenser water system to feed transformer room cooling needs. Water-cooled air conditioning units will cool the transformer rooms utilizing a two-pipe cooling water loop for heat rejection. Optional system solution includes air cooled split system. Optional system includes

chilled water fan coils, since the connection to the FAB provides an uninterrupted source of 24/ 7/365 chilled water supply.

4. Elevator Machine Rooms: Provide separate/standalone condenser water system to feed elevator machine room cooling needs Elevator machine rooms will be provided with a water-cooled air conditioning unit to maintain the minimum/maximum temperatures required by code and the equipment manufacturer. Optional system solution includes air cooled split system. Optional system includes chilled water fan coils, since the connection to the FAB provides an uninterrupted source of 24/ 7/365 chilled water supply.
5. HVAC (Shell and Core) – Retail Spaces: Provide separate/standalone condenser water system to feed retail spaces cooling and heating needs. Condenser water piping will be stubbed out with valves for future water source heat pumps located in retail spaces. 350 SF/ton will be allocated for cooling capacity. Outside air and exhaust louvers will be provided. Optional system solution includes VRF air cooled system.
6. Central Plant:
 - a. Cooling Plant: The building chilled water needs shall be supplied from either the 500 ton chiller and cooling tower located in the 4th and Montgomery building or chilled water supplied from the existing PSU FAB building located across the street and routed through the new tunnel connector. System components include:
 - 1) Cooling Plant: The 4th and Montgomery building will supplied with a 500 ton, high efficiency, variable speed water-cooled centrifugal chiller located in an enclosed mechanical room on the roof of the building. Condenser water will be piped to the chiller from open cell cross flow cooling towers located on the adjacent roof. Chilled water will be distributed via variable speed/variable flow primary pumps to all building equipment requiring chilled water.
 - 2) Connect new 8” chilled water supply and return piping to the existing main riser distribution system located within the FAB building and route new insulated piping under the street in the tunnel connector to the new 4th and Montgomery building. The new system will include a new tertiary secondary pumping station located in the FAB building to accommodate the chilled water pumping requirement for the new 4th and Montgomery building and allow the existing FAB building chilled water pumps to remain in operation without modification or replacement. Install new control valves and pressure and flow balancing valves as well as flow and temperature monitoring station at connection to the existing FAB building chilled water system and provide connection to both the FAB building and 4th and Montgomery control and energy management systems.in order to monitor and control the central plant equipment located in the FAB building as well as the distribution systems for both buildings.
 - 3) Heating Plant: Heating water serving the HVAC systems throughout the building will be provided via high efficiency condensing gas boilers located in an enclosed mechanical room at the roof. Heating water will be distributed via variable flow secondary pumping to air handling unit heating coils, terminal unit heating coils, and unit heaters and all building components requiring heat.

PLUMBING

A. General

1. Hose Bibbs: Hose bibbs will be provided at 100-foot intervals at ground level exterior of entire building. Provide hose bibbs at trash rooms, recycle areas.
2. Primary Booster Pump System: A triplex (33/33/33) booster pump assembly is to be located in the core area water room to raise the static pressure of the domestic water service and distribute cold water to the tower core, restrooms and domestic water heaters. Minimum static delivery pressure at highest level and all other domestic water outlets will be a minimum of 40 psig static and 35 psig residual.
3. Domestic Hot Water Supply System: Domestic hot water will be provided by multiple high efficiency gas fired heaters located in the mechanical penthouse and a circulation system. This system will be fed from a pre-heat storage tank recovering energy from cooling tower system. Domestic hot water will be distributed to the core restrooms and for Dental Clinic and for the office areas (routed adjacent to the cold water services). Provide a shutoff valve in the hot and cold water supply to each restroom. A circulating pump will serve each zone to maintain hot water throughout each circuit.
4. Sanitary Drain, Waste, and Vent System: The building’s sanitary waste system will be connected to a common interior sanitary drain system with a single point connection to the public sewer. Waste and vent stacks will be located in the wall behind the plumbing fixtures in the core restrooms. Provide 60-degree offsets in waste stacks to avoid providing yoke vent system
5. Storm Drainage System: Roof drain piping will be routed to discharge to the storm water planters with overflow routed to the public storm sewer via the core utility shafts. Roof overflow drains will be independent of storm drain risers and will terminate as high as possible as permitted by City of Portland Plumbing Division.
6. Remote Fuel Fill System: Provide remote fill station and fuel oil piping to serve diesel-fired emergency generator located on Level 1. Engine exhaust, primary and emergency vents for the fuel oil storage tank will also be provided and routed to roof for termination.
7. General Drainage: Provide drainage systems (condensate, area drains, and the like) to serve HVAC systems.

B. Plumbing – In-Line Retail Lease Spaces (Shell and Core)

1. Domestic Cold Water Supply System: Provide utility connection and domestic water submeter from building system.
2. Domestic Hot Water Supply System: Retail spaces will provide their own hot water.
3. Sanitary Drain, Waste, and Vent System: The retail space sanitary waste system will be connected to a common interior sanitary drain system. Provide 4-inch capped sanitary waste connection and 4-inch vent connection for the retail tenant space.

4. Grease Waste: Retail spaces will provide their own grease interceptor, if deemed to be required.

C. Natural Gas Utilities

1. Provide utility meter set to serve the main building utility heating water boiler plant and domestic water heaters.
2. Provide utility meter sets for the retail space if considered a food service/deli commercial space.

D. Plumbing Shell and Core – Office

1. Domestic Cold Water Supply System: Provide utility connection and service from core potable water service.
2. Domestic Hot Water Supply System: Domestic hot water is provided from the core system with hot water circulator. Domestic hot water will be distributed core plumbing fixtures and routed adjacent to the cold water services. A circulating pump will maintain hot water throughout the system.
3. Sanitary Drain, Waste and Vent System: The sanitary waste system will be connected to the core plumbing fixtures via the common interior sanitary drain system. Separate capped 3-inch waste and vent is to be stubbed to each floor for future fixtures.

FIRE PROTECTION

- A. Project will have wet fire sprinkler system per NFPA 13, connected to automatic wet Class I standpipe systems in the stairwells and horizontal exits. The combined automatic standpipe/sprinkler system will be supplied by an electric motor driven fire pump. Water will enter the building from the public water system connection and pass through a backflow prevention assembly located away from the fire pump room. Water will fill a fire water storage tank at the greater of either the automatic standpipe demand or the sprinkler demand plus 100 gpm inside hose. The fire pumps will either be a horizontal split case fire pump or vertical in-line fire pump depending on the location and positioning of the fire water tank. The automatic standpipes will be supplied by the fire pump, taking suction from the tank, which will raise the system pressure to deliver water to sprinklers and to valves and piping serving each Class I hose outlet at each floor at a minimum of 100 psi. Standpipe outlet valves will be of the pressure reducing type at each floor where pressure exceeds 175 psig. One automatic wet standpipe will be located in each stairwell and within 200 feet of hose lay distance of every point in the buildings, with a hose connection in each stairwell located at the floor level landing. The fire pump will be provided with a bypass connection to the public water system and backflow preventer to provide water in case of tank failure. A fire department connection connected on the system side of the fire pumps will serve all portions of the project. Fire pumps will be electric, with backup power supplied by the emergency generator. Standpipes will be interconnected at the bottom of the buildings.
- B. Quick response sprinklers will be provided in all light hazard areas. Quick response or residential sprinklers will be provided in all residential areas.
- C. Supervised sprinkler control valves will be installed at the sprinkler system connections to the standpipes at each floor to allow one floor to be shut down for maintenance while maintaining fire protection on other floors. A pressure-reducing valve will be installed at each connection at each floor where pressure exceeds 175 psig.
- D. Pipe will be black steel at wet sprinkler system areas.

- E. Flow, supervisory, and pressure switches on system risers serving each tower will be annunciated at the fire alarm panels serving those towers. Flow, supervisory, pressure, high/low tank water alarm switches and the like reporting on conditions regarding the fire pumps and tank will be annunciated at the fire alarm panel.
- F. Unheated spaces will be protected by a black steel dry pipe sprinkler systems or dry sprinklers per NFPA 13, and connected to the same fire pumps as the wet sprinkler/standpipe system. The dry system will include a nitrogen generator in order to fill the system with nitrogen and extend the life of the dry pipe system.
- G. The fire pump room will be constructed of a 2-hour fire resistive construction and have either a door directly to the exterior or a 2-hour fire resistive rated access hallway. The fire pump room will be dedicated to fire pump equipment. A set of double doors should be provided to the fire pump room to enable equipment to be moved in and out of the room. The fire pump room will be located directly adjacent to the fire water tank.

ELECTRICAL

A. General

1. The electrical services will originate from one large transformer vault room (approximate estimated at 25 ft. by 40 ft.) housing two transformers located on Level 1. The vault room will be served from a new or existing power company primary vault in the street. Our best estimate on service charges from Power Company for providing equipment in the vault and service to the site is approximately \$250,000, which may decrease as further coordination is conducted with the utility.
2. The major equipment room on the Level 1 includes:
 - a. The Main Electrical Room: 12 feet by 24 feet
 - b. Generator Room: 17 feet by 30 feet
 - c. Emergency Power Distribution Room: 16 feet by 10 feet
 - d. The Main Telecom Room: 12 feet by 18 feet
 - e. The Main Electric and Generator Rooms should be a minimum 15 feet in height.
 - f. The Main Telecom Room should be a minimum of 10 feet in height.
3. The service transformers will serve:
 - a. One 3000 amp, 480Y/277-volt service for house loads and levels 2 and above.
 - b. One 1200 amp, 208Y/120-volt service for the retail tenants.

- B. The 480/277V Service will consist of a single utility meter and main breaker, and service house loads including fire pump, elevators, corridor/lobby lighting, smoke control fans, and the like will be supplied from house panel which will be metered separately. The fire pump will be serviced from a full barrier section downstream of the meter but upstream of the main disconnect. The 480/277V will also have a breaker feeding a meter center for the level 2 and above tenants.

C. Emergency Power System

1. The emergency power generation system will consist of a diesel engine generator set located in a designated Generator Room on Level 1. The estimated size of this generator is anticipated to be 500 kW. The generator room will be two-hour rated as required by IBC. Remote annunciator will be located in the Fire Command Center on Level 1.
2. A diesel fuel tank will be located in the generator room. The fuel tank will be sized to provide a minimum of 8 hours of fuel. A remote fuel fill location is needed at street level at the exterior of the building as required by City of Portland.
3. The emergency generator will feed the emergency egress lighting, elevators, fire pumps, the smoke control system, and other systems as required by IBC and is not intended for use by the tenants.
4. Emergency branch panels rated at 480/277 volts and 208/120 volts will be located strategically throughout the Tower to serve life safety loads.

D. Retail Lease Spaces

1. Service will include one circuit breaker dedicated to feed a 208Y/120-volt commercial multi-meter board for serving each retail lease space. Distribution from the service equipment to the retail lease spaces is the responsibility of the tenant improvement work.
2. Telephone/CATV Pathways/Spaces
 - a. One empty 2-inch conduit to each retail space from the telecom service entrance facility will be provided.
 - b. Design of conduit system within retail lease spaces are assumed to be provided by retail owner's personnel.

E. Office Space Tenants

1. Office tenants will be served from a 480/277V meter center. The meter center will be sized to provide 7.0 watts per square foot for tenant use.
2. Distributed transformers for the tenants will be installed supplied by each tenant and located within their lease space to step the voltage down to 120/208 volts. This voltage will be used by end use loads such as convenience receptacles, office equipment, small mechanical equipment, and the like.
3. House branch panels rated at 480/277 volts will be located in the stacked electrical rooms. These branch panels will provide power to the lighting system, mechanical equipment, and other large electrical loads.
4. Telephone/CATV Pathways/Spaces
 - a. 8-ft. wide plywood backboards in dedicated telecom room on all levels to allow connection between office tenants and building backbone cabling. Multiple 4-inch conduit sleeves through stacked electrical rooms for future building backbone cabling. There will be a minimum of three 4-inch conduits through telecom room at ceiling level into adjoining office space area for future cabling.

- F. Design of conduit system within office lease spaces are assumed to be provided by office tenant's personnel unless requested otherwise.
- G. Photovoltaic panels (PV) will be incorporated into the "corrugated" roof over a portion of the Creative Office. The power produced from the panels will be back-fed into the house electrical service. Further study will determine the capacity of the PV system.
- H. Central plant option:
 - a. Central Plant: All items above apply except the building power and emergency power shall be supplied from the existing PSU FAB building located across the street. Note that coordination between PGE and Pacific power will need to occur since the service territory boundary divides the FAB building and new 4th and Montgomery. The scope for connection to the FAB building will include the following:
 - 3) Connect new 12.5 Kv medium voltage service via new utility tunnel. The medium voltage feeder will then terminate into a medium voltage service rated switch located within medium voltage switchgear. The medium voltage switch and transformers will need to be in a two hour rated room with equipment access via street vault or equipment elevator. The switch will then feed step down transformers that will serve the 3000 amp 480 volt three phase service for house loads and levels 2 and above and a new 1200 amp 208 volt three phase for the retail tenants. The feeder required for the 480 volt service would be 8 sets of (4-500 kcmil CU, 1 – 400 kcmil CU GND., in 3-1/2" C.). the feeder required for the 208 volt service would be 4 sets of (4-350 kcmil, 1 #3/0 CU GND., in 3" C.)
 - 4) Connect new emergency power source via PSU FAB building. Emergency capacity to equal 500kw of emergency load. The feeder required for the emergency loads would be 3 sets of (4-300 kcmil CU, 1 #1/0 CU GND., in 3" C.). The emergency generator will feed the emergency egress lighting, elevators, fire pumps, the smoke control system, and other systems as required by IBC and is not intended for use by the tenants. An Automatic Transfer Switch (ATS) will be required in the new building.

FIRE ALARM SYSTEM

- A. An automatic, addressable, fire alarm system with voice evacuation will be provided for each tower to meet the requirements of the Oregon Specialty Structural Code (OSSC), the International Fire Code with Oregon amendments, and NFPA 72, 2002 edition.
- B. The tower will have a fire command center which will provide a centralized command and control location for fire department responding personnel. The command center will be located within sight of the elevators at the street level. The command center will have code-required annunciator, fire alarm and voice evacuation control panels, HVAC and fire pump status indicators and control, and other code-required features.
- C. The fire alarm system will provide system alarm, supervisory monitoring functions, and alarm notification throughout the building. A digital alarm communicator will transmit system alarm, supervisory, and trouble signals off site for 24-hour monitoring. The fire alarm system will have batteries to provide continuous operation upon loss of primary power to the panel.

4th and Montgomery Early MEP Narrative:

- D. The system will provide building alarm notification via a voice evacuation system utilizing speakers and speaker/strobes, amplifiers, and power supplies. The notification appliances will be located throughout to provide compliance with NFPA 72 and the ADA.
- E. Manual pull stations will be located at exits from each floor. Smoke detectors will be installed in residential corridors, elevator lobbies, and elevator machine rooms, and where required by code, for HVAC systems. Sprinkler flow switches, alarm pressure switches, valve tamper switches, low and high pressure switches, water tank level switches, switches associated with fire pumps and fire pump controllers will be monitored for status.
- F. Operation of an automatic or manual fire alarm device or sprinkler flow switch will activate the voice evacuation system and provide voice instructions and flash strobes continuously for the fire floor and the floors above and below the fire floor. An override of the voice evacuation system will allow manual operation by responding personnel.
- G. Control outputs will be provided for HVAC system shutdown, fire smoke damper closure, smoke exhaust, stairwell and elevator pressurization system operation, elevator recall, and elevator shutdown.
- H. Two-way, fire department communication systems will be provided for the tower. Communication points will be located at all elevators, elevator lobbies, emergency and standby power rooms, enclosed exit stairways, fire pump room, and in the fire command center.



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February 27, 2017

Mr. Ben Arico
BORA Architects
720 SW Washington St., Suite 800
Portland, Oregon 97205

RE: PSU 4th + Montgomery
Structural Design Narrative

Dear Ben,

The following is a structural narrative for the proposed PSU 4th + Montgomery, 9-story mixed use building project in Portland, OR. The building will occupy an L-shaped parcel bound by SW 4th and SW 5th, and SW Montgomery and SW Harrison. The narrative is based on the current Cost Estimating Set dated January 23, 2017 provided to us by you, and on project specific notes taken during our design team meeting. The following list of assumptions applies to this project:

Building Assumptions:

- Design will be based on the 2014 Oregon Structural Specialty Code.
- 9-story mixed use building with Risk Category III occupancy classification.
- Approximate total construction budget: \$100 Million
- The building will be constructed at grade and will not require below grade basement structure.
- A majority of the roofs will have green roof and PV systems.
- Major mechanical equipment will be placed on high roof.
- All roofs will require fall protection tie off systems.
- Exterior cladding system to be brick veneer with steel stud back up.
- A Radon control system will be required.
- Foundation systems described within this narrative are based on geotechnical recommendations by GeoDesign, Inc. as described in their Memorandum dated December 21, 2011, as well as on the recommendations recently provided by GeoTech Foundation Company-West dated February 27, 2017.

FOUNDATIONS:

The building foundations will consist of conventional reinforced concrete spread footings beneath load bearing columns and bearing/shear walls. The spread footings will be founded over an Engineered Aggregate Pier foundation system. The aggregate piers will be 30" in diameter and will extend between 12'-15' below the bottom of foundations.

SLAB ON GRADE:

The first floor will consist of a minimum 4-inch thick concrete slab on grade with approximately 1.5 psf of reinforcement placed over a vapor barrier and a minimum 6-inch layer of compacted crushed rock over an approved subgrade. Final slab on grade recommendations shall be confirmed by the project Geotechnical engineer.

FLOOR AND ROOF CONSTRUCTION:

A steel framed building system is well suited for this project. The elevated floor and roof assemblies will consist of a 3-inch, 20 Gage type W composite steel deck with 3-inch normal weight concrete topping. The concrete topping will contain approximately 1.5-psf of reinforcing. The composite deck assembly is supported by a composite steel beam and girder framing system. Composite action will be achieved via

BORA Architects
RE: PSU 4th + Montgomery Structural - Design Narrative
February 27, 2017
Page 2 of 2

the use of 3/4" diameter x 4 1/2" long headed studs welded to the steel beams and girders and cast into the concrete topping. The proposed system provides rigid diaphragm behavior at all levels resulting in greater flexibility when planning the lateral force resisting element locations. Final floor and roof member sizes will be dependent upon actual framing layout and loading. Steel Wide Flange columns will support the floor and roof framing. Steel framed mechanical screen walls are assumed to be required at the roof level around mechanical units. An enclosed, steel-framed mechanical room may be an option to mechanical screen walls.

The south-eastern wing of the building will be 3-stories in height. The third floor creative space roof will have a saw-tooth profile. Framing of this 3-story wing will be steel-framed to match that of the 9-story wing. The saw-tooth roof will likely be sheathed with 1 1/2" - 18 gage steel roof decking.

LATERAL FORCE RESISTING SYSTEM:

The lateral force resisting system may consist of either Special Reinforced Concrete Shear Walls or Buckling Restrained Brace Frames. The lateral resisting elements will be grouped around stair and elevator cores to the extent possible. Building lateral forces would be transferred to the lateral force resisting elements via the floor and roof rigid diaphragms. Select steel wide flange beams within the floor and roof framing will serve as collectors to transfer lateral loads around openings.

EARTHQUAKE RECORDING INSTRUMENTATION:

Per Section 1613.7 of the 2014 Oregon Structural Specialty Code, the building shall be provided with earthquake recording instrumentation. Alternatively, the owner may deposit an amount equal to the cost of the instrumentation to the Earthquake Recording Instrumentation Fund in the Oregon Department of Geology and Mineral Industries (DOGAMI).

Please call us if you have any questions.

Sincerely,

Clinton J. Ambrose, P.E., S.E.
Principal



February 27, 2017

Mr. Benjamin Arico
 Bora Architects
 720 SW Washington, Ste. 800
 Portland, OR 97205

Sent Via Email (arico@bora.co) 9 pages

**Feasibility
 Engineered Aggregate Pier (EAP) System
 PSU 4th & Montgomery (Portland, OR)**

Dear Ben:

We completed our feasibility assessment for utilizing an Engineered Aggregate Pier (EAP) foundation system for PSU 4th & Montgomery in Portland, OR, basing our review on the following:

- Structural Design Narrative by ABHT Structural Engineers, dated February 13, 2017.
- Geotechnical Report by GeoDesign, Inc., dated June 4, 2009.
- GeoDesign Addendum No. 1, dated December 21, 2011.

Based on the above, an EAP foundation system is definitely applicable. We have designed and installed EAP foundations for several similar structures in similar soils in the downtown area (12th & Clay, Pearl Hampton Inn, Janey I and Janey II, Framework-in design).

Based on the above, an Engineered Aggregate Pier foundation system would:

1. Provide 6,000 psf soil bearing capacity with allowable 1/3 increase for transient loads.
2. Allow use of a traditional spread footing foundation system in lieu of pile caps/grade beams.
3. Limit total and differential settlement in the pier-reinforced zone to 1" and ½" respectively.
4. Provide a coefficient of sliding friction of 0.5.
5. The piers would be 30" in diameter and extend from bottom of footing elevation to the depth necessary to support the foundation loads and control settlement, with pier lengths expected to be 12'-16'.
6. As needed, individual piers could be designed to provide about 45 kips tension (uplift) resistance.
7. The EAP system would be designed and constructed per our standard specification (attached).

We appreciate your considering us for the project and look forward to the opportunity of working with you. If you have any questions, please do not hesitate to call.

Yours truly,
GeoTech Foundation Company - West

Steven R. Lundin
 Vice President

Attachment:
 Specification (SPEC01a-2016) – 8 pages



**SECTION 02360 / 31 34 30.13
 ENGINEERED AGGREGATE PIERS
 (SOIL REINFORCEMENT AND FOUNDATION SYSTEM)**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide all equipment, material, labor and supervision to design and install Engineered Aggregate Piers for the soil reinforcement. Design shall rely on subsurface information presented in the project geotechnical report, and structural loading provided by the project Structural Engineer.
- B. Provide design submittal, including appropriate drawings and calculations, sealed by a Professional Engineer licensed in the state in which the project is located.
- C. Design engineer for the project shall be directly employed by the aggregate pier installer, and shall be readily available throughout project Design Development and pier installation to address Requests For Information (RFI's).
- D. Installer's Design Engineer and Quality Control representative shall each have a minimum of 5 years of documented experience with engineered aggregate piers constructed with high energy, vertical ramming of the type specified herein.

1.02 RELATED WORK BY OTHERS

- A. Prior to any pier installation, the Engineered Aggregate Pier installer shall be provided with written confirmation that settlement caused by any fill placed on the site prior to pier installation has stopped. Such confirmation shall come from or be approved by the project Geotechnical Engineer.
- B. Layout of footings, mats, grade beams and staking of all aggregate pier locations prior to aggregate pier installation shall be the responsibility of the General Contractor. If layout and pier staking is not conducted by a licensed surveyor, then General Contractor shall assume full responsibility. Information provided shall include existing ground surface elevations (± 3") within 50 feet of each aggregate pier element. General Contractor shall assume full responsibility for any and all costs associated with piers that may be found later to have been mislocated or constructed to the wrong elevation control.
- C. All above and below ground utilities shall be located, clearly marked, and relocated as necessary prior to installation of aggregate pier elements.
- D. Pier aggregate, if supplied or placed by the Owner's representatives or Contractors, shall be placed within 50 feet of the pier construction area and in sufficient locations as to facilitate unhindered, continuous pier construction, determined in coordination with the aggregate pier installer.
- E. Removal of drill spoils from the site, and fugitive dust control are not included.
- F. Foundation excavations to expose the tops of aggregate piers shall be made in a workmanlike manner, and shall be protected until concrete placement, with procedures and equipment best suited to (1) preventing softening of the matrix soil between and around aggregate piers prior to pouring structural concrete, and (2) achieving suitable contact between the dense, undisturbed aggregate piers and the concrete footing.

Procedures that can be employed for the purpose of achieving these goals include but are not limited to (1) excavate using a smooth bucket, (2) prevent excavation below scheduled bottom-of-footing elevation, (3) place footing concrete or suitable concrete seal (“mud mat”) immediately after footing excavation is made and approved.

Footing excavations shall be inspected by the project Geotechnical Engineer. The following criteria shall apply, and a written inspection report sealed by the project Geotechnical Engineer shall be furnished the aggregate pier installer confirming that:

- a) water (which may have softened unconfined matrix soil between and around aggregate piers, and may have detrimental effects on the supporting capability of the pier-reinforced subgrade) has not been allowed to pond in any footing excavation at any time;
- b) all aggregate pier elements designed for each footing have been exposed in the footing excavation;
- c) immediately prior to footing construction, the tops of all aggregate piers exposed in each footing excavation have been inspected by the Geotechnical Engineer and recompact, as necessary, with mechanical (*not vibratory*) compaction equipment; and that the tops of any pier elements which may have been disturbed by footing excavation and related activity have been recompact to a dry density equivalent to at least 95% of the maximum dry density obtainable by the modified AASHTO compaction procedure (ASTM D1557);
- d) any structural fill placed between the tops of aggregate pier elements and the bottoms of foundations consists of the same quality and gradation material, or better, as used in constructing the piers; and that the fill has been compacted to a dry density equivalent to at least 95% of the maximum dry density obtainable by the modified AASHTO compaction procedure (ASTM D1557); and
- e) no excavations or drilled shafts have been made after installation of aggregate pier elements within a horizontal distance of 10’ from the edge of any pier, without the written approval of the aggregate pier installer.

- G. Failure to provide the above items, which are beyond the responsibility of the aggregate pier installer, may void any written or implied warranty on the performance of the aggregate pier system.

1.03 QUALITY CONTROL / QUALITY ASSURANCE

- A. Upon request, the installer of the aggregate pier system shall provide evidence of satisfactory experience with the design and installation of Aggregate Pier Soil Reinforcement systems using high energy vertical ramming with no vibration, including examples of at least 3 previous projects for which the installer has supported comparable structural loads, controlled settlement to the project tolerances, and utilized real-time quality control monitoring of rammer deflections. The design and installation shall be conducted and overseen by a registered professional engineer employed by the installer.
- B. The installer of the aggregate pier system shall use exclusively high energy, low frequency vertical ramming to construct the piers. No vibratory energy shall be used in constructing the piers. The installer shall provide credible research data to confirm that the rammer design to be used for constructing the aggregate piers develops nearly full passive lateral pressure in the soil surrounding the aggregate pier for a distance of at least 4 feet horizontally beyond the edge of the pier.

- C. The installer of the engineered aggregate pier system shall provide a full time Quality Control (QC) representative on-site during pier construction to maintain QC records during pier installation. This work shall be conducted under the supervision of a registered professional engineer employed by the pier designer. A testing agency or Geotechnical Engineer shall be retained by the Architect/Owner for Quality Assurance (QA) services.
- D. Quality Control observations shall include:
 - a) rammer force determination;
 - b) rammer stroke deflection measurements;
 - c) confirmation that piers are constructed at staked locations and within established tolerances;
 - d) confirmation that aggregate lifts 3 feet or more above the bottom of the pier have been constructed to the design criteria established by the aggregate pier design engineer.
 - e) all other observations required for completing the Daily Aggregate Pier Progress Report (DAPPR), as noted below.
- E. A Daily Aggregate Pier Progress Report (DAPPR) shall be completed by the installer during each day of installation, and shall consist of the following:
 - f) Date of installation and summary of installation equipment and installation procedures.
 - g) Pier location, length, and diameter.
 - h) Final elevations of the pier top and bottom.
 - i) Documentation of any unusual subsurface conditions encountered.
 - j) Soil and groundwater observations, if any.
 - k) The results of any field Quality Control testing or deflection monitoring done.
- F. The aggregate pier installer shall confirm pier modulus based on the dynamic rammer modulus achieved during ramming of aggregate lifts. The modulus shall be evaluated by measuring the dynamic force delivered by each rammer stroke, and applying that to the measured deflection of the rammer foot per stroke. Ramming of each aggregate lift shall be continued until the “design” pier modulus has been achieved.
- G. Prior to installing production piers, the aggregate pier installer shall measure on-site the energy output per stroke for the rammer being used. “Rated” energy provided by the rammer manufacturer shall not be used. During lift ramming, deflection of the rammer foot accompanying each stroke shall be monitored with instrumentation capable of recording rammer deflection to a precision of at least 0.001 inch per rammer stroke. Rammer-blow deflection monitoring shall be performed randomly in at least 5% of the piers installed for the project to confirm that terminal rammer-blow deflections on pier lifts meet the established acceptance criterion and that the “design” pier modulus has been achieved.
- H. A calibrated dynamic penetration test (ASTM STP 399) may be performed on representative aggregate pier elements as a supplement to rammer modulus values obtained during lift ramming. A minimum of 15 blows per 1.75 inch vertical movement shall be the minimum average penetration resistance of compacted, graded aggregate base course stone. On lifts of open graded aggregate, lower values may be approved by the system designer as appropriate.
- I. The testing agency/Geotechnical Engineer providing QA services, shall monitor installation procedures relative to these specifications, and shall confirm that

subsurface conditions across the installation area as revealed by the pier drilling are in general agreement with the project geotechnical explorations.

- J. The designer of the aggregate pier system shall carry Errors and Omissions / Professional Liability Insurance with coverage of at least \$2 Million.

1.04 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

1. ASTM D1143 Pile Load Test Procedures
2. ASTM D1194 Spread Footing Load Test
3. ASTM D1557 Aggregate Densification
4. ASTM D1241 Aggregate Quality
5. ASTM STP 399 Dynamic Penetrometer Testing
6. ASTM D3689 Uplift Load Test

1.05 SUBMITTALS

- A. Make submittals in accordance with requirements of Division 1 and as specified in this section.
- B. A Daily Aggregate Pier Progress Report (DAPPR) shall be furnished by the installer to the General Contractor. The final DAPPR shall include select graphs of the rammer deflection data and modulus determinations for constructed piers.
- C. When load tests are performed, the installer shall furnish within 5 working days of the completion of the test, a report including a description of the installation, test data, and any changes in design parameters based on the load test results. The report shall be prepared by or under the direct supervision of a registered professional engineer experienced in performance and analysis of the aggregate pier system.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Any materials ordered or delivered to the project site before approval will be at the aggregate pier installer's risk.
- B. Deliver materials to project site in quantities and at times to assure conformity of activities with the installation schedule for the aggregate pier system.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Aggregate for the piers shall typically consist of materials that are in general conformance with gradation requirements for State DOT highway base course and/or drainage materials, or as approved by the aggregate pier designer. Wet weather or soil conditions may require that the aggregate contain less than 5 percent fines (silt and clay particles passing the No. 200 sieve). The aggregate pier system designer and installer shall make the determination of acceptable materials to be used in pier construction.

- B. A suitable washed, open graded aggregate may be used in wet conditions or as initial lifts where soft soils are present at the bottom of the aggregate pier.

- C. Potable water or other suitable source shall be used to increase aggregate moisture content as needed for workability. Water shall be made available on-site to the installer of the aggregate pier system for his use in moisture conditioning aggregate for compaction, as needed. The need for moisture conditioning aggregate shall be made by the aggregate pier system installer based on workability and/or dust control; however, moisture content of aggregate is not a requirement for pier acceptance.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine areas and conditions under which aggregate pier elements are to be installed.
- B. Notify General Contractor of conditions detrimental to proper and timely completion of Work.
- C. Do not proceed with Work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 PREPARATION

- A. The General Contractor shall locate and protect underground and above ground utilities, and other structures from damage during installation of the engineered aggregate pier system.
- B. Install aggregate pier elements after Earthwork in the installation area has been completed as follows:
 - a) Site subgrade established by General Contractor shall be within 6 inches of finish subgrade, or as approved by installer of the aggregate pier system.
 - b) Any fills needed to establish finish subgrade have been installed, and settlement resulting from fill loads is complete (unless specifically approved in writing by the aggregate pier designer prior to installation).
 - c) A working surface has been established by General Contractor to provide wet weather protection of subgrade and to provide a base for efficient operation of pier installation equipment.

3.03 INSTALLATION

- A. The locations, size, and spacing of aggregate pier elements are described on the appropriate drawings or details. Any modifications in size and spacing of the aggregate pier element layout shall be approved by the system designer.
- B. Should any obstruction, including but not limited to boulders, timber, concrete, asphalt, large roots etc., be encountered which prevents placing the elements to the required depth, or causes the aggregate pier to drift from the required location, the obstruction shall be removed by the General Contractor. The excavation shall be backfilled by General Contractor with suitable materials and sufficiently compacted, in order to continue with installation of the aggregate pier element. Piers may be terminated short of design depth on rock, gravel or other suitable materials.

Additional aggregate pier elements shall be installed when required by the presence of obstacles.

- C. Special high-energy impact apparatus shall be used to construct the aggregate pier elements. Specially designed rammers per paragraph 1.03 of this specification shall be used. Approval of constructed pier lifts shall be based on observed rammer modulus achieved over the last several blows of ramming.
- D. The bottom of the pier excavation shall be rammed prior to the placement of aggregate. If wet, soft or sensitive soils are present, open graded aggregate shall be placed and rammed to stabilize the pier bottom and may serve as the initial pier lift.
- E. The center of each constructed aggregate pier element shall be within 6 inches of the design location, as located and staked in accordance with Article 1.02.B. Foundation elements installed outside of the above tolerance and deemed not to be acceptable, shall be either rebuilt or other remedial measures taken as approved by the aggregate pier system designer.
- F. Casing for elevator jack shafts located within 10 feet horizontally of any aggregate element shall be installed by others prior to aggregate pier installation, and shall be grouted in-place for the full length of the casing.
- G. Acceptable constructed lift thickness shall be established by the aggregate pier designer and confirmed by the aggregate pier installer for each lift installed.
- H. Required ramming time per lift, or acceptable terminal rammer deflection per blow, shall be established by the aggregate pier designer, and (if a test pier is constructed) shall be consistent with the time or deflection criteria used for the test pier construction.

3.04 AGGREGATE PIER MODULUS TESTING

A. Real-Time Modulus Testing of Multiple Piers and Multiple Lifts:

- 1. See section 1.03 regarding real-time modulus testing to be conducted during the ramming of pier lifts.

B. Post-Construction, Single Pier Modulus Testing:

- 1. Post-construction, single pier modulus testing is not required if Real-Time Modulus Testing (as described in Section 1.03) is performed. However, when specifically required, a single pier modulus test may be conducted on a specific aggregate pier element after it is constructed and has cured for at least 3 days so that excess pore water pressures developed in the surrounding soils during ramming have dissipated. The pier to be tested shall be constructed in the same manner and with the same ramming equipment as used on the project production piers, and rammer deflection monitoring shall be employed on each lift of the test pier.
- 2. Aggregate pier elements used for single pier modulus testing which are located within tolerance and provide a safe design capacity may, upon approval of the aggregate pier designer, be used in the finished work.
- 3. Compressive load test procedures shall be conducted in general accordance with ASTM D1143 and D1194, as appropriate. A test pier shall be loaded to 150 percent of the estimated element design pressure. Alternatively, at the discretion of the aggregate pier designer, the modulus test may be terminated when a modulus equal to 150 percent of the modulus used in the design is achieved.

- 4. The post-construction, single pier modulus test shall be conducted as follows:

- a) ASTM D1143 general test procedures shall be used as a guide to establishing load increments, load increment duration, load decrements, and total applied load.
- b) In order to evaluate bulging of the aggregate pier element itself under loading, the test pier shall be constructed in such a manner that deflections at both the bottom and top of the pier can be measured at each increment of loading.
- c) With the exception of the load increment representing approximately 112% of the design maximum aggregate pier element stress, all load increments shall be held for a minimum of 15 minutes, a maximum of 1 hour, and until the rate of deflection reduces to 0.01 inch per hour, or less.
- d) The load increment which represents approximately 112% of the design maximum aggregate pier element stress shall be held for a minimum of 15 minutes, a maximum of 4 hours, and until the rate of deflection reduces to 0.01 inch per hour, or less.
- e) A seating load equal to 5 percent of the total load shall be applied to the loaded steel plate prior to application of load increments and prior to measurement of deflections to compensate for surficial disturbance.
- f) The test data shall be presented as a graph showing deflection of the pier top and bottom under each load increment.
- g) At the design load, deflection measured at the top of the pier shall not exceed the design settlement for the aggregate pier-reinforced soil zone, and the ratio of bottom plate deflection to top plate deflection shall not exceed 0.25 unless specifically approved by the aggregate pier designer.

3.05 AGGREGATE PIER UPLIFT TESTING

- A. When field uplift tests are performed on aggregate pier elements, ASTM D-3689-07 shall serve as a basis. Uplift deflections shall be measured for both the reaction plate installed at the bottom of the aggregate pier element shaft and for a steel plate installed at the top of the element. Dial gages accurate to at least 0.001" shall be used and shall be supported on independent reference supported beams. Unloading shall be in at least four equal decrements, if possible.

- B. The following procedure shall be followed in performance of field tests to confirm uplift design parameters for aggregate pier elements designed to resist seismic uplift, as required.

- 1. The pier shall be constructed in such a manner that deflections at each load increment can be measured for the top of the pier as well as the bottom of the pier.
- 2. Apply a seating load to the top plate not to exceed 5 kips.
- 3. Zero dial gages following application of seating load.
- 4. Rapidly apply loads in approximately equal increments of at least 5 kips each, with a maximum of 8 increments between the seating load and 200 percent of the element design load. Record deflections at each load increment.
- 5. The final increment of loading shall be equal to at least 200 percent of the design load.
- 6. Unload to approximately 5 kips in 4 approximately equal increments, and record rebound for each increment.
- 7. Repeat the load-unload cycle at least 3 times.

- C. For tests conducted to evaluate performance under sustained uplift conditions (such as hydrostatic), the loading procedure shall be generally as described in B, above, except that only one load-unload cycle is required. Additionally, each load shall be maintained for a minimum of 10 minutes and until the rate of deflection equals 0.01 inch per hour, or less.
- D. The deflections recorded during the test shall be averaged, and a load vs. deflection curve plotted for the top plate and the bottom plate. The ultimate uplift capacity for the aggregate pier element shall be defined as the load at which the rate of deflection measured at the top of the element is approximately equal to the rate of deflection at the bottom of the element. Loading beyond 200 percent of the design load is not required.

DETAILED PROGRAM PSU Graduate School of Education

PROGRAM SUMMARY

	Dean's Office			MCS and Ross			ED Leadership and Policy			Tech Services			Special Education			Curriculum & Instruction			OCCD			Counseling Clinic			TOTAL	TOTAL	
	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf			
Lobby/Welcome																											
Reception	200	1.00	200	1		200	1		200	1		200	1		200	1.00		200	1.00		200					8.00	1,600
Workspaces																											
Enclosed offices (Dean - 180 sf)	180	1.00	180																							1.00	180
Enclosed offices (Chair - 100 sf)	100	1.00	100				1		100			1		100	1		100									4.00	400
Enclosed offices (faculty - 100sf)	100	4.00	400	12		1200	14		1400	2.00		200	16		1600	30		3000	6.00		600				84.00	8,400	
Open Workstation - 64sf	64	15.25	976	8.00		512	1.28		81.92	3.00		192	21.00		1344	3.00		192	25.00		1600	1.00		64	78	4,962	
Open Workstation for adjuncts (1 per 5 adjuncts)	13						19.00		247				6.00		78	48.00		624							73.00	949	
FLEX Work stations TBD																											
Conference/Seminar rooms																											
Small (150 sf - 6 people)	150	1	150	2		300	2		300	1		150	3		450	2		300	1		150					12.00	1,800
Medium (250 sf - 10 people)	250																									0.00	-
Large (300 - 15 people)	300												1		300				1		300					2.00	600
Deans (450 - 25 people)	450	1	450																							1.00	450
Teaching Space																											
Classroom - LG (1200 sf = 50 people)	1200																										
Classroom - Med (600 sf = 25 people)	600																									0.00	-
Classrooms - SM (300 sf = 15 people)	300																									0.00	-
STEM																										0.00	-
Executive Classroom (for ELP)																										0.00	-
Computer Lab																										0.00	-
Resource Room / Maker Space										1		450														1.00	450
Reading Room										1		450														1.00	450
Universal Design Lab													1		200											1.00	200
Reading Clinic													1		200											1.00	200
Infant Toddler Preschool													1		200											1.00	200
															0												
Support																											
copy/mail	100	1	100	1		100	1		100				1		100	1		100	1		100	1		100		7.00	700
workroom		1	250																							1.00	250
storage		1	400	1		130				1		300	1		150				1		400					5.00	1,380
Tech Storage	50																		1		50					1.00	50
tech workroom										1		450														1.00	450
Video recording										1		75														1.00	75
resource																										0.00	-
Faculty and staff lounge and kitchen		1	1600																							1.00	1,600
student lounge			0																							0.00	-
server/IT																										0.00	-
Imaging																			1		100					1.00	100
Private Gender Neutral Bathroom	64																					1		64		1.00	64
Clinic Office	64																					4		256		4.00	256
Clinic Group Room	360																					1		360		1.00	360
Small Counseling Room	80																					4		320		4.00	320
Medium Counseling Room	100																					3		300		3.00	300
Observation Room	300																					1		300		1.00	300
subtotal			4806			2442			2429			2467			4922			4516			3500			1964		300	27,046

25% (Internal Circulation) 6,761

Total Program SF 33,807

DETAILED PROGRAM PSU Graduate School of Education

DEAN'S OFFICE

	Size sf	Position/name	First name/last name	FTE	Total (Qty)	Total sf
Reception						
Reception	200				1.00	200
		Manager of Dean's Office and Academic Affairs	Amy Nye	1.00		0
						0
Workspaces						
						0
Administration						0
Enclosed offices	180				1.00	180
		Dean	Randy Hitz	1.00		0
						0
Enclosed offices	100				1.00	100
		Associate Dean	Micki Caskey	1.00		0
Open Workstation	64				5.50	352
	*	Exec Assist to Dean	Susan Shortridge	1.00		0
		Center for Student Success: Director	Victoria Lukich	1.00		0
		Assessment and Partnerhsip Coordinator	Leslee Peterson	1.00		0
		Data Coordinator	Steve Micke	1.00		0
		Departmental Research Admsitrator	Maerian Morris	1.00		0
		American Indian Teacher Program (AITP) Assistant	Quang Phan	0.50		0
						0
Development						0
Enclosed offices	100				1.00	100
		Director Development	Scott Shlaes	1.00		0
Open Workstation	64				1.50	96
		Development Coordinator	Emily McNulty Scriptor	1.00		0
		Student worker	Matt Klosterman	0.5		0
Budget						0
Enclosed offices	100				1.00	100
		CFO	K.C. Hall	1.00		0
						0
Open Workstation	64				3.25	208
		Sr. Financial/Buisness Analyst	Long Tran	1.00		0
		Finance Coordinator	Patty Maxwell	1.00		0
		Logistics/Instructional Support Specialist	Kisha Milfort	1.00		0
		Student worker	Adna Hergic	0.25		0
Field Placement & Certification						0
Enclosed offices	100				2.00	200
		Director of Partnerships	Gabe	1.00		0
		Licensure Programs Administrator	Lisa Todd	1.00		0
Open Workstation	64				2.00	128
		Field Placement: GTEP	Penny Jasso	1.00		0
		Field Placement: SPED; School COUN	Andria Pearson	1.00		0
Large (300 - 15 people)	300					0
						0
Emeriti work space (3 work stations in	64				3	192
						0
						0
Teaching Space						
Semnar Classroom(15 people)	300				0	0
						0
Meeting Space						
Deans Conference Room (25 people)	450				1	450
Small Conference (6 people)	150				1	150
						0
Support						
Copy, mail	100				1	100
Centralized main workroom, supplies,	250				1	250
storage for archive files	400				1	400
						0
Other						
STEM classroom	1500				1	1500
Learning Garden as part of the outdoor					1	
Executive classroom for Ed Admin	1200				1	1200
faculty & staff lunch room/lounge kitchen	1600				1	1600
carrels	TBD				1	

TOTAL SF 7506

DETAILED PROGRAM PSU Graduate School of Education

MCS & ROSS

	Size sf	Position	First name/Last name	FTE	Total (Qty)	Total sf
Reception						
Reception	200				1	200
		MCS Student Worker		0.2		
		MCS Student Worker		0.2		
		ROSS Student Worker		0.2		
		Doctoral Student GA		0.2		
		Student Ambassador		0.2		
Workspaces						
Administration						
Enclosed offices	100				12	1200
		Diverse Student Recruitment Advisor	Tara Cooper	1.00		
		Recruitment and Student Services Advisor	Carlos Quatela	1.00		
		Recruitment and Student Services Advisor	Lynda Pullen	1.00		
		Recruitment and Student Services Advisor	Elizabeth Snyder	1.00		
		Recruitment and Student Services Advisor	Stefanie Randol	1.00		
		Recruitment and Student Services Advisor	Tracy Williams-Murphy	1.00		
		Co-op Program Manager	Julie Wolleck	1.00		
		Director of ROSS	Jennifer Anderson	1.00		
		Director of MCS	Jeremy McPherson	1.00		
		Marketing	Edward Lentz	1.00		
		Communications	Nancy Eichsteadt	1.00		
		Registrar	Mark Mentzer	1.00		
Open Workstation	64				8.00	512
		CI Admissions Processor	Mark Wallace	1.00		
		SPED/COUN Admissions Processor	Kris Smith	1.00		
		ELP Admissions Processor & Field Placement	David Bikman	1.00		
		Admissions Specialist	Emily McCaffrey	1.00		
		Admissions Specialist	TBD	1.00		
		Database Specialist	Alan Willoughby	1.00		
		Registration/Web	Daryn Lee	1.00		
		Office Specialist	Linnea Goranson	1.00		
Teaching Space						
Semnar Classroom(15 people)	300	NA			0	
Meeting Space						
Small Conference (6 people)	150		MCS/ROSS Conference Room		2	300
Support						
Copy, mail, workroom, Graduation	100				1	100
Media Storage (Print & Display)	80				1	80
archive files	50				1	50

TOTAL SF 2442

DETAILED PROGRAM PSU Graduate School of Education

ED LEADERSHIP & POLICY

	Size sf	Position	first name/last name	FTE	Total (Qty)	Total sf
Reception						
Reception	200	Admissions coordinator	David Bikman	0.5	1.5	
		Department Coordinator	Kiley Melicker	1.00	1	200
Workspaces						
Administration						
Enclosed offices	100				1	100
		Chair	Candyce Reynolds	1.00	1	0
						0
Open Workstation	64				1.28	82
		Graduate Assistant	Megan Wills	0.49		0
		Graduate Assistants (LSE)	various-- 4--off-site and on-site	0.3		0
		Graduate Assistants (Grant)	various--1--on-site	0.49		0
						0
Faculty						0
Enclosed offices	100				14	1400
		Professor	Christine Cress	1.00		
		Professor	Dilafuz Williams	1.00		
		Professor	Ramin Farahmandpur	1.00		
		Asst/Assoc Professor	Heather Burns	1.00		
		Asst/Assoc Professor	Sybil Kelley	1.00		
		Assoc Professor	Karen Haley	1.00		
		Assoc Professor	Andy Job	1.00		
		Assoc Professor	Moti Hara	1.00		
		Assoc Professor	Michael J. Smith	1.00		
		Assoc Professor	Patrick Burk	1.00		
		Assoc Professor	Susan Carille	1.00		
		Asst/Assoc Professor	Deborah Peterson	1.00		
		Assoc Professor	Becky Boesch	1.00		
		Asst/Professor	Jada Phelps-Moultrie	1.00		
Adjuncts	13					0
Open Workstation	64				19	247
		adj	Tona Brewer	0.2		
		adj	Susan Adams	0.26		
		adj	Jane Carr	0.26		
		adj	Gregory Dardis	0.49		
		adj	Joyce Dougherty	0.26		
		adj	Darrin Drill	0.26		
		adj	Karen Gray	0.26		
		adj	Meg Guerreiro	0.26		
		adj	David Guille	0.26		
		adj	William Korach	0.26		
		adj	John Lenssen	0.26		
		adj	Lukas Maurer	0.26		
		adj	Thomas McKenna	0.26		
		adj	Jorge Meza	0.26		
		adj	DJ Netz	0.26		
		adj	William Rhoades	0.26		
		adj	Nancy Schneider	0.26		
		adj	Robin Stoutt	0.26		
		adj	Daniel Vetter	0.26		
Teaching Space						0
Seminar Classroom(15 people)	300				2	600
						0
Meeting Space						0
Small Conference (6 people)	150				2	300
						0
Support						0
Copy, mail, workroom, Storage	100				1	100
						0

TOTAL SF 3029

DETAILED PROGRAM PSU Graduate School of Education

TECH SERVICES

	Size sf	Position	First name/last name	FTE	Total (Qty)	Total sf
Reception					1	200
		Student Employee - Regular	Ronald Polintan	0.4		
		Student Employee - Regular	Adriana Xayachack	0.3		
Reception	200	Student Employee - Work Study	Alfredo Rocha	0.3		
Workspaces						
Enclosed offices	100				2.00	200
		Instructional Technology Service Manager	Lindsey Freer	1.00		
		Information Technology Consultant 2	Robert Brown	1.00		
Open Workstation	64				3.00	192
		Student Employee - Regular	Van Tran	0.30		
		Student Employee - Regular	Huong Do	0.4		
		Student Employee - Regular	Tenzin Kunden	0.3		
		Student Employee - Work Study	Hung Nguyen	0.25		
		Student Employee - Regular	Huy Nguyen	0.25		
		Student Employee - Regular	Minh Phan	0.25		
		Student Employee - Regular	Larry Chiem	0.25		
		Student Employee - Regular	Cuong Ngo	0.25		
		Student Employee - Regular	Kevin Nguyen	0.25		
		Student Employee - Work Study	Tuan Nguyen	0.25		
		Student Employee - Work Study	Duy Pham	0.25		
Teaching Space						
Seminar Classroom(15 people)	300				0	
Meeting Space						
Small Conference (6 people)	150		Technology Services Conference Room		1	150
Support						
Copy, mail, workroom	100				0	
Storage	300		Technology and A/V Equipment Storage		1	300
Other						
Computer Lab (25 people)	600	would also benefit from having a dedicated instructional			1	600
Resource Room/Maker Space	450				1	450
Reading Room	450				1	450
Tech Workroom (incl work counter)	450				1	450
Video Recording space for Online Programs	75				1	75

TOTAL SF 3067

DETAILED PROGRAM PSU Graduate School of Education

SPECIAL EDUCATION

	Size sf	Position	First name/last name	FTE	Total (Qty)	Total sf
Reception						
	200	families, students, clients)			1	200
	64	SPED GA	Dwight Rundle	<.49	1	64
Workspaces						
Administration						
Enclosed offices	100				1	100
Open Workstation	64	Department Chair	Randall De Pry	1.00		
					20.00	1280
		Counseling.)	Teresa Loveland	1		
		TCIO Workstations	Mentor	12		
		RCEIP and ATRC Workstations	GAs and Student Workers	6		
		Kiwanis camp		1		
		Mt Hood Kiwanis Camp with space for locked storage	GAs (2)	0.5	2	
Faculty						
Enclosed offices	100				16	1600
		NTTF	Sue Bert	1.00		
		Professor	Chris Borgmeier	1.00		
		Research NTTF	Kathryn Botsford	1.00		
		Associate Professor	Julie Esparza Brown	1.00		
		NTTF	B. Lynn Coupland	1.00		
		NTTF	Ruth Falco (RCIEP Director Office)	1.00		
		Professor	Ann Fullerton	1.00		
		Assistant Professor	Hollie Hix-Small	1.00		
		NTTF	Tiffany Jones	1.00		
		Assistant Professor	Holly Lawson	1.00		
		Associate Professor	Sheldon Loman	1.00		
		NTTF	Shaheen Munir-McHill	1.00		
		NTTF	Melissa Pebly	1.00		
		Assistant Professor	Christopher Pinkney	1.00		
		Associate Professor	Amanda Sanford	1.00		
		Assistant Professor	Samuel Sennott	1.00		
		TCIO	Nick Bender (UTS)	1.00		
		TCIO	Megan McFarland (UTS)	1.00		
		TCIO	Shared Space PT (UTS)	1.00		
		ATRRC Director Office		1.00		
Adjuncts						
	13					
Open Workstation	64				6	78
		GA/Doc Student Space		0.5		
		GA/Doc Student Space		0.5		
		GA/Doc Student Space		0.5		
		Adjunct Faculty Workstation		0.5		
		Adjunct Faculty Workstation		0.5		
		Adjunct Faculty Workstation		0.5		
Teaching Space						
Seminar Classroom(25 people)	600	teachers) used 8-3:00 5 days/wk. could be a classroom in			1	600
Seminar classroom	300	Doctoral Seminar Room			1	300
Meeting Space						
Small Conference (6 people)	150	Community Meetings (8-10 seating would be ideal)			3	450
Large Conference Room (8-10)	300	TCIO and Other Grant Funded Projects			1	300
Support						
Copy, mail, workroom	100				1	100
Storage	150	e.g., SPED Assessments, Braille machines			1	150
Other						
Universal Design Lab	200	Linked to Sam Sennott's office?			1	200
Reading Clinic	200	observation rm & mtg rm dedicated for mtg & counseling students & clients			1	200
					1	
and Student Space (EI Program)	200	dedicated space for early intervention & assessment.			1	200
Flexible work stations	TBD	term/yr to yr based on grants and classes			?	

TOTAL SF 5822

DETAILED PROGRAM PSU Graduate School of Education

CURRICULUM & INSTRUCTION

	Size sf	Position	first name/last name	FTE	Total (Qty)	Total sf
Reception	200				1	200
Reception		Admin Asst.	Jake Fernandez	1.00		
		Admin Asst.	Mark Wallace	1.00		
		Admin Asst.	Currently vacant/to be filled	0.75		
storage	60	files cabinets needed by Mark Wallace & Jake				
Workspaces						
Administration						
Enclosed offices	100				1	100
		Department Chair	Will Parnell	1.00		
Open Workstation	64				3.00	192
		GRA	Angela Molloy Murphy	0.50		
		GRA	Ben Kasangue	0.5		
		GRA	Jing Chen	0.5		
		GRA	Kirsten Moreno	0.5		
		GRA	Carrie Larson	0.5		
		AITP Office Asst/Student empl	currently vacant/will be filled	0.5		
Faculty						
Enclosed offices	100				30	3000
		Asst Prof	Jean Aguilar-Valdez	1.00		
		Asst Prof	Todd Cherner	1.00		
		Asst Prof	Amanda Sugimoto	1.00		
		Asst Prof	John Nimmo	1.00		
		Asst Prof	Maika Yeigh	1.00		
		Asst Prof	Unfilled/Ron Narode	1.00		
		Professor	Jason Ranker	1.00		
		Professor	(Carol Mack)	1.00		
		Professor	Sue Lenski	1.00		
		Professor	Yer Thao	1.00		
		Professor	Will Parnell	1.00		
		Professor	Samuel Henry	1.00		
		Professor	Nicole Rigelman	1.00		
		Assoc Prof	Anita Bright	1.00		
		Assoc Prof	Esperanza De La Vega	1.00		
		Assoc Prof	Gayle Thieman	1.00		
		Assoc Prof	Dot McElhone	1.00		
		NTTF Assoc Prof of Practice	Olivia Murray	1.00		
		NTTF Asst Prof of Practice	Donna Shrier	1.00		
		NTTF Asst Prof of Practice	Bernd Ferner	1.00		
		NTTF Asst Prof of Practice	Jan Abramovitz	1.00		
		NTTF	Wendy Swanson	1.00		
		NTTF	Howard Yank	1.00		
		NTTF Asst Prof of Practice	Barb Ruben	1.00		
		NTTF	James Gambrell	1.00		
		NTTF Asst Prof of Practice	Ingrid Anderson	1.00		
		NTTF Asst Prof of Practice	Karen Kennedy	1.00		
		NTTF	Rana Houshmand	1.00		
		NTTF	Kelly Cutler	0.5		
		NTTF	Matt McParker	0.5		
		American Indian Urban Teacher Program (AIUTP), Director	Maria Tenorio	1		
Adjuncts	13					
Open Workstation	64				48	624
		adj	Acar, Serra		0.33	fully online
		adj	Ahmed, Julia	0.1		
		adj	Atkins-Boyce, Kendra	0.1		
		adj	Cooper, Joanne	0.1		
		adj	Crandlemire, Susan	0.1		
		adj	Davis, Sara	0.1		
		adj	Dickey Carlis, Liz		0.33	fully online
		adj	Elliott, Rachel	0.1		
		adj	Gasser, David	0.33		
		adj	Gibson, Sarri	0.1		
		adj	Guyon, Sarah	0.1		
		adj	Johnston, Dolores		0.33	fully online
		adj	Johnstone, Janet	0.1		
		adj	Jung, Su-Jin	0.49		

TOTAL SF 5116

	Size sf	Position	first name/last name	FTE	Total (Qty)	Total sf
		adj	Moll, Leanne	0.1		
		adj	Munoz, Myrna	0.33		
		adj	Murray, Ruth	0.33		
		adj	Ogren, Daniel	0.1		
		adj	Olien, Rebecca	0.1		
		adj	Peterson, Kenneth	0.1		
		adj	Petrick, Kellie	0.1		
		adj	Pinney, Lael	0.1		
		adj	Ralley, Linda	0.25		
		adj	Reed, Cindy	0.1		
		adj	Ruddy, Matthew	0.1		
		adj	Schneiderman, Sharon	0.1		
		adj	Schumacher, Conrad	0.25		
		adj	Skach, Kimberly	0.1		
		adj	Solares-Vega, Edgar	0.1		
		adj	Thierry, Trudy	0.1		
		adj	Thomas, Stephanie	0.25		
		adj	Toppel, Kathryn	0.25		
		adj	Turner, Maranda	0.25		
		adj	Verbruggen, Frances		0.25	fully online
		adj	Webb, Donna	0.1		
		adj	Wedel, Amanda	0.1		
		adj	Wolsey, Thomas	0.1		
		adj	Young, Gerald	0.1		
		adj	Zenisek, Joe	0.25		
Teaching Space						
Seminar Classroom(15 people)	300				2	600
Meeting Space						
Small Conference (6 people)	150				2	300
Support						
Copy, mail, workroom, storage	100				1	100

DETAILED PROGRAM PSU Graduate School of Education

OCCD

	Size sf	Position	First name/last name	FTE	Total (Qty)	Total sf	Notes:
Reception							
Reception	200	Office Specialist I	Dustin Swinney	1.00	1	200	
		Office Specialist I	Alisha Robinson	1.00			
		Student Worker	Currently vacant/to be filled	0.50			
Workspaces							
Enclosed offices	100					0	
Enclosed offices	100				6.00	600	
		Coordinator: Certification and Credentialing	Currently vacant/to be filled	1.00			
		Coordinator: Training and Education	Virginia "Dee" Wetzel	1.00			
		Coordinator: Data and Technology	Andrew Bremner	1.00			
		Financial Support	Tracy Hensley	1.00			
		Director	Pamela Deardorff	1.00			
		Coordinator: Oregon ASK	Beth Unverzagt	1.00			
Open Workstation	64				25.00	1600	
		Academic Professional 1	Soobin David Oh	1.00			20% phone usage, open work station to be fully considered.
		Academic Professional 1	Heather Erwin	1.00			20% phone usage, open work station to be fully considered.
		Academic Professional 1	Sarah Scott	1.00			20% phone usage, open work station to be fully considered.
		Information Technology Consultant 2	Jim Mignano	1.00			20% phone usage, open work station to be fully considered.
		Academic Professional 1	Currently vacant/to be filled	1.00			20% phone usage, open work station to be fully considered.
		Academic Professional 1	Lena Ko	1.00			20% phone usage, open work station to be fully considered.
		Academic Professional 1	Sonia Thomas	1.00			20% phone usage, open work station to be fully considered.
		Academic Professional 1	Yet To Be Filled	1.00			
		Office Specialist II	Nick Hershkowitz	1.00			20% phone usage, open work station to be fully considered.
		Office Specialist II	Crystal Donis Leiva	1.00			20% phone usage, open work station to be fully considered.
		Office Specialist II	Qiana Mullen	1.00			20% phone usage, open work station to be fully considered.
		Office Specialist II	Slava Bakhanovich	1.00			20% phone usage, open work station to be fully considered.
		Office Specialist II	Vacant / To Be Filled	1.00			
		Office Specialist I	Eric Gallier	1.00			20% phone usage, open work station to be fully considered.
		Office Specialist 1 - DE	Cathin Yang	1.00			
		Office Specialist 1 - DE	Todd Bayles	1.00			
		Office Specialist 1 - DE	Tyler Karns	1.00			
		Office Specialist 1 - DE	Tomo Neilson	1.00			
		Office Specialist 1 - DE	Thomas Waldo	1.00			Needs Dedicated Phone
		Office Specialist 1 - DE	Jamie Melara	1.00			Needs Dedicated Phone
		Office Specialist 1 - DE	Kaysi Thompson	1.00			Needs Dedicated Phone
		Office Specialist 1	Allison Adkins	1.00			
		Programmer	Thom Linton	1.00			
		Programmer	Andrew Stoneman	1.00			
		Programmer	Brandon Conway	1.00			
		Internal circulation (1.25)					
Teaching Space							
Large Mtg/Training Room(35 people)	700				1	0	Can use shared space if 8 to 10 days/year can be secured for training, 1/2 day per month for staff meetings
Meeting Space							
Small Conference	150				1	150	
Large Conference (12 people)	300				1	300	
Support							
Copy, mail, workroom	100				1	100	
Imaging	100				1	100	
Tech Storage	50				1	50	adjacent to Coordinator: Data and Tech office
Storage	400	onsite - active client/program files			1	400	Current. Convene discussion re: file storage reduction strategies and security
Storage	200	off site - inactive client/program files	Currently in Newberger basement		1	0	200 sf offsite. Should this be brought onsite?
Kitchen space	60	dishwasher, microwave, frig, cupboard space			1	0	Can share central GSE kitchen
Breakroom	150				1	0	Can share central GSE lunch room

TOTAL SF 3500

DETAILED PROGRAM PSU Graduate School of Education

COUNSELING CLINIC

	Size sf	Position	First name/last name	FTE	Total (Qty)	Total sf	Notes:
Reception							
Reception	200				1.00	200	For 8 people
Workspaces							
Enclosed offices	100					0	
Enclosed offices	100				0.00	0	
Open Workstation	64				1.00	64	
		Admin Assist		1.00			
Meeting Space							
Small Conference	150				0	0	
Large Conference (12 people)	300				0	0	
Support							
Copy, mail, workroom	100				1	100	can be an alcove
Private Gender Neutral Bathroom	64				1	64	
Clinic Office	64				4	256	shared by 9 clinic employees, currently 212 which is fine
Clinic Group Room	360				1	360	18 people, serves as classroom & breakroom. Currently 274, not large enough
Small Counseling Room	80				4	320	holds 4
Medium Counseling Room	100				3	300	holds 6 (should this be 120 sf?)
Observation Room	300				1	300	holds 14
Student/Supervisor Lounge	150				0	0	located near faculty

TOTAL SF 1964

DETAILED PROGRAM OHSU / PSU School of Public Health

PROGRAM SUMMARY

	Clinical Trials			HSMP			Health Services			Epidemiology			Bio Statistics			Health Promotion			ESHH			Primary Healthcare			Early Assessment			Dean's Office			Central Resources			TOTAL QTY	TOTAL SF
	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf	#	size	total sf					
Lobby/Welcome																																			
Reception	200									1.00	200						1.00	200													2.00	400			
Workspaces																																			
Enclosed office (Dean - 180 sf)	180																														1.00	180			
Enclosed offices (Assoc. Dean - 100 sf)	100																														5.00	500			
Enclosed offices (Faculty - 100 sf)	100	3.00	300	6.00	600	7.00	700	16.00	1600	25.00	2500	36.00	3600	8.00	800	4.00	400	3.00	300	3.00	300											111.00	11100		
Open Workstation (Adjunct Faculty & Unit Admins - 48 sf)	48	10.00	480	16.00	768	25.00	1200	21.00	1008	34.00	1632	25.00	1200	5.00	240	6.00	288	5.00	240	11.00	528											158.00	7584		
Open Workstation (GRAs - 24sf)	24			8.00	192			6.00	144	3.00	72	13.00	312	3.00	72																33.00	792			
Central GRA Workstations	36																											18.00	648	18.00	648				
Advisors Offices	100													4.00	400																4.00	400			
TLC Satellite Office	120															1.00	120														1.00	120			
Conference/Meeting Spaces																																			
Touchdown Meeting (100 sf)	100			1.00	100	1.00	100	3.00	300	6.00	600	6.00	600			4.00	400															21.00	2100		
Small Meeting	150																														6.00	900			
Medium Meeting	300																														4.00	1200			
Large Meeting	625																														2.00	1250			
Deans Conference Room	250																									1.00	250				1.00	250			
Clinical Visit Rooms	130	5.00	650																												5.00	650			
Teaching Space (Located on the 3rd Floor)																																			
General Classroom - Large	1350																															0.00	0		
General Classroom - Medium	900																															0.00	0		
General Classroom - Small	450																															0.00	0		
Computer Classroom	900																															0.00	0		
Support																																			
Copy Center	120																															1.00	120		
Student + Faculty Hub + Kitchenettes	500																															1.00	500		
Kitchenette / Coffee Station	60																															2.00	120		
Secure Server Room	200							1.00	200																							1.00	200		
Open Collaboration	1000																															1.00	1000		
Storage	200					3.00	600																										3.00	600	
Storage Room (Files & Equipment)	180	1.00	180																														1.00	180	
Phlebotomy Room	200	1.00	200																														1.00	200	
Phlebotomy Waiting Room	160	1.00	160																														1.00	160	
Lab	150	1.00	150																														1.00	150	
Café (TBD)																																	0.00	0	
Interview Rooms	100							3.00	300																								3.00	300	
Exam Rooms	80							2.00	160																								2.00	160	
Help Desk	48							2.00	96																								2.00	96	
subtotal			2120			1660			2600			4008			4804			6312			1112			1208			540			1758			5938	393.00	32060

25% (Internal Circulation) 8015

TOTAL SF 40075

DETAILED PROGRAM OHSU / PSU School of Public Health

CLINIC TRIALS & RESEARCH OFFICE

	Size sf	Position/name	First name/last name	Qty	FTE	Total (Qty)	Total sf
Workspaces							
Administration							
Enclosed offices	100					3.00	300
		Director		1.00			
		Associate Director		1.00			
		Research Faculty		1.00			
Open Workstation	48					10.00	480
		Program Manager & Admin Assistant		1.00			
		Program Manager & Admin Assistant		1.00			
		Statistician & PHD Student		1.00			
		Study Coordinators (including Dr. Curlin's Staff)		1.00			
		Study Coordinators (including Dr. Curlin's Staff)		1.00			
		Study Coordinators (including Dr. Curlin's Staff)		1.00			
		Flex space for Dr. Curlin & Picker		1.00			
		Flex space for Dr. Curlin & Picker		1.00			
		Lab Manager & MA		1.00			
		Lab Manager & MA		1.00			
Meeting Space							
Clinical Visit Rooms	130					5.00	650
Support							
Storage Room (Files & Equipment)	180					1.00	180
Phlebotomy Room	200					1.00	200
Phlebotomy Waiting Room	160					1.00	160
Lab	150					1.00	150
TOTAL SF							2120

DETAILED PROGRAM OHSU / PSU School of Public Health

HEALTH SYSTEMS MANAGEMENT & POLICY (HSMP)

	Size sf	Position/name	First name/last name	QTY	FTE	Total (Qty)	Total sf
Workspaces							
Enclosed Offices	100					6.00	600
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
Open Workstations	48					16.00	768
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Unit Admins		1.00			
		Unit Admins		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
Open Workstation	24					8.00	192
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
Meeting Space							
Touchdown Meeting (Enclosed Office)	100					1.00	100

TOTAL SF 1660

DETAILED PROGRAM OHSU / PSU School of Public Health

HEALTH SERVICES

Workspaces	Size sf	Position	First name/last name	QTY	FTE	Total (Qty)	Total sf
Enclosed Offices	100					7.00	700
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
Open Workstations	48					25.00	1200
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Unit Admins		0.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
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		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
Open Workstations	24					0.00	0
		GRA's		0.00			
Meeting Space							
Touchdown (Enclosed Office)	100					1.00	100
Support							
Storage	200					3.00	600
TOTAL SF							2600

DETAILED PROGRAM OHSU / PSU School of Public Health

EPIDEMIOLOGY

Workspaces	Size sf	Position	First name/last name	Qty	FTE	Total (Qty)	Total sf
Enclosed Offices	100					16.00	1600
		v		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
Open Workstations	48					21.00	1008
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
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		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
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		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					

TOTAL SF 4008

	Size sf	Position	First name/last name	Qty	FTE	Total (Qty)	Total sf
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Adjunct Faculty					
		Unit Admins		1.00			
		Unit Admins		1.00			
		Unit Admins		1.00			
		Unit Admins		1.00			
		Unit Admins		1.00			
		Unit Admins		1.00			
		Unit Admins		1.00			
		Unit Admins		1.00			
		Project Manager		1.00			
		Project Manager		1.00			
		Project Manager		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
Open Workstations	24					6.00	144
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
Meeting Space							
Touchdown (Enclosed Offices)	100					3.00	300
Support							
Secure Server Room	200					1.00	200
Reception / Waiting (15 people)	200					1.00	200
Other							
Interview Rooms	100					3.00	300
Exam Rooms	80					2.00	160
Help Desk	48					2.00	96

DETAILED PROGRAM OHSU / PSU School of Public Health

BIostatISTICS

	Size sf	Position	First name/last name	QTY	FTE	Total (Qty)	Total sf
Workspaces							
Enclosed Offices	100					25.00	2500
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
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		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
Open Workstations	48					34.00	1632
		Adjunct Faculty		1.00			
		Adjunct Faculty					
		Unit Admins		1.00			
		Unit Admins		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Project Manager		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
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		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
Open Workstations	24					3.00	72
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
Meeting Space							
Touchdown (Enclosed Office)	100					6.00	600

TOTAL SF 4804

DETAILED PROGRAM OHSU / PSU School of Public Health

ENVIRONMENTAL SYSTEMS & HUMAN HEALTH (ESHH)

	Size sf	Position	First name/last name	QTY	FTE	Total (Qty)	Total sf
Workspaces							
Enclosed Offices	100					8.00	800
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
Open Workstations	48					5.00	240
		Adjunct Faculty		0.00			
		Unit Admins		1.00			
		Project Manager		0.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Research Staff		1.00			
		Hoteling Faculty		1.00			
		Hoteling Faculty					
		Hoteling Faculty					
		Hoteling Faculty					
		Hoteling Faculty					
Open Workstations	24					3.00	72
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
		GRA's					
		GRA's		1.00			
Meeting Space							
Touchdown (Enclosed Office)	100			0.00			0

TOTAL SF 1112

DETAILED PROGRAM OHSU / PSU School of Public Health

PRIMARY HEALTHCARE & HEALTH DISPARITIES

	Size sf	Position	First name/last name	Qty	FTE	Total (Qty)	Total sf
Workspaces							
Enclosed Offices	100					4.00	400
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
Open Workstations	48					6.00	288
		Adjunct Faculty		0.00			
		Unit Admins		1.00			
		Project Manager		1.00			
		Research Staff		2.00			
		Hoteling Faculty		0.00			
		Hoteling Faculty		0.00			
		Hoteling Faculty		1.00			
		Hoteling Faculty		1.00			
Open Workstations	24					0.00	0
		GRA's		0.00			
Meeting Space							
Touchdown (Enclosed Office)	100					4.00	400
Support							
Other							
TLC Satellite Office	120					1.00	120
TOTAL SF							1208

DETAILED PROGRAM OHSU / PSU School of Public Health

EARLY ASSESSMENT & SUPPORT ALLIANCE

	Size sf	Position	First name/last name	Qty	FTE	Total (Qty)	Total sf
Workspaces							
Enclosed Offices	100					3.00	300
		FTE Faculty		1.00			
		FTE Faculty		1.00			
		FTE Faculty		1.00			
				0.00			
Open Workstations	48					5.00	240
		Work Station		1.00			
		Work Station		1.00			
		Work Station		1.00			
		Work Station		1.00			
		Work Station		1.00			
Open Workstations	24					0.00	0
		GRA's		0.00			
Meeting Space							
Touchdown (Enclosed Office)	100					0.00	0

TOTAL SF 540

DETAILED PROGRAM OHSU / PSU School of Public Health

DEAN'S OFFICE

	Size sf	Position/name	First name/last name	QTY	FTE	Total (Qty)	Total sf
Workspaces							
Enclosed offices	180					1.00	180
		Dean		1.00			
Enclosed offices	100					5.00	500
		Associate Dean (Undergrad)		1.00			
		Associate Dean (Research)		1.00			
		Associate Dean (Finance & Administration)		1.00			
		Associate Dean (Academic Affairs)		1.00			
		Associate Dean (Practice)		1.00			
Open Workstation	48					11.00	528
		Finance Analyst		1.00			
		Finance Analyst		1.00			
		IT		0.00			
		Admin Coordinator		1.00			
		Executive Assistant		1.00			
		Admin Assistant		1.00			
		Data Analyst		1.00			
		Research Account / Grants Manager		1.00			
		Research Account / Grants Manager		1.00			
		Research Account / Grants Manager		1.00			
		Research Account / Grants Manager		1.00			
		Research Account / Grants Manager		1.00			
Enclosed offices	100					3.00	300
		Finance Manager		1.00			
		Director of Assessment (formerly Assoc Dean Accreditation)		1.00			
		Director of Program Integration & Community Engagement		1.00			
Meeting Space							
Deans Conference Room	250					1.00	250

TOTAL SF 1758

DETAILED PROGRAM OHSU / PSU School of Public Health

CENTRAL RESOURCES

	Size sf	Position/name	First name/last name	QTY	FTE	Total (Qty)	Total sf
Meeting/Study Rooms							
Small Meeting	150					6.00	900
Medium Meeting	300					4.00	1200
Large Meeting	625					2.00	1250
Other							
Copy Center	120					1.00	120
Student + Faculty Hub + Kitchenettes	500					1.00	500
Kitchenette / Coffee Station	60					2.00	120
Central GRA Workstations	36					18.00	648
Café		TBD - In Building Program					0
Secure Server Room	200					1.00	200
Classrooms (Located on the 3rd Floor)							
General Classroom - Large	1350					0.00	0
General Classroom - Medium	900					0.00	0
General Classroom - Small	450					0.00	0
Computer Classroom	900					0.00	0
Open Collaboration	1000					1.00	1000

TOTAL SF 5938

DETAILED PROGRAM PCC Dental Sciences Program and Dental Clinic

DENTAL SCIENCES PROGRAM & DENTAL CLINIC

	NO.	SF.	TOT.	Notes
Dental Clinic/ Admissions				
Waiting	30	20	600	30 seat capacity, small childrens area
Reception	1	60	60	1 Workstations (check in/check out - cashier function)
Work Room	1	120	120	Copy/Fax/Office Supply Storage/ Patient Charts
Dental Clinic				
Chairs/Stations	26	115	2990	11-6 x 10-0 per station footprint, between each station will be cabinetry for stroage and a sink, 1 chair to have video capability for demos and student evaluations, 1 intraoral xray machine contained in cabinet between 2 chairs.
Chairs/Stations ADA	3	127	381	10%, Side transfer, 11-6 x 11-0, outfitted like typical station
Demo Area	20	15	300	Open area for students to gather outside of the chair area but within the clinic
Instructor Stations	5	40	200	Line of sight to chair area, distributed throughout the clinic
Sink Station	1	20	20	Station for patients to brush their teeth
Storage Room	1	80	80	Dental Supplies and student instrument storage, gown and coat storage
Clinic Coordinator Office	1	90	90	Adjacent to Clinic and Radiology Lab, Locked Door
Sterilization Processing	1	220	220	Located near Clinic and Labs, two workflows that serve both. Pass through windows for instruments (clean and dirty) and pass through lockers for students personal instruments that have been sterilized, undercounter refrigerators, undercounter sterilizer
Patient toilet	2	55	110	Near waiting area, gender neutral
Labs				
Radiography Lab				
Intraoral Xray	7	100	700	Lead lined walls between suites, vision glass into Xray from corridor
Panorama Xray	1	100	100	Lead lined walls between suites, vision glass into Xray from corridor
Storage	1	60	60	Mostly cabinet storage
Demo Area	1	360	360	15 seat capacity [confirm], 24 SF per station, could be standard classroom
Instructor Station	2	40	80	
Dental Materials/ Simulation				
Bench Area	1	500	500	Sound attenuation,ventilation and dust collection, vacuum and compressed air, natural gas connections, vibration from machinery/tools
Instructor/ Demo Area	1	100	100	camera, projection, large table for students to gather around, sink
Dental Technologies Lab				
Bench Area	1	625	625	25 seat capacity, 25 SF per station, natural gas connection at each station
Office/Quiet	1	80	80	acoustic separation from Lab
Ovens Lab	1	150	150	Large hood/hoods over Ovens, piped Med Gas (O2, Air, V)
Porcelain Lab	1	150	150	could be combined with Ovens lab
Instructor Station	2	40	80	
Soiled Hold	1	50	50	For trash, linen and bio haz waste prior to leaving the floor
Student Lockers	1	150	150	half size, 50 count, hanging rod for lab coats, near laundry

	NO.	SF.	TOT.	Notes
Classroom/ Student Support				
Classrooms	2	600	1,200	25 seat capacity, tables and chairs, could double as space for all faculty meetings
Large Classroom	1	1,200	1,200	50 seat capacity, individual chairs with tablet arm. Used 3 days per week at 1 hour and 2 days per week for half the day
Computer Lab	1	700	700	25 seat capacity, could double as classroom
Student Lockers	1	200	200	half size, 100 count, hanging closet for lab coats, near laundry
Student Restrooms	2	55	110	gender neutral
Student Lounge	-	300	-	Lounge can be common with building
Student Gown Laundry	1	100	100	stackable washer and dryer for student gowns, rod for hanging, counter for basket
Lactation Room	-	80	-	Common to building
Conference				
Testing Room	3	90	270	1 capacity for student test accommodations
Meeting Rooms	2	150	300	3-5 seat capacity
Medium Conference	1	350	350	12-15 seat capacity
Dental Offices/Staff				
Admin Assistant	1	80	80	1 Workstation at Clinic Reception/Waiting Area
Director's Private Office	1	120	120	prefer window to outdoors, near waiting area and faculty open office
Dental Faculty Open Office	1	768	768	12 Workstations @ 64 SF per
Part-Time Faculty Office	1	200	200	5 person capacity
Staff Lockers	1	150	150	20 lockers
Staff Restroom	1	55	55	near office area
Staff Lounge	1	60	60	Coffee bar within office area, "lounge area" could be shared with PSU faculty
Support Services				
Med Gas Room	1	TBD	-	In mechanical room, O2, Air and Vacuum
Dust collector	1	TBD	-	In mechanical room
Vacuum /Compressor Room	1	TBD	-	In mechanical room

Total DNSF	14,219
net to gross	1.4
Total DGSF	19,907

DETAILED PROGRAM City of Portland

CITY OF PORTLAND OFFICES

		qty	sf	subtotal
Lobby/Welcome/Collaboration				500
Reception or Open Collaboration		1	500	500
Workspaces	ratio used			12,110
Enclosed offices (large)				-
Enclosed offices (small)	0.4	70	120	8,352
Open Workstation	0.6	104	36	3,758
GRA or part time workstations				
headcount		174		
sf per person (of total SF)		132		
Conference rooms	1: __ ppl			4,160
Touchdown Room	20	9	60	540
X-Small (<150 sf)	28	6	120	720
Small (150-249 sf)	40	5	220	1,100
Medium (250-350 sf)	54	3	320	960
Large or X-Large (>350)	70	2	420	840
Support (sf)	1: __ ppl			1,550
copy, phone	75	2	75	150
Computer Lab				-
resource				-
kitchen	200	1	400	400
lounge	32	5	100	500
storage		1	250	250
server/IT		1	250	250
Internal circulation	0.25			4,580
			Subtotal Unique Elements	22,901
			35% grossing factor	8,015
			TOTAL SF	30,916