



LIVING LEARNING COMMUNITY FEASIBILITY STUDY
PORTLAND STATE UNIVERSITY

9 MAY 2016

mahlum

TABLE OF CONTENTS

Introduction	1
Participants	5
Executive Summary	7
Opportunity Site & Context	13
Site Concepts	17
Case Studies	21
Feasibility Studies	27
Dining Studies.....	39
Numeric Programs	45
Cost Models	51

INTRODUCTION





View looking west at the proposed living-learning community from SW 11th and Market

PROJECT OVERVIEW & PURPOSE

In December 2015, Portland State University (PSU) engaged and partnered with Mahlum to prepare a feasibility study (the “Study”) for a new Living-Learning Community and Dining Commons on an existing, under-developed parcel on PSU’s urban campus located at the corner of Market and 12th Avenue.

The Study looked at two (2) alternate design concepts:

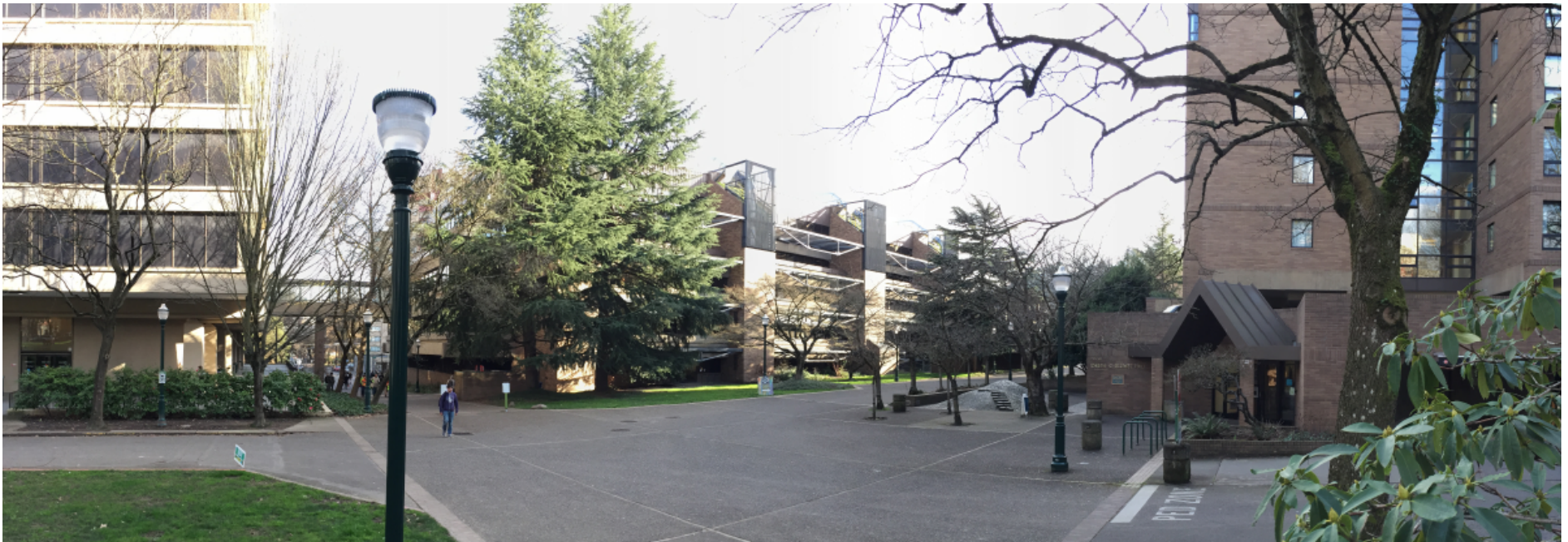
- Option 1: 200-bed traditional style residence hall with double-occupancy sleeping units, University Success Center and Dining Commons
- Option 2: 400-bed traditional style residence hall with double-occupancy sleeping units, University Honors College (UHC) and Dining Commons.

Both design concepts address not only site response and maximum development

opportunities, but also current demand for on-campus student housing and accommodations to dramatically increase PSU’s ability to offer a more traditional undergraduate housing experience.

Additionally, the Study analyses current and future food service needs to accommodate PSU students with a variety of dining options.

The purpose of this feasibility study is to establish baseline project parameters and information to allow the University to plan for future development of the opportunity site. The Study will clearly define the needs and issues required to be addressed by a future project, and through the development of a preferred building concept, will demonstrate that the project can successfully meet these needs on a specific opportunity site.



PROJECT TASKS

The project program and goals were addressed in the following “tasks”:

Task 1: Communications

Engagement with Steering Committee and University User Groups to identify relevant program and University-wide goals for a new residence hall, Urban Honors program and dining facility, and precedent studies for ideal 21st-century collegiate residential experiences.

Task 2: Review of the Existing Conditions and Program

Analyze specific conditions of the proposed site, existing housing and dining program, and considered broader campus and neighborhood influences.

Task 3: Best Practices Research

Identify innovative facility, community-centric solutions, program opportunities and precedent studies for ideal 21st-century collegiate residential experiences.

Task 4: Feasibility Study

Provide programmed residential and dining options for pre-design concepts, aligning with University’s goals.

PARTICIPANTS

The feasibility study process included regular engagement with the Steering Committee representing a cross-section of PSU constituents. User Groups interviews were also initiated with relevant stakeholders to explore specific design and operational themes for the project. Sessions included visioning, review of case studies, space programming interviews, site analysis review, adjacency exercises and evaluation of blocking and stacking scenarios.



**LIVING-LEARNING COMMUNITY
FEASIBILITY STUDY STEERING
COMMITTEE**

Campus Planning and Design

Rani Boyle, Associate Campus Planner
Jason Franklin, Director

Office of Finance and Administration

Donald Forsythe, Treasurer
Dan Zalkow, Associate Vice President -
Planning, Construction, and Real Estate
(PCRE)

University Housing and Residence Life

Mike Walsh, Director
Ashley Wendler, Associate Director - Housing
Operations

Enrollment Management and Student Affairs

Sara Duerr, Chief Fiscal Officer

PSU USER GROUP COMMITTEES

Building / Facilities / Sustainability Committee

Ron Blaj, Director - Capital Projects &
Construction
Laurel Brown, Assistant Director - Property
Management & Zone Maintenance
Viron Lynch, Director - Facilities and Property
Management
Jenny McNamara, Campus Sustainability
Manager
Dan Zalkow, Associate Vice President -
Planning, Construction, and Real Estate
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Rani Boyle, Associate Campus Planner -
Campus Planning and Design
Jason Franklin, Director - Campus Planning
and Design

Food Service Committee

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Donald Forsythe, University Treasurer - Office
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Mike Walsh, Director - University Housing
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Ashley Wendler, Associate Director -
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Campus Planning Committee

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Jason Franklin, Director - Campus Planning
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Urban Honors College Committee

Cornelia Coleman, Program Administrator -
University Honors
Betsy Natter, Interim Director - University
Honors
Rani Boyle, Associate Campus Planner -
Campus Planning and Design
Jason Franklin, Director - Campus Planning
and Design

DESIGN TEAM

MAHLUM

Kurt Haapala, Principal in Charge
Jeremy Rear, Project Manager
Brad Iest, Project Designer

MAYER-REED

Carol Mayer-Reed, Landscape Architect

ENVISION STRATEGIES

Peg Rogers, Food Service & Dining
Consultant

RLB

Graham Roy, Principal
Daniel Junge, Cost Estimator

EXECUTIVE SUMMARY



PROJECT DESCRIPTION

PSU is one of Oregon’s most diverse higher education institutions with a rich history of providing a unique urban collegiate experience.

PSU operates 10 student-housing buildings, in addition to University Pointe, an apartment-style residence facility located in the southeast district of campus, which is operated by a private entity. While additional students reside in nearby privately operated housing, a majority of PSU students commute to campus from other neighborhoods.

ON-CAMPUS HOUSING GROWTH

Between 2,000 and 2,100 students live on campus during the 2015-2016 academic year. The Residence Life and Housing Department experiences a fluctuating demand during the school-year, with a lower occupancy rate beginning at the beginning

of the schoolyear in the fall, peaking in the winter and decreasing again during the spring. This trend is largely due to returning students in the winter and students moving to off-campus housing in the spring.

Approximately 800 to 850 First Year Experience (FYE) students live on campus, and it is anticipated that the majority will continue to live on the east side of campus in the future. Many students move off campus their second year, and return to campus their junior year.

Because PSU resides in the heart of the urban context of downtown Portland, the housing opportunities are abundant. However, market-rate apartment-style housing is not conducive to supporting the needs (both socially and academically) of incoming freshman and the undergraduate community. Also, while downtown Portland is known for an abundance of dining opportunities, there are limited options for on-campus dining.

Existing student housing is at 100% occupancy in a majority of apartment-style units. A new living-learning facility will prioritize FYE and Returning students, providing 200 to 400 beds of double-occupancy sleeping units. The proposed facility will also include shared residential community spaces, academic common area and a dining commons at the ground and second floor level. This new residential community signifies a long-term investment in the student experience, providing expanded live/learn opportunities and a new dedicated campus dining facility which will and revitalize PSU’s west campus district identity.

The proposed new living-learning facility is also an indicator of planned future expansion of the student housing program, moving away from developer-driven and operated facilities. PSU wants to be strategic about campus growth by creating new energy on the west side of campus.

CREATING COMMUNITY

While the living-learning community will provide a more traditional unit type model, where bathroom, dining social activities occur outside of the sleeping unit, community-making and providing innovative ways to improve academic integration and social engagement will be paramount to the success of the new facility.

A living-learning community must support enhanced Student Services to enrich student life. The new facility will support a wide range of student life activities at multiple scales, as well as consider infrastructure that will support Housing and Residential Life’s living-learning communities, providing:

- :: Ease of transition to University life
- :: Increased self-confidence
- :: Improved peer interaction
- :: Direct access to classes / faculty
- :: Flexible academic delivery
- :: Social and academic connections



- :: Higher civic engagement
- :: Intellectual growth & abilities
- :: Diversity appreciation
- :: Increased resource use
- :: Higher cumulative grades
- :: Lower alcohol abuse
- :: Better overall satisfaction
- :: Higher retention rates

The living-learning model design aspects will focus on:

- :: Academic Integration
- :: Celebrating Culture
- :: Environmental Stewardship
- :: World-Class Dining
- :: Social Equity
- :: Privacy and Independence
- :: Enhancing Community
- :: Advancing Technology

ON-CAMPUS DINING EXPERIENCE

The proposed dining venue in the west

campus district will be a new destination and complement the other services that are available on campus. The living-learning community dining venue is anticipated to provide an ‘a la carte’ operation that is designed with flexibility to allow for an “all-you-care-to eat” (AYCTE) operation similar to Victor’s, using china, glass and silver in the future, if so desired. The new living-learning community may also feature a coffee concept that could be operated by students.

The new venue will also offer meal plans which provide a complete nutritious meal at a reduced rate for students that may qualify for the Supplemental Nutritional Assistance Program (SNAP) benefits or food stamps.

URBAN HONORS COLLEGE (UHC)

As the only urban-focused honors college in the country, the UHC integrates a rich urban variety of social, cultural, and environmental themes, fostering critical thinking and

writing skills needed to conceptualize and apply academics to real world issues. The program’s research-based learning results in academic achievements for self-motivated, intellectually curious students, who can apply their work globally, and attaining a higher level of academic maturity.

With approximately 600 students in the program currently, a fraction of those are living on campus in the current living-learning themed floors of Epler Hall. Academic facilities such as the University Success Center in Ondine Residence Hall and the Meetro below King Albert Residence Hall provide collaborative learning, advising and technological resources for students to further support their academic success. Academic support and offices are located in the Honors College building on the southwest corner of the project opportunity site at SW 12th Avenue and SW Mill Street.

Integrating the Urban Honors College

program into a new living-learning community would not only address the program’s goals for growth over the next decade, but also provide modern, technological and accessible academic and resource space that is set within a collaborative and inspiring environment where students and faculty live and learn together.

SUSTAINABILITY

The proposed facility will comprehensively integrate sustainable features to align with PSU’s Climate Action Plan, aiming to reduce carbon emissions. Sustainable Development strategies are included in the following project goals.



PROJECT GOALS

The feasibility study established the following goals against which to evaluate new housing development concepts:

- :: Inform PSU Administration of anticipated housing demand among students, and cost modeling to develop new housing.
- :: Help answer the questions of whether it is time for PSU to develop new housing.
- :: Develop innovative concepts, which include housing, dining and academic programs.
- :: Help envision on-campus, non-developer driven housing.
- :: Determine if housing should be built as one or multiple phases.
- :: Identify why it's valuable to have a living / learning facility on campus.

- :: Illustrate the need for a new campus dining facility, serving the west side of the campus and to provide a growing student population with a variety of food service options.
- :: Study opportunities to provide improved housing and academic facilities for the Urban Honors College.
- :: Identify a housing solution that students can afford, rather than passing the operational costs onto student residents.
- :: Envision a Living/ Learning facility that should exemplify what works well in Epler and Broadway Halls.
- :: Accommodate freshman and sophomore living / learning experience.
- :: Address the site as a "new entry" to campus.

SUSTAINABILITY GOALS

- :: A new student living-learning community for more on-campus living, reducing off-campus commuting and the need for more parking.
- :: High-performance design, construction and systems, which will enhance life-cycle costs and lessen environmental impacts over the lifespan of the building.
- :: Passive features on "display", such as storm water reclamation for irrigation, rooftop photovoltaic (PV) arrays and occupancy-switched electrical outlets.
- :: Internet-based metering to illustrate "real time" performance of the building's energy consuming systems.
- :: The project will also have the capacity to aid a "Living Laboratory" environment where PSU Students, Staff and Faculty can

- collaborate and address the University's sustainably goals and use the facility as a learning tool.
- :: It is anticipated that the project will aspire to achieve LEED Platinum Certification, with a minimum requirement of LEED Gold.

OPPORTUNITY SITE & CONTEXT



SITE OVERVIEW

EXISTING SITE

The opportunity site is a largely under-developed greenspace, nestled in the northwest part of campus, bounded by SW Market Street to the north, SW Mill Street to the south, SW 12th Avenue to the west and SW 11th Avenue to the east.

To the north and across SW Market, are a variety of multi-family housing and businesses. SW Market is the northern edge of the campus-proper, and the South Waterfront-bound Streetcar turns east at the SW Market and 11th intersection. Helen Gordon Child Care Center and a PSU parking structure occupy the property immediately west and across SW 12th. Blumel Residential Hall occupies the southern edge of SW Mill Street and provides under-building parking access from SW Mill. Immediately east of the opportunity site resides Science Building One, where classrooms, laboratories and offices

support PSU’s Science programs.

Current UHC program offices, conference and academic lab spaces currently reside in the Robert S. Howard house, located on the same block as the opportunitie site, at the intersection of SW 12th and Mill.

Activity in this area is typically quiet and docile. However, because the ramp from Highway 26 exits immediately to the west of the site at SW 13th and Market, vehicular traffic moves fast along the north side of the site. Children from the Helen Gordon Child Care Center frequent the site for play and activities. The Center hopes to have some use of this site after development.

LANDSCAPE FEATURES

The north edge of the site is flanked by SW Market with large Elm and Maple street trees, which have roots that are growing into the street. It is anticipated that any development along the north edge, including

landscaping and new sidewalks, will affect the future of these trees.

A large portion of the site interior is occupied by a series of gravel pathways, park benches, light poles, and minor perimeter plantings. It is unclear if underground utilities exist, and thus a full investigative survey prior to developing the site is required.

SITE OPPORTUNITIES

The northwest corner of the campus has potential to create a stronger identity and more valuable, programmable, improved pedestrian environment. The vacated city streets of SW 11th and Mill could be designed for pedestrian character and greater multi-modal use in addition to fire lanes and service access to buildings. There may be opportunities to shape the space with special paving, signage, public art, landscape elements, lighting and furnishings.

In particular, the intersection of SW 11th and

Mill has potential to become a pedestrian plaza and a signature space on campus. Blumel Hall and the Science Research and Teaching Center anchor three of the corners. The live-learn community will anchor the fourth. Each building at the edges of the intersection would play a role in activating the space. The plaza perimeter could offer seating opportunities and sub-spaces for small gatherings, while allowing unrestricted space for service and emergency vehicles.

The live-learn community has great potential to build institutional identity in this quadrant of campus. The building will help create a new gateway, given the importance of inbound SW Market and SW 11th with its northbound streetcar service. The building and its related site features have opportunity to respond to each surrounding street and influence the fourth corner of the SW 11th and Mill intersection as a new pedestrian space on campus.



CORNER OF SW 12TH AND SW MILL
Looking North East



CORNER OF SW 11TH AND SW MILL
Looking North West



CORNER OF SW 12TH AND SW MARKET
Looking South East



CORNER OF SW 11TH AND SW MARKET
Looking South West

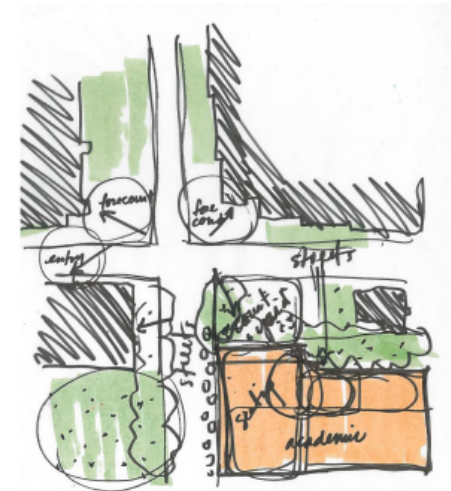
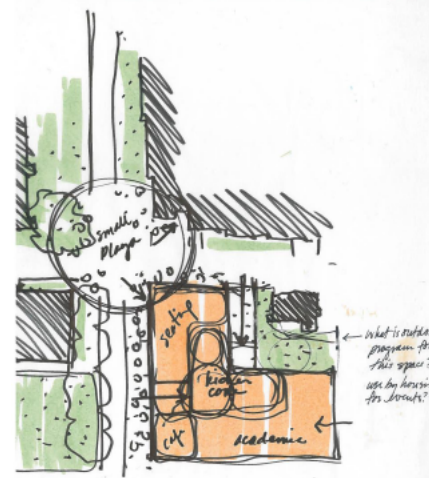
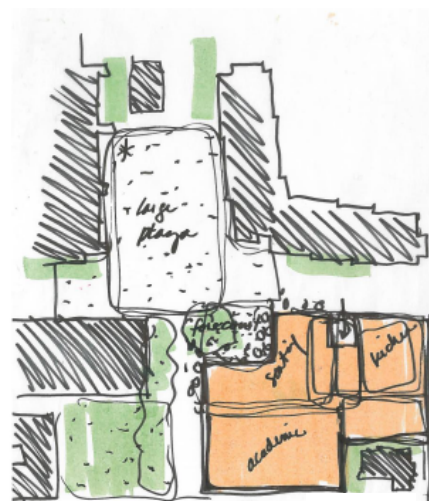
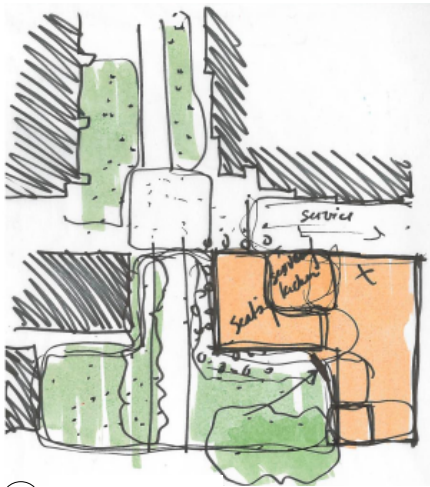
SITE CONCEPTS

SITE CONCEPTS

DESIGN CHARRETTE

With critical program, goals and project understanding, the Design Team developed a series of design and site planning schemes through the use of drawings, sketches and working models to determine the appropriate fit, site / campus response and character of the future living-learning community facility on the opportunity site.

SITE CONCEPTS



The design charrette provided the following site and building massing concepts:

CAMPUS GATEWAY

- :: Creates a new gateway, arriving from the north.
- :: Extends small greenspace where Yankee Champion sculpture currently resides to the west.
- :: Dining and seating spill out to south at SW Mill and 11th - Service provided from SW Mill.
- :: New larger building footprint displaces the existing Robert S. Howard house.
- :: Building entrance in the middle of the site from the new gateway green space.

PLAZA

- :: Creates a new west district plaza, providing an improved hard-surfaced social gathering area, and capturing service-related space adjacent to existing buildings.
- :: Dining and seating spill out within the site at SW Mill and 11th - Services provided from SW Mill.
- :: Robert S. Howard house is moved to a new location on the northwest corner of the site.
- :: Ground floor academic programs are located along SW Market.
- :: Building entrance on north side along SW 12th, and adjacent to the Helen Gordon Child Care Center.

STREETScape

- :: South building edge activates SW 11th and district plaza, creating a variety of seating environments, including a cafe at the corner of SW Market and 11th.
- :: Existing Robert S. Howard house remains, and is unaffected by the development.
- :: Food service production located at center of building - Services provided from SW Mill, through the middle of site.
- :: Ground floor academic programs are located along SW Market.
- :: Building entrances along SW 11th, and the corner of SW Market and 12th.

STREETS AND FORECOURTS

- :: Provides an opportunity of multiple forecourts at the intersection of SW Mill and 11th.
- :: Creates a buffer along SW Mill, providing maximum continuity of existing property greenspace.
- :: Existing Robert S. Howard house remains, and is unaffected by the development.
- :: Entire building immediately flanks SW Market, creating a more urban edge / building entrance with academic and dining seating engaging the street.
- :: Food service production located at center of building - Services provided from SW Mill, through the middle of site.

CASE STUDIES

BEST PRACTICES AND PRECEDENTS

Planning for a 21st century living-learning environment requires critical thinking about not only the current needs and goals but also projecting the evolving future necessities of housing and academic programming. Innovative and progressive ideas must be considered to allow for facility flexibility, security, life-cycle costs, user equity, and social interaction.

The following selection of peer institution projects illustrates similar program, functions and facilities of a future PSU living-learning facility with attributes of innovative housing, dining and honors programs.



ZURA HALL

WEBER HONORS COLLEGE LLC
SAN DIEGO STATE UNIVERSITY

Consistently ranked as one of the most surf-friendly universities in the country, San Diego State University attracts students as intent on gaining an exceptional education as they are perfecting their drop-ins. Transforming the 1960s-era Zura Hall has allowed the campus to embrace this magnetic aspect of its culture and create a surfing-focused residence hall.

The faculty, staff and students of the Weber Honors College believe strongly in a residential, liberal arts education. The Honors Residential College provides a unique community where highly motivated students encourage each other to excel as they share experiences in and out of the classroom. The rich, supportive educational environment offers a place where students from diverse backgrounds can enjoy a rich array of academic, co-curricular, and experiential

activities. Such an environment creates opportunities for students to use their talents and creativity in the service of understanding the world, of communicating effectively with others, and of making a positive difference. In addition, the Honors Residential College promotes involvement on campus, leadership, and academic achievement.

PROJECT STATISTICS

- :: Singles, Doubles, Triples & Quads w/ Community Bathroom
- :: Floor Group Studies and Nooks
- :: Learning Studio w/ Offices
- :: Outdoor Porches (Ground Level & Roof)
- :: 8 Floors, 140,000 sf, 600 beds





COMMONWEALTH HONORS COLLEGE LLC

UNIVERSITY OF MASSACHUSETTS

The 500,000 sf residential complex provides 1,500 beds in seven new buildings for the Honors Program at UMASS Amherst. The project brings together all classes of students in a mix of unit types, including approximately 600 beds of singles and doubles, and 900 beds in suites and apartments are organized around intimately scaled courtyards. The buildings step down the hillside, creating the sense of an academic village for the Honors College, with a series of open outdoor quads for students to gather.

The complex has enough beds to house about half of the honors students. About 13 percent of all undergraduates are in the honors program.

All honors freshmen were given the option to live in one of the two freshman halls of single, double, and triple rooms. Another 900 beds in suites and apartments are for upperclassmen.

Then there are nine classrooms, administrative offices, two faculty apartments, and a 24-hour café with a brick pizza oven.

PROJECT STATISTICS

- :: Single, Double and Triple Suites / Apartments w/ Private Baths
- :: Advising Center
- :: Faculty-in-Residence
- :: Classrooms
- :: 5 Floors, 500,000 sf, 1,500 beds (10 Communities / Houses)





TERRY HALL LLC
UNIVERSITY OF WASHINGTON

Terry Halls creates a distinct residential environment for more than 500 undergraduate students at the University of Washington (UW). Interior and exterior amenity spaces attract and serve many of the 5,000 students living within the West Campus neighborhood.

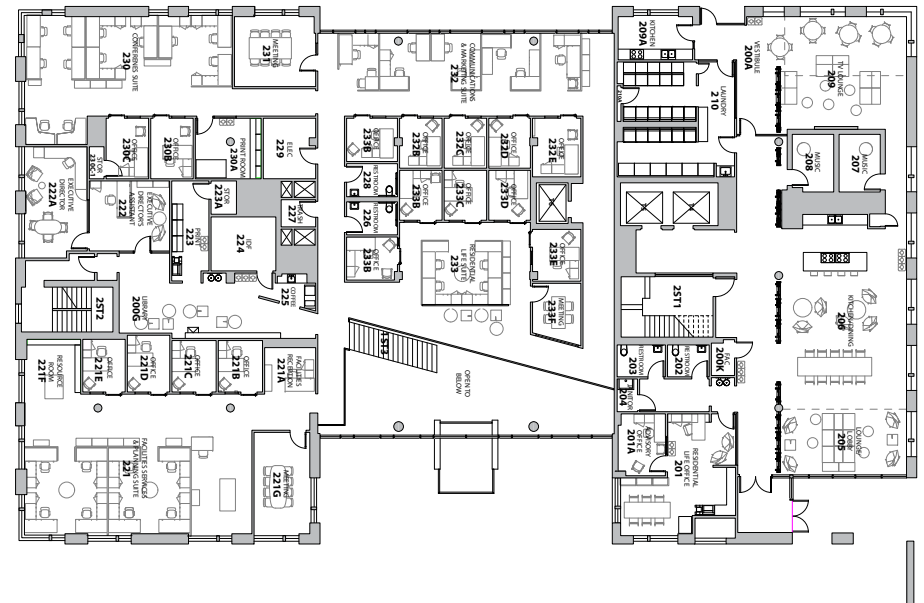
The building thrives on the site’s urban condition to create student-focused open spaces on pedestrian plazas, embracing the city streets and is highlighted by entries and two-story lobbies. Terry Hall creates an activated gateway into the neighborhood and houses the headquarters for the UW Housing and Food Services Offices. The podium of Maple Hall includes a game center, a group collaborative project center, an art studio and technology lounge.

The overall conceptual approach celebrates

the natural forces that affect the building by using day lighting and natural ventilation strategies as a way to derive both window vocabulary and landscape architectural response. Thus, the building’s “personality” and expression responds to the environment within each façade and the interior courtyards create a wonderful “learn to live” student experience.

PROJECT STATISTICS

- :: Triples, Doubles, Studios w/ Private Baths
- :: Study Rooms
- :: Music Practice Rooms
- :: Local Point Dining
- :: 5:1, 100,000 sf, 308 beds



FEASIBILITY STUDIES
SCHEME 1



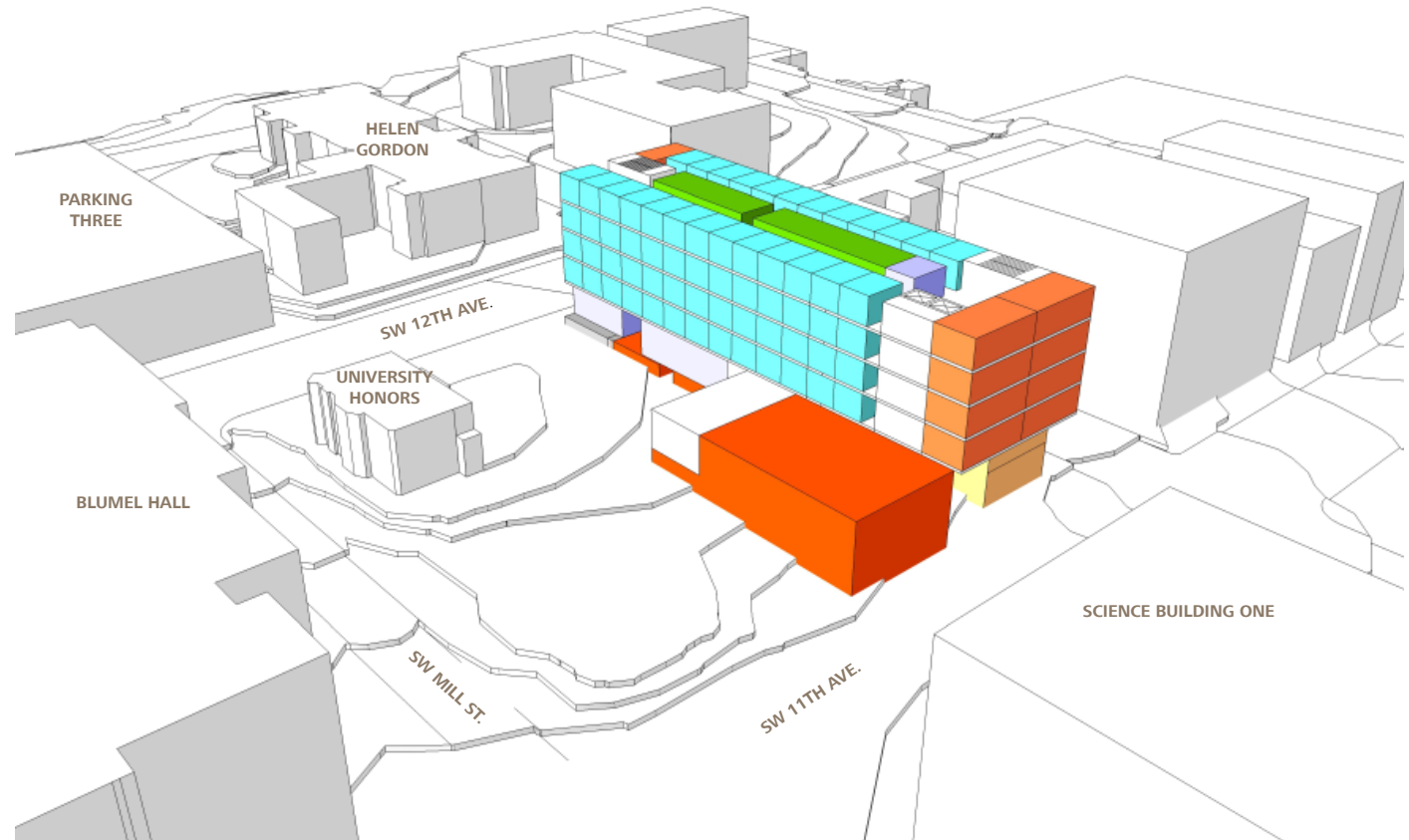
PROJECT DESCRIPTION

BUILDING AREA: 84,580 GSF
CONSTRUCTION COST: \$28,055,000*

In an attempt to maintain future site flexibility, Scheme 1 focuses on a condensed footprint with housing and dining being major program drivers. The scale of the building is based off the existing Epler Hall which represents an ideal community relationship. The smaller footprint provides the advantage of allowing the existing University Honors building to have an identity and provide access to daylight and views for both buildings.

- :: 200 beds
- :: Double occupancy sleeper units
- :: Centralized bathroom suites
- :: Distributed laundry per residential floor
- :: Consolidation of building footprint allows future site flexibility
- :: 4 floors of residential over 2 mixed use floors

(UHC program is not provided in this Scheme)



SITE RESPONSE

The new building, located at the north edge of the site, fills the existing open space and creates a new strong urban edge along SW Market. The student commons entry reinforces the pedestrian street on SW 11th. On SW 12th, the new University Success Center and west building entry pair across from the Helen Gordon Center.

Dining located on the building’s southeast side has ample opportunity to spill out into a multi-level, flexible, active outdoor space on the remaining portion of the block. The orientation of the space is favorable to shade created by the existing trees. The

space may extend as flexible hardscape to the intersection of SW 11th and Mill for large gatherings and events. It could also be designed as a welcoming forecourt and shortcut into the south side of the building. Proposed storefront glazing SW 11th will activate this entry into campus.

The consolidated footprint of the building further allows for a small open space directly north of the Honors College building across from the Helen Gordon Child Development Center. This space could be programmed and designed for bike parking and east/west circulation through mid-block. There may be opportunity for an outdoor study space, small lawn and/or urban habitat as passive

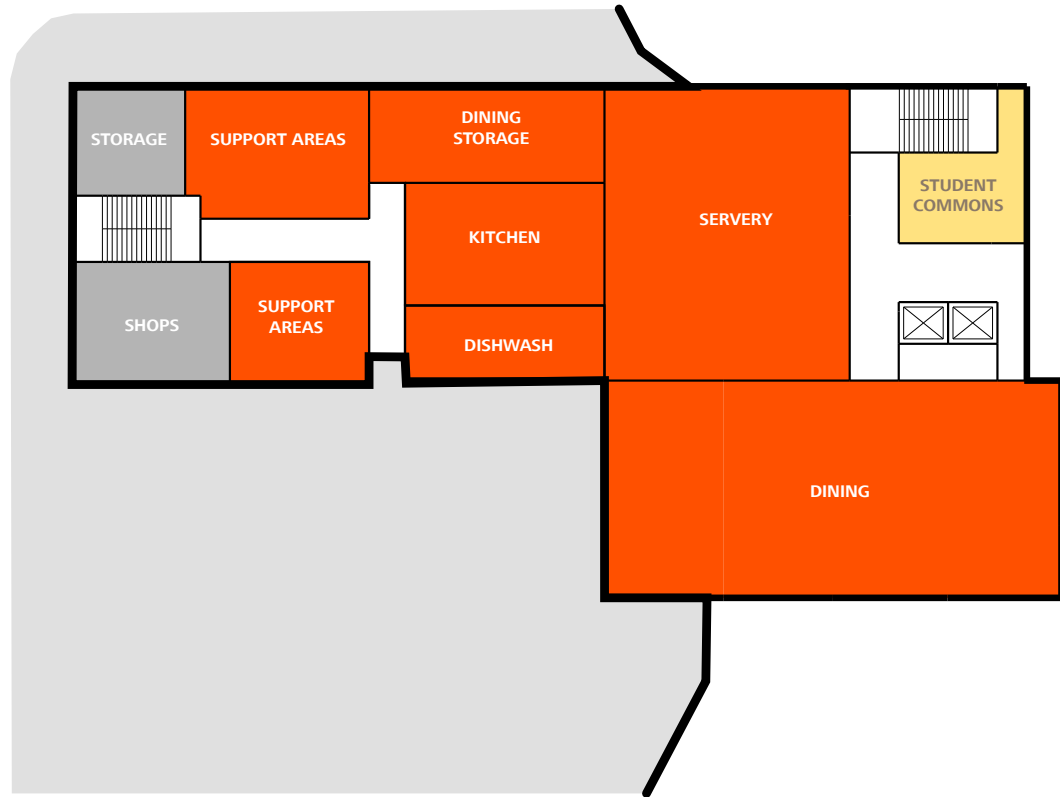
uses or more active uses such as barbeques, bocce ball and small gatherings. This scheme allows open space to flow around the building’s south side, connecting into the small ¼ block where the Yankee Champion sculpture has been recently located.


A service corridor extends from SW Mill into the core of this building. While this breaks the natural pedestrian flow through mid-block, the layout of service elements and vehicular approach can be designed to be compatible with other outdoor uses and pathways.

*Escalation to 2Q 2017

GROUND FLOOR

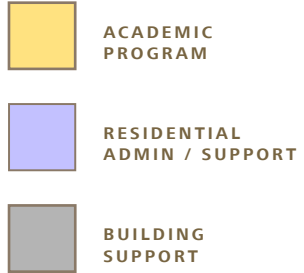
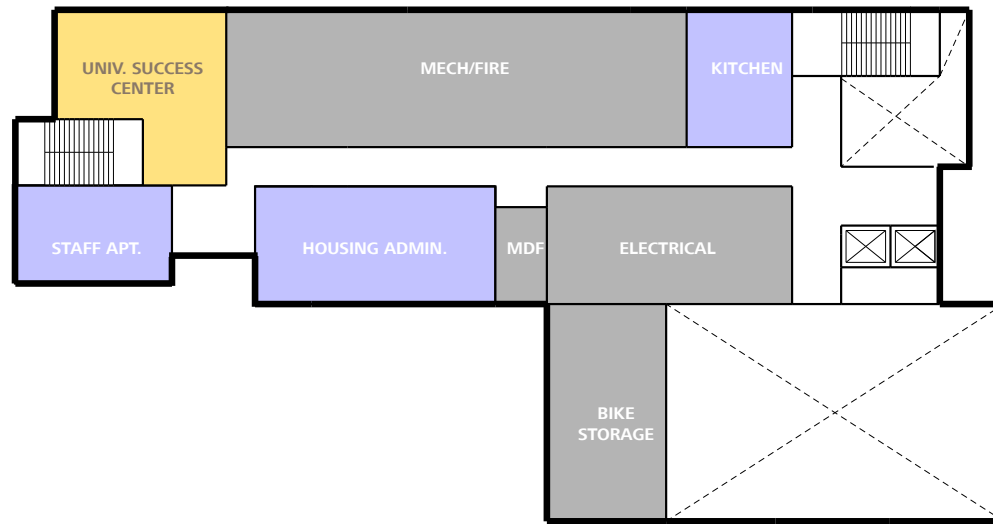
A common entry on the corner of SW Market and 11th provides connection to dining, commons, or up a grand stair to the residential portion of the building. In an attempt to consolidate the footprint, building support areas were pushed to the second floor allowing the large dining program to slide underneath the building above. This creates potential for a dramatic double height dining commons to anchor the SE corner of the site.



-  DINING PROGRAM
-  ACADEMIC PROGRAM
-  BUILDING SUPPORT

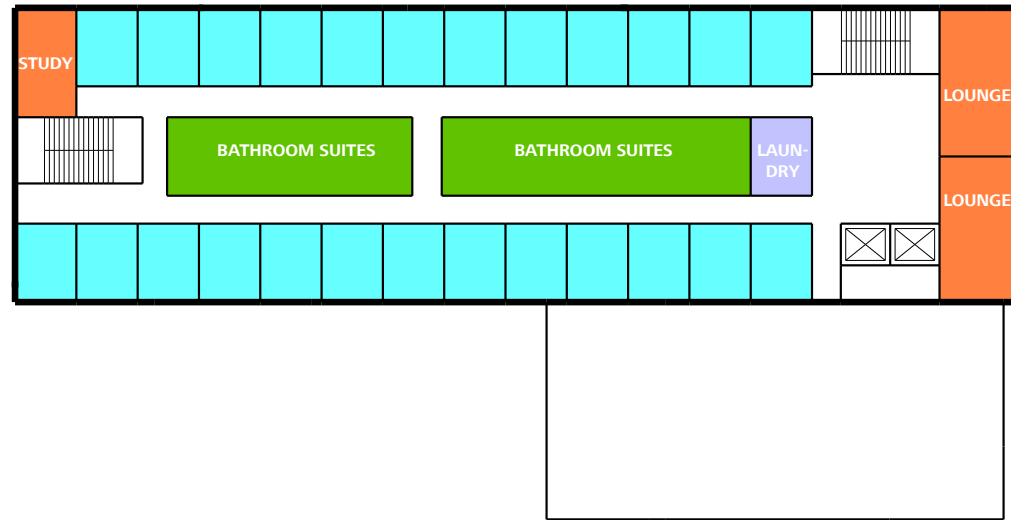
SECOND FLOOR

Taking advantage of grade change along the site, a secondary entry for students is placed at the University Success Center. This creates a beacon and an identity at the edge of campus. Opening up portions of this floor visually to functions below creates a layered community. Bike storage could also have a visual connection to dining below to further reinforce this multi-level experience.



TYPICAL FLOOR

The typical residential floor is a straightforward layout. Rooms and bathroom suites are book-ended by community spaces such as study rooms and lounges. The short bar length allows for an intimate community with daylight at the end of corridors and a preferable N/S window orientation.



-  DOUBLE OCCUPANCY UNITS
-  RESIDENTIAL SUPPORT
-  COMMUNITY SPACES
-  COMMUNITY BATHROOMS / SUPPORT

FEASIBILITY STUDIES
SCHEME 2



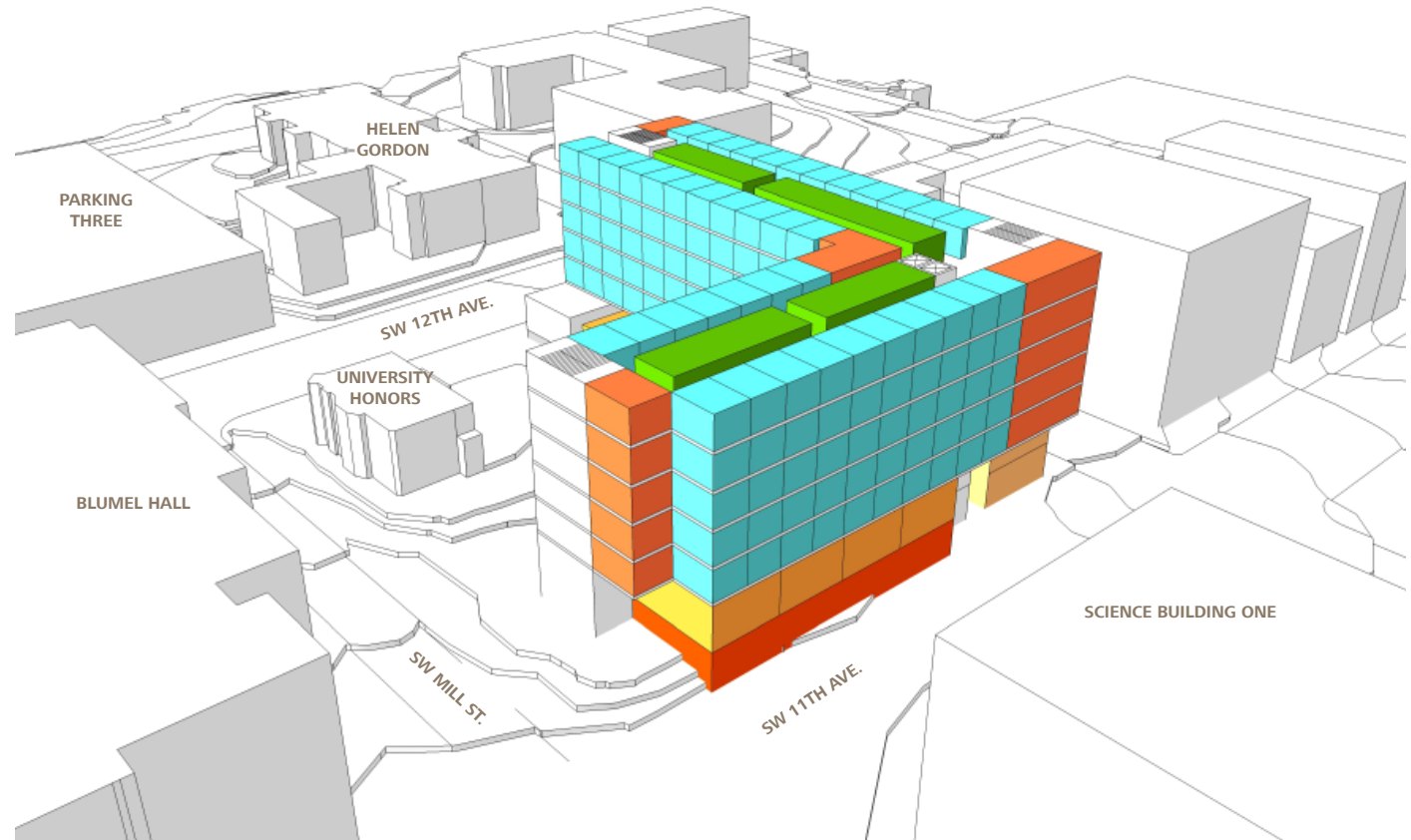
PROJECT DESCRIPTION

BUILDING AREA: 140,915 GSF

CONSTRUCTION COST: \$44,616,000*

Combining the need for an efficient construction type and optimizing buildable area, Scheme 2 represents the maximum density determined acceptable by the Steering Committee. This scale allows for the building to have a more tangible physical connection to Blumel Hall and existing campus, but also a more prominent identity in the existing city fabric. The inclusion of the UHC creates an academic destination at the NW edge of campus.

- :: 400 beds
- :: Double occupancy sleeper units
- :: Centralized bathroom suites
- :: Centralized ground floor laundry
- :: Maximizes buildable area
- :: Integration of UHC or academic facilities
- :: 5 floors of residential over 2 mixed use floors



SITE RESPONSE

Scheme 2 becomes important as a gateway into the campus at the intersection of SW Market and 11th. The large first floor footprint that extends south allows for more street activation. The massing of Scheme 2 creates strong, multi-story urban edges along both SW Market and SW 11th. Dining at the southeast corner of the building will provide opportunity for a smaller, flexible outdoor use space located at the southeast corner of the site. The pedestrian character and use of the street should be strongly considered as part of the project. This building location creates a stronger urban edge at the intersection of SW Mill and 11th; perhaps

re-design of this intersection as a new pedestrian-oriented, gathering space can be strongly considered. The dining location also suggests opportunities for roll-up doors and cafe-style seating along the avenue.

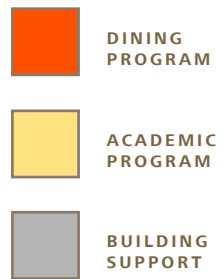
Similar to Scheme 1, existing street trees will need to be removed along SW 12th, 11th and Market. This scheme will also require removal of most trees on the south side of the building along SW Mill due to the service corridor and grades of the new building entries.

A small outdoor space suitable for flexible uses will be available on the west side of the space.

*Escalation to 2Q 2017

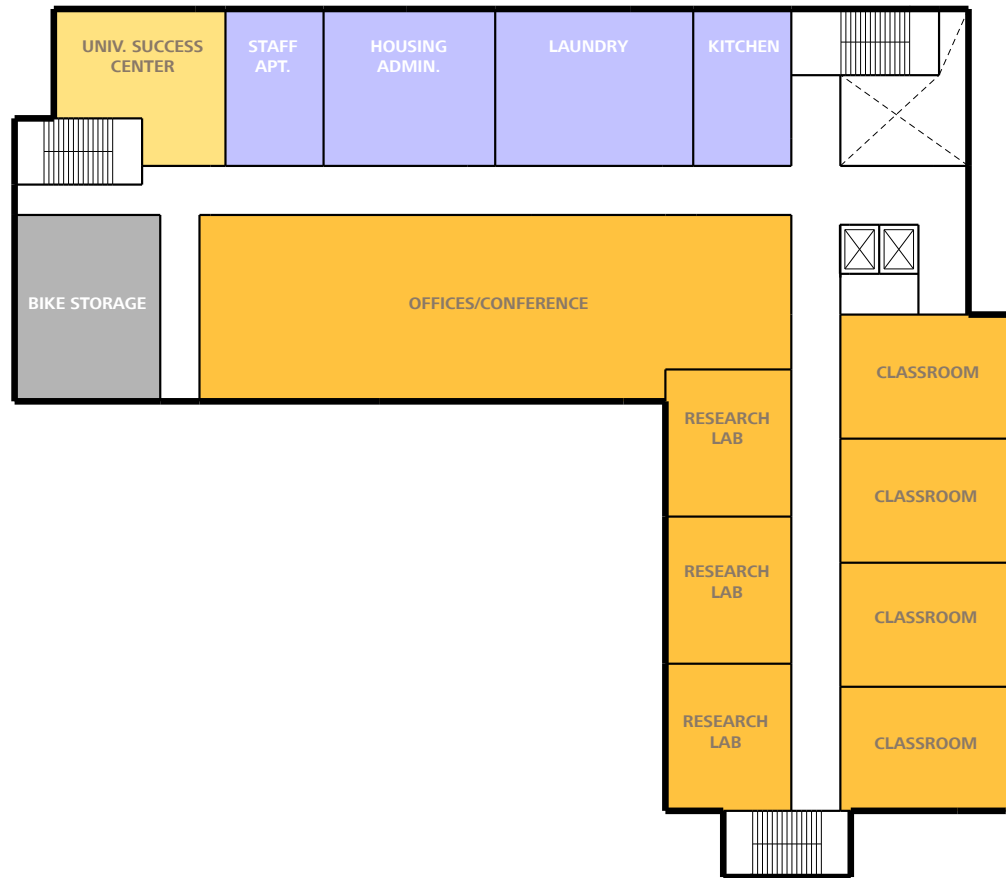
GROUND FLOOR

A common entry on the corner of SW Market and 11th provides connection to dining, commons, or up a grand stair to the residential portion of the building. Unlike Scheme 1, the dining and servery are combined into one large space giving flexibility for varied service types. Support spaces are placed towards the NE portion of the site undergrade.



SECOND FLOOR

Taking advantage of grade change along the site, a secondary entry for students is placed at the University Success Center. The addition of the UHC to the building program creates a dynamic mixed-use second floor that can be accessed separately from dining. This location also allows the classrooms to be up away from the street level and have visual access to the existing tree canopy.



- ACADEMIC PROGRAM
- RESIDENTIAL SUPPORT
- UNIVERSITY HONORS PROGRAM
- BUILDING SUPPORT

DINING STUDIES

Building	Campus Location	Unit Kitchen Types	Fall 15 Occupancy	Total Voluntary Meal Plans	% of Voluntary Meal Plans Per Non-required Beds
Blackstone	West Campus	80% of units have full kitchens	61	2	3.3%
Broadway	East Campus	100% of units have kitchenettes (2-burner stove, sink, minifridge)	671	15	9.1%
Blumel	West Campus	100% of units have full kitchens	283	47	16.6%
King Albert Hall	West Campus	100% of units have full kitchens	64	2	3.1%
Montgomery	West Campus	0% of units have kitchens	146	19	13.0%
Ondine	East Campus	66% of units have kitchenettes (range, sink, minifridge)	490	20	8.3%
Parkway	West Campus	100% of units have full kitchens	58	1	1.7%
Stephen Epler	West Campus	100% of units have kitchenettes (range, sink, minifridge)	228	36	25.5%
Saint Helens Court	West Campus	100% of units have full kitchens	55	1	1.8%
Stratford	West Campus	100% of units have full kitchens	32	-	0.0%
	Total		2,088	143	11.5%
	West Campus		927	108	12.9%
	East Campus		1161	35	8.6%

TABLE 1: VOLUNTARY MEAL PLAN PARTICIPATION

DINING BACKGROUND

The Design Team met with PSU representatives to understand the current dining options available, future campus initiatives, as well as the University’s vision for dining at a new living-learning facility.

Highlights of the information gathered during the site visit included:

- :: Victor’s, the current residential dining facility on campus, and located in Ondine Hall, has approximately 280 seats and during the Fall Term it sometimes cannot accommodate 1,000 to 1,200 students on a meal plan. Insufficient capacity for food production, service, and customer seating primarily occurs during the dinner meal, when the operator is serving an average of 600, or 50% of the daily customers. In this regard, the University envisions a dining facility in a new living-learning facility to be able to take the pressure off Victor’s

and accommodate some of students living in the residence halls on the west side of campus.

- :: The west side of campus is underserved, relative to dining options available.
- :: In Fall Term 2015, there were 2,088 residents, of which 927, or 44.4%, lived on west campus. In the future, it is anticipated that there may be as many 1,176 to 1,376 beds on west campus if a new living-learning facility accommodates 200 or 400 beds, respectively. This implies a campus capacity of 2,411 to 2,561 beds, of which 50.9% to 53.7% will be on west campus.
- :: Approximately 800-850 First Year Students live on campus, where it is anticipated that the majority will live on the east side of campus in the future. Of the 810 FYE students living on campus in Fall Term 2015, approximately 27% elected to purchase

the All Access (Unlimited) Meal Plan, 13% purchased the 15 Meals per Week Plan, while 60% opted for 10 meals per Week Plan.

- :: Portland State University is unique in that 84% of its residence halls have full kitchens or kitchenettes. Montgomery Hall, with approximately 160 beds, is the only residence where students do not have cooking facilities in their room.
- :: There is a desire to improve the retention rate of Returning students living on campus. Many students move off campus in their second year, and return to campus their junior year.
- :: In Fall Term 2015, approximately 985 residents purchased a meal plan, of which 842, or 85.5% were mandatory meal plans. 80% of all meal plan holders lived on east campus, while 20% lived on west campus. Approximately 11.5% of the

residents lived on west campus, and not required to be on a meal plan, chose to purchase a meal plan as indicated in the Table 1 (Voluntary Meal Plan Participation), above.

It is interesting to note that only 13% of the Montgomery residents purchased a meal plan, despite the lack of kitchens in their rooms. Furthermore, the overall voluntary meal plan participation rate for west campus residents appears to be 12.9%.



PROPOSED DINING CONCEPT

Taking into consideration the desired vision, the Design Team recommends that the dining venue at a new living-learning facility be different from venues that are already available on campus and in the immediate neighborhood (competitive market). Given the desire to take some pressure off Victor's, providing services for those working or living on the west side of campus, as well as accommodate 200 to 400 new beds that will be on a mandatory meal plan, the dining concept will likely need to open for breakfast, lunch and dinner. Late night service will likely remain in Victor's and/or at the Memorial Student Union.

LOCATION

The Design Team also recommends that the location of the living-learning facility dining venue have a prominent exterior entrance so that it welcomes campus community members that may use the parking garage on

SW 12th as well as non-residents on this side of campus. With an outside entrance, this venue will be easier to discover and perhaps provide a better setting where student, faculty and staff can dine together.

INNOVATIVE CONCEPTS

Although some of the food platforms/concepts may be similar to those available in Victor's, such as a made to order grill station and salad bar, the living-learning facility dining venue should feature concepts that may not be available elsewhere on campus, such as specific international cuisine and/or a health conscience, sustainable oriented concept. Relative to service style, the University may initially want to offer the dining venue as an a la carte concept as this will accommodate campus community members that may not want to pay a flat door rate for a full meal. The a la carte structure will allow campus community members to stop in to purchase a cup of

coffee or soup on their way to work or class, or a complete meal, if so desired.

Another option for the University's consideration is to offer a la carte service for breakfast and lunch and provide "All-You-Care-to-Eat" (AYCTE) service for dinner, when primarily residential students may be more inclined to use the dining venue. In this regard, the preliminary demand analysis that follows assumes that the University will want to offer one of more meals on an "All-You-Care-To-Eat" basis, where menu offerings will be served on reusable dinner ware and that at least three food platforms or concepts will be available, in addition to a soup/salad bar to provide parity for west campus residents.

Regardless if the University offers the dining venue on an a la carte or AYCTE basis, it should be able to provide a complete nutritious meal for students qualifying for SNAP assistance.

PRELIMINARY DEMAND ANALYSIS

Based on the previously noted information, The Design Team developed a preliminary space program based on the following assumptions.

POTENTIAL CUSTOMER DEMAND

Table 2 (Dining Customer Estimate For Living Learning Center Dining Venue), to the right, indicates the assumptions used for determining the number of potential customers at a peak meal.

This analysis assumes the majority of the living-learning community residents will dine at this facility. The Design Team also assumed a conservative increase (7.5%) in voluntary meal plan participation, since many of the existing residences on west campus have full kitchens.

ANALYSIS BASED ON RESIDENTS / MEAL PLAN REQUIREMENT					
Residential Population	Existing Beds	If 200 New Beds	Meal Plan Requirement	If 400 New Beds	Meal Plan Requirement
Blackstone	79	79	No	79	No
Blumel	298	298	No	298	No
King Albert Hall	64	64	No	64	No
Montgomery	161	161	No	161	No
Parkway	58	58	No	58	No
Stephen Epler	229	229	38.0%	229	38.0%
Saint Helens Court	55	55	No	55	No
Stratford	32	32	No	32	No
New Residential Beds		200	Yes	400	Yes
Total West Campus Residents	976	1,176		1,376	
Total East Capus Residents	1,285				
Other Non-Residential Customers					
Academic Classroom Space		264		264	
Potential Non-residential Undergraduates	20,674	20,210		20,010	
Potential Faculty and Staff	3,305	3,305		3,305	
Total Non-Residential Customers	23,979	23,779		23,579	
Demand Analysis for PSU AYTCE Marketplace	Existing Demand	If 200 New Beds		If 400 New Beds	
Notes	Dinner	Lunch	Dinner	Lunch	Dinner
1 Existing West Campus Voluntary Participation Less Epler	13.0%	20.5%	20.5%	20.5%	20.5%
Est. Existing West Campus Less Epler Customers	97	153	153	153	153
1 Overall Stephen Epler Participation Rate	53.9%	61.4%	61.4%	61.4%	61.4%
Estimated Stephen Epler Customers	123	141	141	141	141
1 New Residential Beds Participation	90.0%	85.0%	90.0%	85.0%	90.0%
Estimated New Residential Beds Customers	225	170	180	340	360
2 Non-Residential Participation Rate	0.02%	0.30%	0.04%	0.40%	0.06%
Estimated Non-Residential Customers	5	72	10	96	14
Estimated peak Meal Customers	450	536	484	730	668

Notes

- 1 University assumes 7.5% by residents.
- 2 Estimated by Envision and approved by the University.

TABLE 2: DINING CUSTOMER ESTIMATE FOR LIVING LEARNING CENTER DINING VENUE

ANALYSIS BASED ON RESIDENTS / MEAL PLAN REQUIREMENT

Demand Analysis for PSU AYCTE Marketplace		If 200 New Beds		If 400 New Beds	
		Lunch	Dinner	Lunch	Dinner
Notes					
3	% Participation at Peak Half hour	30.0%	30.0%	30.0%	30.0%
	Estimated Peak Half Hour Customers	161	145	219	200
4	Estimated Take-Out Factor	0%	0%	0%	0%
	Estimated # of Dine-In Customers	161	145	219	200
5	Average Length of Stay at Peak Meal	30 Minutes	40 Minutes	30 Minutes	40 Minutes
	# of Anticipated Occupied Seats	161	194	219	267
6	Seating Efficiency	75.0%	75.0%	75.0%	75.0%
	Total # of Seats Required	214	258	292	356

SEATING REQUIREMENT

Based on the potential number of customers for the peak meal, the Design Team estimated the number of seats required. The factors that affect the number of seats required include:

- :: Number of customers arriving during the peak half-hour of service
- :: Number of customers that take their meal to go versus dining in
- :: Time a customer occupies a seat
- :: Seating efficiency

Should PSU elect to serve non-residential customers, this may affect peak meal hours, but not necessarily seating or stay factors with an assumed 0% take-out factor. If customers can take their meal to go on disposable ware, then this will reduce the seating requirement. Table 3 (Estimated Number Of Seats Required), to the right, indicates the assumptions that were incorporated as well as the projected number of seats required.

At a minimum and assuming an AYCTE marketplace with exhibition cooking, the University should plan on 258 seats if the living-learning facility has 200 beds, and 356 dining seats if providing 400 beds.

ESTIMATED SPACE PROGRAM

Table 4 (Office Assuptions In Net Square Feet) and Table 5 (Support Space Assumptions In Net Square Feet), to the right, indicate the assumptions for the office and support spaces.

Notes

- 3 Based on consulting team’s experience and approved by the University
- 4 Estimated by Envision
- 5 Industry standards for Lunch average stay seating turnover
- 6 Based on most diner’s tendency to not share seats at a table with someone they don’t know.

TABLE 3: ESTIMATED NUMBER OF SEATS REQUIRED

Residential Dining Offices	Description	NSF Est.
Residential Dining Manager	Private	100
Sous Chef / Production Manager	Private	100
Receiving Station	Open	100
Assistant Managers (3)	Shared Space	240
Total Residential Dining Offices		540

TABLE 4: OFFICE ASSUMPTIONS IN NET SQUARE FEET

Support Areas	NSF Est.
Lockers / Employee rest room / Changing room	600
Janitor Closets	100
Bag in Box Soda	100
Pig Farm Refrigerator / Composting	100
Recycling	180
Card Board Bailer	180
Cart Wash	100
Total Support Areas	1,360

TABLE 5: SUPPORT SPACE ASSUMPTIONS IN NET SQUARE FEET



TOTAL NET AREAS FOR DINING

Table 6 (Preliminary Space Program Requirements In Net Square Feet), to the right, estimates the preliminary net square footage requirements assuming an AYCTE marketplace with china, glass and service ware. The dining area assumes 16 square feet per seat and the space program includes a 50% circulation allowance for the serving area.

Note: The space program does not include the student-run coffee venue.

ANALYSIS BASED ON RESIDENTS / MEAL PLAN REQUIREMENT		
Demand Analysis for PSU AYCTE Marketplace	If 200 New Beds	If 400 New Beds
Notes	Lunch	Dinner
Initial Space Program		
Proposed Number of Dining Seats	282	356
7 Dining	4,130	5,700
Server	3,020	3,120
Dishwash, Pots & Tray Drop	820	1,000
Kitchen	780	1,060
Storage	900	1,250
Offices	540	540
Support	1,360	1,360
Total Estimated Net Square Footage Required	11,550	14,030

Notes

7 16 SF/Seat factor based on ES benchmarking of similar facilities on college campuses.

TABLE 6: PRELIMINARY SPACE PROGRAM REQUIREMENTS IN NET SQUARE FEET

NUMERIC PROGRAMS

Portland State University - LLC Feasibility Study



201 Bed Student Facility
8 Communities of 25

9-Mar-16
REVISED 30-Mar-16

Program Area	rm	space gen	sf/rm	total nsf	total prog nsf
RESIDENTIAL LIVING					
Student Rooms					
Double-occupancy Bedroom	92	184	200	18,400	
Accessible (ADA) Double-occupancy Bedroom	8	16	200	1,600	
Subtotal - Student Living Area	100	200			20,000
Staff Apartment					
Master Bedroom	1	1 rm	160	160	
Living Room	1	1 rm	180	180	
Kitchen	1	1 rm	140	140	
Bathroom	1	1 rm	100	100	
Coat Closet / Storage	1	1 rm	25	25	
Subtotal - Staff Apartment		1			605
Student Bathrooms					
Community Bathroom suite	5	1 rm	1950	9,750	
Accessible (ADA) Single-occupancy Bathroom suite	10	1 rm	100	1,000	
Subtotal - Student Bathrooms					10,750
Subtotal - RESIDENTIAL LIVING		201			31,355
RESIDENTIAL PROGRAM					
Service Center					100
Mailboxes	1	1 area	100	100	
Administration					1,100
RD Office	1	1 rm	100	100	
RA Offices	3	1 rm	100	300	
Conference Room	1	10	400	400	
Resource/Workroom area	1	1 rm	300	300	
Student Community Space					5,600
Open Floor Lounge	8	1 area	500	4,000	
Floor Nook	8	1 area	200	1,600	
Distributed Laundry	4	1 rm	200	800	800
Community Kitchen	1	1 rm	600	600	600
Subtotal - RESIDENTIAL PROGRAM					8,200
ACADEMIC PROGRAM					
General Education Instructional Space					
Student Commons	1	1 area	1,000	1,000	1,000
University Success Center					
Student Café	1	1 area	500	500	
Group study area	1	1 area	500	500	
Business Center (printing, etc)	1	1 area	500	500	
Public restroom (mens / womens / gender inclusive)	3	1 rm	150	450	450
Subtotal - ACADEMIC PROGRAM					2,950

SCHEME 1 PROGRAM

Program assumes 200, double-occupancy sleeping units with shared community bathrooms, limited academic program and a dining facility with a capacity to seat 282 customers at any given time.

Building Gross Area: **84,580 GSF**

Communities: **8 communities of 25**

Bed Count: **200**

Dining Capacity (Seats): **282**

Portland State University - LLC Feasibility Study



Portland State University - LLC Feasibility Study



201 Bed Student Facility
8 Communities of 25

9-Mar-16
REVISIED 30-Mar-16

201 Bed Student Facility
8 Communities of 25

9-Mar-16
REVISIED 30-Mar-16

Program Area	rm	space gen	sf/rm	total nsf	total prog nsf
GENERAL BUILDING SUPPORT					
Public Areas					700
Vestibule	1	1 rm	100	100	
Lobby	1	1 area	500	500	
Vending	1	1 area	100	100	
Custodial					1,240
Custodial Closet - Academic / Public	1	1 rm	200	200	
Custodial Closet - Residential	8	1 rm	80	640	
Custodial Storage	1	1 rm	400	400	
Storage					500
General Building Storage	1	1 rm	500	500	
Shop/Staff					1,000
Maintenance Shop	1	1 rm	1,000	1,000	
Bicycle Storage	1	60	960	960	960
Recycling/Trash	6	1 area	100	600	600
Subtotal - GENERAL BUILDING SUPPORT					5,000
DINING PROGRAM					
Food Production					5,520
Main Kitchen	1	1 area	780	780	
Dishwash / Pots & Tray Drop	1	1 area	820	820	
Storage	1	1 area	900	900	
Servery	1	1 area	3,020	3,020	
Dining Areas					4,130
Dining Areas & Seating	1	1 area	4,130	4,130	
Support Areas					1,900
Offices	2	1 rm	270	540	
Lockers / Restroom / Changing Room	2	1 rm	300	600	
Janitor Closets	2	1 rm	50	100	
Bag-In-Box Soda Storage	1	1 rm	100	100	
Pig Farm Refrigerator / Composting	1	1 rm	100	100	
Recycling	1	1 rm	180	180	
Cardboard Bailer	1	1 rm	180	180	
Cart Wash	1	1 rm	100	100	
Subtotal - DINING PROGRAM					11,550
MEP SUPPORT					
Mechanical/Fire					3,350
Boiler and Pumps	1	1 rm	500	500	
Air Handlers / Misc Equipment	1	1 rm	1,000	1,000	
Fire Riser	1	1 rm	250	250	
Control Room	1	1 rm	250	250	
Misc Equipment space and shafts	1	mult areas	1,350	1,350	
Electrical					1,000
Main Electrical Room	1	1 rm	400	400	
Electrical Closets (every other floor)	3	1 rm	200	600	
Communications					1,000
Main Server (MDF) Room	1	1 rm	400	400	

Program Area	rm	space gen	sf/rm	total nsf	total prog nsf
Independent Hub (IDF) Room (every other floor)	3	1 rm	200	600	
Subtotal - MEP SUPPORT					3,350
Horizontal					7,664
Corridors	1	11.9% of gsf	64,405	7,664	
Vertical					4,460
Residential Elevator	6	2 rms	120	720	
Elevator Equipment Room (Residential)	1	1 rm	100	100	
Public Elevator	2	1 rms	120	240	
Elevator Equipment Room (Public)	1	1 rm	100	100	
Central 'Open' Stair	6	1 stair	300	1,800	
Rated Exit Stair	6	1 stair	250	1,500	
Interior Partition Walls	1	7.5% of gsf	64,405	4,830	4,830
Infrastructure	1	5% of gsf	64,405	3,220	3,220
TOTAL BUILDING GROSS SF					84,580
Exterior Spaces					
Recycling/Trash	1	1 area	750	750	750
Programmable Outdoor Open Space	1	1 area	47,607	21,392	21,392
Subtotal - Exterior Spaces					22,142
TOTAL EXTERIOR GROSS SF					22,142

Portland State University - LLC Feasibility Study



401 Bed Student Facility
20 Communities of 20

9-Mar-16
REVISED 30-Mar-16

Program Area	rm	space gen	sf/rm	total nsf	total prog nsf
RESIDENTIAL LIVING					
Student Rooms					40,000
Double-occupancy Bedroom	180	360	200	36,000	
Accessible (ADA) Double-occupancy Bedroom	20	40	200	4,000	
Subtotal - Student Living Area	200	400			40,000
Staff Apartment					605
Master Bedroom	1	1 rm	160	160	
Living Room	1	1 rm	180	180	
Kitchen	1	1 rm	140	140	
Bathroom	1	1 rm	100	100	
Coat Closet / Storage	1	1 rm	25	25	
Subtotal - Staff Apartment		1			605
Student Bathrooms					19,000
Community Bathroom Suite	10	1 rm	1800	18,000	
Accessible (ADA) Single-occupancy Bathroom suite	10	1 rm	100	1,000	
Subtotal - Student Bathrooms					19,000
Subtotal - RESIDENTIAL LIVING		401			59,605
RESIDENTIAL PROGRAM					
Service Center					100
Mailboxes	1	1 area	100	100	
Administration					1,300
RD Office	1	1 rm	100	100	
RA Offices	5	1 rm	100	500	
Conference Room	1	10	400	400	
Resource/Workroom area	1	1 rm	300	300	
Student Community Space					7,000
Open Floor Lounge	10	1 area	500	5,000	
Floor Nook	10	1 area	200	2,000	
Centralized Laundry Lounge	1	1 rm	1,000	1,000	1,000
Community Kitchen	1	1 rm	600	600	600
Subtotal - RESIDENTIAL PROGRAM					10,000
ACADEMIC PROGRAM					
General Education Instructional Space					1,000
Student Commons	1	1 area	1,000	1,000	
Urban Honors Program					9,850
Reception	1	1 area	200	200	
Front desk	1	1 area	100	100	
Faculty & Advisor Offices	20	1 rm	100	2,000	
Breakroom	1	1 rm	200	200	
Advising Center	1	1 rm	300	300	
Classroom	4	36	900	3,600	
Research Labs	3	30	750	2,250	
Large Conference Room	2	16	400	800	
Small Conference Room	2	8	200	400	

SCHEME 2 PROGRAM

Program assumes 400, double-occupancy sleeping units with shared community bathrooms, University Honors College and academic programs and a dining facility with a capacity to seat 356 customers at any given time.

Building Gross Area: **140,915 GSF**

Communities: **20 communities of 20**

Bed Count: **400**

Dining Capacity (Seats): **356**

Portland State University - LLC Feasibility Study



Portland State University - LLC Feasibility Study



401 Bed Student Facility
20 Communities of 20

9-Mar-16
REVISED 30-Mar-16

401 Bed Student Facility
20 Communities of 20

9-Mar-16
REVISED 30-Mar-16

Program Area	rm	space gen	sf/rm	total nsf	total prog nsf
University Success Center					1,500
Student Café	1	1 area	500	500	
Group study area	1	1 area	500	500	
Business Center (printing, etc)	1	1 area	500	500	
Public restroom (mens / womens / gender inclusive)	3	1 rm	150	450	450
Subtotal - ACADEMIC PROGRAM					12,800
GENERAL BUILDING SUPPORT					
Public Areas					700
Vestibule	1	1 rm	100	100	
Lobby	1	1 area	500	500	
Vending	1	1 area	100	100	
Custodial					1,400
Custodial Closet - Academic / Public	1	1 rm	200	200	
Custodial Closet - Residential	10	1 rm	80	800	
Custodial Storage	1	1 rm	400	400	
Storage					500
General Building Storage	1	1 rm	500	500	
Shop/Staff					1,000
Maintenance Shop	1	1 rm	1,000	1,000	
Bicycle Storage	1	60	960	960	960
Recycling/Trash	10	1 area	100	1,000	1,000
Subtotal - GENERAL BUILDING SUPPORT					5,560
DINING PROGRAM					
Food Production					6,430
Main Kitchen	1	1 area	1,060	1,060	
Dishwash / Pots & Tray Drop	1	1 area	1,000	1,000	
Storage	1	1 area	1,250	1,250	
Servery	1	1 area	3,120	3,120	
Dining Areas					5,700
Dining Areas & Seating	1	1 area	5,700	5,700	
Support Areas					1,900
Offices	2	1 rm	270	540	
Lockers / Restroom / Changing Room	2	1 rm	300	600	
Janitor Closets	2	1 rm	50	100	
Bag-In-Box Soda Storage	1	1 rm	100	100	
Pig Farm Refrigerator / Composting	1	1 rm	100	100	
Recycling	1	1 rm	180	180	
Cardboard Bailer	1	1 rm	180	180	
Cart Wash	1	1 rm	100	100	
Subtotal - DINING PROGRAM					14,030
MEP SUPPORT					
Mechanical/Fire					3,350
Boiler and Pumps	1	1 rm	500	500	
Air Handlers / Misc Equipment	1	1 rm	1,000	1,000	
Fire Riser	1	1 rm	250	250	

Program Area	rm	space gen	sf/rm	total nsf	total prog nsf
Control Room	1	1 rm	250	250	
Misc Equipment space and shafts	1	mult areas	1,350	1,350	
Electrical					1,200
Main Electrical Room	1	1 rm	400	400	
Electrical Closets (every other floor)	4	1 rm	200	800	
Communications					1,200
Main Server (MDF) Room	1	1 rm	400	400	
Independent Hub (IDF) Room (every other floor)	4	1 rm	200	800	
Subtotal - MEP SUPPORT					5,750
HORIZONTAL					
Corridors	1	11.9% of gsf	107,745	12,822	12,822
VERTICAL					
Residential Elevator	7	2 rms	120	840	
Elevator Equipment Room (Residential)	1	1 rm	100	100	
Public Elevator	2	1 rms	120	240	
Elevator Equipment Room (Public)	1	1 rm	100	100	
Central 'Open' Stair	7	1 stair	300	2,100	
Rated Exit Stair	14	2 stairs	250	3,500	
Interior Partition Walls	1	7.5% of gsf	107,745	8,081	8,081
Infrastructure	1	5% of gsf	107,745	5,387	5,387
TOTAL BUILDING GROSS SF					140,915
EXTERIOR SPACES					
Recycling/Trash	1	1 area	750	750	750
Programmable Outdoor Open Space	1	1 area	47,607	8,262	8,262
Subtotal - Exterior Spaces					9,012
TOTAL EXTERIOR GROSS SF					9,012

COST MODELS

RLB | Rider Levett Bucknall

Concept Estimate

PSU Living Learning Center Feasibility Study
Portland, OR

Prepared for Mahlum Architects

March 10, 2016



RLB | Rider Levett Bucknall

CONTENTS

- 1.00 Scheme 1
- 2.00 Scheme 2

PSU Living Learning Center Feasibility Study
Portland, OR

Concept Estimate

RLB | Rider Levett Bucknall

PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

GFA: Gross Floor Area
Rates Current At March 2016

Location Summary

Location	GFA SF	Cost/SF	Total Cost
A BUILDING	84,700	297.57	25,203,970
B SITE			1,514,809
ESTIMATED NET COST	84,700	\$315.45	\$26,718,779
MARGINS & ADJUSTMENTS			
Escalation to 2Q2017		5.0 %	\$1,335,939
ESTIMATED TOTAL COST	84,700	\$331.22	\$28,054,718

1.00 Scheme 1

- . Grand Summary with Margins & Adjustments Distributed
- . Grand Summary with Margins & Adjustments Undistributed
- . Elemental (Unifomat Level 3) Summary
- . Estimate Detail

RLB | Rider Levett Bucknall

PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Location Summary

GFA: Gross Floor Area
Rates Current At March 2016

Location	GFA SF	Cost/SF	Total Cost
A BUILDING	84,700	225.93	19,136,637
B SITE			1,150,150
ESTIMATED NET COST	84,700	\$239.51	\$20,286,787
MARGINS & ADJUSTMENTS			
General Conditions	6.5 %		\$1,318,641
Bonds & Insurance	3.5 %		\$756,190
Overhead & Profit	3.9 %		\$872,103
Design Contingency	15.0 %		\$3,485,058
Escalation to 2Q2017	5.0 %		\$1,335,939
ESTIMATED TOTAL COST	84,700	\$331.22	\$28,054,718

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Unifomat II - Level 3) Summary

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Cost/SF	Total Cost
A1010 Standard Foundations	\$6.35	\$538,200
A1030 Slab on Grade	\$1.52	\$129,000
A2020 Basement Walls	\$3.30	\$279,180
B1010 Floor Construction	\$18.97	\$1,606,500
B1020 Roof Construction	\$4.41	\$373,600
B2010 Exterior Walls	\$14.71	\$1,245,938
B2020 Exterior Windows	\$30.16	\$2,554,209
B2030 Exterior Doors	\$2.00	\$169,400
B3010 Roof Coverings	\$3.55	\$300,900
B3020 Roof Openings		Excl.
C1010 Partitions	\$12.00	\$1,016,400
C1020 Interior Doors	\$6.00	\$508,200
C1030 Fittings	\$5.00	\$423,500
C2010 Stair Construction	\$4.72	\$400,000
C3010 Wall Finishes	\$5.00	\$423,500
C3020 Floor Finishes	\$6.00	\$508,200
C3030 Ceiling Finishes	\$6.00	\$508,200
D1010 Elevators & Lifts	\$3.78	\$320,000
D2010 Plumbing Fixtures	\$15.00	\$1,270,500
D3090 Other HVAC Systems & Equipment	\$27.00	\$2,286,900
D4010 Sprinklers	\$3.80	\$321,860
D5010 Electrical Service & Distribution	\$9.00	\$762,300
D5020 Lighting and Branch Wiring	\$12.00	\$1,016,400
D5030 Communications & Security	\$5.94	\$503,500
D5090 Other Electrical Systems	\$3.97	\$336,000
E1090 Other Equipment	\$6.33	\$536,000
E2010 Fixed Furnishings	\$3.43	\$290,250
E2020 Movable Furnishings	\$6.00	\$508,000
G1020 Site Demolition and Relocations	\$1.40	\$119,000
G1030 Site Earthwork	\$1.69	\$142,800
G2020 Parking Lots		Excl.
G2030 Pedestrian Paving	\$0.88	\$74,700
G2040 Site Development	\$1.77	\$150,000
G2050 Landscaping	\$1.70	\$143,650
G3010 Water Supply	\$0.89	\$75,000
G3020 Sanitary Water	\$0.35	\$30,000
G3030 Storm Sewer	\$2.07	\$175,000

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Uniformat II - Level 3) Summary

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Cost/SF	Total Cost
G3060 Fuel Distribution	\$0.24	\$20,000
G4010 Electrical Distribution	\$1.18	\$100,000
G4020 Site Lighting	\$0.94	\$80,000
G4030 Site Communications & Security	\$0.47	\$40,000
ESTIMATED NET COST	\$239.51	\$20,286,787
MARGINS & ADJUSTMENTS		
General Conditions	6.5 %	\$1,318,641
Bonds & Insurance	3.5 %	\$756,190
Overhead & Profit	3.9 %	\$872,103
Design Contingency	15.0 %	\$3,485,058
Escalation to 2Q2017	5.0 %	\$1,335,939
ESTIMATED TOTAL COST	\$331.22	\$28,054,718

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Uniformat II - Level 3) Item

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
A1010 Standard Foundations				
1 Isolated and continuous footings	SF	84,700	6.00	508,200
48 Elevator pit - complete	EA	2	15,000.00	30,000
			Standard Foundations	\$6.35/SF \$538,200
A1030 Slab on Grade				
3 Slab on grade, incl. base course and vapor barrier	SF	17,200	7.50	129,000
			Slab on Grade	\$1.52/SF \$129,000
A2020 Basement Walls				
102 Concrete basement walls, incl. waterproofing	SF	5,170	54.00	279,180
			Basement Walls	\$3.30/SF \$279,180
B1010 Floor Construction				
5 Concrete structural frame to Lvl 2	SF	13,500	28.00	378,000
18 Wood structural frame to upper floors	SF	54,000	20.00	1,080,000
106 Gypcrete underlayment	SF	54,000	2.75	148,500
			Floor Construction	\$18.97/SF \$1,606,500
B1020 Roof Construction				
6 Wood structural frame to roof	SF	13,500	20.00	270,000
58 Concrete structural frame to podium roof	SF	3,700	28.00	103,600
			Roof Construction	\$4.41/SF \$373,600
B2010 Exterior Walls				
7 Exterior wall assembly; brick veneer/metal wall panel, weather-resistant barrier, rigid insulation, sheathing, flashings, metal stud framing, secondary support steel, vapor barrier, batt insulation, and finished gyp board to inside face of exterior wall	SF	19,342	54.00	1,044,468
107 Allowance for misc. facade enhancements	SF	40,294	5.00	201,470
			Exterior Walls	\$14.71/SF \$1,245,938
B2020 Exterior Windows				
9 Curtainwall	SF	20,953	105.00	2,200,065
10 Vinyl windows to upper floors, operable	SF	5,712	62.00	354,144
			Exterior Windows	\$30.16/SF \$2,554,209
B2030 Exterior Doors				
12 Exterior doors	SF	84,700	2.00	169,400
			Exterior Doors	\$2.00/SF \$169,400

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Unifomat II - Level 3) Item

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
B3010 Roof Coverings				
15 Low-slope membrane roof system	SF	13,500	17.00	229,500
94 Standing seam metal roof system	SF	2,975	24.00	71,400
Roof Coverings			\$3.55/SF	\$300,900
B3020 Roof Openings				
16 Skylights - Assumes NIC	Item			Excl.
Roof Openings				Excl.
C1010 Partitions				
17 Partitions	SF	84,700	11.25	952,875
19 Allowance for rough carpentry	SF	84,700	0.75	63,525
Partitions			\$12.00/SF	\$1,016,400
C1020 Interior Doors				
20 Interior doors and glazing	SF	84,700	6.00	508,200
Interior Doors			\$6.00/SF	\$508,200
C1030 Fittings				
21 Specialties; Includes markerboards, tackboards, signage, corner/wall protection, toilet fittings, fire extinguishers, etc.	SF	84,700	5.00	423,500
Fittings			\$5.00/SF	\$423,500
C2010 Stair Construction				
22 Steel-stair with wood treads, glass guardrails	Flight	10	40,000.00	400,000
Stair Construction			\$4.72/SF	\$400,000
C3010 Wall Finishes				
24 Wall finishes	SF	84,700	5.00	423,500
Wall Finishes			\$5.00/SF	\$423,500
C3020 Floor Finishes				
27 Floor finishes	SF	84,700	6.00	508,200
Floor Finishes			\$6.00/SF	\$508,200
C3030 Ceiling Finishes				
34 Ceiling finishes	SF	84,700	6.00	508,200
Ceiling Finishes			\$6.00/SF	\$508,200

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Unifomat II - Level 3) Item

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
D1010 Elevators & Lifts				
47 Elevator	Stop	8	40,000.00	320,000
Elevators & Lifts			\$3.78/SF	\$320,000
D2010 Plumbing Fixtures				
56 Plumbing fixtures and pipework, incl. water reclamation	SF	84,700	15.00	1,270,500
Plumbing Fixtures			\$15.00/SF	\$1,270,500
D3090 Other HVAC Systems & Equipment				
51 HVAC; Zoned VRF incl. controls	SF	84,700	27.00	2,286,900
Other HVAC Systems & Equipment			\$27.00/SF	\$2,286,900
D4010 Sprinklers				
52 Fire sprinklers	SF	84,700	3.80	321,860
Sprinklers			\$3.80/SF	\$321,860
D5010 Electrical Service & Distribution				
53 Electrical service and and distribution	SF	84,700	9.00	762,300
Electrical Service & Distribution			\$9.00/SF	\$762,300
D5020 Lighting and Branch Wiring				
54 Lighting and branch wiring	SF	84,700	12.00	1,016,400
Lighting and Branch Wiring			\$12.00/SF	\$1,016,400
D5030 Communications & Security				
55 Systems; Fire alarm, PA, tel/data, security	SF	84,700	5.00	423,500
104 Wireless card reader	EA	100	800.00	80,000
Communications & Security			\$5.94/SF	\$503,500
D5090 Other Electrical Systems				
100 Rooftop Photovoltaic system - by kW	EA	96,000	3.50	336,000
Other Electrical Systems			\$3.97/SF	\$336,000
E1090 Other Equipment				
11 Allowance for Dining Hall food service equipment, servery casework, etc.	Item			500,000
49 Allowance for residential appliances at resident Lounge areas; refrigerators, microwaves, etc.	Item			12,000
103 Washer and dryer set, commercial grade	Pr	8	3,000.00	24,000
Other Equipment			\$6.33/SF	\$536,000

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Uniformat II - Level 3) Item

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
E2010 Fixed Furnishings				
37 Casework and furnishings to Ground & Second floor	SF	27,500	6.00	165,000
105 Casework and furnishings to Upper floors	SF	50,100	2.50	125,250
Fixed Furnishings			\$3.43/SF	\$290,250
E2020 Movable Furnishings				
95 Standard Residence Room Furniture Allowance	SF	92	5,000.00	460,000
96 ADA Residence Room Furniture Allowance	EA	8	6,000.00	48,000
Movable Furnishings			\$6.00/SF	\$508,000
G1020 Site Demolition and Relocations				
88 Site demolition; assumes mix of hardscapes and softscapes with no (E) structures	SF	47,600	2.50	119,000
Site Demolition and Relocations			\$1.40/SF	\$119,000
G1030 Site Earthwork				
78 Level and grade site	SF	47,600	1.00	47,600
84 Allowance for misc. site earthwork	SF	47,600	2.00	95,200
Site Earthwork			\$1.69/SF	\$142,800
G2020 Parking Lots				
93 Allowance for off-site improvements to roadways, sidewalks, traffic signals, utilities, etc. - NIC	Item			Excl.
Parking Lots				Excl.
G2030 Pedestrian Paving				
67 Hardscaped areas; pedestrian/vehicular paving, curbs, etc	SF	8,300	9.00	74,700
Pedestrian Paving			\$0.88/SF	\$74,700
G2040 Site Development				
79 Allowance for site development; retaining walls, site furnishings, fencing, etc.	Item			150,000
Site Development			\$1.77/SF	\$150,000
G2050 Landscaping				
62 Landscaped areas	SF	22,100	6.50	143,650
Landscaping			\$1.70/SF	\$143,650
G3010 Water Supply				
86 Site fire water/potable water service	Item			75,000
Water Supply			\$0.89/SF	\$75,000

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PSU Living Learning Center Feasibility Study
Scheme 1 - Concept

Elements (Uniformat II - Level 3) Item

Gross Floor Area: 84,700 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
G3020 Sanitary Water				
85 Site sanitary water	Item			30,000
Sanitary Water			\$0.35/SF	\$30,000
G3030 Storm Sewer				
87 Site storm drainage, incl. 30,000 gal. detention basin	Item			175,000
Storm Sewer			\$2.07/SF	\$175,000
G3060 Fuel Distribution				
97 Gas service to (N) building	Item			20,000
Fuel Distribution			\$0.24/SF	\$20,000
G4010 Electrical Distribution				
81 Site electrical service	Item			100,000
Electrical Distribution			\$1.18/SF	\$100,000
G4020 Site Lighting				
82 Site lighting	Item			80,000
Site Lighting			\$0.94/SF	\$80,000
G4030 Site Communications & Security				
83 Site systems	Item			40,000
Site Communications & Security			\$0.47/SF	\$40,000
ESTIMATED NET COST			\$239.51/SF	\$20,286,787

PSU Living Learning Center Feasibility Study
Portland, OR

Concept Estimate

2.00 Scheme 2

- . Grand Summary with Margins & Adjustments Distributed
- . Grand Summary with Margins & Adjustments Undistributed
- . Elemental (Uniformat Level 3) Summary
- . Estimate Detail

PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Location Summary

GFA: Gross Floor Area
Rates Current At March 2016

Location	GFA SF	Cost/SF	Total Cost
A BUILDING	140,915	291.17	40,327,441
B SITE			1,494,461
ESTIMATED NET COST	140,915	\$301.96	\$41,821,902
MARGINS & ADJUSTMENTS			
Escalation to 2Q2017		5.0 %	\$2,091,095
ESTIMATED TOTAL COST	140,915	\$317.06	\$44,678,510

PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Location Summary

GFA: Gross Floor Area
Rates Current At March 2016

Location	GFA SF	Cost/SF	Total Cost
A BUILDING	138,500	221.08	30,619,446
B SITE			1,134,700
ESTIMATED NET COST	138,500	\$229.27	\$31,754,146
MARGINS & ADJUSTMENTS			
General Conditions	6.5 %		\$2,064,019
Bonds & Insurance	3.5 %		\$1,183,636
Overhead & Profit	3.9 %		\$1,365,070
Design Contingency	15.0 %		\$5,455,031
Escalation to 2Q2017	5.0 %		\$2,091,095
ESTIMATED TOTAL COST	138,500	\$317.06	\$43,912,997

PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Elements (Uniformat II - Level 3) Summary

Gross Floor Area: 138,500 SF
Rates Current At March 2016

Description	Cost/SF	Total Cost
A1010 Standard Foundations	\$6.22	\$861,000
A1030 Slab on Grade	\$1.19	\$165,000
A2020 Basement Walls	\$2.68	\$370,764
B1010 Floor Construction	\$19.93	\$2,760,625
B1020 Roof Construction	\$3.34	\$463,200
B2010 Exterior Walls	\$17.64	\$2,442,974
B2020 Exterior Windows	\$23.74	\$3,287,413
B2030 Exterior Doors	\$2.00	\$277,000
B3010 Roof Coverings	\$2.85	\$394,300
B3020 Roof Openings		Excl.
C1010 Partitions	\$12.00	\$1,662,000
C1020 Interior Doors	\$6.00	\$831,000
C1030 Fittings	\$5.00	\$692,500
C2010 Stair Construction	\$3.47	\$480,000
C3010 Wall Finishes	\$5.00	\$692,500
C3020 Floor Finishes	\$6.00	\$831,000
C3030 Ceiling Finishes	\$6.00	\$831,000
D1010 Elevators & Lifts	\$2.60	\$360,000
D2010 Plumbing Fixtures	\$15.00	\$2,077,500
D3090 Other HVAC Systems & Equipment	\$27.00	\$3,739,500
D4010 Sprinklers	\$3.80	\$526,300
D5010 Electrical Service & Distribution	\$9.00	\$1,246,500
D5020 Lighting and Branch Wiring	\$12.00	\$1,662,000
D5030 Communications & Security	\$6.16	\$852,500
D5090 Other Electrical Systems	\$4.04	\$560,000
E1090 Other Equipment	\$5.94	\$822,000
E2010 Fixed Furnishings	\$3.59	\$496,750
E2020 Movable Furnishings	\$7.36	\$1,020,000
F1020 Integrated Construction	\$1.55	\$214,120
G1020 Site Demolition and Relocations	\$0.86	\$119,000
G1030 Site Earthwork	\$1.03	\$142,800
G2020 Parking Lots		Excl.
G2030 Pedestrian Paving	\$0.95	\$131,400
G2040 Site Development	\$1.08	\$150,000
G2050 Landscaping	\$0.52	\$71,500
G3010 Water Supply	\$0.54	\$75,000
G3020 Sanitary Water	\$0.22	\$30,000

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PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Elements (Unifomat II - Level 3) Summary

Gross Floor Area: 138,500 SF
Rates Current At March 2016

Description	Cost/SF	Total Cost
G3030 Storm Sewer	\$1.26	\$175,000
G3060 Fuel Distribution	\$0.14	\$20,000
G4010 Electrical Distribution	\$0.72	\$100,000
G4020 Site Lighting	\$0.58	\$80,000
G4030 Site Communications & Security	\$0.29	\$40,000
ESTIMATED NET COST	\$229.27	\$31,754,146
MARGINS & ADJUSTMENTS		
General Conditions	6.5 %	\$2,064,019
Bonds & Insurance	3.5 %	\$1,183,636
Overhead & Profit	3.9 %	\$1,365,070
Design Contingency	15.0 %	\$5,455,031
Escalation to 2Q2017	5.0 %	\$2,091,095
ESTIMATED TOTAL COST	\$317.06	\$43,912,997

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PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Elements (Unifomat II - Level 3) Item

Gross Floor Area: 138,500 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
A1010 Standard Foundations				
1 Isolated and continuous footings	SF	138,500	6.00	831,000
48 Elevator pit - complete	EA	2	15,000.00	30,000
			Standard Foundations	\$6.22/SF \$861,000
A1030 Slab on Grade				
3 Slab on grade, incl. base course and vapor barrier	SF	22,000	7.50	165,000
			Slab on Grade	\$1.19/SF \$165,000
A2020 Basement Walls				
102 Concrete basement walls, incl. waterproofing	SF	6,866	54.00	370,764
			Basement Walls	\$2.68/SF \$370,764
B1010 Floor Construction				
5 Concrete structural frame to Lvl 2	SF	21,000	28.00	588,000
18 Wood structural frame to upper floors	SF	95,500	20.00	1,910,000
106 Gypcrete underlayment	SF	95,500	2.75	262,625
			Floor Construction	\$19.93/SF \$2,760,625
B1020 Roof Construction				
6 Wood structural frame to roof	SF	19,100	20.00	382,000
58 Concrete structural frame to podium roof	SF	2,900	28.00	81,200
			Roof Construction	\$3.34/SF \$463,200
B2010 Exterior Walls				
7 Exterior wall assembly; brick veneer/metal wall panel, weather-resistant barrier, rigid insulation, sheathing, flashings, metal stud framing, secondary support steel, vapor barrier, batt insulation, and finished gyp board to inside face of exterior wall	SF	39,361	54.00	2,125,494
107 Allowance for misc. facade enhancements	SF	63,496	5.00	317,480
			Exterior Walls	\$17.64/SF \$2,442,974
B2020 Exterior Windows				
9 Curtainwall	SF	24,135	105.00	2,534,175
10 Vinyl windows to upper floors, operable	SF	12,149	62.00	753,238
			Exterior Windows	\$23.74/SF \$3,287,413
B2030 Exterior Doors				
12 Exterior doors	SF	138,500	2.00	277,000
			Exterior Doors	\$2.00/SF \$277,000

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PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Elements (Unifomat II - Level 3) Item

Gross Floor Area: 138,500 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
B3010 Roof Coverings				
15 Low-slope membrane roof system	SF	19,100	17.00	324,700
94 Standing seam metal roof system	SF	2,900	24.00	69,600
<i>Roof Coverings</i>			\$2.85/SF	\$394,300
B3020 Roof Openings				
16 Skylights - Assumes NIC	Item			Excl.
<i>Roof Openings</i>				Excl.
C1010 Partitions				
17 Partitions	SF	138,500	11.25	1,558,125
19 Allowance for rough carpentry	SF	138,500	0.75	103,875
<i>Partitions</i>			\$12.00/SF	\$1,662,000
C1020 Interior Doors				
20 Interior doors and glazing	SF	138,500	6.00	831,000
<i>Interior Doors</i>			\$6.00/SF	\$831,000
C1030 Fittings				
21 Specialties; Includes markerboards, tackboards, signage, corner/wall protection, toilet fitments, fire extinguishers, etc.	SF	138,500	5.00	692,500
<i>Fittings</i>			\$5.00/SF	\$692,500
C2010 Stair Construction				
22 Steel-stair with wood treads, glass guardrails	Flight	12	40,000.00	480,000
<i>Stair Construction</i>			\$3.47/SF	\$480,000
C3010 Wall Finishes				
24 Wall finishes	SF	138,500	5.00	692,500
<i>Wall Finishes</i>			\$5.00/SF	\$692,500
C3020 Floor Finishes				
27 Floor finishes	SF	138,500	6.00	831,000
<i>Floor Finishes</i>			\$6.00/SF	\$831,000
C3030 Ceiling Finishes				
34 Ceiling finishes	SF	138,500	6.00	831,000
<i>Ceiling Finishes</i>			\$6.00/SF	\$831,000

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PSU Living Learning Center Feasibility Study
Scheme 2 - Concept

Elements (Unifomat II - Level 3) Item

Gross Floor Area: 138,500 SF
Rates Current At March 2016

Description	Unit	Qty	Rate	Total Cost
D1010 Elevators & Lifts				
47 Elevator	Stop	9	40,000.00	360,000
<i>Elevators & Lifts</i>			\$2.60/SF	\$360,000
D2010 Plumbing Fixtures				
56 Plumbing fixtures and pipework, incl. water reclamation	SF	138,500	15.00	2,077,500
<i>Plumbing Fixtures</i>			\$15.00/SF	\$2,077,500
D3090 Other HVAC Systems & Equipment				
51 HVAC; Zoned VRF incl. controls	SF	138,500	27.00	3,739,500
<i>Other HVAC Systems & Equipment</i>			\$27.00/SF	\$3,739,500
D4010 Sprinklers				
52 Fire sprinklers	SF	138,500	3.80	526,300
<i>Sprinklers</i>			\$3.80/SF	\$526,300
D5010 Electrical Service & Distribution				
53 Electrical service and and distribution	SF	138,500	9.00	1,246,500
<i>Electrical Service & Distribution</i>			\$9.00/SF	\$1,246,500
D5020 Lighting and Branch Wiring				
54 Lighting and branch wiring	SF	138,500	12.00	1,662,000
<i>Lighting and Branch Wiring</i>			\$12.00/SF	\$1,662,000
D5030 Communications & Security				
55 Systems; Fire alarm, PA, tel/data, security	SF	138,500	5.00	692,500
104 Wireless card reader	EA	200	800.00	160,000
<i>Communications & Security</i>			\$6.16/SF	\$852,500
D5090 Other Electrical Systems				
100 Rooftop Photovoltaic system - by kW	EA	160,000	3.50	560,000
<i>Other Electrical Systems</i>			\$4.04/SF	\$560,000
E1090 Other Equipment				
11 Allowance for Dining Hall food service equipment, servery casework, etc.	Item			750,000
49 Allowance for residential appliances at resident Lounge areas; refrigerators, microwaves, etc.	Item			24,000
103 Washer and dryer set, commercial grade	Pr	16	3,000.00	48,000
<i>Other Equipment</i>			\$5.94/SF	\$822,000

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