UNIVERSITY of WASHINGTON

MAGNUSON HEALTH SCIENCES (T-WING) RENOVATION PHASE II

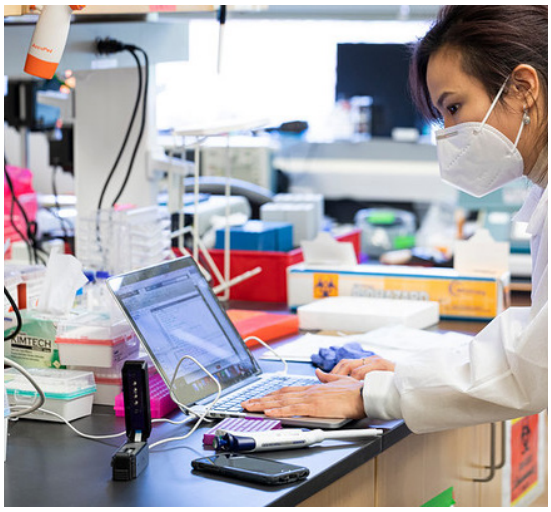
UW Health Sciences is a widely recognized leader in professional education, research innovation, and public service in pursuit of solving the most demanding social and health issues of today with active roles in regional and global initiatives.

Enabled by the Phase I construction of the new Health Sciences Educations Building, this project represents Phase II of the long-range, multi-phase renovation of approximately 400,000 square feet of existing space in the health science complex. Phase II is essential for creating more efficient and higher space utilization. To be competitive, our Health Science education is dependent upon creating space that encourages formal and informal interaction among students, faculty, and staff and fosters our vision of the future for all six Health Sciences schools: Dentistry, Medicine, Nursing, Pharmacy, Public Health and Social Work.

CUTTING EDGE E-LEARNING CAPACITY

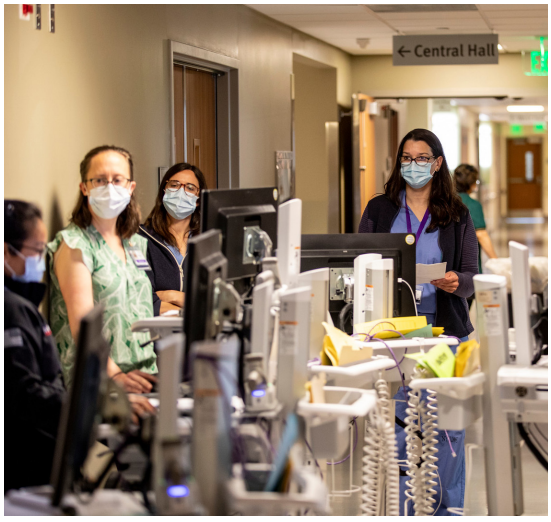
The design will support and enhance in-person experiential learning capacity for students throughout the state as Health Sciences students are embracing technology in ways not imagined a few years ago as a key component of their Health Sciences professional education.

The design will support distance and distributed learning by enhancing technology platforms including I-TECH and others to support simplified access to our learning and teaching opportunities through the state, across the country and around the world.



GEOGRAPHIC REACH

UW health professions have increasingly broad and enhanced geographic reach and influence through: Landmark WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) medical education program; RIDE (Regional Initiatives in Dental Education) program; MEDEX a leading national Health Sciences education program in Physician Assistant education; and other regional public health professions education initiatives throughout the region and state.

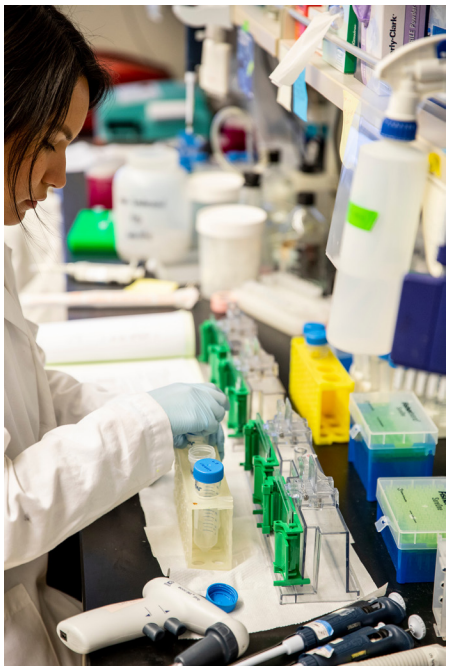


IMPROVED CONNECTIVITY

The design will improve connectivity within the larger Magnuson Health Science Center, the existing campus distance learning locations, and other educational programs physically remote from the Magnuson Health Science T-Wing classrooms and simulation facilities.

QUICK FACTS

OFM Project Number	40000049
Agency Code	360
Agency Contact	Jean Hushebeck jhush@uw.edu | 206-616-3795
Total Building Sq. Ft.	493,496 - Phase II Ttl Sq. Ft. - 75,000
Assignable Sq. Ft.	401,277 - Phase II Assingable Sq. Ft. - 48,750



SCHEDULE

PreDesign	September 2020 - September 2021
Design	October 2021 - June 2023
Construction	July 2023 - August 2025
Full Occupancy	September 2025

BUDGET

2020 Supplemental State Capital Budget Request	$1,000,000
2021-23 Capital Budget Request for Design/Preconstruction	$5,000,000
2023-25 Capital Budget Request for Construction	$58,000,000
Total Project Cost	$64,000,000

FAST FACTS

- All six Health Sciences schools are recognized leaders in healthcare education and research, and are ranked amongst the top few in the world.
- We teach over 8,000 students working toward a wide variety of healthcare and social service research degrees within the schools of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Social Work.
- In 2017-2018, the six schools created 2,209 degrees in the healthcare and social services industry.
- Built in 1973, the T Wing cannot support the space requirements and advanced learning technologies essential for training modern health professionals.
- Current space limits the options for inter-professional experiential learning capacity, impacting accreditation and certification requirements.
- The current facilities condition index for the T-wing is listed as a 3 out of 5 for the overall building, however critical areas in both academic and infrastructure spaces significantly exceed this scoring. Thus, this building is listed as a critical need in deferred maintenance resolution.

2020 PROJECT PROPOSAL CHECKLIST
2021-23 Biennium Four-year Higher Education Scoring Process

INSTITUTION	CAMPUS LOCATION
360 - University of Washington	Seattle
PROJECT TITLE	**FPMT UNIQUE FACILITY ID # (OR NA)**
Magnuson Health Sciences Phase II - Renovation/ Replacement (40000049)	A00358
PROJECT CATEGORY	**PROJECT SUBCATEGORY**
Renovation	Major
PROPOSAL IS	
New or Updated Proposal (for scoring)	Resubmitted Proposal (retain prior score)
☒ New proposal ☐ Resubmittal to be scored (more than 2 biennia old or significantly changed)	☐ Resubmittal from 2017-19 biennium ☐ Resubmittal from 2019-21 biennium
CONTACT	**PHONE NUMBER**
Jean Hushebeck, Director of Finance	206-616-3795

PROPOSAL CONTENT

- ☒ Project Proposal Checklist: this form; one for each proposal
- ☒ Project Proposal Form: Specific to category/subcategory (10-page limit)
- ☒ Appendices: templates, forms, exhibits and supporting/supplemental documentation for scoring.

INSTITUTIONAL PRIORITY

- ☒ Institutional Priority Form. Sent separately (not in this packet) to: Darrell Jennings.

Check the corresponding boxes below if the proposed project meets the minimum threshold or if the item listed is provided in the proposal submittal.

MINIMUM THRESHOLDS

- ☒ Project is not an exclusive enterprise function such as a bookstore, dormitory or contract food service.
- ☒ Project meets LEED Silver Standard requirements.
- ☒ Institution has a greenhouse gas emissions reduction policy in place in accordance with RCW 70.235.070 and vehicle emissions reduction policy in place per RCW 47.01.440 or RCW 43.160.020 as applicable.
- ☐ Design proposals: A complete predesign study was submitted to OFM by July 1, 2020. Please note, funding for the Predesign was provided in March 2020. Due to COVID, we have not been able to complete this work prior to submitting this request for design funding. However, to keep the project on track as a phased renovation, we would like to request design funding now as opposed to delaying the project two years, but will not use that funding until after the Predesign report is completed and submitted to OFM.
- ☐ Growth proposals: Based on solid enrollment projections and is more cost-effectively providing enrollment access than alternatives such as university centers and distance learning.
- ☒ Renovation proposals: Project should cost between 60 – 80% of current replacement value and extend the useful life of the facility by at least 25 years.
- ☐ Acquisition proposals: Land acquisition is not related to a current facility funding request.

2020 PROJECT PROPOSAL CHECKLIST
2021-23 Biennium Four-year Higher Education Scoring Process

- ☐ Infrastructure proposals: Project is not a facility repair project.
- ☐ Stand-alone, infrastructure and acquisition proposals: is a single project requesting funds for one biennium.

REQUIRED APPENDICES

- ☒ Capital Project Report CBS 002
- ☒ Project cost estimate:
  - CBS 003 for projects between $2 million and $5 million
  - Excel C-100 for projects greater than $5 million
- ☒ Degree Totals and Targets template to indicate the number of Bachelors, High Demand and Advanced degrees expected to be awarded in 2021. (Required for Overarching Criteria scoring criteria for Major Growth, Renovation, Replacement and Research proposals).
- ☒ Availability of Space/Campus Utilization template for the campus where the project is located. (Required for all categories/subcategories except Infrastructure and Acquisition proposals).
- ☒ Assignable Square Feet template to indicate program-related space allocation. (Required for Growth, Renovation and Replacement proposals, all categories/subcategories).

OPTIONAL APPENDICES

Attach supplemental and supporting project documentation, *limit to materials directly related to and needed for the evaluation criteria*, such as:

- ☐ Degree and enrollment growth projections
- ☐ Selected excerpts from institutional plans
- ☐ Data on instructional and/or research space utilization
- ☐ Additional documentation for selected cost comparables (acquisition)
- ☒ Selected materials on facility conditions
- ☐ Selected materials on code compliance
- ☐ Tables supporting calculation of program space allocations, weighted average facility age, etc.
- ☐ Evidence of consistency of proposed research projects with state, regional, or local economic development plans
- ☐ Evidence of availability of non-state matching funds
- ☐ Selected documentation of prior facility failures, high cost maintenance, and/or system unreliability for infrastructure projects
- ☐ Documentation of professional assessment of costs for land acquisition, land cleanup, and infrastructure projects
- ☐ Selected documentation of engineering studies, site survey and recommendations, or opinion letters for infrastructure and land cleanup projects
- ☒ Other: Cover Sheet

I certify that the above checked items indicate either that the proposed project meets the minimum thresholds or the corresponding items have been included in this submittal.

2020 PROJECT PROPOSAL CHECKLIST

2021-23 Biennium Four-year Higher Education Scoring Process

Name: Jean Hushebeck Title: Director of Finance

Signature: Jean Hushebeck Date: 8/14/2020

INSTITUTION	CAMPUS
University of Washington	Seattle
PROJECT TITLE	
Magnuson Health Sciences - T Wing Renovation Phase II (40000049)	

SUMMARY NARRATIVE

- Problem statement (short description of the project – the needs and the benefits)
- History of the project or facility
- University programs addressed or encompassed by the project

Problem statement

The Magnuson Health Sciences Teaching Center (T-Wing), constructed in 1972, no longer adequately accommodates expanding course offerings, advanced teaching technologies, and active team-based learning essential for training health care professionals for the 21st Century. Aging facilities and space constraints inhibit inter-professional instructional activities across all six Health Science schools. Outdated systems constrain access to cutting-edge technology essential to supporting in-person, distance and distributed experiential learning, and ultimately the connections with local, regional, and global community partners.

The seven story plus basement facility was constructed prior to modern seismic codes, consists of highly inefficient single pane glazing, is deficient in ADA compliance, has four of its six elevators assessed to be in poor condition, and requires significant mechanical and electrical upgrades to meet current standards. The renovation of existing space will optimize efficiency, allowing the University to absorb operating costs into existing resources.

Enabled by the Phase I construction of the new Health Sciences Educations Building, this project represents Phase 2 of the long-range, five-phase renovation of approximately 400,000 square feet of existing space in the health science complex.

History of the project or facility

Identified in the 2011-2013 State Capital Budget Request 10-Year Plan, the "Health Sciences Teaching Building" long range multi-phase project and subsequent proposal for Phase I emerged as a top priority for the University in supporting our shared vision of service to people locally and globally. Phase I, the new Health Science Education Building, supports the immediate need for shared, modernized instructional spaces while decanting some program functions from the T-Wing in anticipation of Phase II and subsequent phases of renovation and rehabilitation. This enables renovation of the T-wing with minimal interruption to operating existing and evolving pedagogies, while providing continuous improvements that will meet the growing demands of up-to-date educational space for the health science schools.

University programs addressed or encompassed by the project

UW Health Sciences is already a widely recognized leader in professional education innovation and quality. The inter-professional Global Health program, dually based in the School of Medicine and the School of Public Health, and working collaboratively with other UW schools and colleges is renowned worldwide. The renovated facility will transform existing didactic learning spaces into flexible, technologically advanced broad array of learning environments able to adapt to the changing pedagogical needs of the Health Sciences including the Schools of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Social Work. Phase II (and subsequent

phases) will enable the University to meet educational program requirements and accreditation needs while ensuring the T- Wing continues to serve still relevant lecture style classes and foundational lab-based learning.

The University of Washington has a longstanding, university-wide culture of collaboration - a prerequisite to successful professional training, practice, and leadership. This means Health Sciences education has enormous potential to leverage expertise, resources, and research collaborators from across the campus to address health systems and human health issues holistically. For example: the College of Education can provide expertise on educational technologies and interdisciplinary education; the Colleges of the Environment and Built Environments can inform our students on the relationships between human health and the natural and constructed environments; and the Evans School of Public Affairs can shape health promotion and policy decisions.

OVERARCHING SCORING CRITERIA

1. Integral to achieving statewide policy goals

Provide degree targets and describe how the project promotes improvement on 2018-19 degree production totals in the OFM Statewide Public Four-Year Dashboard. Include the degree totals and target template in an appendix.

- Indicate the number of bachelor's degrees awarded at the close of the 2018-19 academic year, and the number targeted for 2021.
- Indicate the number of bachelor's degrees awarded in high-demand fields at the close of the 2018-19 academic year, and the number targeted for 2021.
- Indicate the number of advanced degrees awarded at the close of the 2018-19 academic year, and the number targeted for 2021.

This project will increase the potential number of bachelor and advanced degrees by increasing the quantity, quality and efficiency of the classroom and class lab spaces within the Health Sciences. The UW Health Sciences disciplines are already highly competitive and desired programs. By modernizing the environments that will accommodate collaborative and multidisciplinary learning, the University will simultaneously create greater demand and greater capacity for these programs.

At the close of the 2018-2019 academic year, a total of 13,892 degrees were awarded overall at the University. Of that total, 8,329 were Bachelor's degrees, 4,021 were high-demand field bachelor's degrees and 5,563 advanced degrees. The Health Science schools accounted for a total of 2,412 of the degrees awarded. (Refer to Appendix: 2021 Degree Total Targets.)

2. Integral to campus/facilities master plan

A. Describe the proposed project's relationship and relative importance to the institution's most recent campus/facilities master plan or other applicable strategic plan.
B. Does the project follow the sequencing laid out in the Master Plan (if applicable)? If not, explain why it is being requested now.

The proposed project is consistent with the 2019 Master Plan. A copy of the Master Plan can be downloaded at: UW Campus Master Plan Seattle. The Campus Master Plan reflects the recommendations that evolved out of the UW Health Sciences Precinct Plan (2012-32). The proposed project follows the prioritized sequence for development/renovation identified in the UW Health Sciences Precinct Plan, addressing the comprehensive educational academic program growth, space, and resulting capital needs of the six Health Sciences schools.

The Plan examines the existing resources and key issues to identify several recommendations to support the growth and enhancement of an innovative Health Sciences professional community. The Precinct Plan demonstrated that a four-phase renovation of the existing Magnuson Health Sciences Building T-Wing (currently housing the vast majority of Health Sciences instructional functions) will meet long-term program enrollment growth needs more cost effectively than constructing a replacement building.

The approved Seattle Campus Master Plan shows a significant change in the Health Sciences region of campus, proposing additional view corridors and public access to the waterfront. The long-term goal being to provide more visual and physical permeability by strategically removing portions of the Magnuson Health Sciences Center to enable ease of wayfinding and offer better pedestrian connections and student centric spaces. The city of Seattle supported and advocated for this change in campus land use patterns to support the long-term vision of access to the waterfront. The proposed project is consistent with the Seattle Campus Master Plan's vision for this portion of campus.

3. Integral to institution's academic programs plan

Describe the proposed project's relationship and relative importance to the institution's most recent academic programs plan. Must the project be initiated soon in order to:

A. Meet academic certification requirements?
B. Permit enrollment growth and/or specific quality improvements in current programs?
C. Permit initiation of new programs?

Yes to each question. The Health Sciences Schools require improved quality teaching and research spaces to support advancements in Health Sciences education and research. Modern facilities, including updated classrooms, research laboratories and collaborative student spaces are critical to meeting national academic certification and accreditation requirements. In the highly competitive Health Sciences fields, high quality facilities are necessary for the UW to continue to attract the best and brightest faculty and students. New facilities are also required to accommodate and respond to the rapidly evolving technological requirements of current and future Health Sciences programs. Without such facilitates, it becomes exceedingly difficult for the University of Washington to compete with other institutions for new research, to grow enrollment in these high demand areas, and to initiate new programs.

The fundamental mission of the University of Washington is to provide education, research, and service at a nationally competitive level to the citizens of Washington State. This project contributes to the fulfillment of several core strategic goals as outlined in the University of Washington's Sustainable Academic Business Plan. Launched in 2010 under the umbrella project of Two Years to Two Decades (2y2d), the UW Sustainable Academic Business Plan is based on the vision of more than 3,500 student, faculty and staff who participated in 2y2d focus groups to imagine the UW of the 21st Century. The plan is an evolving framework of long and short-term goals that guide workgroups across the campus, to maintain excellence in teaching, scholarship and research within financial realities. It outlines the following strategic goals and related activities that will keep us strong and well positioned for the 21st Century:

1. **Sustain**
   - Academic excellence and mission
   - Financial Stability
2. **Compete**
   - Attract the best students, faculty and staff
   - Increase and diversify funding
3. **Transform**
   - Embrace technology and interdisciplinary collaboration to meet the needs of a diverse and
   - dispersed student body
   - Invest in people and infrastructure to meet 21st Century challenges

CATEGORY-SPECIFIC SCORING CRITERIA

1. Age of building since last major remodel

Identify the number of years since the last substantial renovation of the facility or portion proposed for renovation. If only one portion of a building is to be remodeled, provide the age of that portion only. If the project involves multiple wings of a building that

were constructed or renovated at different times, calculate and provide a weighted average facility age, based upon the gross square feet and age of each wing.

Constructed in 1972, the T-Wing continues to serve relevant large lecture classes and foundational lab-based learning. However, current infrastructure requires significant investment to prolong the useful life of the building, its functions, and the learning environments while planning for future redevelopment. The T-wing is constructed as three buildings with seismic separations between the west, center, and east portions.

There have been no substantial renovations to the 48-year old T-Wing building. Minor preventative maintenance activities include:

- Replacement of the upper roof in 1999 and lower roofs in 2004;
- Modernization of one of the six elevators (the original elevator manufacturer, Haughton, is no longer in business and parts are not available, making repairs very difficult);
- Upgrades to 2nd and 4th floor west restrooms to make them accessible;
- Installation of a closed loop cooling tower in 2007;
- Replacement of three transformers in the T-Wing East Sport network;
- Installation of three emergency services in 2000;
- Lighting system upgrades to the auditoriums in the early 2000s; and
- Upgrade to the fire alarm system in the 1990s.

Condition of building

A. Provide the facility's condition score (1 superior – 5 marginal functionality) from the 2016 comparable framework study, and summarize the major structural and systems conditions that resulted in that score. Provide selected supporting documentation in appendix, and reference them in the body of the proposal.
B. Identify whether the building is listed on the Washington Heritage Register, and if so, summarize its historic significance.

Constructed in 1972, the T-Wing's relative condition score in 2017 was three, however, the weighted average condition score was lower, at 2.8, per the summary provided in the attached appendix. With T-Wing continuing to serve relevant lecture classes and foundational lab-based learning, current infrastructure requires investment to prolong the useful life of the building, its functions, and the learning environments within, while planning for the future redevelopment of the south campus according to the 2019 Campus Master Plan.

This building is currently not listed on the Washington Historic Register.

2. Significant health, safety, and code issues

It is understood that all projects that obtain a building permit will have to comply with current building codes. Identify whether the project is needed to bring the facility within current life safety (including seismic and ADA), or energy code requirements. Clearly identify the applicable standard or code and describe how the project will improve consistency with it. Provide selected supporting documentation in appendix and reference them in the body of the proposal.

This will be a multi-phased renovation within the Health Sciences campus, which will significantly reduce our deferred maintenance in infrastructure and bring these aging facilities up to life safety and code compliance, while enabling the modernization of classroom and lab spaces for all six schools within the Health Sciences campus. Many of the system-based deficiencies are outlined in the 2012 audit included in the Appendix. Specific details to be addressed in this phase will be outlined in the Predesign study, expected to be completed in September 2021. (Refer to Appendix B: Building Condition Audit.)

3. Reasonableness of cost

Provide as much detailed cost information as possible, including baseline comparison of costs per square foot (SF) with the cost data provided in Chapter 5 of the scoring process instructions and a completed OFM C-100 form. Also, describe the construction methodology that will be used for the proposed project.

If applicable, provide life cycle cost analysis results demonstrating significant projected savings for selected system alternates (Uniformat Level II) over 50 years, in terms of net present savings.

ADJUSTMENT OF EXPECTED COST RANGES

Facility Type: Classrooms	
End Date: August 2025	
Midpoint: August 2024	
Construction Index for Midpoint:	**1.1372**
Expected maximum allowable construction cost in 2019 dollars	**$405**
Expected maximum allowable construction cost at midpoint:	**$461**
Projected Project maximum allowable construction cost:	**$439**
Percentage of OFM Cost Standard	**95%**

Construction Methodology

In accordance with RCW 39.10.300, the University will utilize the alternative public works contracting procedure for the procurement and delivery of the project using the Design-Build method. "Design-build" means a contract between a public body and another party in which the party agrees to both design and build the facility, portion of the facility, or other items specified in the contract. (Refer to Appendix C: OFM Form C-100.)

4. Availability of space/utilization on campus

Describe the institution's plan for improving space utilization and how the project will impact the following:

A. The utilization of classroom space
B. The utilization of class laboratory space

Phase II is critical for the UW by creating more efficient and higher space utilization for the T-Wing. Existing classrooms are unsuitable for active, collaborative learning – the current model for professional health science education. There is a severe shortage of small seminar rooms and team-based classrooms – current classrooms are designed for didactic, lecture-based teaching. The vision for Health Science education at the University of Washington is dependent upon creating space that encourages formal and informal interaction among students, faculty, and staff from all six Health Sciences schools. The T-Wing Renovation improves and expands classroom and lab space on a campus that currently exceed the 22-hour per classroom and 16-hour per station HECB utilization standards. (Refer to Appendix D: Space/Utilization Template.)

5. Efficiency of space allocation

A. *For each major function in the proposed facility (classroom, instructional labs, offices), identify whether space allocations will be consistent with Facility Evaluation and Planning Guide (FEPG) assignable square feet standards. To the extent any proposed allocations exceed FEPG standards, explain the alternative standard that has been used, and why. See Chapter 4 of the scoring process instructions for an example. Supporting tables may be included in an appendix.*

B. Identify the following on form CBS002:
   1. Usable square feet (USF) in the proposed facility
   2. Gross square feet (GSF)
   3. Building efficiency (USF divided GSF)

Compliance with FEPG Space Standards:

The project will be consistent with FEPG standards for defined space types. (Refer to Appendix E: Space Allocation/FEPG Template.)

Space Efficiency: (Refer to Appendix F: Form CBS002.)

Gross Square Feet	Usable Square Feet	Space Efficiency
75,000	48,750 proposed	65% proposed**

Our goal is to create functional program spaces to meet or exceed Facilities Evaluation and Planning Guide (FEPG) standards, retain existing spaces that are generally in compliance, and prioritize expanded collaboration areas towards a more balanced mix of spaces for the Health Science schools. Phase II of this multi-phase project is planning to target approximately 48,750 USF of general use classrooms, general use training labs and existing non-library student study and lounge areas as the primary focus for expanding and updating inter disciplinary teaching and collaborative spaces.

The T-Wing has approximately 235,000 ASF, with 150,000 SF dedicated to instructional and related support services space with the majority of the remainder consisting of the large Health Sciences University Library and Information Support. Nearly all of this space, the educational heart of the Health Sciences at UW, lacks the flexibility and advanced technologies required for educating our future health sciences professionals.

In the 2013-12 academic year, an extensive review of learning spaces on the UW Seattle campus was performed to identify classroom needs in light of changing instructional pedagogies and rising demand for general-assignment classroom space. This review, the Learning Space Assessment Study, explored utilization rates, scheduling practices, technology deployment and the physical conditions of classroom spaces. The study recommends a utilization rate of 67% based on best practice common among peer institutions. Recent data shows actual core utilization rates of 82.5% in general use classrooms and over 72% in core class labs, significantly higher than recommended rates. (Refer to Appendix G: Utilization Heat Maps.)

6. Adequacy of space

Describe whether and the extent to which the project is needed to meet modern educational standards and/or to improve space configurations, and how it would accomplish that.

Both the current classroom space and the current laboratory space for the University of Washington exceed the Higher Education Coordinating Board (HECB) utilization standards. Classroom space exceeds HECB standards by 3%, and class lab space exceeds the HECB utilization standard by 2%. Existing classrooms are unsuited to active, collaborative learning – the current model for professional health science education.

Phase II is essential for creating more efficient and higher space utilization for the T-Wing. To be competitive our Health Science education is dependent upon creating space that encourages formal and informal interaction among students, faculty, and staff and fosters our vision of the future for all six Health Sciences schools:

CUTTING EDGE E-LEARNING CAPACITY
The design will support and enhance in-person experiential learning capacity for students throughout the state as Health Sciences students are embracing technology in ways not imagined a few years ago as a key component of their Health Sciences professional education. The design will support distance and distributed learning by enhancing technology platforms including I-TECH and others to support simplified access to our learning and teaching opportunities through the state, across the country and around the world.

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IMPROVED CONNECTIVITY

The design will improve connectivity within the larger Magnuson Health Science Center, the existing campus distance learning locations, and other educational programs physically remote from the Magnuson Health Science T-Wing classrooms and simulation facilities.

TEMPLATES REQUIRED IN APPENDIX FOR SCORING

- Degree totals and targets - Appendix A
- Availability of space/campus utilization Appendix D
- Program-related space allocation Appendix E

Additional Appendix Items:

- Appendix B – Building Audit
- Appendix C – Form C-100
- Appendix F – form CBS002
- Appendix G(1) & G(2) – Classroom Utilization Heat Maps

APPENDIX A

Degree Totals and Targets Template

Required for Overarching Criteria for Major Growth, Renovation, Replacement and Research Proposals

Institution: University of Washington

Campus location: Seattle, Washington

Project name: Magnuson Health Science - T Wing Renovation - Phase 2

	Increase in bachelor's degrees awarded	Increase in bachelor's degrees awarded in high-demand fields	Increase in advanced degrees awarded
2018-19 Statewide Public Four-Year Dashboard (a)	8,308	4,040	5,557
Number of degrees targeted in 2021 (b)	8,779	4,599	6,056
2018-19 totals/2021 target (a/b)	94.6%	87.8%	91.8%
Score:	**1.00**	**1.00**	**1.00**

Comments:

Targets for years 20-21 were estimated at : 2.8% for bachelors, 6.7% for bachelors in high demand and 4.4% for advanced degrees based on year over year increases.

November 20, 2009 FacNum 1168

Revised Mechanical July 12, 2012

Consolidated Building Audit for: By: Campus Engineering

MHSC T- Wing

General:

This audit reflects the status of existing building systems, components and infrastructure for **Magnuson Health Sciences Center T-Wing** and includes known maintenance and/or operational issues related to those systems, along with a rating of their general condition. Also included are preliminary recommendations for addressing the issues noted.

This audit is the result of a "brief" site investigation and document search of University records. Please note that our audit does not replace the need for a detailed investigation and evaluation of the building and its components. Existing conditions and known problems are pointed out here for awareness and so that they are addressed early in future planning and scoping activity.

Description:

T-Wing was designed by Naramore Bain Brady & Johanson (nbbj) in 1970 and construction completed in 1972. The building has a concrete and steel framed structure. The exterior is clad with architectural precast concrete wall panels and single glazed windows with aluminum frames. Penthouses are stucco exterior over steel framing.

T-Wing consists of seven floors with a basement. The building is divided into 3 separate structures with 2 seismic joints that extend North-South through the building. The building is also isolated from the original Health Science Center by a continuous seismic joint.

The building houses the School of Nursing including large lecture halls, teaching laboratories, departmental offices and the Medical School library.

Table of Contents:

Service Entrance Equipment
Emergency Power
Distribution System
Lighting
Lighting Controls
Systems and Communications

Site:

General:

The building is located along NE Pacific Street and ties directly into the original buildings of the Magnuson Health Science Center. The building is separated from NE Pacific Street by a wide paved pedestrian sidewalk and a narrow, sloped planted yard. There is an uncovered concrete bridge at level 4 connecting this building to the main campus across NE Pacific Street. At the east end of the building is Magnuson Court and the main entrance to the Health Science Center and entranced to the School of Nursing offices. At the west end is a grassy court yard serving this building and adjacent wings of the Health Science Center.

Hardscape: *Parking, Streets, Walks, Curbs.*

Background/ Problem:

Magnuson Court has a cast-in-place concrete pavement over a built-up waterproofing membrane and rigid insulation. The portion of this court north of the A-Wing wall is concrete slab on grade. This northern area of concrete paving has sections that are out of level and heaving. This creates a tripping hazard.

Recommendations:

Reset or grind down the sections of precast concrete paving that are out of level and heaving. Perform periodic cleaning and maintenance to extend useful life.

Background/ Problem:

T-Court has a cast-in-place concrete pavement over a built-up waterproofing membrane and rigid insulation. Pavers are in serviceable condition/

Recommendations:

Perform periodic cleaning and maintenance to extend useful life.

Furnishing: *Benches, Trash Receptacles.*

Background/ Problem:

Wood benches in T-Court have moderate dry-rot. Some areas are rotted to the point where sections of the bench could break off soon.

Recommendations:

Replace or repair the wood benches.

Civil:

General:

Tunnel

There are two locations where the UW tunnel system accesses this facility. These locations are at the south west and south east ends of the structure. The westerly location is referred to as ST-4 and the easterly is HS-0. ST-4 was constructed in 1963 and HS-0 was originally built in 1947. The 1970 construction of the T-wing building required modification to the tunnel system resulting in these two tunnel systems connected together under T-wing.

Utility Services

Nearly all the Civil utilities (water, fire, sanitary sewer, storm drain and natural gas) constructed for this facility are original to the 1970 structure.

Water/Fire

There are two sets of Water and Fire services. All are 8-inch and enter T-wing from the north east and south east sides of the building. These services connect to a 12-inch water line running parallel to NE Pacific St.

Sanitary Sewer

The sanitary sewer services connect to the building in two locations. Both are located about mid building. A 12"service flows north connecting to the 108-inch King County Metro sewer trunk in NE Pacific St and a 4" exits the building on the south side, flows north west eventually connecting to the same KC Metro sewer trunk in NE Pacific St just off the south east corner of Health Sciences Annex 4.

Storm Drain

The storm runoff from the roof of T-wing is connected to a conveyance system located along the NE Pacific ST side of the building. This conveyance picks up yard drains along this area and together flows northwest and then southwest between Hitchcock and J wing. Aproximately 1500 feet of pipe later this conveyance directly enter Portage Bay next to the Marine Sciences facility. There are no stormwater quantity or quality facilities between T-wing and Portage Bay.

Natural Gas

The original Gas service and meter in this building was constructed in 1970. The 2-inch service came from the south side on the north west area near the stairs. A high pressure service and meter were added crossing under NE Pacific ST to the north west corner of T-wing. The 4-inch service did not show up on 1996 Washington Natural Gas asbuilts but did appear on 1997 UW record drawings (882-RU-1) for Gas Distribution within the Health Sciences / Medical Center. This master meter serves all the adjoining medical center facilities along with T-wing.

Storm Water Management:

Background/ Problem: *Water Quality*

There are no water quality facilities between T-wing and portage Bay.

Recommendations:

Changes to building footprint may require storm water quality mitigation measures.

Background/ Problem: *Courtyard Drains*

Storm drains associated with the courtyard areas should be inspected and cleaned.

Recommendations:

Any signs of excess siltation or damage will require a possible change in the design of courtyard drains

Background/ Problem: *Storm Conveyances*

There are a mix of yard drains and catchbasins which require inspection and cleaning. Footing drains connect to the tunnel drains.

Recommendations:

Inspect perimeter storm conveyance system and replace old or defective catchbasins, yard drains and pipe. Footing drains should be replaced due to age.

Utilities: *Sewer/Water/Gas/Power/Fire*

Background/ Problem:

There are no ongoing problems with utility services to T-wing. However, 39 years of usage will require replacement due to age. These replacements should extend to the main connections points from the building.

Recommendations:

Natural Gas:

There is natural gas serving this building, service should be inspected and replaced due to age.

Water/Fire:

The fire and water services should be replaced due to age.

Sanitary Sewer:

The sewer service should be replaced due to age. TV inspection of the sewer service will determine if there are any other problems with the sewer.

Architectural:

General:

T-Wing at Magnuson Health Science Center is clad with architectural "Columbia Buff" precast concrete panels popular at the time of construction for their integral light tan color. Exterior walls at stairs and toilet room "cores" are of cast-in-place "Columbia Buff" concrete. Fenestration is single glazed in continuous, dark anodized aluminum "ribbon" windows.

The building is isolated from the original Magnuson Health Science Center by a continuous seismic joint. This joint is generally concealed below plaza pavers and is exposed at all other exterior locations.

Exterior Walls & Windows:

Background/Problems:

The façade is CIP and precast concrete panels. Over time, rain and air-borne solids stain the concrete, especially near the tops of walls. Sealant in panel joints has a general life expectancy of 15-years, and this building is past due for new sealant.

Recommendations:

Clean exterior concrete surfaces and apply a penetrating sealer. Replace sealant at panel joints within 5-years.

Background/Problems:

Windows are dark bronze anodized aluminum framed with single pane glazing. All are in good condition. Sealant around windows where they abut concrete walls is serviceable but past it's expected useful life.

Recommendations:

Replace windows with energy efficient units that meet the energy code. Replace sealant at same time panel joints are re-sealed.

Background/Problems:

Exterior doors are a combination of painted hollow metal at stairway exits and dark bronze anodized aluminum storefront type at main entries. All are in good to fair condition with some rust at the hollow metal doors.

Recommendations:

Replace exterior doors at end of life cycle or during renovation.

Roofs & Horizontal Waterproofing:

Background/Problems:

The roof is modified bitumen with a white granulated cap sheet. The upper roof was replaced in 1999. The lower roofs were replaced in 2004.

Stainless steel flashing and copings were added during the two roofing projects.

Roofing and flashings are in good condition.

Recommendations:

Maintain scheduled maintenance for useful life of the roofs.

Floors & Finishes:

Background/Problems:

Floors are generally VCT/VAT in corridors, classrooms, labs and offices. Support, mechanical and accessory spaces have sealed concrete. Some offices have carpet. Restrooms have ceramic tile. The 1st floor has a section of seamless epoxy flooring in good condition. Conditions of finishes varies dependent on use of the area, but are generally good to fair.

Recommendations:

Study/survey the specific area of renovation to determine the actual condition of materials and condition. Replace all floor finishes affected by renovation.

Interior Partitions & Finishes:

Background/Problems:

Walls are painted GWB in generally good condition. Restrooms have full height ceramic tile walls in generally good condition. The 1st floor has a section of glazed masonry in addition to painted concrete and CMU in good condition.

Recommendations:

Study/survey the specific area of renovation to determine the actual condition of materials and finishes. Retain and refinish walls unaffected by renovation.

Ceilings & Finishes:

Background/Problems:

Ceilings are a combination of exposed painted concrete with painted exposed ducts, pipes and conduit and suspended ACP. Restrooms have painted GWB ceilings. All are in generally good to fair condition.

Recommendations:

Study/survey the specific area of renovation to determine the actual condition of materials and finishes. Refinish ceilings affected by renovations.

Doors & Hardware:

Background/Problems:

Doors are solid core wood, dark stained with a clear finish, generally. Some are equipped with lever handles however most have knob hardware. Some office doors and others have glass relites. All doors are in generally good condition. Stairway doors are painted hollow metal and are in generally good to fair condition.

Recommendations:

Retain and refinish all doors unaffected by renovation. Replace at end of life cycle.

Elevator:

Background/Problems:

There are six elevators, #s 171, 172, 174, 176, 177 & 178, and three empty hoistways, #s 170, 173 & 175, in this building.

Elevator #171 is a traction type with a capacity of 3,500 lbs. It has been modernized with a new non-proprietary controller however this was an emergency upgrade and no other work was accomplished.

Elevator #172 is a two stop hydraulic type with a capacity of 1,500 lbs. It serves the T-Wing library and is poor condition. The future and present needs of the library needs to be assessed to determine whether this unit needs to be upgraded or replaced.

Elevators #s 174, 176, 177 & 178 are all traction type with capacities from 3,500 to 4,500 lbs. All are in poor condition.

All elevators were originally manufactured by Haughton and installed in 1972. Haughton is no longer in business and parts are not available making repairs very difficult.

Recommendations:

Elevators #s 172, 174, 176, 177 & 178 are at the end of their life cycle and require upgrades per the FDI before component failures. As replacement parts are unavailable parts will have to be scavenged from the other like elevators to keep critical elevators in operation. Elevator #171 needs the remaining systems that were not included in the emergency work above, upgraded to prolong its life.

Background/Problems:

The original library, 2-stop elevator will be upgraded or replaced depending on whether the library stays or if a new tenant occupies the north half of the ground and main floors.

Recommendations:

None.

Accessibility:

Background/Problems:

The north entry off the bridge over Pacific Ave. and the south entry off of C-Court are accessible with automatic door operators. The west entry at the 2nd floor does not have an automatic door operator however the pull force may be within ADA criteria for accessibility. 2nd floor north entry is not accessible due to stairs for the elevation difference between the street and 2nd floor. The building is also accessible from adjacent wings of the Health Science Center.

The 4th floor and 2nd floor west restrooms are accessible. All others are not due to inadequate clearances and fixture deficiencies. 2nd floor central restrooms are signed as accessible however due to inadequate clearances are not.

Recommendations:

Accessible entries are adequate to technically meet accessibility requirements. Other entries should be equipped with automatic door operators if the program requires grater accessibility.

Upgrade restrooms when an adjacent area is renovated.

Structural:

General:

T-Wing is constructed as three buildings with seismic separations between the west, center and east portions. The structure consists of moment resisting steel frames encased in concrete. The foundation is supported on square column footings, continuous wall footings and caisson footings. Typical floors are reinforced concrete slabs on steel girders. The exterior is clad with precast concrete panels.

Codes:

Background/Problems:

The building was designed and constructed prior to the adoption of modern seismic codes. The building has survived the major earthquake of 2001 in this area.

Recommendations:

Evaluate seismic load-resisting ability of the existing lateral system base on ASCE 31-03 to determine if it meets a "Life Safety" performance level (as defined by ASCE 31).

Structure:

Background/Problems:

Located at the east portion of first floor, the Motor Control Center is resting on a concrete pad. Is the anchoring system adequate for seismic forces?

Recommendations:

Check anchor bolts for earthquake forces.

Background/Problems:

In the first floor mechanical room, there are several access steel stairs and landings which are inadequately supported.

Recommendations:

Provide lateral braces for steel stairs and landings.

Background/Problems:

There are pipes and equipment which laterally connect to the concrete wall 2' away, but no lateral support in the direction parallel to the wall.

Recommendations:

Install lateral braces in the direction parallel to the wall.

Background/Problems:

In the basement mechanical room, many overhead pipes and ducts are hanging with suspended steel rods.

Recommendations:

Install lateral steel braces.

Background/Problems:

In the West stairwell to the roof, there is water penetration through walls.

Recommendations:

Patch cracks along the wall construction joints.

Background/Problems:

On the exterior steel stair to the upper roof, the handrail is on one side of stair only.

Recommendations:

Install handrail on the opposite side.

Background/Problems:

One steel tank is suspended from the ceiling without lateral bracing.

Recommendations:

Install lateral braces.

Mechanical:

General:

The Magnuson Health Science Center T-Wing was built in 1972. Separate heating, ventilating, and air conditioning (HVAC) systems were provided. It is currently a laboratory with some classroom/office areas. The building has 237,498 ventilated square feet. MHSC T-Wing has a centralized vivarium area on the first floor and a few decentralized areas scattered throughout the building.

Utilities:

Background/Problems:

T-Wing is served by 12" campus cooling water (CCW), 6" high pressure steam (185 p.s.i.), 2-1/2" condensate, and 2" compressed air. The utilities enter the building through the Health Sciences Tunnel at manhole HS-0. The steam valves do not have positive shutoff. Steam traps are leaking. Piping insulation appears to have asbestos containing material (ACM).

Recommendations:

The condensate piping in the T-Wing is in poor condition and should be replaced. Provide meters for the CCW and condensate system. Provide new steam valves and steam traps at header. Abate piping insulation.

Plumbing:

Background/Problems:

There are two 8" domestic water system mains (east and west ends) that serve T-Wing from Northeast (NE) Pacific street. The plumbing fixtures are old and most of the toilet and urinal flush valves appear to not be low flow. The acid resistant waste system is a combination of borosilicate glass and cast iron. The 4" sewer system exits the T-Wing south through adjacent wings. The 10" sewer exits the building out through the north to NE Pacific street. The sanitary sewer condition is satisfactory. Much of the piping insulation appears to have ACM and most of the piping and valves also do not have labeling. There is a 4" high pressure gas main gas main that has a meter but it is not compatible with the direct digital control (DDC) system. The gas main also does not appear to have a seismic shutoff valve. There is a lack of emergency gas shut-off for the laboratories. The roof does not have overflow drains. There are a miscellaneous number of stills providing deionized (DI) water. These stills waste water to produce the DI water. There are two vacuum pumps located in the mechanical room 050. The rain leaders/storm drainage discharge to a Portage Bay outfall. The vivarium areas do not have dedicated or redundant plumbing services. . There are some cross connections for the LCW and LHW primarily at the 2nd floor sink mixing valves. The potable water heaters in mechanical room T-10 have exceeded their service life.

Recommendations:

Provide meters for water and gas systems. Provide separate waste and acid resistant waste piping systems. Replace acid resistant waste piping. Provide emergency gas shut-off valves for labs. Provide gas seismic shutoff valve at gas main. Provide a gas meter that can be connected to a DDC system. Replace toilet and urinal flush valves with low flow valves. Provide new reverse osmosis/deionized (RO/DI) system to replace existing stills. Abate pipe insulation with ACM. Provide overflow roof drains and tie into existing rain leaders. Provide new labeling for the existing piping and valves. Provide dedicated and redundant plumbing services for the vivarium areas. Remove sinks or replace sink mixing valves. Replace potable water heaters in mechanical room T-10.

Ventilation:

Background/Problems:

This building is served by twelve main air handling systems, four for the west, four for the east, two for the penthouse, and one each for the mechanical and electrical rooms. The air handling units are all 100% outside air/100% exhaust. The building outside air intakes (typ. of 6) are located in the penthouse roof and face NE Pacific street. The ventilation system is dual duct with perimeter heat. The ductwork is dirty and has many leaks. Most of the ductwork is located in ceiling spaces that has ACM. There are a number of individual fume exhaust fans. Much of the existing heating, ventilating and air conditioning (HVAC) equipment and ductwork are not labeled. There is a centralized vivarium area on the first floor that is served by the supply fan, SF-6, and exhaust fans, EF-1 & 2. These vivarium fans do not have redundancy.

Recommendations:

Replace ductwork. Provide variable frequency drives (VFDs) for the fans. Replace fan control valves. Air Balance T-Wing. Provide labeling for the existing HVAC equipment and ductwork.

Heating:

Background/Problems:

T-Wing has a perimeter heating system that is fed from the mechanical room 050. The perimeter heating system is turned off during the summer months. The heat exchangers are past their service life. The vivarium does not have dedicated and redundant heating systems. The AHU steam traps and coils should be replaced.

Recommendations:

Replace heat exchangers. Provide dedicated and redundant heating systems for the vivarium. Provide new AHU steam coils and traps.

Cooling:

Background/Problems:

A closed loop cooling tower (756 gpm) was installed in 2007 and is located in the penthouse mechanical room. The condenser water system has a Dolphin non-chemical water treatment system.

Recommendations:
Provide chemical treatment equipment for condenser water loop.

Controls:

Background/Problems:

The T-Wing control system is pneumatic and is in good shape. This pneumatic air is supplied from the central campus plant air and has an air dryer located in the basement mechanical room. There are some Johnson Control DDC controls.

Recommendations:
If there is a major renovation for T-Wing, the pneumatic control system should be replaced with a DDC system. Provide commissioning for the building systems.

Miscellaneous:

Background/Problems:
The T-Wing has an 8" fire service with the main valve located in the basement mechanical room. The sprinkler heads are old style. The fire protection backflow preventers and shut-off valves are beyond the service life and replacement parts are difficult to obtain.

Recommendations:
Replace the existing fire sprinkler heads with rapid response heads. Replace the fire protection backflow preventers and shutoff valves.

Electrical:

General:

T-Wing is fed 13.8 kV from the three feeders WA1, WB1, WC1. These feeders start at the West Receiving Station pass through MHA and MHB and then in Ductbank go to the T-Wing corridor. There are three spot networks fed by the feeders: T-WingWest, T-Wing Central and T-Wing East. The primary switches for the feeders WA1, WB1, and WC1 that are on the feeders to the Spot Networks are General Electric Breakmaster switches located on the basement floor of TWING in the cable tray corridor. These are older switches and are not barriered switches which now are our campus standard. There are a total of nine of these GE switches. The manufacture date for these switches was not found on any nameplate. As the 480 volt transformers and substations that these switches feed power to were installed in 1972 they are at least 36 years old.

The transformers on the spot networks of TWING are 1000kVA 480/277 volt transformers. For the purposes of this audit I have created fields for the transformers of each spot network see below.

Utilities:

Background/Problems:

The transformers of the T-Wing West Spot Network are fed from 13.8 kV feeders WA1, WB1, and WC1. The transformers are GE network transformers, 1000kVA, oil filled, class OA. Each holds 350 gallons. There is a sticker from EH+S indicating they contain PCB material. A manufactured date was not on the nameplate of the transformers. The transformers appear to be in good condition. No leaks were noticed around any of them. The contract that installed these transformers was most likely Health Sciences Phase 1 as the switchboards that they feed were installed then. This was in 1972 so the transformers would now be 37 years old.

Recommendations:

In a future major renovation replace the transformers with non-PCB units.

Background/Problems:

The three transformers of the T-Wing Central Spot network are 1000 kVA 13.8kV-480/277 volt GE Network Transformers. They were installed in the Health Sciences Teaching increment job in 1972. All three transformers are fed by interlocked armored cable that was installed in 1999. These are fluid filled transformers class OA with 95kV BIL on the high side and 30kV on the low side. The temperature reading on the temperature gauge was reading 75 centigrade.

Recommendations:

In a future major renovation replace the transformers with non-PCB units..

Background/Problems:

The three transformers of the T-Wing East Spot network are 1000 kVA 13.8kV-480/277 volt GE Network Transformers were recently replaced. They are now ABB dry type transformers

Recommendations:

No action required as the transformers are in good condition.

Service Entrance Equipment:

Background/Problems:

T-Wing West is fed 13.8kV power from feeders WA-1, WB-1, and WC-1. There are three GE Breakmaster switches located on the basement floor in the cable tray corridor that switch the power to T-Wing West. All of these are unbarriered switches. The switchgear fed by the T Wing West spot network transformers are GE type AKD-5 switchgear. They were installed in 1972. The main is a 1600 amp frame size LV power circuit breaker in the each switchgear. All the mains and feeder breakers of the T Wing West spot network switchgear have been retrofitted with Cutler Hammer Westinghouse Digitrip RMS Trip Units. Each switchgear appears in good condition. On each board there are cover plates in the instrument sections that are missing due to former meters, etc. having been removed and no cover plate provided. The mains have an interrupting rating of 50000 symmetrical amps at 480 volts.

Recommendations:

Replace the missing cover plates. The main breaker on substation 2 ha2 a solenoid or something that keeps cycling. This was reported to the Health Sciences Zone Shop 17 and needs to be checked and repaired if necessary. As the switchgear is now 37 years old consideration should be given to renovating the power breakers in the future.

Background/Problems:

T-Wing Central is located in Room T161. Electrical service is provided via 13.8 kV power from feeders WA1, WB1, and WC1 brought into the room via interlocked armored cables on the ceiling. There are three GE switches located on the basement floor of TWING in the cable tray corridor. These switch the 13.8 kV power to the T-Wing Central spot network transformers. The three GE switches in the basement corridor are 150 TC PS4 (switches feeder WA1), 150 TC PS5 (switches feeder WB1), and 150 TC PS6 (switches feeder WC1). All three of these switches are older GE Breakmaster switches.

Recommendations:

The GE Breakmaster switches that switch the 13.8kV to the network transformers are not barriered switches which is our standard now. In the future consideration should be given to replacing these with barriered switches. As the switchgear is now 37 years old consideration should be given to renovating the power breakers in the future.

Background/Problems:

T-Wing East is provided 13.8 kV power via switches 150 TE PS1, 150 TE PS2, and 150 TE PS3. These are located on the basement floor in the cable tray corridor. They are older GE Breakmaster switchgear. From these three switches interlocked armored cable goes up one level to floor one and enters the T-Wing east electrical room suspended from the ceiling. The T-Wing East spot network switchgear is GE type AKD-5 switchgear. There is a concern that not exercising these breaker once in a while could be a problem. There has been a case where the breaker was opened and the electricians could not get it to close. These breakers are now 37 years old.

Recommendations:

In a future renovation replace the Breakmaster switches with barriered switches. The switchgear is now 37 years old and consideration should be given to renovating the power breakers in the future.

Emergency Power:

Background/Problems:

Emergency Power for T-Wing is fed from Manhole HSO and Room T050. From Manhole HSO there are elbows which tap feeder GE10. A 2/0 Interlocked Armored Cable then goes to room T113 (T-Wing East). There a fused (85E) S+C switch (150-PS34) switches the feeder GE10. On the load side of this switch is a 150 kVA transformer (150-TR34) that provides emergency power to TWING East. Similarly, In Room T161 (T-Wing Central) is fed from feeder GE10 with 2/0 interlocked armored cable extending to an S+C switch. There is one 225 kVA 4160/2400-480/277 volt transformer which provides emergency power to TWING central. Also from Room T050 elbows tap feeder GE10 and a 2/0 Interlocked armored cable feeder feeds power to fused (125E) switch 150-PS14 that feeds power to the 4160/2400-480/277 volt 300 kVA transformer 150-TR14 that feeds emergency power to T-Wing West. See Drawings 8080M150 and 8080B150 for more information on this system.

Recommendations:

No action is required at the present time. The three emergency services were installed around 2000 and are less than 10 years old. In the future the emergency power panels could be replaced or another panel provided where needed as some panels have used all their breaker spaces.

Background/Problems:

The emergency power system in T-Wing West is fed from an S+C switch that switches 4.16 kV feeder G10. Its load is transformer 150 TR14, a 4.16kV-480/277 volt 300 kVA dry type transformer. This transformer's loads are two circuit breakers 150 CB 14 (225A) and 150 CB 15 (225A) that switch power to two Russoelectric transfer switches 150 AT15 and 150 AT14. 150 AT 15 feeds a 42 circuit panel with a 225 amp main. 150AT 14 feeds a GE AV Line 400 amp switchboard with a 225 amp main.

Recommendations:

Both the Life safety and Optional Standby system equipment are in good condition. It would be wise to clearly label the Life Safety panel and the Optional Standby panel. The 42 circuit panel has a 225 amp main and two 100 amp breakers in use. There is no panel schedule for this panel when this audit was done.

Background/Problems:

Emergency power for T-Wing east is fed from Manhole HSO. From Manhole HSO there are elbows which tap feeder GE10. A 2/0 Interlocked Armored Cable then goes to T-Wing East. There a fused (85E) S+C switch (150-PS34) switches the feeder GE10. On the load side is 150kVA dry type transformer 150 TR 34. The load side of 150 TR 34 feeds a circuit breaker 150 CB 34 which switches power to a Russoelectric Transfer switch. The transfer switch feeds 140 SB 4 which is a 480 volt switchboard with a 225 amp main breaker. This switch board was installed in 1972 while all the gear on the line side is new as of 2002. There are two beakers on 150 SB4 which feed transformer T16 and the emergency riser for T Wing East which include Panels 1Y-7Y.

Recommendations:

The indicating light for the normal position was not working on the transfer switch it needs replacement. Panel 1Y is maxed out with regards to breaker capacity. In the future more emergency capacity may be desired on this emergency riser.

Background/Problems:

The T-Wing Central Emergency system has been upgraded. Feeder GE10 at 4.16 kV via HSO EL1 comes into the room overhead to a new S+C switch (manufactured in 2005) which switches Feeder GE10. The load side of the switch provides power to 4.16kV/2400-480/277 V transformer 150T TR24. This is a 225 kVA dry type transformer. The transformer then feeds 150 CB 24 which is a 225 amp circuit breaker which feeds transfer switch 150 AT 24. This transfer switch is a 400 amp rated Russoelectric dual motor operated RMTD switch. The load side of the ATS feeds 400 amp Cutler Hammer PRL3a panel board 150 SB 24. A 225 amp breaker in 150 SB 24 feeds a 480/277-120/208 volt 150 kVA dry type transformer 150 TR 25. The transformer then feeds a Cutler Hammer panel 150 SB 25. 120 /208 volt feeders from this panel feed several emergency power loads in the building: T-293 EM Power at 150 amps, T-271 Locke Lab and 2-CM+2CMM at 125 amps, and GX 130 at 200 amps.

Recommendations:

This emergency power system is in excellent condition. There is one condition. Panel 150 SB 25 has an incorrect latch assembly so the door does not close correctly.

Background/Problems:

T-West now has a standby equipment branch for future research. See the emergency description above for T-Wing west. There are areas in the building which a standby source would be a good idea. The comparative medicine area (animal quarters) does not have a source of standby power, The Gross Anatomy Training area has no standby power and the morgue also has no standby power. There are also some areas where servers are located that an alternate source would be useful.

Recommendations:

In the future consideration should be given to providing an alternate source of power for the areas described.

Distribution System:

Background/Problems:

The distribution system for T-Wing consists of busway and conduit risers. In the T-West area a busway runs from the basement to the sixth floor. 400 amp plug-in circuit breakers then feeds horizontal busway that is tapped via plug in circuit breakers to feed the panels in the area. There are also three cable and conduit risers, one for emergency power and two for normal power that feed only one panel per floor on each riser. These are all fed from the T-West vault. In the T-Central area again there is a vertical busway and several cable and conduit risers fed from the T-Central vault. Horizontal busway is on the 5th and 6th floors. There are several cable and conduit risers with panels on each floor, several risers that fed only individual panels and an emergency power riser. The T-East area is served by the T-East vault and has just cable and conduit risers to all floors. See Drawings 150 E-36, 150-E-359, 150-E-47 and 150-E-362R for one line information.

Recommendations:

The wiring layout for some areas has been used up with the new equipment such that lack of outlets has become an issue. Distribution boards are dated from the early 70's. They are GE gear. They are in acceptable condition. Future replacement of these distribution boards should be considered as they are now 37 years old.

Background/Problems:

The older MCC's from the 70's are starting to be hard to find parts. There are two large MCC's in the mech rooms in the minus one level. These are GE MCC's 1600 amp 480 volts 22000 AIC units installed in 1972. There is one locked out breaker on the T-Wing West MCC. The busbar to breaker burned off. The MCC is now fed from a main breaker on the other side of the unit. (It is a two sided MCC)

Recommendations:

The MCC's have indicator lights that are not working. Removal of the breaker in the burned section should be considered in the future and refurbishment of the unit. As these are aging MCC's consideration should be given to replacing them in a major remodel.

Background/Problems:

The panel boards date from the early 1970's and many of them have all their breaker spaces in use.

Recommendations:

In the future more panels should be considered as the design of this building was completed in an era where there was less receptacle load capacity needed. Over the years the breaker spaces have been used up in the panels.

Lighting:

Background/Problems:

Many of the auditoriums have had their lighting systems upgraded. There are GERR7 relays-low voltage relays in Auditoriums.

Recommendations:
None at the present time. The renovation of auditoriums has been done recently and the systems are not dated.

Background/Problems:

LED fixtures are starting to fade.

Recommendations:

Replace as needed the LED fixtures.

Lighting Controls:

Background/Problems:

T-Wing has daylight controls for exterior hallway lighting. There is low voltage switching in Exterior corridors and in some rooms. Linear fluorescents have been upgraded to Electronic ballasts and T8 fluorescents.

Recommendations:
In the future the building's various spaces should be brought up to the standards of the energy code.

Systems and Communications:

Background:

The fire alarm system was upgraded to a Simplex 4100U system in the 90's.

Recommendations:
No action required.

Background/Problems:

Access control is with Keys and electronic locks.

Recommendations:
No action required.

Background/Problems:

There is a Simplex Clock system in the building.

Recommendations:

In future remodels supply clocks as needed.

Background/Problems:

There is no public address system in the building.

Recommendations:

In future remodels address whether the occupants would like a system.

Energy Code Compliance:

Background:

The building is not up to the latest energy codes.

Recommendations:

In future renovations bring the building up to the current code requirements.

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2020

Agency	University of Washington
Project Name	Magnuson Health Sciences Phase II- Renovation/Replacement
OFM Project Number	40000049

Contact Information	
Name	Jean Hushebeck
Phone Number	(206) 616-3795
Email	jhush@uw.edu

Statistics			
Gross Square Feet	75,000	MACC per Square Foot	$400
Usable Square Feet	48,750	Escalated MACC per Square Foot	$439
Space Efficiency	65.0%	A/E Fee Class	B
Construction Type	College classroom facilit	A/E Fee Percentage	9.67%
Remodel	Yes	Projected Life of Asset (Years)	50
Additional Project Details			
Alternative Public Works Project	Yes	Art Requirement Applies	Yes
Inflation Rate	2.38%	Higher Ed Institution	Yes
Sales Tax Rate %	10.10%	Location Used for Tax Rate	Seattle
Contingency Rate	10%		
Base Month	August-20	OFM UFI# (from FPMT, if available)	A00358
Project Administered By	Agency		

Schedule			
Predesign Start	September-20	Predesign End	September-21
Design Start	October-21	Design End	June-23
Construction Start	July-23	Construction End	August-25
Construction Duration	25 Months		

Green cells must be filled in by user

Project Cost Estimate

Total Project	**$58,657,381**	Total Project Escalated	**$64,000,002**
		Rounded Escalated Total	**$64,000,000**

STATE OF WASHINGTON
AGENCY / INSTITUTION PROJECT COST SUMMARY

Updated June 2020

Agency	University of Washington
Project Name	Magnuson Health Sciences Phase II- Renovation/Replacement
OFM Project Number	40000049

Cost Estimate Summary

Acquisition			
Acquisition Subtotal	**$0**	**Acquisition Subtotal Escalated**	**$0**

Consultant Services			
Predesign Services	$972,951		
A/E Basic Design Services	$2,201,859		
Extra Services	$715,000		
Other Services	$989,241		
Design Services Contingency	$487,905		
Consultant Services Subtotal	**$5,366,956**	**Consultant Services Subtotal Escalated**	**$5,678,768**

Construction			
GC/CM Risk Contingency	$1,725,000		
GC/CM or D/B Costs	$4,371,000		
Construction Contingencies	$3,000,000	Construction Contingencies Escalated	$3,292,800
Maximum Allowable Construction Cost (MACC)	$30,000,000	Maximum Allowable Construction Cost (MACC) Escalated	$32,928,000
Sales Tax	$3,948,696	Sales Tax Escalated	$4,334,089
Construction Subtotal	**$43,044,696**	**Construction Subtotal Escalated**	**$47,245,859**

Equipment			
Equipment	$2,750,000		
Sales Tax	$277,750		
Non-Taxable Items	$0		
Equipment Subtotal	**$3,027,750**	**Equipment Subtotal Escalated**	**$3,323,259**

Artwork			
Artwork Subtotal	**$318,408**	**Artwork Subtotal Escalated**	**$318,408**

Agency Project Administration			
Agency Project Administration Subtotal	$1,164,183		
DES Additional Services Subtotal	$0		
Other Project Admin Costs	$0		
Project Administration Subtotal	**$1,664,183**	**Project Administation Subtotal Escalated**	**$1,826,607**

Other Costs			
Other Costs Subtotal	**$5,235,388**	**Other Costs Subtotal Escalated**	**$5,607,101**

Project Cost Estimate

Total Project	**$58,657,381**	Total Project Escalated	**$64,000,002**
		Rounded Escalated Total	**$64,000,000**

Cost Estimate Details

Acquisition Costs					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Purchase/Lease					
Appraisal and Closing					
Right of Way					
Demolition					
Pre-Site Development					
Other					
Insert Row Here					
ACQUISITION TOTAL	**$0**		**NA**	**$0**	

Green cells must be filled in by user

Cost Estimate Details

Consultant Services				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Pre-Schematic Design Services				
Programming/Site Analysis				
Environmental Analysis				
Predesign Study	$972,951			
Other				
Insert Row Here				
Sub TOTAL	**$972,951**	**1.0278**	**$1,000,000**	Escalated to Design Start
2) Construction Documents				
A/E Basic Design Services	$2,201,859			69% of A/E Basic Services
Other				
Insert Row Here				
Sub TOTAL	**$2,201,859**	**1.0482**	**$2,307,989**	Escalated to Mid-Design
3) Extra Services				
Civil Design (Above Basic Svcs)				
Geotechnical Investigation				
Commissioning	$100,000			
Site Survey				
Testing	$100,000			
LEED Services	$50,000			
Voice/Data Consultant				
Value Engineering				
Constructability Review				
Environmental Mitigation (EIS)	$100,000			
Landscape Consultant				
Speciality Consultant	$365,000			
Insert Row Here				
Sub TOTAL	**$715,000**	**1.0482**	**$749,463**	Escalated to Mid-Design
4) Other Services				
Bid/Construction/Closeout	$989,241			31% of A/E Basic Services
HVAC Balancing				
Staffing				
Other				
Insert Row Here				
Sub TOTAL	**$989,241**	**1.0976**	**$1,085,791**	Escalated to Mid-Const.
5) Design Services Contingency				
Design Services Contingency	$487,905			
Other				
Insert Row Here				
Sub TOTAL	**$487,905**	**1.0976**	**$535,525**	Escalated to Mid-Const.
CONSULTANT SERVICES TOTAL	**$5,366,956**		**$5,678,768**	

Green cells must be filled in by user

Cost Estimate Details

Construction Contracts				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
1) Site Work				
G10 - Site Preparation				
G20 - Site Improvements				
G30 - Site Mechanical Utilities				
G40 - Site Electrical Utilities				
G60 - Other Site Construction				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0710**	**$0**	
2) Related Project Costs				
Offsite Improvements				
City Utilities Relocation				
Parking Mitigation				
Stormwater Retention/Detention				
Other				
Sub TOTAL	**$0**	**1.0710**	**$0**	
3) Facility Construction				
A10 - Foundations				
A20 - Basement Construction				
B10 - Superstructure				
B20 - Exterior Closure				
B30 - Roofing				
C10 - Interior Construction				
C20 - Stairs				
C30 - Interior Finishes				
D10 - Conveying				
D20 - Plumbing Systems				
D30 - HVAC Systems				
D40 - Fire Protection Systems				
D50 - Electrical Systems				
F10 - Special Construction				
F20 - Selective Demolition				
General Conditions				
Complete Facilities	$30,000,000			
Insert Row Here				
Sub TOTAL	**$30,000,000**	**1.0976**	**$32,928,000**	
4) Maximum Allowable Construction Cost				
MACC Sub TOTAL	**$30,000,000**		**$32,928,000**	

5) GCCM Risk Contingency				
GCCM Risk Contingency	$525,000			
Risk Reward Incentive 4%	$1,200,000			
Insert Row Here				
Sub TOTAL	**$1,725,000**	**1.0976**	**$1,893,360**	
6) GCCM or Design Build Costs				
GCCM Fee	$1,500,000			
Bid General Conditions	$1,500,000			
GCCM Preconstruction Services				
Validation Definition	$700,000			
DB Indirect	$671,000			
Sub TOTAL	**$4,371,000**	**1.0976**	**$4,797,610**	
7) Construction Contingency				
Allowance for Change Orders	$3,000,000			
Other				
Insert Row Here				
Sub TOTAL	**$3,000,000**	**1.0976**	**$3,292,800**	
8) Non-Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0976**	**$0**	
Sales Tax				
Sub TOTAL	**$3,948,696**		**$4,334,089**	
CONSTRUCTION CONTRACTS TOTAL	**$43,044,696**		**$47,245,859**	

Green cells must be filled in by user

Cost Estimate Details

Equipment				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
E10 - Equipment	$1,500,000			
E20 - Furnishings	$1,250,000			
F10 - Special Construction				
Other				
Insert Row Here				
Sub TOTAL	**$2,750,000**	**1.0976**	**$3,018,400**	
1) Non Taxable Items				
Other				
Insert Row Here				
Sub TOTAL	**$0**	**1.0976**	**$0**	
Sales Tax				
Sub TOTAL	**$277,750**		**$304,859**	
EQUIPMENT TOTAL	**$3,027,750**		**$3,323,259**	

Green cells must be filled in by user

Cost Estimate Details

Artwork					
Item	**Base Amount**		**Escalation Factor**	**Escalated Cost**	**Notes**
Project Artwork	$0				0.5% of total project cost for new construction
Higher Ed Artwork	$318,408				0.5% of total project cost for new and renewal construction
Other					
Insert Row Here					
ARTWORK TOTAL	**$318,408**		**NA**	**$318,408**	

Green cells must be filled in by user

Cost Estimate Details

Project Management				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Agency Project Management	$1,164,183			
Additional Services				
Other	$500,000			
Insert Row Here				
PROJECT MANAGEMENT TOTAL	**$1,664,183**	**1.0976**	**$1,826,607**	

Green cells must be filled in by user

Cost Estimate Details

Other Costs				
Item	**Base Amount**	**Escalation Factor**	**Escalated Cost**	**Notes**
Mitigation Costs				
Hazardous Material Remediation/Removal	$3,500,000			
Historic and Archeological Mitigation				
Reimbursabl/other rounding	$235,388			
Permit/Insurance/Connections	$1,500,000			
OTHER COSTS TOTAL	**$5,235,388**	**1.0710**	**$5,607,101**	

Green cells must be filled in by user

C-100(2020)
Additional Notes

Tab A. Acquisition
Insert Row Here

Tab B. Consultant Services
Insert Row Here

Tab C. Construction Contracts
Insert Row Here

Tab D. Equipment
Insert Row Here

Tab E. Artwork
Insert Row Here

Tab F. Project Management
Insert Row Here

Tab G. Other Costs
Insert Row Here

Availability of Space/Campus Utilization Template

2020 Four-year Higher Education Scoring Process

Required for all categories except Infrastructure and Acquisition.

Project Name:	Magnuson Health Sciences - T Wing Renovation Phase II (40000049)
Institution:	University of Washington
Campus Location:	Seattle, Washington

Identify the average number of hours per week each (a) classroom seat and (b) classroom lab is expected to be utilized in Fall 2018 on the porposed porject's campus. Please fill in the green shaded cells for the **campus** where the project is located.

(a) General University Classroom Utilization		**(b) General University Lab Utilization**	
Fall 2019 Weekly Contact Hours	516,214	Fall 2019 Weekly Contact Hours	92,814
Multiply by % FTE Increase Budgeted	0.00%	Multiply by % FTE Increase Budgeted	0.00%
Expected Fall 2020 Contact Hours	516,214	Expected Fall 2020 Contact Hours	92,814
Expected Fall 2020 Classroom Seats	20,518	Expected Fall 2020 Class Lab Seats	5,098
Expected Hours per Week Utilization	**25.2**	**Expected Hours per Week Utilization**	**18.2**
HECB GUC Utilization Standard	22.0	HECB GUL Utilization Standard	16.0
Differrence in Utilization Standard	14%	Differrence in Utilization Standard	14%

If the campus does not meet the 22 hours per classroom seat and/or the 16 hours per class lab HECB utilization standards, describe any institutional plans for achieving that level of utilization.

APPENDIX D

Program Related Space Allocation Template

Assignable Square Feet

Required for all Growth, Renovation and Replacement proposals.

Institution: University of Washington

Campus location: Seattle, WA

Project name: Magnuson Health Sciences -T Wing Renovation Phase

Input the assignable square feet for the proposed project under the applicable space types below:

Type of Space	Points	Assignable Square Feet	Percentage of total	Score [Points x Percentage]
Instructional space (classroom, laboratories)	10	42,965	91.17	9.12
Research space	2		0.00	0.00
Office space	4		0.00	0.00
Library and study collaborative space	10	4,161	8.83	0.88
Other non-residential space	8		0.00	0.00
Support and physical plant space	6		0.00	0.00
Total		**47,126**	**100.0**	**10.00**

OFM

360 - University of Washington
Capital Project Request

2021-23 Biennium

*

Version: 01 21-23 Capital Request

Report Number: CBS002
Date Run: 8/12/2020 6:31AM

Project Number: **40000049**
Project Title: **Magnuson Health Sciences Phase II- Renovation/Replacement**

Description

Starting Fiscal Year: 2022
Project Class: Renovation
Agency Priority: 1

Project Summary

The University of Washington requests $5M of funding in the 21-23 biennium for the design of the Magnuson Health Sciences Phase II - Renovation/Replacement. This funding will continue to support the ongoing, phased renovation of the Magnuson Health Sciences Center (MHSC). This multi-phased renovation within the Health Sciences campus will significantly reduce our deferred maintenance in infrastructure, life safety, code compliance issues, as well as enable modernization of classroom and lab spaces (some instructional spaces are currently at risk of losing accreditation). Funding for construction will be requested in the 23-25 biennium.

Project Description

Overview

Enabled by the Phase I construction of the new Health Sciences Educations Building, this project represents Phase II of the long-range, multi-phase renovation of approximately 400,000 square feet of existing space in the health science complex. Phase II is essential for creating more efficient and higher space utilization. To be competitive, our Health Science education is dependent upon creating space that encourages formal and informal interaction among students, faculty, and staff and fosters our vision of the future for all six Health Sciences schools: Dentistry, Medicine, Nursing, Pharmacy, Public Health, and Social Work.

Cutting Edge E-Learning Capacity

The design will support and enhance in-person experiential learning capacity for students throughout the state as Health Sciences students are embracing technology in ways not imagined a few years ago as a key component of their Health Sciences professional education.

The design will support distance and distributed learning by enhancing technology platforms including I-TECH and others to support simplified access to our learning and teaching opportunities through the state, across the country and around the world.

Geographic Reach

UW health professions have increasingly broad and enhanced geographic reach and influence through: Landmark WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) medical education program; RIDE (Regional Initiatives in Dental Education) program; MEDEX a leading national Health Sciences education program in Physician Assistant education; and other regional public health professions education initiatives throughout the region and state.

Improved Connectivity

The design will improve connectivity within the larger Magnuson Health Science Center, the existing campus distance learning locations, and other educational programs physically remote from the Magnuson Health Science T-Wing classrooms and simulation facilities.

Location

City: Seattle **County:** King **Legislative District:** 043

Project Type

Remodel/Renovate/Modernize (Major Projects)

OFM

360 - University of Washington
Capital Project Request
2021-23 Biennium

*

Version: 01 21-23 Capital Request DRAFT

Report Number: CBS002
Date Run: 8/12/2020 6:31AM

Project Number: **40000049**
Project Title: **Magnuson Health Sciences Phase II- Renovation/Replacement**

Description

Growth Management impacts

The 2019 Campus Master Plan (CMP) is the primary regulatory vehicle for the University's future development, defining both the square footage to be constructed and the geographic location of such development. The CMP applies to the Seattle campus and the University's property located within the Major Institution Overlay, or MIO, and is guided by the City-University Agreement between the University of Washington and the City of Seattle.

Funding

Acct Code	Account Title	Estimated Total	Expenditures Prior Biennium	Expenditures Current Biennium	2021-23 Fiscal Period Reapprops	2021-23 Fiscal Period New Approps
057-1	State Bldg Constr-State	64,000,000		1,000,000		5,000,000
	Total	**64,000,000**	**0**	**1,000,000**	**0**	**5,000,000**

Acct Code	Account Title	Future Fiscal Periods 2023-25	2025-27	2027-29	2029-31
057-1	State Bldg Constr-State	58,000,000			
	Total	**58,000,000**	**0**	**0**	**0**

Schedule and Statistics

	Start Date	End Date
Predesign	09/01/2020	09/01/2021
Design	10/1/2021	6/1/2023
Construction	7/1/2023	8/1/2025

	Total
Gross Square Feet:	75,000
Usable Square Feet:	48,750
Efficiency:	65.0%
Escalated MACC Cost per Sq. Ft.:	439
Construction Type:	College Classroom Facilities
Is this a remodel?	Yes
A/E Fee Class:	B
A/E Fee Percentage:	9.67%

Cost Summary

	Escalated Cost	% of Project
Acquisition Costs Total	**0**	**0.0%**
Consultant Services		
Pre-Schematic Design Services	1,000,000	1.6%
Construction Documents	2,444,034	3.8%
Extra Services	749,463	1.2%

OFM

360 - University of Washington
Capital Project Request
2021-23 Biennium

*

Version: 01 21-23 Capital Request DRAFT

Report Number: CBS002
Date Run: 8/12/2020 6:31AM

Project Number: **40000049**
Project Title: **Magnuson Health Sciences Phase II- Renovation/Replacement**

Cost Summary

		Escalated Cost	% of Project
Consultant Services			
Other Services		1,149,794	1.8%
Design Services Contingency		535,525	0.8%
Consultant Services Total		**5,678,767**	**8.9%**
Maximum Allowable Construction Cost(MACC)	**32,928,000**		
Site work		0	0.0%
Related Project Costs		0	0.0%
Facility Construction		32,928,000	51.5%
GCCM Risk Contingency		1,893,360	3.0%
GCCM or Design Build Costs		4,797,610	7.5%
Construction Contingencies		3,292,800	5.2%
Non Taxable Items		0	0.0%
Sales Tax		4,334,089	6.8%
Construction Contracts Total		**47,245,859**	**73.8%**
Equipment			
Equipment		3,018,400	4.7%
Non Taxable Items		0	0.0%
Sales Tax		304,858	0.5%
Equipment Total		**3,323,258**	**5.2%**
Art Work Total		**318,408**	**0.5%**
Other Costs Total		**5,607,101**	**8.8%**
Project Management Total		**1,826,607**	**2.9%**
Grand Total Escalated Costs		**64,000,000**	
Rounded Grand Total Escalated Costs		**64,000,000**	

Operating Impacts

No Operating Impact

Narrative

None anticipated at this time.

Capital Project Request

2021-23 Biennium

*

Parameter	Entered As	Interpreted As
Biennium	2021-23	2021-23
Agency	360	360
Version	01-A	01-A
Project Classification	*	All Project Classifications
Capital Project Number	40000049	40000049
Sort Order	Project Priority	Priority
Include Page Numbers	Y	Yes
For Word or Excel	N	N
User Group	Agency Budget	Agency Budget
User Id	*	All User Ids

Health Sciences Lecture Hall Utilization Heat Map- WIN18

	Supply	Target	Monday	Tuesday	Wednesday	Thursday	Friday
7:30	**12**	**8**	2	6	9	3	5
8:00	**12**	**8**	6	7	6	7	8
8:30	**12**	**8**	11	9	12	11	12
9:00	**12**	**8**	11	7	11	11	12
9:30	**12**	**8**	11	10	11	10	12
10:00	**12**	**8**	9	9	10	11	12
10:30	**12**	**8**	9	9	12	11	12
11:00	**12**	**8**	9	11	12	11	11
11:30	**12**	**8**	10	11	9	9	11
12:00	**12**	**8**	10	8	7	9	11
12:30	**12**	**8**	9	8	8	9	11
13:00	**12**	**8**	9	8	8	9	11
13:30	**12**	**8**	10	11	10	10	11
14:00	**12**	**8**	10	10	11	9	9
14:30	**12**	**8**	7	10	11	11	4
15:00	**12**	**8**	6	10	9	11	6
15:30	**12**	**8**	9	11	9	10	5
16:00	**12**	**8**	8	10	9	9	3
16:30	**12**	**8**	6	9	8	9	4
17:00	**12**	**8**	5	7	7	6	3
17:30	**12**	**8**	4	7	5	6	3
18:00	**12**	**8**	0	5	2	5	1
18:30	**12**	**8**	0	4	2	4	1
19:00	**12**	**8**	0	3	2	2	1

N=12

67%	8.04
80%	9.6
60%	7.2
50%	6

Health Sciences Classroom Utilization Heat Map- WIN 18

	Supply	Target	Monday	Tuesday	Wednesday	Thursday	Friday
7:30	33	22	4	8	12	7	5
8:00	33	22	9	9	12	15	11
8:30	33	22	21	18	28	24	18
9:00	33	22	24	21	37	32	20
9:30	33	22	24	24	37	32	25
10:00	33	22	25	22	35	32	26
10:30	33	22	31	26	40	36	29
11:00	33	22	31	28	42	35	27
11:30	33	22	35	28	33	27	27
12:00	33	22	29	22	25	25	27
12:30	33	22	26	24	23	28	25
13:00	33	22	24	25	20	29	22
13:30	33	22	24	28	22	34	23
14:00	33	22	26	29	27	34	22
14:30	33	22	28	26	28	31	17
15:00	33	22	25	29	27	31	16
15:30	33	22	28	38	27	30	16
16:00	33	22	26	38	27	23	13
16:30	33	22	16	34	19	21	14
17:00	33	22	11	30	14	14	11
17:30	33	22	8	14	12	9	7
18:00	33	22	5	9	8	9	5
18:30	33	22	4	7	8	7	3
19:00	33	22	4	5	7	3	2

N=33

67%	22.11
80%	26.4
60%	19.8
50%	16.5