Washington State University Health Sciences Spokane

Eastern Washington University Center Renovation

BASIS OF DESIGN REPORT

July 2, 2021
# Basis of Design Report - EWUC Renovation

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Project Team

WASHINGTON STATE UNIVERSITY SPOKANE
Pre-Design Committee Members

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*Project Manager Facilities Services, WSU Spokane*

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*Director of Facilities Operations, WSU Spokane*

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*IT Director of Infrastructure, WSU Spokane*

DESIGN TEAM

Anderson Mason Dale Architects
*Design Architect*

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*Principal in Charge*

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*Project Manager*

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*Project Architect*

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*Mechanical Engineer*

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*Structural Engineer*

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*Principal in Charge*

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*Acoustical Engineer*

Daniel Horney
*Audiovisual Systems Engineer*

Brian King
*Telecom Engineer*
I. EXECUTIVE SUMMARY
EXECUTIVE SUMMARY

Photo I.1 EWUC Building Arrival Court - Facing East

Photo I.2 Aerial View of WSU Spokane and Downtown Spokane Looking Southwest
I.1 EXECUTIVE SUMMARY

In the Fall of 2020, Washington State University Health Sciences Spokane engaged Anderson Mason Dale Architects to develop the programmatic and pre-design requirements for the renovation of the Eastern Washington University Center (EWUC) building on the Spokane campus. The impetus for the project was spurred by Eastern Washington University's vacation of the building in January 2021. The primary project driver for the renovation work is to meet expanding program needs of the Elson S. Floyd College of Medicine, including office, dedicated student lounge and group study rooms, classroom and breakout rooms, with a priority emphasis on classroom modernization. Additional minor program components include a new home for Campus Safety and Security, renovation of the existing general use classrooms to remain, and basic facility upgrades.

Goals

Based on a series of discussions with WSU leadership for the project, the following goals have been identified for the renovation of the EWUC building.

- Provide a home for the College of Medicine by co-locating offices, student spaces and classrooms in one building
- Provide appropriate classroom space; testing, active learning and breakout rooms to support the ESFCOM teaching pedagogy and meet accreditation requirements
- Provide sufficient office space to allow for the full co-location of the College of Medicine faculty, staff and administration, or to the greatest extent feasible given existing conditions
- Expand general classroom space for WSU campus use, and modernize existing classroom spaces
- Provide a new home for WSU campus security
- Improve the quality of arrival experience at the main building entrance
- Enhance the quality of the lobby space adjacent to the active learning classroom to encourage more activity and campus use
- Improve the view corridor from the second floor lounge overlooking the main building entrance
- Improve exterior lighting at main entrance and rear building entrance from Spokane Falls Blvd.

Process

The design team worked collaboratively with the University over the course of a 6-month period to arrive at the consensus program and design requirements for the project. A series of workshops were held with user groups and campus facilities to define the project scope and criteria as follows:

- Workshop 01 College of Medicine – Kickoff
- Workshop 02 College of Medicine – Classroom Configurations
- Workshop 03 College of Medicine – Student Spaces
- Workshop 04 WSU Facilities – MEP Coordination
- Workshop 05 WSU Facilities – IT/AV Coordination
- Workshop 06 College of Medicine – VR, 3D printing, Range Community Clinic and Telemedicine
- Workshop 07 WSU Campus Security – Space Needs
- Workshop 08 College of Medicine – Clinical Campus
- Workshop 09 College of Medicine – AV and Acoustic Requirements
Programmatic Needs

The College of Medicine largely operates out of the Student Academic Center, where their dedicated student lounge spaces are currently located, along with a majority of faculty and administrative offices. The balance of the College of Medicine offices are scattered across the campus, and thus, a key outcome of the project is to provide the accommodations for a co-located workforce. The College of Medicine has also been operating with sub-standard student lounge and classroom testing spaces and need spaces that meets the full extent of accreditation criteria as required by the Liaison Committee on Medical Education. Furthermore, the College of Medicine would like to advance their teaching pedagogy in the realization of a new active learning space for their 80-student cohort of medical year 1 and year 2 students (M1 and M2). Paired with the active learning space are a series of 10 breakout rooms where students will work in small groups to advance their basic science and clinical skills. The breakout rooms the College of Medicine utilizes are scattered across campus and make it challenging for the instructor to move between rooms, while the lack of adjacency also negatively impacts instructional time as students transition between the active learning space and breakout rooms.

WSU Campus Safety and Security is currently housed in the Health Education and Research Building (HERB), in Suite 201. The space used by the department is not purpose built; they have outgrown their current accommodations and lack sufficient support space for administration and patrol. The department also requires a dedicated point-of-service counter to better support student walk-up services, such as lost and found. The department does not have any sworn officers, they do not store or carry firearms, do not book or detain, and do not store evidence, all of which is handled by the City of Spokane Police Department. Campus Safety and Security owns two fleet vehicles, which will continue to be parked outside HERB in reserved spaces. It is the intent of WSU to backfill the HERB space currently used by the department with additional academic space for the University.
Existing Building

The Eastern Washington University Center was originally constructed in 1997, and is comprised of 113,770 GSF. The building is 3-stories plus a walk-out basement on the north wing and includes vacated program space for general offices, classrooms, assembly occupancy and a data center. WSU conducted a Facility Condition Assessment in 2017, and was given an average system score of 1.98, on a scale of 1-5, where 1 is excellent and 5 is poor. At the time of the assessment, the roof assembly received a score of 5, and was subsequently replaced in 2020.

The current condition of the building is perfectly suited for the renovations proposed by the University.
**Sustainability**

The project area falls below the threshold for LEED BD+C consideration for a major renovation. WSU is still considering whether to pursue LEED O&M for existing interiors, however, LEED requirements to meet the intent of LEED should be pursued regardless of the ultimate decision to certify the project.

**Art and Art in Public Spaces**

An art piece for the Eastern Washington University Center has been commissioned and is currently in fabrication by artist Iolanda Palmer. A location has not been formally identified, but will require coordination for mounting and lighting. The overall dimensions of the primary piece is approximately 18’ long x 10’ high, with smaller associated pieces approximately 4’ x 4’. Shapes are sizes may change as the artist continues to work on the pieces. The piece is comprised of a series of (8) 4’ x 4’ panels that will weigh between 100-150 lbs each. The artist is also evaluating methods for backlighting the pieces with LED lighting.

As part of Capital Projects within the State of Washington, a small portion of the project budget will go to the Art in Public Places program (AIPP). This artwork will be in addition to the artwork piece that is already documented for installation in the building. The University will work with the State Art Commission to identify and select an artist for the project. Following the selection, the Contractor may be asked to work with the artist to integrate the artwork into the flooring, the lighting or otherwise facilitate installation of this art piece into the building. The budget for this scope of work is approximately $60,000.

**Schedule and Budget**

WSU Spokane has applied for and has been approved for a $15M funding request through the State Legislature as part of the 2021-2-23 Funding Biennium, for the renovation of the EWUC building. The owner’s fixed limit of construction is in the range of $8-$10M, with the remaining held for soft costs. The project will pursue a design-build delivery method and WSU will formally publish a Request for Qualifications for the work in July 2021.
II. PROGRAM SUMMARY
II.1 PROGRAM SUMMARY

The program summary lists the areas determined by the Pre-Design Committee to be necessary for the University and College of Medicine to function to the greatest benefit of WSU Spokane. The existing gross building area is 113,770 GSF, yielding approximately 66,000 SF of assignable area based on an efficiency of 58%. The program contained in this report accounts for roughly 45,000 SF of assignable area. Every attempt has been made to re-use existing spaces to accommodate new program requirements, and therefore certain space standards have not consistently been met. A number of existing classrooms on Level 1, as well as the Data Center and supporting office spaces in the basement will remain in place, as will existing building support spaces, including mechanical, electrical and telecom rooms. Program areas denoted with the red label heading are associated with the College of Medicine. and indicate dedicated program.

PROGRAM ANALYSIS

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Space Name</th>
<th>Qty</th>
<th>ASF / Stations / Room</th>
<th>Width</th>
<th>Depth</th>
<th>Room Size</th>
<th>Total ASF</th>
<th>Remarks</th>
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<td>21,300</td>
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<td>COM - 1.02</td>
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<td>18</td>
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<td></td>
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<td></td>
<td></td>
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<td>COM - 1.04</td>
<td>Clinical Education</td>
<td>14</td>
<td>120 1 10 12 120 1680</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>COM - 1.05</td>
<td>Administration</td>
<td>20</td>
<td>120 1 10 12 120 2400</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Copy/Mail/Workroom</td>
<td>4</td>
<td>10 15 150 600</td>
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<td></td>
<td></td>
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<td>Records/Storage</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
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<td>25 5 10 12 120 720</td>
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<td></td>
<td></td>
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<td>Medium Conference (8-10 seat capacity)</td>
<td>6</td>
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<td>COM - 1.11</td>
<td>Dean’s Conference (12-16 seat capacity)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMT - 1.00</td>
<td>COM Tech Suite</td>
<td>4</td>
<td>120 1 10 12 0 0</td>
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<td></td>
<td>1,240</td>
<td>Near VR, office count included in MED 1.01 above</td>
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<td>COMT - 1.01</td>
<td>COM EIT Offices</td>
<td>1</td>
<td>10 120 45 100 2250 2,250</td>
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<td>COMT - 1.02</td>
<td>VR Room</td>
<td>4</td>
<td>1 24 40 960 960</td>
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<td></td>
<td></td>
<td></td>
<td>(4) 10’x10’ setups, room for student help desk</td>
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<tr>
<td>COMT - 1.03</td>
<td>VR Consult Room</td>
<td>2</td>
<td>8 10 80 160</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>COMT - 1.04</td>
<td>VR Training Room</td>
<td>1</td>
<td>5 8 80 160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMT - 1.05</td>
<td>3D Printing Lab</td>
<td>1</td>
<td>10 12 120 120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLL - 1.00</td>
<td>Collaboration</td>
<td>1</td>
<td>15 150 45 100 2250 2,250</td>
<td></td>
<td></td>
<td></td>
<td>5,514</td>
<td>160 M1 +M2 and 40 M3 + M4 x 75% occupancy = 150</td>
</tr>
<tr>
<td>COLL - 1.01</td>
<td>Dedicated Med Student Study Lounge</td>
<td>1</td>
<td>12 24 288 288</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLL - 1.02</td>
<td>Med Student Break Room</td>
<td>1</td>
<td>8 12 24 288 288</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>COLL - 1.03</td>
<td>Med Student Break Lounge</td>
<td>1</td>
<td>24 24 576 576</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLL - 1.04</td>
<td>Group Study - Small (4-6 seat capacity)</td>
<td>4</td>
<td>20 6 10 12 120 480</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLL - 1.05</td>
<td>Group Study - Medium (8-10 seat capacity)</td>
<td>4</td>
<td>25 11 14 20 280 1,120</td>
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<td></td>
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<td></td>
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<tr>
<td>COLL - 1.06</td>
<td>Student Lockers (210 half-height)</td>
<td>1</td>
<td>20 40 800 800</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>CCAM - 1.01</td>
<td>Dean’s Office</td>
<td>1</td>
<td>120 10 12 0 -</td>
<td></td>
<td></td>
<td></td>
<td>840</td>
<td>Near lounge, office count included in MED 1.05 above</td>
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<tr>
<td>CCAM - 1.02</td>
<td>Coordinator Office</td>
<td>3</td>
<td>80 8 10 0 -</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CCAM - 1.03</td>
<td>Office Assistant Workstation</td>
<td>3</td>
<td>48 6 8 0 -</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCAM - 1.04</td>
<td>Small Conference (4-6 seat capacity)</td>
<td>1</td>
<td>0 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCAM - 1.05</td>
<td>Storage</td>
<td>1</td>
<td>8 10 0 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Included in the M 1.07 storage rooms above</td>
</tr>
<tr>
<td>CCAM - 1.06</td>
<td>Student Break Room</td>
<td>1</td>
<td>20 12 240 240</td>
<td></td>
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<td></td>
<td></td>
<td>Combined seating capacity for 50 students</td>
</tr>
<tr>
<td>CCAM - 1.07</td>
<td>Med Student Break Lounge</td>
<td>1</td>
<td>20 24 480 480</td>
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<td></td>
<td></td>
<td>Combined seating capacity for 50 students</td>
</tr>
<tr>
<td>CCAM - 1.08</td>
<td>Student Lockers (50 half-height)</td>
<td>1</td>
<td>8 15 120 120</td>
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<td></td>
<td></td>
<td></td>
<td>12”x 18”, near student lounge</td>
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<tr>
<td>COMC - 1.00</td>
<td>Active Learning Classroom</td>
<td>1</td>
<td>30 80 48 50 2400 2,400</td>
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<td></td>
<td></td>
<td>6,336</td>
<td>80 student capacity</td>
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<td>COMC - 1.01</td>
<td>Group Breakout Rooms</td>
<td>10</td>
<td>14 24 336 3,360</td>
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<td></td>
<td></td>
<td></td>
<td>Subdivisible, clinical floor, 8-10 students per room</td>
</tr>
<tr>
<td>COMC - 1.02</td>
<td>Breakout Support</td>
<td>2</td>
<td>12 24 288 576</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>exam table storage + supplies</td>
</tr>
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</table>
The office space identified under College of Medicine Administration only accounts for staff they currently have and known hires within the next 6 months. The office count also does not account for any future hires or any hotel workstations or offices to accommodate faculty who may need to be on campus during a given semester and need temporary space to conduct work. The University intends to address the future and hoteling space needs through backfill of vacated College of Medicine offices in the Student Academic Center (SAC). That said, their may be some shuffling of office space between the two buildings as floor plans and office counts are finalized for this renovation project.
II.2 GRAPHIC PROGRAM

PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

<table>
<thead>
<tr>
<th>Space Name</th>
<th>Area</th>
<th>Quantity</th>
<th>Total ASF</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLLEGE OF MEDICINE ADMINISTRATION</td>
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<td></td>
<td>21,300</td>
</tr>
<tr>
<td>Office - Administration</td>
<td></td>
<td></td>
<td>21,300</td>
</tr>
<tr>
<td>Education Offices</td>
<td>120</td>
<td>71</td>
<td>8520</td>
</tr>
<tr>
<td>Research, Administration and Finance</td>
<td>120</td>
<td>25</td>
<td>3000</td>
</tr>
<tr>
<td>Student Services</td>
<td>120</td>
<td>18</td>
<td>2160</td>
</tr>
<tr>
<td>Clinical Education</td>
<td>120</td>
<td>14</td>
<td>1680</td>
</tr>
<tr>
<td>Administration</td>
<td>120</td>
<td>20</td>
<td>2400</td>
</tr>
<tr>
<td>Copy/Mail/Workroom</td>
<td>150</td>
<td>4</td>
<td>600</td>
</tr>
<tr>
<td>Records/Storage</td>
<td>120</td>
<td>3</td>
<td>360</td>
</tr>
<tr>
<td>Break Room</td>
<td>180</td>
<td>1</td>
<td>180</td>
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<tr>
<td>Small Conference (4-5 seat capacity)</td>
<td>120</td>
<td>6</td>
<td>720</td>
</tr>
<tr>
<td>Medium Conference (8-10 seat capacity)</td>
<td>280</td>
<td>6</td>
<td>1680</td>
</tr>
<tr>
<td>Dean's Conference (12-16 seat capacity)</td>
<td>400</td>
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<td>400</td>
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PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY
### PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

#### COLLEGE OF MEDICINE TECHNOLOGY

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<th>Area</th>
<th>Quantity</th>
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<tr>
<td>COM Tech Suite</td>
<td>1,240</td>
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<td>1,240</td>
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<tr>
<td>COM EIT Offices</td>
<td>0</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>VR Room</td>
<td>960</td>
<td>1</td>
<td>960</td>
</tr>
<tr>
<td>VR Consult Room</td>
<td>80</td>
<td>2</td>
<td>160</td>
</tr>
<tr>
<td>VR Training Room</td>
<td>0</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>3D Printing Lab</td>
<td>120</td>
<td>1</td>
<td>120</td>
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#### COLLEGE OF MEDICINE STUDENT LOUNGE

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<th>Space Name</th>
<th>Area</th>
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<th>Total ASF</th>
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<tbody>
<tr>
<td>Collaboration</td>
<td>5,514</td>
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<td>5,514</td>
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<tr>
<td>Dedicated Med Student Study Lounge</td>
<td>2250</td>
<td>1</td>
<td>2,250</td>
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<tr>
<td>Med Student Break Room</td>
<td>288</td>
<td>1</td>
<td>288</td>
</tr>
<tr>
<td>Med Student Break Lounge</td>
<td>576</td>
<td>1</td>
<td>576</td>
</tr>
<tr>
<td>Group Study - Small (4-6 seat capacity)</td>
<td>120</td>
<td>4</td>
<td>480</td>
</tr>
<tr>
<td>Group Study- Medium (8-10 seat capacity)</td>
<td>280</td>
<td>4</td>
<td>1,120</td>
</tr>
<tr>
<td>Student Lockers (210 half-height)</td>
<td>800</td>
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<td>800</td>
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## PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

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<th>Area</th>
<th>Quantity</th>
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<td><strong>COLLEGE OF MEDICINE CLINICAL CAMPUS</strong></td>
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<td>840</td>
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<tr>
<td>Clinical Campus</td>
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<tr>
<td>Dean's Office</td>
<td>0</td>
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<tr>
<td>Coordinator Office</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Office Assistant Workstation</td>
<td>0</td>
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<tr>
<td>Small Conference (4-6 seat capacity)</td>
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<tr>
<td>Storage</td>
<td>0</td>
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<tr>
<td>Student Break Room</td>
<td>240</td>
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<tr>
<td>Med Student Break Lounge</td>
<td>480</td>
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<tr>
<td>Student Lockers (50 half-height)</td>
<td>120</td>
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### Diagram:
- Clinical Campus Administrative Office Suite
  - Dean's Office: 120 sq ft
  - Coordinator Office: 120 sq ft
  - Assistant Office: 48 sq ft
  - Conference: 160 sq ft
- Clinical Campus Student Lounge
  - Break Room: 240 sq ft
  - Lounge: 480 sq ft
  - Lockers: 120 sq ft
### PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

<table>
<thead>
<tr>
<th>Space Name</th>
<th>Area</th>
<th>Quantity</th>
<th>Total ASF</th>
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<tr>
<td><strong>COLLEGE OF MEDICINE CLASSROOMS</strong></td>
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<td><strong>Teaching</strong></td>
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<tr>
<td>Active Learning Classroom</td>
<td>2400</td>
<td>1</td>
<td>2,400</td>
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<tr>
<td>Group Breakout Rooms</td>
<td>336</td>
<td>10</td>
<td>3,360</td>
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<td>Breakout Support</td>
<td>288</td>
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<td>576</td>
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<table>
<thead>
<tr>
<th>Space Name</th>
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<tbody>
<tr>
<td><strong>RANGE COMMUNITY CLINIC</strong></td>
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<td><strong>Range Community Clinic Telemedicine</strong></td>
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<td>Telehealth Administrative Office</td>
<td>120</td>
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<td>720</td>
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<td>Telehealth Tech Workstation</td>
<td>48</td>
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<tr>
<td>Equipment Storage and Repair</td>
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</table>

![Diagram of space layout]
### PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

<table>
<thead>
<tr>
<th>Space Name</th>
<th>Area</th>
<th>Quantity</th>
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<td>CAMPUS CLASSROOMS AND SUPPORT</td>
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<td><strong>Teaching</strong></td>
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<td>Testing Classroom</td>
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<td>Individual Testing Rooms</td>
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<tr>
<td>Private Testing Reception</td>
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<td>Classroom (20 seat capacity)</td>
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<tr>
<td>Furniture Storage</td>
<td>240</td>
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</table>
### PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

<table>
<thead>
<tr>
<th>Space Name</th>
<th>Area</th>
<th>Quantity</th>
<th>Total ASF</th>
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<tbody>
<tr>
<td>CAMPUS SECURITY</td>
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<tr>
<td>Patrol Workstations</td>
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<td>Reception</td>
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<tr>
<td>Break Room</td>
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<tr>
<td>Interview Room</td>
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<tr>
<td>Emergency Operations Center</td>
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<td>Equipment Room</td>
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<td>Lost and Found - Small Items</td>
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<td>60</td>
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<tr>
<td>Lost and Found - Bicycles</td>
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<td>Restroom</td>
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<tr>
<td>Changing Room</td>
<td>60</td>
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![Diagram of security spaces]
### PROGRAM SPACE SUMMARY AND SPACE BY USE SUMMARY

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<th>Space Name</th>
<th>Area</th>
<th>Quantity</th>
<th>Total ASF</th>
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<tbody>
<tr>
<td><strong>BUILDING SUPPORT - ASSIGNABLE</strong></td>
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<td>Building Support</td>
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<tr>
<td>Wellness Room</td>
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<tr>
<td>Gender Neutral Multi-Stall</td>
<td>144</td>
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</tr>
<tr>
<td>Mail Room (150 mail slots)</td>
<td>120</td>
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</tbody>
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Building Support

![Diagram showing Wellness Room, Gender Neutral Multi-Stall, and Mail Room](T:\20-457_WSU_Spokane_Phase 1_Building\05-Design\Program\2021-07-02_WSU COM Bldg Program Model.xlsx 7/2/2021 9:48 AM Page 9 of 9)
II.3 SPATIAL RELATIONSHIPS

DIAGRAMMATIC PLAN DRAWINGS:
III. PRELIMINARY PROJECT DESCRIPTION
III.1 PRELIMINARY PROJECT DESCRIPTION

PROJECT DESCRIPTION

The project consists of a Renovation to the Eastern Washington University Center (EWUC) Building on the Washington State University Health Sciences Spokane campus. The renovation is to primarily support programming for the Elson S. Floyd College of Medicine, and will include new active learning and testing classrooms, dedicated student lounge spaces and study rooms, and academic offices. In addition, WSU Campus Security will be relocated from another campus building to a suite on Level 1. Existing classrooms on Level 1 will also be renovated. The balance of back-of-house MEP spaces, the data center in the Basement, certain offices and meeting rooms on Levels 1 thru 3 will remain unchanged.

Structure

Repair or remediation of the existing structure is not required. Several structural modifications are proposed, including:

- New opening in the curved wall at the Active Learning Classroom
- Removal of the tiered slab on grade which steps in the upward direction in the Active Learning Classroom and replacement with a new slab on grade at the first floor level
- Removal of tiered seating in classrooms directly across from the Active Learning Classroom which step in the downward direction and replacement with a new slab on grade at the first floor level
- Opening in the second floor shear wall as required for a new, continuous office corridor

Envelope

Re-work of the exterior envelope is not required, with the exception for the new opening proposed at the curved exterior wall of the Active Learning Classroom.

Interiors

Basement

Limited architectural work is planned in the basement, as identified in the demolition plans. Scope is limited to renovation of the gang restrooms, removal of inset mailboxes in Work Room 0013A, and removal of an overhead coiling door in Storage 001C.

Level 1 thru 3

See associated demolition and floor plans in Section V.

Accessibility

The design team is not aware of any existing accessibility deficiencies in the existing building. As the project will likely fall under the IEBC Work Area compliance path for Alterations Level 1 and Level 2, only new construction elements, components, systems and spaces need comply with the requirements of the current code.
As defined by the Construction Specifications Institute, the emphasis of the Preliminary Project Description (PPD) is on describing the physical requirements of the project. It is organized to describe the various groupings of facility construction systems and components in a logical sequence from the ground up and from the outside in. This Preliminary Project Description follows the CSI UniFormat.

A. Sub-structure
A10 Foundations
- Refer to structural narrative

A1010 - Standard Foundations
- See structural design narrative for design criteria.

A1030100 - Slab on Grade
- Refer to structural narrative

Specifications Required:
- 03 30 00 Cast-in-Place Concrete
- 07 13 26 Self-Adhering Sheet Waterproofing
- 07 21 00 Thermal Insulation
- 33 46 00 Subdrainage

B. Shell
B10 Superstructure
- Refer to structural narrative

B1010 - Floor Construction
- See structural design narrative for design criteria.

B1020.10 - Columns, Beams, Girders, and Joists
Refer to structural narrative

B1020 - Roof Construction
See structural design narrative for design criteria.

B20 Exterior Walls
B2010 Exterior Walls
- See structural design narrative for design criteria.

B2010.20 - Metal Stud Framing
- Refer to structural narrative

B2010160 - Anchored Stone Masonry Veneer
- Stone cavity wall assembly: existing stone cavity wall assembly on the new active learning exterior wall to be patched and repaired to accommodate new glazed openings.

B2020 Exterior Windows
B2020200 - Curtain Walls
- Thermally broken aluminum frame with double glazed, translucent, vertical channel shaped linear glass with 2-3/8-inch deep channel flange. Basis of Design: Bendheim Frame System SF60 with Lamberts LINIT channel glass
- Glazing:
  - Translucent Linear Glass Units: Lamberts LINIT channel glass, tempered with low-e coating

B30 Roof Assemblies
- Patching of existing roof at new penetrations.

Specifications Required
- 03 30 00 Cast-in-Place concrete
- 05 12 00 Structural Metal Framing
- 05 30 00 Metal Decking
- 05 40 00 Cold-formed Metal Framing
- 05 50 00 Metal Fabrications
- 06 10 53 Miscellaneous Rough Carpentry
- 06 16 00 Sheathing
- 07 01 50.21 Roof Repair
- 07 11 13 Bituminous Dampproofing
- 07 21 00 Thermal Insulation
- 07 21 19 Foamed-In-Place Insulation
- 07 27 26 Fluid-Applied Membrane Air Barriers
- 08 80 00 Glazing

C. Interiors
C10 Interior Construction

C1010 Interior Partitions
C1010145 - Partitions - Drywall with Metal Stud
- Refer to Acoustical narrative for additional sound isolation criteria and descriptions.

- Gypsum board partitions with metal studs, typical. Studs shall be minimum 25 gauge spaced at 16" oc with a deflection limit of L/240.
  - 3 5/8" depth for studs spanning up to 15'-4".
  - 6" depth for studs spanning up to 21'-8".
  - 5/8" type ‘X’ gypsum board, typical.
- Provide mold- and moisture-resistant gypsum board at all interior faces of exterior walls, and wall surfaces of “wet” walls of restrooms and shower rooms, unless cementitious wall
sheathing is specified.

- Unless noted otherwise, all gypsum board wall assemblies shall have acoustical treatment at top and bottom and sound attenuation blankets full height.
- Provide deflection track detail (assume 2") at all partitions anchored to structure. Detail shall maintain fire rating if part of fire rated assembly.
- Provide control joints at both jambs of all doors.
- Provide impact resistant gypsum board at all hallways and corridors.
- Typical sound isolating partitions shall be two layers of 5/8" gypsum board on each side of metal studs. STC 55
- 1-hour rated partitions shall be one layer of 5/8" type 'X' gypsum board on both sides of metal studs.

C1010148 - Partitions - Shaft Walls
- New shaft walls are not anticipated as part of the renovation. In the event existing chases require re-work resulting from repairs from other work that may be required, the following applies:
  - Chase walls shall consist of CH or I studs at 16" o.c., with one layer of 1" gypsum board at shaft side, and one layer of 5/8" type 'X' gypsum board on exposed side, for 1 HR rating.

C1010315 - Partitions - Operable Partitions
- At Breakout Rooms (Level 1) Provide operable acoustic panel partition with STC not less than 50. Basis of Design: Modernfold Acousti-Seal Encore.

C1010711 Interior Windows - Hollow Metal
- Interior sidelights in non-rated partitions shall be 1/2" laminated safety glazing set in 16 gauge hollow metal frames.

C1010702 - Interior All Glass Storefront
- Double glazed at conference, private testing on Level 1 and new private offices on Level 3
- Basis of Design: Modernus, Lama

C1020 Interior Doors
C1020210 - Interior Door Frames - Metal
- Door frames shall be 16-gauge hollow metal frames, fully welded construction.
  - Provide 14-gauge hollow metal frames at all openings greater than 36”.

C1020120 - Interior Doors - Wood Doors
- Interior doors shall be flush 1-3/4” solid core wood doors. Veneer shall be Premium Grade A to match existing.
- New doors to be provided with dual bevels.
- Existing doors may need to have new hinges, to be reviewed on a case by case basis with WSU Facilities.

C1020310 - Interior Metal Doors with Metal Frames
- Secure interior doors shall be 1-3/4” seamless hollow metal doors set in security grade 14 gauge welded hollow metal frames.

C1020400 - Interior Door hardware
- Internal door hardware shall be heavy duty mortised type, unless noted otherwise.
- Entire building is scheduled to be re-keyed, scope of work to be coordinated with the University.
  - Cores: Everest
  - Exterior Locks: Primus
  - Interior Locks: Non primus
- All new door frames to be prepped for electrical power transfer.
- New access control may be required at certain existing doors, to be coordinated with WSU Facilities.
- Refer to Technology narrative for information regarding secure access control.

C1030 Fittings
C1030110 - Toilet Partitions
- Provide enhanced privacy stainless steel overhead braced partitions at new gender-neutral restroom on Level 2.

C1030200 - Toilet Accessories - Commercial
- WSU Facilities will provide a matrix showing OFOI, OFCI and CFCI FFE items for scope clarification.
- Provide stainless steel toilet room accessories. Typical accessories include grab bars, toilet paper dispensers, combined recessed paper towel dispenser/disposal units, soap dispensers, and sanitary napkin disposal units. Provide baby changing stations at public restrooms.

C1030305 - Student Lockers
  - Standard Student Lockers: 12” x 18” x 36”

C1030412 - Manufactured Plastic Laminate Casework
C1030457 - Simulated Stone Counters
• Counters and backsplashes shall be solid quartz surfacing 3cm thick with square edge detail.

C1030546 - Markerboard Wall Covering
• Provide magnetic ½” laminated glass marker surface with white interlayer at all Meeting, Conference Rooms, Classrooms, and Breakout Rooms.
• Remove all existing dry erase boards and provide new glass marker board as coordinated with WSU Facilities.

C1030726 - Access Flooring Systems
• Provide low profile 1-1/2” raised access floor with built-in cable management at Testing Classroom. Basis of Design: NetFloor USA, CamassCrete Cable Management Access Flooring.

C30 Finishes
C3000 General
• All adhesives, sealants, paints, coatings and carpet systems used in the interior of the building shall be of Low Emitting type so as to receive LEED EQ credits 4.1 through 4.3.
• All suspended ceilings to be seismically braced.

C3010 Wall Finishes
C3010150 - Wall Finishes - Tile
• All restroom, shower and kitchenettes
• Provide cementitious backer units behind wall tile at all wet locations.

C3010210 – Wall Finishes – Paint
C3010410 - Wall Finishes - Fixed Sound-Absorptive Panels (at select locations in classrooms, conference, meeting and breakout rooms)
• Refer to Acoustical narrative for additional sound isolation criteria and descriptions.

C3020 Floor Finishes
C3020430 - Flooring - Tile
• All restrooms and bathrooms
C3020440 – Flooring - Vinyl Composition Tile
• At common corridors (if not polished concrete)
• At kitchenettes and workrooms
• At student lounges and locker rooms
• Provide moisture mitigation at all concrete floors to receive impermeable floor finishes.

C3020520 - Tile Carpeting
• 24” x 24” carpet tile at office areas, classrooms, and meeting rooms

C3020610 - Base - Rubber
• Rubber Base: 4-inch cove at all locations. Preformed inside and outside corners.

C3030 Ceiling Finishes
C3030210 - Suspended Ceilings - Acoustical Panel 01 (Private Office)
• Type and Form for typical installations: Type III, Form 1, nodular; sag resistant with antimicrobial treatment. LR: Approximately 0.90. NRC: Approximately 0.60. CAC: Approximately 35. Thickness: 3/4 inch. Modular Size: 24 by 24 inches.
  • Basis of design: Armstrong Ultima.
• Metal Suspension Systems: ASTM C 635. Wide-Face, 15/16-inch, Capped, Double-Web, Fire-Rated where require. Steel: Intermediate duty

C3030210 - Suspended Ceilings - Acoustical Panel 02 (Conference, Classroom, and Meeting)
• Type and Form for typical installations: Type XII, Form 2, Pattern E. LR: 0.90. NRC: 0.95. CAC: Approximately 25. Thickness: 3/4 inch. Modular Size: 24 by 48 inches.
  • Basis of design: Armstrong Optima Open Plan
• Metal Suspension Systems: ASTM C 635. Wide-Face, 15/16-inch, Capped, Double-Web, Fire-Rated where require. Steel: Intermediate duty

C3030210 - Suspended Ceilings - Acoustical Panel 03 (Student Lounge)
• Basis of Design: Armstrong TECTUM Clouds

C3030220 - Suspended Ceilings - Gypsum Board
• 5/8 inch gypsum board
• Grid Suspension System for Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
• Wire Hangers: ASTM A 641, Class 1 zinc coating, soft temper, 0.162-inch diameter.
• Control joints for every 200 square feet.
C40 Finish Schedule

1. Corridors
   • Floor: Existing to remain slate pavers and polished concrete. New VCT in select hallways (if not polished concrete).
   • Base: rubber
   • Walls: painted gypsum board, existing exposed brick, concrete and field stone veneer
   • Ceiling: acoustical ceiling tile 02, exposed concrete deck

2. Classrooms
   • Floor: tile carpeting
   • Base: rubber
   • Walls: painted gypsum board
   • Full height fabric wrapped acoustical panel on one wall
   • Ceiling: acoustical ceiling panel 02, painted gypsum board soffits
   • Windows: manual, dual roller shade at 3% openness with blackout.
   • Specialty: Low-profile raised access floor at Testing Classroom and Active Learning Classroom where underfloor distribution of power and data required

3. Private Offices
   • Floor: tile carpeting
   • Base: rubber
   • Walls: painted gypsum board
   • Ceiling: acoustical ceiling panel 01
   • Windows: manual roller window shade at 3% openness

4. Office Corridors
   • Floor: Existing to remain / match existing slate pavers, polished concrete
   • Base: rubber
   • Walls: painted gypsum board
   • Ceiling: acoustical ceiling panel 02
   • Windows: N/A

5. Copy Rooms, Work Rooms
   • Floor: VCT flooring
   • Base: rubber
   • Walls: painted gypsum board
   • Ceiling: acoustical ceiling panel 01
   • Casework: plastic laminate faced cabinets with solid surface countertop
   • Windows: where located on exterior wall, manual roller window shade at 3% openness

6. Conference, Meeting Rooms and Breakout Rooms
   • Floor: tile carpeting
   • Base: rubber
   • Walls: painted gypsum board
   • Full height fabric wrapped acoustical panel on one wall
   • Ceiling: acoustical ceiling panel 01
   • Windows: Manual, dual roller shade at 3% openness with blackout.
   • Operable acoustic partition at breakout rooms

7. Student Lounge
   • Floor: VCT flooring with tile carpet inserts
   • Base: rubber
   • Walls: painted gypsum board
   • Ceiling: acoustical ceiling panel 03, exposed concrete deck
   • Windows: Manual, dual roller shade at 3% openness with blackout.

8. Kitchen / Break Rooms
   • Floor: VCT flooring
   • Base: rubber
   • Walls: painted gypsum board, tile backsplash at wet wall locations
   • Ceiling: painted gypsum board
   • Casework: plastic laminate faced cabinets with solid surface countertop
   • Windows: where located on exterior wall, manual roller window shade at 3% openness

9. Locker Rooms and Restrooms
   • Floor: porcelain tile
   • Base: tile
   • Walls: full height porcelain tile
   • Ceiling: painted gypsum board
   • Plastic laminate clad lockers

10. Multi-Stall and Single Use Restrooms
    • Floor: porcelain tile
    • Base: tile
    • Walls: full height porcelain tile
    • Ceiling: painted gypsum board
    • Casework: solid surface countertops
    • Other: Framed mirrors

11. Utility (including storage, electrical, mechanical and telecom rooms)
    • Floor: sealed concrete.
    • Base: rubber
    • Walls: painted gypsum board, to deck
    • Ceiling: exposed to structure.
**Specifications Required**

- 03 39 00 Moisture/Vapor Mitigation System
- 05 40 00 Cold-Formed Metal Framing
- 05 50 00 Metal Fabrications
- 06 10 53 Miscellaneous Rough Carpentry
- 06 20 23 Interior Finish Carpentry
- 06 41 16 Plastic-Laminate-Faced Architectural Cabinets
- 08 11 13 Hollow Metal Doors and Frames
- 08 12 16 Flush Wood Doors
- 08 43 27 Translucent Exterior Channel Glass Wall Assemblies
- 08 71 00 Door Hardware
- 08 80 00 Glazing
- 08 83 00 Mirrors
- 09 21 16.23 Gypsum Board Shaft Wall Assemblies
- 09 22 16 Non-Structural Metal Framing
- 09 29 00 Gypsum Board
- 09 30 00 Tiling
- 09 51 00 Acoustical Panel Ceilings
- 09 65 13 Resilient Base and Accessories
- 09 68 13 Tile Carpeting
- 09 82 00 Sound Absorption Materials
- 09 91 26 Interior Painting
- 09 96 00 High Performance Coatings
- 10 11 00 Visual Display Surfaces
- 10 21 13 Toilet Compartments
- 10 22 33 Accordion Folding Partitions
- 10 26 00 Wall Protection
- 10 28 00 Toilet Bath and Laundry Accessories
- 10 50 50 Interior Operable Partitions
- 12 36 61.16 Solid Surfacing Countertops

**D. Services**

**D20 Plumbing Systems**
- Refer to MEP narrative

**D2010 Plumbing Fixtures**
- Water closets, lavatories and floor drains for new restrooms. Sink replacement for existing restrooms. Alternate for water closets and urinal replacement for existing restrooms.

**D2020 Domestic Water Distribution**
- Hot water, cold water, hot water recirculation to new restrooms.

**D2030 Sanitary Waste**

**D2090 Other Plumbing Systems**
- Plumbing piping insulation.
- General building plumbing systems
- New single use restroom in Campus Security suite
- New gender neutral multi-stall restroom on Level 2
- Relocation of existing break room in Campus Security suite

**D30 Heating, Ventilating, and Air Conditioning**
- Refer to MEP narrative

- **D3010 Energy Supply**
- **D3020 Heat Generating Systems**
- **D3030 Cooling Generating Systems**
- **D3040 Distribution Systems**
- **D3050 Terminal & Package Units**
- **D3060 Controls & Instrumentation**
- **D3070 Systems Testing & Balancing**
- **D3090 Other HVAC Systems/Equip**
- Restroom Exhaust fans

**D40 Fire Protection**

- **D4010 Sprinklers**
  - The existing building is fully fire sprinklered.
  - Reconfigure existing sprinkler heads to accommodate renovation scope per NFPA 13 requirements.
- **D4090 Other Fire Protection Systems**
  - **D4030200 - Fire Extinguisher Cabinets**

**Specifications Required**

- 210100 Basic Fire Suppression Requirements
- 210500 Common Work Results for Fire Suppression
- 211300 Fire-Suppression Sprinkler Systems
- 220100 Basic Plumbing Requirements
- 220500 Common Work Results for Plumbing
- 220719 Plumbing Piping Insulation
- 221005 Plumbing Piping
- 221006 Plumbing Piping Specialties
- 224000 Plumbing Fixtures
- 230100 Basic Mechanical Requirements
- 230519 Meters and Gages for HVAC Piping
- 230553 Identification for HVAC Piping and Equipment
- 230593 Testing, Adjusting, And Balancing For HVAC
- 230713 Duct Insulation
- 230719 HVAC Piping Insulation
- 230913 Instrumentation and Control Devices For HVAC
- 230923 Direct-Digital Control System For HVAC
- 230993 Sequence of Operations for HVAC
Controls
- 232113 Hydronic Piping
- 232114 Hydronic Specialties
- 232500 HVAC Water Treatment
- 233100 HVAC Ducts and Casings
- 233300 Air Duct Accessories
- 233423 HVAC Exhaust Fans
- 233600 Air Terminal Units
- 233700 Air Outlets and Inlets
- 283100 Fire Detection and Alarm System w/ Voice Evac

D50 Electrical
- Refer to MEP narrative

Electrical Service
D5010 Electrical Service/Distribution
- Refer to MEP narrative

Lighting Systems
D5020 Lighting and Branch Wiring
- Refer to MEP narrative
- New LED lighting for all renovated classrooms, meeting, conference rooms and offices.
- Replacement of all non-LED corridor and public space lighting with LED fixtures

Specifications Required
- Section 26 05 00 - Common Work for Electrical
- Section 26 05 19 - Low Voltage Electrical Power Conductors and Cables
- Section 26 05 26 - Grounding and Bonding for Electrical Systems
- Section 26 05 29 - Hangers and Supports for Electrical Systems
- Section 26 05 33 - Raceways and Boxes for Electrical Systems
- Section 26 05 53 - Identification for Electrical Systems
- Section 26 08 00 - Testing of Electrical Systems
- Section 26 09 26 - Lighting Controls
- Section 26 27 26 - Wiring Devices
- Section 26 28 16 - Enclosed Switches
- Section 26 51 00 - Interior Lighting
- Section 26 56 00 - Exterior Lighting
- Section 27 05 00 - Communication Systems Infrastructure
- Section 27 08 00 - Commissioning of Communications General Cable Testing
- Section 28 05 00 - Common Work Results for Electrical Security

E. Equipment and Furnishings
E2010 Fixed Furnishings
- E2010320 - Window Treatments - Roller Shades
  - Provide motorized roller shades at all classroom exterior windows.
  - Provide manual roller shades at all other exterior windows.

Specifications Required
- 12 24 13 Roller Shades

F. Special Construction and Demolition
F10 Special Construction
F1010 Special Structures

F20 Selective Building Demolition
F2010 Building Demolition

Specifications Required
- 02 41 19 - Selective Demolition
IV. BUILDING SYSTEMS NARRATIVE
IV.1.1 PRELIMINARY CODE REVIEW

APPLICABLE CODES AND STANDARDS

- 2018 International Building Code
- 2018 International Existing Building Code
- 2018 International Mechanical Code
- 2018 International Fuel Gas Code
- 2018 Uniform Plumbing Code
- 2017 National Electrical Code
- 2018 International Energy Conservation Code
- 2018 Washington State Energy Code
- 2018 International Fire Code
- 2017 ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
- 2019 NFPA 13 Installation of Sprinkler Systems
- 2018 NFPA 10 Portable Fire Extinguisher
- 2019 NFPA 110 Emergency and Standby Power Systems

EXISTING BUILDING: 1997

Construction Type: Type II – FR
Sprinklered: Yes
Fire Walls: No
Exterior Walls: 4-hour Construction
Structural Frame: 2-hour Construction
Occupancy Separations: No

PROPOSED RENOVATION: CURRENT

Construction Type:
The declared construction type is existing to remain.
Current code equivalent is Type I-B

Sprinklered: Yes
Fire Walls: No
Occupancy Separations: No
Allowable Building Height: 180ft (Table 504.3)
Allowable # of Stories: 12 (Table 504.4)
Allowable Area: Unlimited

PLUMBING FIXTURE COUNT

<table>
<thead>
<tr>
<th>Occupancies</th>
<th>Occupant Loads</th>
<th>Toilets</th>
<th>Lavatories</th>
<th>Drinking Fountains/Bottle Fill Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>ASSEMBLY</td>
<td>615</td>
<td>308</td>
<td>308</td>
<td>1/125</td>
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<tr>
<td>BUSINESS</td>
<td>1383</td>
<td>692</td>
<td>692</td>
<td>1/25 for first 50 + 1/50 for remainder</td>
</tr>
<tr>
<td>STORAGE</td>
<td>60</td>
<td>30</td>
<td>30</td>
<td>1/100</td>
</tr>
<tr>
<td>Total Required</td>
<td>18</td>
<td>20</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Total Provided</td>
<td>28</td>
<td>28</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

UNISEX/GENDER NEUTRAL: 6 TOILETS, 5 LAVS PROVIDED
IV.1.2 STRUCTURAL NARRATIVE

STRUCTURAL SYSTEMS DESCRIPTION

The following narrative provides a general overview of the structural considerations associated with the Eastern Washington University Center Building including design criteria, material specifications, existing building structural system descriptions, and descriptions of proposed revisions.

Design Criteria

2018 International Building Code and Referenced Code Standards Therein
(Existing building designed per UBC 1991)

Roof:
- Ground Snow Load 39 PSF
- Roof Snow Load 30 PSF
- Risk Category III
- Importance Factor 1.1
- Designed for drifting snow in accordance with ASCE 7.

Floor Live Load:
- First Floor and Slab on Grade 100 PSF
- Mechanical Spaces 80 PSF or weight of equipment
- Elevated Floor Classrooms 40 PSF + 15 PSF Partition
- Elevated Floor Corridors 80 PSF

Roof/Floor Total Load Deflection Limit L/240
Roof/Floor Live Load Deflection Limit L/360
Frost Depth 24”

Allowable Soil Bearing Pressure 40 ksf bearing on rock

Wind Design:
- Basic Wind Speed (Ultimate based on 3-second gust) 110 MPH
- Risk Category III
- Exposure B

Seismic Design:
- Risk Category III
- Importance Factor 1.25
- Site Class D
- Seismic Design Category C

Material Specifications

Concrete Strengths (f’c):
- Foundations and Footings 3000 PSI
- Slab on Grade 4000 PSI
- Elevated Concrete 4000 PSI

Concrete Reinforcement (Rebar) ASTM A615, Gr. 60

Structural Steel:
- HSS Beams and Columns ASTM A500, Grade B
- Shapes and plate ASTM A36

Metal Roof/Floor Decking: ASTM A446 galvanized

Cold-Formed Steel:
- Structural metal studs Yield strength fy=33ksi

Roof Framing Systems: Roof framing at the Active Learning Classroom and mechanical room roof consists of 1 ½ inch – 20 gage metal deck supported approximately 6’-5” feet on center by open web steel joists. Roof framing at most of the building consists of cast-in-place concrete waffle slab supported by cast-in-place concrete columns.

Floor Framing Systems: Floor framing consists of cast-in-place concrete waffle slab supported by cast-in-place concrete columns. Slab on grade areas typically consist of a 4” reinforced slab on grade. Some areas consist of 6-inch slab on grade or is of varying thickness due to steps in the slab for tiered seating.

Exterior Walls: Exterior walls consists of cast-in-place concrete or cold-formed steel studs. The curved wall at the active learning classroom consists of solid grouted 10-inch CMU.


Lateral: Cast-in-place concrete shear walls resist building lateral forces.
Proposed Structural Modifications:

- Opening in curved wall at Active Learning Classroom: An opening will be placed in the existing curved CMU wall for a storefront system. Steel posts will be added to support the CMU wall. Added bracing above the ceiling line will resist out-of-place forces on the CMU wall above the new opening. The limestone veneer will need to be supported by a new bearing ledger anchored to the CMU wall or a flat plate cantilevered from the head of the CMU opening.

- Remove tiered slab on grade in Active Learning Classroom: The existing slab on grade in this portion of the building is stepped in an upward direction from main floor to accommodate tiered auditorium style seating. The existing stepped slab will be removed, and grade excavated so a new slab on grade can be placed at main floor level.

- Remove Tiered Seating in Classrooms: The classrooms across from the Active Learning Classroom consist of a stepped slab on grade in a downward direction from the main floor to accommodate tiered seating. A new concrete slab on grade at main floor level will be placed over the existing steps in these classrooms to create a level floor. Rigid insulation can be used to decrease the amount of concrete required to bring the classroom floor to main floor level. A minimum concrete thickness of 4-inches should be provided.

- Opening in 2nd Floor Shear Wall: An opening in a concrete shear wall is required for a new second floor corridor. The A/E/C team will need to evaluate if this wall will require strengthening around this new opening.

- Concrete Cutting and Coring: Penetrations through existing concrete floors and walls will be required. It is strongly encouraged that penetrations through beams, waffle slab ribs, and ends of shear walls be avoided. Reinforcing may be required at larger penetrations. Where possible perform testing to identify the location of reinforcing to minimize the amount of rebar being cut. Over-cutting of corners is not allowed.

Observations of Existing Building Structure:

The concrete structure is exposed to view at several locations through the interior and exterior of the building. A walk-through of the building revealed no signs of structural issues. Cracking common to concrete structures was observed throughout and is not a concern. Signs of foundation settlement were not observed. The building appeared to have performed well to date.
IV.1.3 MEP SYSTEMS NARRATIVE

MECHANICAL

1.1 GENERAL INFORMATION

A. The proposed mechanical systems for the Eastern Washington University Center (EWUC) renovation will be based on balancing occupant usage and comfort requirements while taking into account other important factors such as first costs, operational costs, and the Washington State Energy Code. Within this narrative, the mechanical system characteristics for the building will be addressed. System design characteristics will include:

1) Design Criteria and Mechanical Utility Services Loading
2) Heating System
3) Cooling System
4) Air Systems
5) Temperature Controls
6) Plumbing Systems
7) Fire Protection Systems

B. The occupiable floor area of the existing EWUC is approximately 116,290 gross square feet (GSF). The existing building is three stories tall and has a basement. The basement houses the WSU campus IT offices, as well as the campus data center. The renovation will take place on level one, two, and three, as well as the basement.

C. The MEP system will be sized to accommodate the floor plan with limited flexibility to remodel within the footprint proposed. The Mechanical Systems have not been sized in anticipation of any future additions to the building.

D. It is recommended that the owner test each system's integrity prior to design completion to evaluate system functionality and perceived useful life. System inactivity may have led to failure of components that cannot be observed without a contractor enabling the systems.

E. The design will be in accordance with the International Building Codes listed below, as well as the NFPA 101 – Life Safety Code.

1) International Building Code
2) International Mechanical Code
3) Uniform Plumbing Code
4) International Fuel Gas Code
5) Washington State Energy Code
6) International Fire Code

1.2 BUILDING LOAD STANDARDS

A. Outdoor Design Conditions

1) The WSU standard for design temperatures in all Inland Northwest Facilities, according to WSU standard 23 00 00 – HVAC is as follows:
   a) Summer Outdoor Temperature = 97°F DB/72°F WB
   b) Winter Outdoor Temperature = -6°F DB

2) Indoor Design Conditions

   a) The standard space temperatures in the building will be 76°F for cooling and 70°F for heating. This will be typical for general purpose spaces according to WSU standards. Special use spaces will require different space temperatures as determined by the user.
   b) Room noise criteria (NC) for the occupancies listed will be used as the Basis of Design in accordance with ASHRAE recommendations for mechanical systems unless specifically requested by the Program Plan.
   c) Humidification is not currently anticipated for this project.

3) Internal Cooling Load Design Assumptions

   a) Lights = 0.5 watts/SF, general
   b) People = 200 SF/ person
   c) Equipment:
      i. 2 watts/SF in staff work areas
      ii. 2 watts/SF in offices
      iii. 2 watts/SF in classrooms
      iv. 1.5 watts/SF in suite areas
      v. Telecom rooms – 24,000 btu/hr
      vi. Elevator Machine room – 18,000 btu/hr

1.3 PROJECT BUILDING LOADS

A. Cooling System Load:

Area Served: 116, 290 SF
Total Cooling Load: 250 tons (465 SF/ton)
Total Cooling Airflow: 140,000 CFM (1.2 CFM/SF)
Rooftop HVAC Units: - Chilled Water: 3
1.4 DEMOLITION

A. The following mechanical and plumbing systems shall be considered for demolition pricing:
   a) All controls including thermostats, pneumatic control systems, and front-end BAS systems shall be demolished for replacement with current control systems.
   b) All exhaust fans.

1) Hydronic Heating Water Boilers
   a) Only one of the (2) existing boilers shall be demolished, to create a hybrid system under new work.

2) Domestic Hot Water Heaters (2)

3) Plumbing Fixtures
   a) All sinks in restrooms.
   b) An alternate shall be established to determine pricing to demolish all urinals and water closets in building for replacement.

4) Fire Protection System
   a) The existing system will need to be demolished to an extent determined by a fire sprinkler contractor to provide a complete system for the new floor plans.

1.5 AIR HANDLING AND DISTRIBUTION

A. The following mechanical system shall be considered for pricing:
   1) The existing non-condensing heating water boilers in the basement are existing to remain, along with all circulation pumps and piping. See alternate #1 below for alternate scenario pricing.

2) Heating System Alternate #1 One (1) new hydronic heating water boiler will be provided as a replacement to one of the existing hydronic boilers. The boiler will be in the existing basement mechanical room. The new boiler shall be condensing and will be controlled in such a way to create a hybrid condensing and non-condensing boiler arrangement.
   a) The new boiler will be sized to provide approximately 2200 MBH of heating capacity.
   b) One new heating water circulation pump will be provided to provide heating water to the new building air handlers, and hydronic re-heat coils in all VAV terminal units.
   c) Hydronic boiler will be gas fired.

B. All telecom rooms and elevator machine rooms will be served by a chilled water-cooling fan coil, sized for the cooling load as stated in part 3 under general information.

C. All damaged or non-functional piping insulation will be replaced under the renovation.

D. All dual duct air handling components such as dual-deck air handling units, dual-duct VAV terminal units, ductwork, and all GRD’s are existing to remain.

1.6 PLUMBING SYSTEMS

A. The building has an existing domestic water service and backflow preventer that is not anticipated to increased or decreased in size for the renovation.

B. Under the renovation, gang toilet restrooms will be renovated, and plumbing fixtures will be updated to match campus standards. As an alternative t provide a new multi-stall gender neutral restroom, the gang restrooms on the floor may be converted one large gender neutral restroom. Single toilet rooms will also be renovated, and fixtures replaced.

C. A bottle filling station will be added on each floor, located in a main corridor. New domestic cold-water piping will be routed to bottle filling stations.

D. All domestic water piping will be re-used as much as possible. Domestic water is currently distributed from the basement mechanical room to the building in insulated copper piping.
E. Two (2) new domestic hot water heaters will be provided to replace the two (2) existing hot water heaters, located in the basement mechanical room. The new hot water heaters will be natural gas semi-instantaneous condensing style water heaters. The facility will be provided with 120°F water. Specific use areas requiring higher water temperatures (140°F – 160°F) will require their own electric water booster heaters. Domestic water will be re-circulated to each water heater to maintain a consistent temperature within the piping. Recirculation piping will be connected to the hot water piping close to the fixtures to minimize wait time for hot water to a maximum of 10 seconds. Each connection to the recirculation piping will have a check valve to prevent reverse flow when the hot water piping is isolated for service. All hot, cold, and recirculation piping will be located in the ceiling of the floor it serves, and a significant amount of isolation valves will be provided to minimize service disruptions for maintenance and remodeling. Calibrated balancing valves shall be used to balance the hot water system.

1) The (2) new domestic water heaters will be sized to handle a potential increase in plumbing fixture quantity requiring hot water (sinks, lavatories).

F. Waste and Vent:

1) Waste and Vent piping will be conventional in compliance with the Uniform Plumbing Code as required by the State of Washington. All existing Waste and Vent piping will be re-used as much as possible. PVC waste piping will be used below grade – schedule 40 for standard waste. Cast iron will be used for above grade waste and vent piping where vent piping is routed through a return air plenum. The main sewer line is understood to have adequate size to handle the renovation.

2) All toilet rooms, including toilet rooms where multiple flush valve fixtures are within one room will have a floor drain. Floor drains and/or sinks will be provided for each grouping of mechanical equipment to minimize drain piping on the floor. Floor sinks will be provided for all high-volume indirect wastes from kitchen equipment. Floor cleanouts will not be allowed in corridor floors.

G. Storm Water:

1) All roof drain locations will be maintained. Roof drains were recently replaced in 2020. No new roof work unless new penetration required. hh

2) New perimeter drainage and sub-slab drainage shall be provided by the Civil Engineer if required.

H. Plumbing Fixtures:

1) Plumbing fixtures will be institutional grade, vitreous china, except stainless steel sinks, and institutional grade acrylic showers. Public water closets will be wall mounted. All wall hung fixtures including lavatories, public water closets, water coolers, and urinals will utilize floor mounted wall carriers.

2) Faucets will be institutional grade, heavy pattern brass, with replaceable ceramic disk valve cartridges. Flush valves will be Sloan Royal or equivalent. Dual flush operation to be confirmed by WSU Facilities. Faucets and flush valves for public and private toilet rooms will be manual or IR where specified. Locations to be confirmed with WSU Facilities. h. Shower valves will be thermostatic mixing type.

3) In general, plumbing fixtures shall be as described below:

a) Public Water Closets:
   i. Material: Vitreous china.
   ii. Action: Siphon jet, dual flush 1.1/1.6 g.p.f. maximum.
   iii. Provide rigid anchoring for piping, shock arrestors, flush valves, quick closing quarter turn and solenoid valves, branch and riser piping and accessories.
   iv. Support all “wall hung” fixtures from building floor structure with floor mounted chair carriers. Do not support from walls.
   v. Flush valves shall be manually operated.
   vi. Provide IR operation where specified (with manual override button).

b) Urinals:
   i. Material: vitreous china.
   ii. Provide IR operation where specified (with manual override button).

c) Lavatories:
   i. Material: Vitreous china or type 302/304 stainless steel as specified. Plastic formed or enameled cast iron lavatories are not acceptable unless specified.
   ii. Provide IR operation where specified.
d) Sinks:
i. Material: Stainless steel type 302/304, 20 gauge.

e) Fittings, Trim and Accessories:
i. Supplies and Stops for Lavatories, Water Closets and Sinks: Polished chrome plated Brasscraft 1/4 turn ball valve 2082 series, angle stop having ½" inlet and 3/8" O. D. x 12" long flexible tubing outlet and wall flange and escutcheon.
ii. Traps for Drinking Fountains, Lavatories and Bidets: 17 gauge tubular brass, 1-1/4" adjustable p-trap and waste to wall.
iii. Traps for Sinks: Cast brass, 1-1/2" adjustable p-trap, and waste to wall. Traps for labs use PVC.
iv. Tub Waste and Overflow Fittings: 17 gauge brass bath waste and overflow, chrome plated waste spud with universal type outlet connection suitable for 1-1/2" I. P. S., or 1-1/2" O. D. tubing or 1-1/2" solder joint outlet connection on waste tee.
v. Escutcheons: Chrome plated cast brass with set screw.

f) Water Conservation:
i. All plumbing fixtures shall be of water conservative design. Provide as a minimum device to restrict water flow as follows:

<table>
<thead>
<tr>
<th>Fixture</th>
<th>Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lavatory</td>
<td>0.5 gpm</td>
</tr>
<tr>
<td>Sink</td>
<td>2.5 gpm</td>
</tr>
<tr>
<td>Mop Sink</td>
<td>1.6 gpm hot and 1.6 gpm cold</td>
</tr>
<tr>
<td>Water Closets (siphon jet)</td>
<td>1.28 gallons per flush</td>
</tr>
<tr>
<td>Water Closets (gravity)</td>
<td>1.28 gallons per flush</td>
</tr>
<tr>
<td>Urinals (siphon jet)</td>
<td>0.125 gallon per flush</td>
</tr>
<tr>
<td>Shower Heads</td>
<td>2.50 gpm</td>
</tr>
</tbody>
</table>

ii. Flow control devices shall maintain flow rate shown regardless of inlet pressure.


h) Elevator Sump Pump
i. A 50 GPM submerged sump pump will be required for all elevator shafts.

1.7 FIRE PROTECTION

A. The existing fire protection system will remain in place as much as possible. The final system will be installed in accordance with NFPA 13, 14, and 20.

1) The existing fire protection water service and backflow preventer will remain in place and be re-used.
2) All fire protection piping will be analyzed and inspected by a fire protection contractor to determine ability to re-use. New piping will be provided as required.
3) All fire protection sprinkler heads will be analyzed and inspected by a fire protection contractor to determine ability to re-use. New heads will be provided as required.

B. The system will use concealed sprinkler heads in all public spaces. All other areas of the building will have upright pendant sprinkler heads. Sidewall sprinkler heads will be used where required. Sprinkler piping will be concealed where practical in areas such as closets and soffits.

1.8 BUILDING AUTOMATION SYSTEM

A. Direct Digital Control System

1) The heating, ventilating, and air conditioning (HVAC) system controls will include all direct digital controls (DDC). The following general control requirements will be incorporated to provide temperature control and reduced energy usage:

   a) Thermostats will have heating/cooling setpoint range limits.
   b) Avoidance of simultaneous heating and cooling whenever possible with adjacent zones.
   c) All major mechanical equipment will be controlled through a DDC controller.
   d) Zone thermostats are to be 24 Volt.
   e) Damper and valve actuation will be electric.
   f) The BAS will limit the setpoint range of the space thermostats.

1.9 TEST AND BALANCE AND COMMISSIONING

A. All mechanical systems, plumbing systems,
and related support systems shall be tested and balanced by a qualified independent Test and Balance Contractor. The Test and Balance Contractor shall be contracted directly to the Mechanical Contractor. The Test and Balance Contractor shall be involved in the project from the early phases of construction to verify balancing components, control devices, and other necessary devices being installed in the system to properly balance the system.

B. The Test and Balance Contractor shall be responsible for completing a complete Test and Balance Report. The Test and Balance Report shall be submitted to the Engineer in a timely manner to allow the systems to be validated prior to occupancy by the Owner.

C. The Test and Balance Contractor shall be responsible for working closely with the Commissioning Agent, as required, to fully commission the building.

1.10 MISCELLANEOUS MECHANICAL/PLUMBING PROVISIONS

A. Insulation:
   1) Insulation shall be provided on all ductwork systems and piping systems. Insulation thickness shall be in accordance with the 2018 version of the Washington State Energy Code.

B. All damaged or non-functional piping and ductwork insulation will be replaced under the renovation.

C. Control Dampers/Fire/Smoke Dampers
   1) All fire/smoke dampers and control dampers shall be provided with airfoil type blades, including blade seals and edge seals.

1.11 MECHANICAL SPACE REQUIREMENTS

A. It is anticipated that the existing water entry/mechanical room in the building basement will be adequate in size for locating all equipment, and having existing equipment remain in place.
IV.1.4 ELECTRICAL SYSTEMS NARRATIVE

1. GENERAL OUTLINE

This electrical scope narrative is intended to provide general direction for the design and initial pricing of the electrical system design for power, lighting, and fire alarm systems. The proposed electrical systems for the Eastern Washington University Center (EWUC) Renovation attempts to balance occupant usage requirements with other factors such as existing conditions, budgets, first costs, and operating costs. Work shall consist of furnishing all labor, equipment, supplies, and materials, unless otherwise specified, necessary for the installation of a complete electrical system(s) as required by the system description and drawings. The work shall include all electrical work not mentioned or shown which is necessary for a complete and operational electrical system. Within this narrative, the electrical system characteristics for the building will be addressed. System design characteristics will include:

- Codes and Standards
- Existing Normal and Emergency Distribution Systems
- Electrical Distribution System
- Emergency Electrical Distribution System
- Grounding System
- General Power
- Lighting
- Lighting Controls
- Fire Alarm System

Overall area of work is anticipated at approximately 116,290 gross square feet (GSF). The existing building is three stories tall and has a basement. The basement houses the WSU campus IT offices, as well as the campus data center. The renovation will involve all levels, including basement. Data Center to remain operational during construction.

It is recommended that the owner test each system's integrity prior to design completion to evaluate system functionality and perceived useful life. System inactivity may have led to failure of components that cannot be observed without a contractor enabling the systems.

2. CODES AND STANDARDS

The following standards will be used for this project (code versions subject to change per Authority Having Jurisdiction adoption timelines):

- 2020 National Electrical Code (NEC)
- 2018 International Building Code (IBC)
- 2018 International Energy Conservation Code (IECC)
- 2018 Washington State Energy Code (WSEC)
- 2018 International Fire Code (IFC)
- Current version of National Fire Protection Association (NFPA) 72, 99, 101, and 110.
- ANSI/ASME A17.1
- Washington State WAC 296-46B electrical rules and amendments

3. EXISTING NORMAL AND EMERGENCY DISTRIBUTION SYSTEMS

Existing normal service sourced from a 750kVA 15kV/480/277V pad mounted transformer from Avista Utilities. The transformer serves a 2500A main distribution switchboard with circuit breaker distribution and SPD device. The main circuit breaker is equipped with a GF trip device. It is not anticipated that the main service and switchboard will need to be upgraded for capacity. Main Distribution switchboard may need updates to comply with current NEC codes.

There are currently no existing emergency services or generator that support EWUC.

4. ELECTRICAL DISTRIBUTION SYSTEMS NEW WORK

Secondary Distribution

- Provide upgrades to secondary panelboards as necessary to support adequate branch circuits throughout the building described in General Power.
- Test and replace SPDs as required
- Provide Arc Flash Study of electrical system

Emergency Services and Distribution:

Provide new panelboards for legally required standby systems.

- Provide new panelboards for legally required standby systems.
Provide surge suppression for emergency electrical systems per NEC.

Emergency system to be selectively coordinated.

**Electrical Service to Remain Online During Construction**

The following Data Center services will need to stay online:

- Secure access
- Emergency Lighting
- Data Center power, to include 21B and 17T as these rooms provide services to the entire campus
- Data Center cooling, to include 21B and 17T as these rooms provide services to the entire campus

If a shutdown of the circuit that feeds the Data Center is required, WSU will need advanced notice of at least 30 days to allow for proper coordination and communication, and an appropriately sized generator must be provided to maintain operations during the scheduled shutdown.

5. **GROUNDING SYSTEM**

- A ground riser will run up the building in the electrical rooms with ground bars on each floor where electrical rooms are located.
- A ground riser will run up the building in the telecom rooms with a ground bar installed on each floor where telecom rooms are located.

6. **GENERAL POWER**

- Computer areas are anticipated to have two-compartment aluminum raceway provided for the power and data/communications requirements for workstations and equipment locations.
- Classrooms and study areas will have duplex receptacles at all desk locations. For classrooms, (1) duplex receptacle will be provided and distributed evenly for every (2) chairs/seats in classrooms. Provide duplex receptacles for displays on each wall of classrooms and study rooms with raceways for HDMI connections to main display control area.
- Each private office will be equipped with a minimum of (4) duplex receptacles (i.e. (2) quads or (1) duplex per wall)
- Conference rooms will be equipped with a minimum of (4) duplex receptacles of general convenience use. Additionally, one combination power/tele-data floor mounted device will be centered under the conference room table.
- Auditorium area will be equipped with plenty of receptacle access throughout as an active learning classroom. Placement to be determined as design progresses.
- Testing Classroom(s) will be equipped with receptacle access for each student seating location. Evaluate floor power versus other methods to distribute power for receptacle access.
- Power will be provided in each location as necessary for ceiling mounted projectors, projection screens, wall mounted digital displays, audio/visual equipment, etc.
- Duplex receptacles will be provided throughout the building for general convenience power in corridors, lobbies, mechanical rooms, electrical rooms, janitor closets, restrooms, elevator machine rooms and other similar spaces. Additional devices and circuits will be provided as required for electric water coolers, copy machines, refrigerators, coffee makers, dishwashers, garbage disposals, microwaves and other owner furnished equipment.
- Duplex receptacles with integral 5-VDC/2.1-amp "USB" charging ports will be located in gathering and collaborative work areas. These devices shall be "USB 2.0/3.0 compatible" class 2. A minimum of (50) USB receptacles are anticipated. Exact locations of these devices will be determined as the design progresses.
- The telecommunication rooms(s) will be equipped with one general convenience receptacle and additional power connections and specialty receptacles as necessary for equipment racks, access control equipment, etc.
- Power will be provided for building mechanical equipment, the elevators, and elevator ancillary equipment, etc. as required.
- Exterior receptacle locations will be required for maintenance and for service of any exterior equipment. Exterior receptacles shall be GFI type and provided with in-use type weatherproof covers.
- EMT conduit shall be used throughout the building for electrical feeders, electrical branch circuits, low voltage systems, etc. EMT conduit smaller than ¾” will not be allowed.
- MC cable shall be allowed for lengths up to 8’ for branch circuits only. Conduit is required from the branch circuit panelboard to each room.
- Refer to Mechanical Systems Narrative and drawings for additional information regarding specific and/or specialty equipment.
7. **LIGHTING**

All luminaires in building to be LED. All luminaires in spaces that are not LED will be replaced such that all luminaires in the building are LED. Luminaires to be provided based on WSU section 26 standards. Luminaires provided will be capable of programming and controls compatible with Washington State Energy Code.

- Existing classrooms and offices currently have LED luminaires. To be verified during design and upgraded as required. Controls also to be upgraded as required to meet Energy Code.
- Existing public spaces (Corridors, lobbies, circulation, etc) and newly renovated spaces to be provided with new LED luminaires and new lighting controls to meet Energy Code.
- Back of house spaces (mechanical and electrical rooms, janitor closets, etc): new lighting and controls requirement to be verified during design.

7.1 Emergency Lighting:

- Base: Lighting to be supported by generator
- Alt 1: Provide emergency lighting system with lighting inverter and battery pack to support all emergency lights and exit lights.
- The following luminaire types will be provided. Base design will be LED, 4100 K color temperature and 85 coloring rendering index (CRI) minimum. All lighting will comply to be DLC or energy star compliant per the WSU standards.
- Lighting in areas with tall ceilings, will be LED for increased life and located in places that are accessible from a lift for maintenance.
- Lighting to be evaluated for upgrade as design progresses:
  - Entry lobby
  - All public spaces
  - New classroom areas
  - New office suite
  - Open studios (level 2, level 3, lobby near auditorium on level 1) require upgrade to LED
  - Provide lighting for task lighting and art specialty lighting.

7.2 Exterior: Existing exterior lights to remain.

- Provide alternate pricing to include all new exterior lights and controls: LED weatherproof wall mounted with recessed LED downlights in soffits and entry canopy locations to illuminate the surrounding walls and pavement. Sidewalk, vehicle circulation area and bike lane luminaires will be LED pole mount. All luminaires will have sharp cut-off distribution characteristics.
- Provide alternate for exterior lighting upgrade at entry and ramp for southwest entrances.
- Provide alternate for exterior lighting upgrade on columns on NorthWest side of building

8. **LIGHTING CONTROLS:**

8.1 All existing lighting controls will be replaced with new. Means for automatic lighting controls will be provided to comply with the requirements of the current International Energy Conservation Code (IECC) for interior lighting. The lighting control system will be commissioned and confirmed to be fully operational prior to completion. The lighting controls system will be provided by a manufacturer with a training program for WSU staff, have spare parts and systems provided to be located on campus, and have a local presence for support and maintenance.

- Item discussed for future consideration: The lighting controls system to be Bacnet certified and be capable of interfacing with Siemens building automation controls used on WSU Campus.

8.2 Spaces equipped with three (3) or more luminaires located along perimeter walls will be equipped with daylight harvesting photocells as required by the IECC. The photocells will be low voltage, ceiling mounted devices in these locations.

8.3 Corridors and public areas will be equipped with occupancy sensors. The occupancy sensors will trigger the lights to come ON at the beginning of normal business hours. Lights in these areas will remain ON outside of normal business hours. The main Building Lighting Controller will schedule lights to turn on and off per scheduled business hours. Manual override will be provided.

8.4 All classroom and conference areas will be equipped with lighting controls via ceiling occupancy sensors (Auto ON/Auto OFF) with manual controls for dimming and presentation modes and zones.

8.5 Exterior site lighting will be controlled by a relay-based lighting control system by a photocell and time clock connected to the building.
8.6 Street lighting will be connected to the campus distribution and control and not served from the building.

8.7 The following matrix describes the intent of the lighting control system in general spaces as required by the IECC.

<table>
<thead>
<tr>
<th>Building Area Type</th>
<th>Control Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time Clock (ON)</td>
</tr>
<tr>
<td>Corridors</td>
<td>X</td>
</tr>
<tr>
<td>Lobbies/Common Areas</td>
<td></td>
</tr>
<tr>
<td>Mech/Elec/IT</td>
<td>X</td>
</tr>
<tr>
<td>Storage</td>
<td>X</td>
</tr>
<tr>
<td>Exterior Lighting</td>
<td>X</td>
</tr>
<tr>
<td>Conference/Meeting Rooms</td>
<td></td>
</tr>
<tr>
<td>Labs</td>
<td>X</td>
</tr>
<tr>
<td>Classrooms</td>
<td>X</td>
</tr>
<tr>
<td>Private Offices</td>
<td>X</td>
</tr>
<tr>
<td>Open Offices/Workstations, Workrooms</td>
<td></td>
</tr>
<tr>
<td>Breakrooms</td>
<td>X</td>
</tr>
<tr>
<td>Restrooms</td>
<td></td>
</tr>
<tr>
<td>Stairs</td>
<td>X</td>
</tr>
</tbody>
</table>

9. **FIRE ALARM SYSTEM:**

9.1 The existing fire alarm system in this building is a Simplex Addressable 4020 and will need to be completely upgraded with an addressable system with digital voice audible sounders (voice evacuation). The system will be capable of monitoring the sensitivity and calibration of each detection device and reporting alarms by an alpha-numeric display and on a remote printer. Each detection device and manual pull station will be addressable and report to the control panel as an individual device. Addressable interface models will be used to connect the sprinkler system flow and tamper devices to the system.

- New system to be Simplex
- Building occupancy type B
- The Fire Alarm dialer will be replaced as new.
- Fire/Smoke Dampers will be replaced as new. Use Belimo actuators.

9.2 The main fire alarm panel will be located in fire command center and a graphic annunciator panel will be located in the main building lobby and other areas defined by WSU Facilities. The exact locations will need to be coordinated with WSU and the fire department. This annunciator will indicate by LED which device is in alarm and if there is trouble on the system.
9.3 Because the building will be sprinkled, devices will be located as follows:

- Manual Stations: Double action pull stations will be located at each exit door and where required to meet the travel distance limitations per NFPA.
- Photoelectric Smoke Detectors: In all electrical and telephone closets, main electrical room, emergency electrical room, elevator lobbies, elevator machine room, top of the elevator shaft, and the top of stairs. Thermal detectors to be provided in janitor closets.
- Duct Detectors: In all supply and return ducts required by code. Sequence of operation to be coordinated with WSU facilities personnel for fan shut down and damper operations.
- Audible and Visual Notification Devices: Audible and visual notification devices will be located throughout the building as required to comply with current codes and ADA documents. Notification devices shall be ceiling mounted, white with red “ALERT” marking.
- Fire Alarm Cabling: All fire alarm system cabling shall be routed in EMT conduit or a survivable path where required by NFPA.
IV.1.5 TELECOMMUNICATIONS NARRATIVE

Introduction

The Eastern Washington University Center (EWUC) at WSU Spokane is a 3-story plus basement, approximately 113,700 GSF building constructed in the 1990s, containing offices, classrooms, assembly spaces, and a campus data center. Major programs for the renovation of the building will include office space for the College of Medicine, a student lounge, group study rooms, and active and remote learning classrooms. Connectivity, both wired and wireless, is imperative to the learning environment.

The following narrative provides general criteria and guidelines for the architects and MEP designers regarding the telecommunications aspects of the building design. It should be used as a guideline for design.

Design Guidelines

Washington State University design guidelines shall be followed concerning telecommunications design. The telecom design shall also comply with relevant sections of the International Building Code, International Fire Code, National Electrical Code, industry standards, and best practices.

The project is being developed to meet LEED Version 4-Silver, although it is unclear whether telecom performance criteria would be required for the facility to meet LEED Silver.

The telecommunications distribution system shall meet the WSU Telecommunications Distribution Design Guide (TDDG.) The copper structured cabling system shall be CommScope Uniprise Structured Cabling System (SCS) product line. The optical fiber cabling and components shall be Corning Cable LANscape® product line.

Horizontal Distribution Systems

Horizontal distribution copper cable and components for data transmission will comply with the IEEE 802.3ab 1000Base-T Gigabit Ethernet Standard. A 4-pair, 100-ohm, 24 AWG, unshielded twisted-pair (UTP) copper Category 6 cable is the minimum for all horizontal cabling applications.

Wireless outlets will be designed throughout the project. Faceplates or surface mount boxes shall be two-port.

WAO products

- Category 6 cable
  - CS34P
- Modular jack, RJ45, Category 6
  - UKJ-600
- Category 6A cable
  - CS44P
- Modular jack, RJ45, Category 6A
  - UKJ-10G

Quantities of cables per outlet:

- Wireless Access Points – (2) Cat6A
- Room schedulers – (1) Cat6
- Workstations – minimum (2) Cat6
- Digital Signage – (1) Cat6
- Wall phones – (1) Cat6
- Surveillance cameras – (1) Cat6
- Building Automation System – (1) Cat6
- Fire Alarm Control Panel (if required) – (1) Cat6
- Elevators – (1) Cat6 per car
- Point-of-Sale – (2) Cat6

Work Area Outlet Rough-In

Work area outlets shall be installed within wall cavities with a one (1) inch conduit and a 4-11/16-inch square box with a single gang mud ring for conduit containing two Category 6 cables.

Areas defined by the National Electrical Code as wet locations shall have the appropriately rated cable installed.

Copper Patch Panels

Patch panels shall be the same Category as the cable. Patch panels shall be angled, 48-port, 2 Rack Mount Units.

- Category 6 Angled Distribution Module Patch Panel – UNPA-6-DM-2U-48
- Category 3 Voice Patch Panel – 1711214-2

Copper Patch Cords

Copper patch cords shall be the same Category as the cable. Work area outlet patch cords shall be (50) percent (6) feet and (50) percent (10) feet in length and shall be furnished by the Contractor for each outlet port plus (10) percent spare. The Contractor shall furnish telecommunication room patch cords for patching by the Owner. The Contractor will provide one for each outlet plus (10) percent spare. These patch cords shall be
(50) percent (3) feet and (50) percent (5) feet in length. The Owner reserves the right to change the lengths and quantities at any time.
- Category 6 patch cables – UC1BBB2

**Backbone Distribution Systems**

The intra-building backbone pathway is intended to utilize a physical start topology consisting of conduit, chases, shafts, sleeves, cable tray, and ladder rack. When backbone cable is installed in cable trays, chases, or shafts, the cable shall be fully supported, secured, and adequately transitioned to include proper bend radius fittings at pathway transitions. When cabling is routed vertically, it shall be secured that the weight of the cabling does not subject itself to stresses that could damage or reduce the performance of the cabling. The intra-building backbone distribution system shall consist of the dedicated pathway system, cabling, and components. Each telecommunication room shall be served with a 25-pair copper voice backbone cable and multi-strand optical fiber cable.

- 25-pair cable – various manufacturers
- Corning FREEDM® One Tight-Buffered Cable, Riser, 12 F, OS2 – 012E8F-31131-29
- Corning FREEDM® One Tight-Buffered Cable, Riser, 12 F, OM3 – 012T8F-31180-29
- Corning FREEDM® One Tight-Buffered Cable, Riser, 24 F, OM3 – 024T8F-31180-29

**Fiber Patch Cords**

Fiber patch cords shall be the same type as the optical fiber cable. Patch cord lengths shall be based upon the distance between the devices being patched. Sufficient length shall be provided to route patch cords neatly, without excessive length.
- Corning OM3 Duplex LC-LC – U9U902TD120011M
- Corning OS2 Duplex LC-LC – U8U802GD120012M

The basement data center will serve as the main telecommunications room in the building and will serve as the main demarc for the campus network. Other intra-building pathways will originate from this space and route to the other intermediate telecommunications rooms.

4-inch conduit is the primary pathway for intra-building pathways. Four 1-inch inner ducts shall be placed within each 4-inch conduit.

Intra-building backbone inner duct is required to provide additional protection to the backbone cabling system outside of the conduit. The environmental rating of the inner duct shall comply with the building construction space.

**Telecommunications Spaces**

**Architectural**
- Concrete walls and floor shall be sealed
- No carpeting or tile
- Extend finished walls along all four sides to the structure above
- Cover walls with 3/4-inch AC grade plywood, mounted 6-inches above finished floor. Convenience electrical receptacles shall have the appropriate plaster ring to account for this extra wall material.
- No suspended ceilings
- Minimum ceiling height is 10-feet
- Ceiling finish shall be light-colored to enhance room lighting
- Doors shall be a minimum of 36-inches wide and 80-inches tall. Doors shall have an outward swing of 180 degrees, fitted with a lock
- Rooms shall not be adjacent to an exterior wall
- Entrance will not be through a non-circulation space such as a storage room

**Electrical/Lighting**
- Minimum (1) dedicated, non-switched 120VAC, 30-ampere receptacle and (1) dedicated, non-switched 120VAC, 20-ampere receptacle for equipment power, each on individual branch circuits mounted directly above each equipment rack
- Minimum (1) standard 20-ampere quadraplex convenience outlet located near the door with additional duplex convenience outlets placed at 6-foot intervals around the perimeter walls at standard outlet height
- Provide (1) light fixture with emergency power or on a battery pack
- Provide 50-foot candles of lighting measured at 3-feet from the floor in front of, behind, and to the sides of equipment racks
- Lighting layout shall be coordinated with the equipment to ensure lighting is not obstructed
- Provide a 100-ampere electrical panel in each telecommunications rooms
  - Panel will be dedicated to the equipment in the room
  - Size panel according to current implied by rack count
  - Locate panel near the door
  - The panel shall not be used to power HVAC, lights, or convenience outlets within the room
  - Label as “Telecommunications Equipment Only”
Mechanical
- Refer to ASHRAE 90.1 for mechanical requirements
- Maintain continuous and dedicated environmental control, separately cooled from the rest of the building on a dedicated, stand-alone system
- Connect cooling to emergency power when present
- Maintain the temperature between 64 and 75 degrees Fahrenheit
- One air change per hour is required
- Provide monitoring of:
  - Room temperature
  - Discharge temperature
  - Fan motor status

Fire Protection
- When cables, pathways, or other elements penetrate fire-rated barriers, firestopping sleeves shall be installed
- Provide wire cages on sprinkler heads to prevent accidental operation

Plumbing
- Avoid locations below or adjacent to areas of a potential water hazard
- Liquid carrying pipe shall not be routed through, above, or in walls enclosing the room

Equipment Racks
- 45 RMU tall and floor-mounted
- (1) two-post rack dedicated to network electronics
- (1) two-post rack dedicated to cabling
- 19-inch tapped rail system
- Minimum 36-inches clearance at the front and back
- Minimum 12-inches clearance on at least one side
- Racks with active network equipment shall have a vertically-mounted Power Distribution Unit (PDU)
- Provide vertical and horizontal cable management
- Cabinets shall be used in place of racks when not located inside of a telecommunications room
  - 42 RMU tall and 36-inch deep
  - Minimum 36-inches clearance in the front
  - Minimum 24-inches clearance on the side
- Panduit Net Access Universal

Pathways
The intra-building pathway shall be a star topology consisting of conduit, chases, shafts, sleeves, and cable tray. Cabling, both horizontal and backbone, shall be properly dressed and secured in a professional manner and according to standards. Provide cable tray above the accessible ceiling for the main trunk of the cabling pathway.
- Eaton KwikSplice Aluminum™ Cable Tray

Bonding and Grounding
Telecommunications rooms shall be bonded to the electrical ground system per ANSI/TIA-607-C.

The Primary Bonding Busbar shall be bonded to the main electrical ground system. Equipment racks, cable runway, and metallic pathways shall be attached using standard NEMA-compliant hardware.

The Secondary Bonding Busbar shall be bonded to the Primary Bonding Busbar. Equipment racks, cable runway, and metallic pathways shall be attached using standard NEMA-compliant hardware.
- Erico nVent Telecom Busbars – various sizes

Wireless Access Distribution
The wireless network shall be designed to provide full-building wireless coverage with exceptions as nominated by owner. Wireless Access Points shall be Owner Furnished Contractor Installed (OFCI).
IV.1.5 AUDIO VIDEO NARRATIVE

INTRODUCTION

The Eastern Washington University Center (EWUC) Building at WSU Spokane is a 3-story plus basement, approximately 113,700 GSF building constructed in 1997, containing offices, classrooms assembly spaces and a campus data center. Major program for the renovation of the building will include office space for the College of Medicine, a student lounge, group study rooms, as well as active and remote learning classrooms.

STANDARDS AND GUIDELINES

Audio Video Systems shall be developed in accordance with the most current revision of the WSU Spokane Audio/Visual Design Guide – currently December 11, 2020. Reference standards included in the design guide shall apply to all AV systems developed in this scope.

For General Classrooms and other spaces managed by the University IT department, refer to “Section 27 41 00 – Audio Video Systems – WSUP Telecom and AV Construction Guide Specification – 2015 June 24” as well as the above Design Guide for approved equipment and installation practices. Confirm any updates to, or required variances from the design guide with the Campus AV Project Manager. Coordinate the number of data drops required to support the AV systems with the owner and Structured Cabling Contractor.

The Active Learning and Testing Classrooms included in this narrative have different programmatic requirements than the campus standard and are broken out below. These spaces are managed by the College of Medicine and AV system designs may deviate from the campus standards to the extent required to fulfill the project requirements. AV systems in these spaces are to be provided, installed, and tested by the AV contractor.

AUDIO VIDEO SYSTEMS DESCRIPTIONS

General Use Classrooms – Infrastructure Only
General Use Classroom scope includes the following items:
  • Electrical rough-in for Owner Provided AV systems.
    ◦ Existing cable pathway may be reused where it is in good condition.
    ◦ New rough-in, power, and pathway will be required for:
      ▪ Owner-furnished far-end video monitors and camera on the rear wall
      ▪ Dual 85” Displays on the teaching wall
  • Supply and installation of all TV monitor mounts.
Refer to Section 6 of the AV Design Guide for typical classroom layouts.

All classroom AV equipment shall be provided and installed by the owner, with the exception of the monitor mounts above.

Breakout Spaces (x10) – Infrastructure Only
Breakout spaces are designed to allow groups of up to ten people to meet and collaborate. It includes a wall-mounted flat screen display, sized appropriately for the room, with AV connections to a floorbox underneath the conference table. A table top mounted cable cubby allows for the connection of a user-provided laptop or other device to send content to the display.

Each breakout space shall include videoconferencing capabilities including local microphone(s) and camera(s) to capture in-room audio and video, loudspeakers to reproduce far-end audio and the ability to share content from connected devices.

Breakout Space scope includes:
  • Power, Rough-in and pathway for owner-provided AV devices
  • Supply and installation of all TV monitor mounts.

No room combining functionality is required in divisable breakout spaces.

Group Study (x8) – Infrastructure Only
Group Study rooms are designed for several people to meet and collaborate. These rooms have a wall-mounted flat screen display with integrated speakers and a direct wired input connection at the table as well as an option for wireless connectivity.

Group Study scope includes:
  • Power, Rough-in and pathway for owner-provided AV devices
  • Supply and installation of all TV monitor mounts.

Private Testing Rooms (x10) – Infrastructure Only
Each Private Testing room shall be equipped with a camera that routes back to a central monitoring station. Electrical and Low Voltage rough-in shall be provided for a future wall-mounted display and local input panel below.

Private Testing Room scope includes:
  • Power, Rough-in and pathway for owner-provided AV devices
**Testing Classrooms (x2)**

Testing Classrooms are used primarily for testing with additional uses as a large classroom or potential flexible space. The AV system in this room shall be based around the “Basic Classroom” in Section 2.2.1.1 of the AV Design Guide.

Two projection screens, sized per campus standards, shall be located at the front of the room. These screens shall be electrically operated and controlled by the AV control system. Two ceiling mounted video projectors are connected to a video matrix switcher located in the teaching station. Video inputs from the teaching station computer, document camera, wireless video gateway, video conferencing codec, and other inputs as nominated by the owner shall be capable of being routed to each projector independently.

A microphone system shall be provided for instructor voiceleif. Confirm form-factor (wired/wireless + transmitter type) and performance requirements with owner during the design phase. All microphones, as well as other audio sources shall be routed to a digital signal processor for signal equalization and routing. This processor will feed an overhead distributed loudspeaker system designed for voice lift and audio presentation playback.

A videoconferencing system shall be provided. This system shall include cameras to capture the instructor as well as students, microphones to capture local audio and a video conferencing endpoint.

The AV system shall be controlled by a Control System Processor, located in the instructor position. The primary control interface shall be a touchscreen controller at the instructor station.

An RF-Based (or other approved alternative) assisted listening system shall be provided.

The testing Classroom scope includes the supply, installation and testing of a fully functional AV system and any associated power, rough-in and pathway required for its support.

**Active Learning Classroom**

In the Active Learning Classroom, students sit in small groups of 8 to 10. The wall near each table may have a flat screen display or a projection surface that students can send content to either via wired or wireless connection. Display types, locations and mounting requirements shall be coordinated with the owner and architect during the design phase.

The Active Learning Classroom has a front-of-room position that functions similarly to the basic classroom with the additional ability to send content to the screens located around the room. Students connect their laptops to input devices located at the table (with a cable+power whip) to floorbox below, or via wireless network to share video content throughout the room. Additional video moderator controls are located at the instructor position.

Wired and wireless microphones shall be used for instructors and at group tables for in-room voice lift as well as to provide audio to far-end videoconference participants. It is recommended that room-wide microphone coverage be achieved through the use of tabletop microphones rather than ceiling mounted microphone arrays due to ceiling height conditions. Overhead loudspeaker systems provide even audio coverage for voice lift and program audio.

A videoconferencing system shall be provided that includes multiple cameras and may include auto-tracking software. Audio inputs to the video conferencing end point may be from wired/wireless microphones at the instructor position as well as distributed tabletop microphones.

The Active Learning Classroom shall be capable of being controlled through a touchpanel controller and shall not require a dedicated AV operator.

The Active Learning Classroom scope includes the supply, installation and testing of a fully functional AV system and any associated power, rough-in and pathway required for its support.

**VR Classroom**

No AV scope is currently anticipated in the VR Classroom.

**INFRASTRUCTURE AND SUPPORT**

The AV Systems shall be supported by a system of cable pathways and boxes to allow for efficient and protected routing of AV signals. All AV signals shall be run in conduit or cable tray. All AV wall boxes shall include conduit stubs to cable tray or above an accessible ceiling. Refer to typical classroom layouts provided in the Design Guide.

Electrical receptacles will need to be located adjacent to or integrated into AV equipment located throughout the room. These locations include but are not limited to: Projectors, Projection Screens, Flat Panel Displays, Floor Boxes, and Wall Plates.

Connections to the campus network for AV equipment shall be coordinated with the owner and telecom designer.
IV.1.6 ACOUSTICS NARRATIVE

INTRODUCTION

The Eastern Washington University Center (EWUC) at WSU Spokane is a 3-story plus basement, approximately 113,700 GSF building constructed in 1997, containing offices, classrooms assembly spaces and a campus data center. Major program for the renovation of the building will include office space for the College of Medicine, a student lounge, group study rooms, as well as active and remote learning classrooms. Appropriate room acoustics, sound isolation, and mechanical noise and vibration control strategies shall be employed to provide appropriate acoustical environments for the building’s occupants.

The following narrative provides general criteria and guidelines for the architects, MEP designers, and structural system designers regarding room acoustics, sound isolation, and HVAC noise control aspects of the building design, and should be used as a guideline for design.

DESIGN GUIDELINES

Washington State University design guidelines shall be followed in relation to acoustics and noise control design. The acoustics design shall also comply with relevant sections of the International Building Code.

The project is being developed to meet LEED Version 4-Silver, although it is not clear whether optional acoustical performance criteria would be required for the facility to meet LEED Silver. Regardless, the criteria contained herein are consistent with the principles set forth in the LEED acoustics performance criteria, wherever possible.

While HIPAA requirements for privacy of patient information apply generally to healthcare facilities, this education building will not be used to attend to patients (except in simulation), and this project will not be required to meet the acoustical criteria set forth by HIPAA or related institutional guidelines, such as FGI. However, healthcare simulations are part of the program of this building, and speech privacy principles shall be employed, as necessary.

ROOM ACOUSTICS

The interior finishes, volume, and shape of a room directly affects the speech privacy, intelligibility, and reverberation time in a space. Recommendations for acoustical finishes and minimum Noise Reduction Coefficient (NRC) ratings will be fine tuned in design. Preliminary recommendations are described below.

Active Learning Classroom
A sound-absorbing ceiling finish (minimum NRC 0.70) is recommended for the entire Active Learning Classroom to reduce the build-up of noise from large groups of people. Carpet should be installed on the floor and the walls should be covered with 2-inch thick absorptive wall finishes starting at 3-4 feet above the finished floor. Architectural elements shall be introduced on the walls to break up the curved wall areas to avoid focusing of the sound in localized areas of the room.

Classrooms, Testing Classroom, Group Breakout, Group Study, and Conference Rooms
These spaces should have a sound-absorbing ceiling finish (minimum NRC 0.70 for small rooms, minimum NRC 0.80 for large rooms), and the floor should be carpeted. To improve communication within these rooms, a sound-absorbing wall finish (minimum NRC 0.80) is recommended over a minimum 30% of the total wall area. Where operable walls are used, they should be rated at STC-50 or better.

Offices, Private Testing, and Interview
These spaces should have a sound-absorbing ceiling tile (minimum NRC 0.85). Carpet on the floor will control disturbance from footfall noise.

Lounges (enclosed)
A sound-absorbing ceiling finish (minimum NRC 0.70) is recommended for the lounge areas to reduce the build-up of noise from large groups of people.

Lounges (open)
The collaborative work spaces should have a sound-absorbing ceiling finish (minimum NRC 0.80) above all work areas.

Lobbies
Spaces with large volumes and acoustically-reflective finishes (gypsum board, glass, exposed concrete, hard floor finishes, etc.) will result in a build-up of noise from multiple noise sources (phones ringing, large groups of people talking, etc.) that can be disruptive within the space and in adjacent spaces. To improve the acoustical environment and reduce the reverberation time, sound-absorbing ceiling and wall finishes (minimum NRC 0.80) are recommended.

Corridors
Corridors should have a sound-absorbing ceiling finish (minimum NRC 0.70) and should be carpeted where feasible to reduce footfall noise transmission both horizontally and vertically.
MEP Rooms
To reduce the build-up of MEP noise, the entire ceiling surface and 50% of the wall surfaces should be covered by a sound-absorbing finish (minimum NRC 0.80). 2" thick fiberglass duct liner would be acceptable.

SOUND ISOLATION AND SPEECH PRIVACY

Sound isolation addresses the appropriate reduction of sound transmission between adjacent spaces, and specific wall type recommendations will be defined based on building layout. Keep in mind that privacy between adjacent spaces will also be affected by the background noise level in the receiver's room. Privacy will also be dictated by ceiling types if walls do not continue full height to the deck above.

Minimum STC ratings for partitions between other types of spaces are listed below. These ratings may be modified when specific adjacencies are further developed.

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Minimum STC Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Learning Classroom</td>
<td>STC-50-55</td>
</tr>
<tr>
<td>Conference Rooms</td>
<td>STC 50-55</td>
</tr>
<tr>
<td>Classrooms</td>
<td>STC 50-55</td>
</tr>
<tr>
<td>Private Testing/ Interview</td>
<td>STC 50-55</td>
</tr>
<tr>
<td>Group Breakout/ Group Study</td>
<td>STC 50-55</td>
</tr>
<tr>
<td>Executive Offices</td>
<td>STC 50-55</td>
</tr>
<tr>
<td>Private Offices</td>
<td>STC 45-50</td>
</tr>
<tr>
<td>Open Offices</td>
<td>STC 45</td>
</tr>
<tr>
<td>Lounges to Public Space</td>
<td>STC 45</td>
</tr>
<tr>
<td>Restroom to Public Space</td>
<td>STC 45</td>
</tr>
</tbody>
</table>

Wall Types
Wall types will be designed to minimize the transmission of sounds between spaces of dissimilar use. Typical wall types below are offered for use from an acoustical standpoint, and wall constructions will be refined during design phases of the project. Unless stated otherwise, all walls shall extend to the structure above, and all penetrations and interesections with surrounding structure or building elements shall be fully sealed. Steel stud framing shall be 22 gauge or lighter to achieve the stated STC criteria.

- Type 1SS1 (STC 45) - This partition should consist of one layer of 5/8-inch thick gypsum board on both sides of a single 3-5/8-inch thick steel stud with batt insulation in the stud cavity.
- Type 2SS1 (STC 50) - This partition should consist of two layers of 5/8-inch thick gypsum board on one side of a single 3-5/8-inch thick steel stud with batt insulation in the stud cavity, and one layer of 5/8-inch thick gypsum board on the other side of the stud.
- Type 2SS2 (STC 55) - This partition should consist of two layers of 5/8-inch thick gypsum board on both sides of a single 3-5/8-inch thick steel stud with batt insulation in the stud cavity.
- Type 2DS2 (STC 63) - This partition should consist of two layers of 5/8-inch thick gypsum board on both sides of a double 3-5/8-inch thick steel stud with batt insulation in each cavity. The stud cavity areas should be separated by a minimum 2” air gap.

If the partitions do not extend full-height up to structure (stopping 6” above the ceiling, for example), the sound isolation performance will be reduced significantly, and the required STC ratings cannot be achieved. Conversations will be audible and intelligible between any spaces that do not have full-height partitions, so full-height partitions are recommended between all spaces where a minimum level of speech privacy is needed.

Operable partitions shall achieve the required STC rating for the spaces they are separating.

Doors
Solid core wood or mineral core metal doors, fitted with perimeter adjustable sound seals and insulated door frames, will be required at all spaces where speech privacy or sound isolation is critical.

Interior Windows
Interior glazing, where provided, should be a minimum STC 36 in locations where a higher level of sound isolation and privacy is desired. Specific recommendations for glazing types shall be provided during design phases.

Impact Noise
Footfall impact noise can be transmitted both horizontally and vertically through the building structure, especially when hard floor finishes (polished concrete, vinyl, tile, etc.) are utilized. Carpet is the most cost-effective method for reducing impact noise transmission.

For high traffic corridors above acoustically-sensitive spaces or areas with exposed structure, hard floor finishes, or that are especially sensitive to impact noise transmission, acoustical underlayments may be required beneath the floor finishes. Floor finishes and ceiling types as they relate to impact isolation performance should be coordinated in the design phases.

Speech Privacy
A good reference for speech privacy is the Facilities Guidelines Institute. According to their standards, to achieve
confidential speech privacy, the sum of the composite STC rating (partition, door, and glazing combined) of the partition and the A-weighted background noise level (dBA) shall be at least 75. Sound masking systems should be considered in areas where speech privacy is critical.

“Secure” speech privacy is the highest level and generally requires total inaudibility of speech between adjacent spaces. No “secure” speech privacy adjacencies have been identified for this project.

MECHANICAL AND ELECTRICAL NOISE CONTROL

Noise Criteria
Background noise levels attributable to mechanical and air distribution systems are defined in terms of maximum octave band sound pressure levels in decibels (dB) from 31.5 Hz to 8000 Hz – expressed in terms of Noise Criteria (NC) ratings, as defined below. The ambient noise level in occupied spaces not listed here should be NC-40 or less.

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Noise Criteria (NC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference Rooms</td>
<td>NC-25-30</td>
</tr>
<tr>
<td>Classrooms/ Lecture</td>
<td>NC-30</td>
</tr>
<tr>
<td>Active Learning Classroom</td>
<td>NC-30</td>
</tr>
<tr>
<td>Testing Classroom</td>
<td>NC-30-35</td>
</tr>
<tr>
<td>Private Testing/ Interview</td>
<td>NC-30-35</td>
</tr>
<tr>
<td>Group Breakout/ Group Study</td>
<td>NC-30-35</td>
</tr>
<tr>
<td>Executive Offices</td>
<td>NC-30</td>
</tr>
<tr>
<td>Private Offices</td>
<td>NC-30-35</td>
</tr>
<tr>
<td>Open Offices</td>
<td>NC-35-40</td>
</tr>
<tr>
<td>Lobby/ Circulation/ Lounge</td>
<td>NC-40-45</td>
</tr>
</tbody>
</table>

Chillers and Cooling Towers
Large mechanical equipment that can produce significant noise and vibration levels, such as chillers and cooling towers, shall be isolated appropriately.

Vibration Isolation
Proper vibration isolation for mechanical equipment (air handling units, pumps, fans, transformers, etc.) will be specified during design and shall be consistent with ASHRAE and campus guidelines. 4” thick concrete pads should be used under each piece of equipment in the mechanical room to provide a structure that is sufficiently stiff and to minimize structure-borne noise and vibration.

Emergency Generator
Generators produce high noise levels and should be located away from noise-sensitive areas as much as possible. The noise impact on interior spaces can be significant, so an acoustical enclosure should be planned for all new generators, including proper sound attenuation of the discharge, inlet, and exhaust.

Elevator Equipment
The elevator equipment rooms should not be located adjacent to noise-critical spaces.

Air Distribution Systems
Ducts from rooftop or exterior air handlers should not enter the building directly over noise critical spaces. Maximize duct runs between fans and first terminal outlets. A distance of 25 feet should be taken as a minimum guideline. Provide lined transfer ducts in all classrooms, meeting rooms, conference rooms, and other noise critical spaces, extending into the corridors. Pay close attention to providing duct velocities as called out in ASHRAE guidelines, with gradual velocity transitions to reduce turbulence. Terminal units will need to be strategically located to avoid noise impact on the spaces they serve.
V. DRAWINGS
BASEMENT DEMOLITION PLAN

DEMOLITION PLAN LEGEND

- - - Existing wall to be removed

 Existing door to be removed

 Existing glass partition to be removed

 Existing wall to remain

NOTES

• Limited architectural demolition in the basement.
• Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.
LEVEL 01 DEMOLITION PLAN

DEMOLITION PLAN LEGEND

--- Existing wall to be removed

Existing door to be removed

Existing glass partition to be removed

--- Existing wall to remain

GENERAL NOTES

• Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.

WORK NOTES

A. Remove existing carpet, APC ceiling and light fixtures. Prep for new carpet, paint, ceiling tiles, LED light fixtures, and AV.
LEVEL 02 DEMOLITION PLAN

DEMOLITION PLAN LEGEND

---  Existing wall to be removed

   Existing door to be removed

   Existing glass partition to be removed

---  Existing wall to remain

NOTES

• Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.
LEVEL 03 DEMOLITION PLAN

DEMOLITION PLAN LEGEND

--- Existing wall to be removed

Existing door to be removed

Existing glass partition to be removed

Existing wall to remain

NOTES

- Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.
BASEMENT FLOOR PLAN

PLAN LEGEND

Existing wall to be remain

Existing door to be remain

New Partition

New Door

Area of Improvement

GENERAL NOTES

• Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.

ROOM LEGEND (Not all notes on all sheets)

1. Lobby
2. COM Active Learning Classroom
3. Campus Testing Classroom
4. Campus Testing Center
5. Campus Testing
6. Conference
7. Lounge
8. Office
9. Open Office
10. Men’s Restroom
11. Women’s Restroom
12. Unisex Restroom
13. Storage
14. Security
15. Emergency Ops Center
16. Break Room
17. Interview
18. Reception
19. Waiting
20. Changing
21. Equipment Room
22. Building Support
23. Lost & Found
24. Campus Classroom
25. COM Group Breakout
26. Vending
27. COM Student Lounge
28. COM Group Study
29. COM Student Break/Lounge
30. COM VR Classroom
31. COM VR Consult
32. COM 3D Printing
33. COM Clinical Campus Lounge
34. COM Student Lockers
35. Data Center
36. Gender Neutral Restroom
37. Lactation
38. Open Collaboration
39. Print/Copy
40. Telecom
41. Admin
42. Campus Conference
43. Work Room
44. Mail Room
45. COM Dean’s Waiting
46. COM Dean’s Reception
47. COM Dean’s Conference
48. COM Dean’s Office
LEVEL 01 FLOOR PLAN

PLAN LEGEND

Existing wall to be remain

Existing door to be remain

New Partition

New Door

Area of Improvement

GENERAL NOTES

- Refer to Structural, MEP, IT, AV, and Acoustics
  narratives for additional scope of work.
- Furniture shown for reference only

ROOM LEGEND (Not all notes on all sheets)

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42. Campus Conference
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44. Mail Room
45. COM Dean's Waiting
46. COM Dean's Reception
47. COM Dean's Conference
48. COM Dean's Office
LEVEL 02 FLOOR PLAN

PLAN LEGEND

Existing wall to be remain

Existing door to be remain

New Partition

New Door

Area of Improvement

GENERAL NOTES

• Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.
• Furniture shown for reference only

ROOM LEGEND (Not all notes on all sheets)

1. Lobby
2. COM Active Learning Classroom
3. Campus Testing Classroom
4. Campus Testing Center
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48. COM Dean's Office
LEVEL 03 FLOOR PLAN

PLAN LEGEND

 Existing wall to be remain

 Existing door to be remain

 New Partition

 New Door

GENERAL NOTES

• Refer to Structural, MEP, IT, AV, and Acoustics narratives for additional scope of work.
• Furniture shown for reference only

ROOM LEGEND (Not all notes on all sheets)

1. Lobby
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