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EXECUTIVE SUMMARY

MISSION

The pre-design mission is to provide a space program and conceptual thinking for a new residence hall (of 350 beds) that will become a model for the next generation of residence halls at Eastern Washington University. This model shall appeal to students of all class levels.

The University has established a budget for the project. The design of the residence hall shall live within the budget constraints while creating an architectural ambiance that reflects the campus fabric and conveys a sense of engaged social and living accommodations.

This will provide a memorable and identifiable community for students.

METHODOLOGY & PROCESS

Research:

• Through the engagement of a housing/residential life consultant (Douglas Hyde Design), the team was made aware of what has and is happening on campuses in other areas of the country. The team also became familiar with the program components of student housing projects.

• The team toured the existing EWU housing to assess existing conditions and housing standards.

• The team met with a variety of EWU groups (Administrators, Directors, Resident Directors, RA’s and Students) to discover their points of view and ideas as to what works, what doesn’t work and what needs to be added to make an EWU residence hall viable and livable.

• The team toured new housing models at Washington State University and University of Idaho.

Development:

Utilizing the information gained during the Research phase, a program and space attributes was developed:

• A program was developed indicating the quantity of rooms, lounges and support spaces needed to meet the project mission.

• The qualifications or attributes of each of the program elements provide guidelines for the size, quality, finish, comfort and furnishings in these rooms.

The net result is a space program of approximately 101,000 square feet.

IMPLEMENTATION

Site Planning:

• Diagrams were developed to demonstrate the site attributes.

• The diagrams assist in identifying the probable building locations.

• Site infrastructure was reviewed to plan the available points of service to the building.

Conceptual Development:

• In addressing 350 beds in the facility, the building organization looked at 4, 5 and 6 story configurations, availability and quantification of open space and existing circulation to the site.

• Stacking of the floors created mass models that began to present images of a building and its relation to surrounding housing.

• Each of these mass models was analyzed and Pros and Cons developed.
The net result of this effort pointed to the elimination of the 4-story idea. The 5- and 6-story ideas were to be developed further with a focus on the orientation of the courtyard, the prominence of the building entry and an identifiable front porch.

Sketch renderings were provided to give a sense of architecture to the concepts.

**COSTS**

The MACC identified by the University is $16,600,000 with a project budget of $24,997,736. The current construction cost estimate is at $17,960,000. With adjustments to several line items in the budget and with the current estimated construction cost, the project is currently $980,000 over budget. The team needs to reflect on the concepts, area allocations, construction materials and building systems to bring the project and budget into alignment.
**DESIGN PRINCIPLES**

**VIABLE:**
- Create a safe, secure environment.
- Honor the budget.
- Fulfill program requirements.
- Provide clear organization, circulation and zoning (interior and exterior).
- Operational and maintenance costs to be balanced with first cost.
- Provide universal accessibility.

**LIVEABLE:**
- Healthy environment - daylight, views, good air quality and thermal comfort.
- Encourage formal and informal interaction between students.
- Accommodate technology.

**IDENTIFIABLE:**
- A student centered building promoting a sense of community.
- Open and inviting with good visibility of community spaces.
- Reinforce the existing campus character while establishing a new identity for residence halls.

**FLEXIBLE:**
- Accommodate current programs and future changes.
- Multi-use spaces that can accommodate differing programs and community use.
- Create rooms that are flexible and allow for student adaptation.

**MEMORABLE:**
- Create spaces and provide amenities that are unique and memorable.
- Build relationships - students, staff, parents and community.
- Social interaction – open and inviting.
- 2-D and 3-D display to allow students to modify and personalize their neighborhoods.

**SUSTAINABLE:**
- Optimize energy performance and conservation.
- Foster respect for and knowledge of natural environment.
- Meet LEED Silver.
- Create a building that is durable, maintainable and long lasting.
PROGRAM AREAS

Eastern Washington University New Student Residence Hall Program
Revised March 28, 2011

<table>
<thead>
<tr>
<th>Program Element</th>
<th>Rooms</th>
<th>Beds</th>
<th>Program Area Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.00 Dorm Room Type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.01 Traditional Double</td>
<td>147</td>
<td>294</td>
<td>200 sf 29,400 sf</td>
</tr>
<tr>
<td>1.02 Traditional Triple</td>
<td>15</td>
<td>45</td>
<td>300 sf 4,500 sf</td>
</tr>
<tr>
<td>1.03 CA Rooms</td>
<td>11</td>
<td>11</td>
<td>190 sf 2,090 sf</td>
</tr>
<tr>
<td>1.04 Resident Director Apartment (2 bedroom)</td>
<td>1</td>
<td>2</td>
<td>900 sf 900 sf</td>
</tr>
<tr>
<td>1.05 Guest Apartment (1 bedroom)</td>
<td>1</td>
<td>1</td>
<td>300 sf 300 sf</td>
</tr>
<tr>
<td><strong>2.00 Resident Support Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.01 Bathroom (toilet, showers &amp; sinks)</td>
<td>22</td>
<td>350</td>
<td>7,700 sf</td>
</tr>
<tr>
<td>2.02 Study Lounges</td>
<td>9</td>
<td>300</td>
<td>2,700 sf</td>
</tr>
<tr>
<td>2.03 Social Lounges</td>
<td>9</td>
<td>360</td>
<td>3,240 sf</td>
</tr>
<tr>
<td>2.04 Community Lounge w/kitchen</td>
<td>4</td>
<td>750</td>
<td>3,000 sf</td>
</tr>
<tr>
<td>2.05 Laundry Room</td>
<td>4</td>
<td>370</td>
<td>1,480 sf</td>
</tr>
<tr>
<td><strong>3.00 Resident Recreation Areas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.01 Gaming/TV Room</td>
<td>2</td>
<td>250</td>
<td>500 sf</td>
</tr>
<tr>
<td><strong>4.00 Community Spaces</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.01 Commons/Great Room w/storage</td>
<td>1</td>
<td>1,800</td>
<td>1,800 sf</td>
</tr>
<tr>
<td>4.02 Servery</td>
<td>1</td>
<td>300</td>
<td>300 sf</td>
</tr>
<tr>
<td>4.03 Seminar/Multipurpose room</td>
<td>1</td>
<td>500</td>
<td>500 sf</td>
</tr>
<tr>
<td>4.04 Lobby (including vestibule)</td>
<td>1</td>
<td>1,000</td>
<td>1,000 sf</td>
</tr>
<tr>
<td>4.05 Public Toilet room</td>
<td>1</td>
<td>380</td>
<td>380 sf</td>
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<tr>
<td>4.06 &quot;Front Porch&quot; covered patio (half area)</td>
<td>1</td>
<td>1,000</td>
<td>500 sf</td>
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<tr>
<td><strong>5.0 Administration Office Space</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.01 Front desk</td>
<td>1</td>
<td>180</td>
<td>180 sf</td>
</tr>
<tr>
<td>5.02 Staff office</td>
<td>1</td>
<td>180</td>
<td>180 sf</td>
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<tr>
<td>5.03 Mail room</td>
<td>1</td>
<td>200</td>
<td>200 sf</td>
</tr>
<tr>
<td>5.04 Resident Director's office</td>
<td>1</td>
<td>200</td>
<td>200 sf</td>
</tr>
<tr>
<td>5.05 Conference Room</td>
<td>1</td>
<td>0</td>
<td>0 sf</td>
</tr>
<tr>
<td>5.06 Housing/Resident Life Office</td>
<td>1</td>
<td>2,650</td>
<td>2,650 sf</td>
</tr>
<tr>
<td><strong>6.0 Retail/Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.01 Cafe/Convenience Store</td>
<td>1</td>
<td>800</td>
<td>800 sf</td>
</tr>
<tr>
<td><strong>7.0 Storage/Mechanical/Electrical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.01 General Storage</td>
<td>1</td>
<td>1,700</td>
<td>1,700 sf</td>
</tr>
<tr>
<td>7.02 Bike Storage</td>
<td>1</td>
<td>800</td>
<td>800 sf</td>
</tr>
<tr>
<td>7.03 Mechanical &amp; Electrical Room</td>
<td>1</td>
<td>5,000</td>
<td>5,000 sf</td>
</tr>
<tr>
<td><strong>Total Assigned Area</strong></td>
<td></td>
<td></td>
<td>72,000 sf</td>
</tr>
<tr>
<td>Unassigned Space (38% of Assigned Area):</td>
<td></td>
<td></td>
<td>28,800 sf</td>
</tr>
<tr>
<td><strong>Gross Building Area</strong></td>
<td></td>
<td></td>
<td>100,800 sf</td>
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</tbody>
</table>

Notes:
1. Includes walls, circulation, janitor's closets/storage

Douglas Hyde Design, Consultant
## HOUSING AND RESIDENCE LIFE OFFICE PROGRAM

<table>
<thead>
<tr>
<th>Space</th>
<th>Existing Area (s.f.)</th>
<th>Proposed Area (s.f.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting/Reception</td>
<td>345</td>
<td>345</td>
</tr>
<tr>
<td>(Including circulation area)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Office Area</td>
<td>755</td>
<td>755</td>
</tr>
<tr>
<td>(Including circulation area)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Area</td>
<td>238</td>
<td>230</td>
</tr>
<tr>
<td>Offices</td>
<td>2 @ 140 = 280</td>
<td>3 @ 140 = 420</td>
</tr>
<tr>
<td>Residence Life /Housing Storage</td>
<td>36</td>
<td>150</td>
</tr>
<tr>
<td>Conference Room</td>
<td>250</td>
<td>1 @ 250 s.f.</td>
</tr>
<tr>
<td>Circulation</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Toilet Rooms</td>
<td>0</td>
<td>2 @ 75 s.f.</td>
</tr>
</tbody>
</table>

Subtotal                                   2,004 s.f.               2,650 s.f.
ROOM ATTRIBUTES: 1.01 - Traditional Double

1.01 TRADITIONAL DOUBLE

Adjacency Requirements
- Social Lounge
- Study Lounge
- Bath/Shower

Character
- Limited Built-Ins
- Flexibility for Personal Arrangements
- Daylight

Space Required
- 190–210 s.f.
- 9’ Ceiling

Occupants
- 2

Finishes
- Paint on Gypsum Board Walls and Ceiling
- Wood-like Floor Finish
- Some Tackable Surfaces

Architectural Elements
- Operable Windows

HVAC
- Heating and Ventilation
- Cooling (Optional)

Plumbing
- No Plumbing in Rooms

Electrical/Lighting
- Multiple Outlets at Desk Area and Adjacent Wall
- Overhead Lighting (No Wall Sconces)

Communications/Data
- Minimum of Two Data Ports
- WiFi Access

Furnishings
- Bed 6’- 8” Length
- (2) Wardrobe with Drawers
- (2) Desks with 1 Locking Drawer

Other
- Possible Tackable Surfaces on Door; Dry Erase Surface
ROOM ATTRIBUTES: 1.02 - Traditional Triple

1.02 TRADITIONAL TRIPLE

Adjacency Requirements
- Social Lounge
- Study Lounge
- Bath/Shower

Character
- Limited Built-Ins
- Flexibility for Personal Arrangements
- Daylight

Space Required
- 300 s.f.
- 9’ Ceiling

Occupants
- 3

Finishes
- Paint on Walls and Ceiling
- Wood-Like Floor Finish
- Some Tackable Surfaces

Architectural Elements
- Operable Windows

HVAC
- Heating and Ventilation
- Cooling (Optional)

Plumbing
- No Plumbing in Rooms

Electrical/Lighting
- Multiple Outlets at Desk Area and Adjacent Wall
- Overhead Lighting (No Wall Sconces)

Communications/Data
- Minimum of Three Data Ports

Furnishings
- Bed 6’–8” Length
- (3) Armoires with Drawers
- (3) Desks with 1 Locking Drawer

Other
- Possible Tackable Surface on Door; Dry Erase Surface
1.03 CA ROOM

Adjacency Requirements
- Dorm Rooms
- Social Lounge
- Study Lounge
- Toilet/Showers

Character
- Same as Traditional Double and Traditional Triples

Space Required
- 190–200 s.f.
- 9’ Ceiling Height

Occupants
- 1 (Can be Converted to a Double)

Finishes
- Painted Walls and Ceiling
- Wood-Like Floor Finish
- Some Tackable Surfaces

Architectural Elements
- Operable Windows

HVAC
- Heating and Ventilation
- Cooling (Optional)

Plumbing
- No Plumbing in Rooms

Electrical/Lighting
- Overhead Lighting (No Wall Sconces)
- Multiple Outlets at Desk Area

Communications/Data
- Minimum of Two Data Ports

Furnishings
- Twin Bed (6’-8” Long)
- Wardrobe with Drawers
- Desk with One Locking Drawer
- N/A
1.03 RESIDENT DIRECTOR APARTMENT

Adjacency Requirements
• N/A

Character
• Homelike
• Well Planned and Appointed Unit

Space Required
• 850 - 950 s.f. – 2 BR
• 8’± Ceilings

Occupants
• 2-3

Finishes
• Carpet and VCT on Floor
• Paint on Walls and Ceiling

Architectural Elements
• Operable Windows
• Independent Access
• Storage Closets

HVAC
• Heating Ventilation and Cooling

Plumbing
• Bath with Toilet, Shower and Vanity Sink

Electrical/Lighting
• Overhead Lighting, Some Wall Surfaces
• Power for Table and Floor Lamps
• Power for Refrigerator, Range/Oven, Microwave

Communications/Data
• WiFi with Two Data Port

Furnishings
• Beds
• Living Room Furniture
• Dining Room Furniture

Other
• N/A
ROOM ATTRIBUTES: 1.04 - GUEST STUDIO

1.04  GUEST STUDIO

Adjacency Requirements
• N/A

Character
• Hotel Suite-Like
• Well Appointed

Space Required
• 350-450 s.f.

Occupants
• 1

Finishes
• Carpet and VCT on Floor
• Paint on Walls and Ceiling

Architectural Elements
• Operable Windows
• Independent Access
• Storage Closet

HVAC
• Heating, Ventilation and Cooling

Plumbing
• Bath with Toilet, Shower and Vanity Sink

Electrical/Lighting
• Overhead Lighting, Some Wall Surfaces
• Power for Table and Floor Lamps
• Small Refrigerator and Microwave

Communications/Data
• WiFi with One Data Port

Furnishings
• Bed
• Soft Seating and Table
• Desk and Chair

Other
• N/A
ROOM ATTRIBUTES: 2.01 - BATH/SHOWER

2.01 BATH/SHOWER

Adjacency Requirements
• Dorm Rooms

Character
• Durable, Clean Space
• Accessible
• Privacy Requirements Respected
• Well Ventilated

Space Required
• 350 s.f. For Each Gender
• 8’-6” Ceiling Height

Occupants
• 5-6

Finishes
• Tile Floors and Walls
• Painted Ceilings

Architectural Elements
• Storage Cubicles for Students
• Shower Compartments (hard walled if possible) w/Dressing Area
• Toilet Stall Compartments
• Windows

HVAC
• Heating and Ventilation

Plumbing
• Water Saving Fixtures
• Adjustable Shower Head in Accessible Stall
• Hand Dryers
• Sinks in Vanity Counter

Electrical/Lighting
• Good Lighting at Sinks
• Ceiling Lights
• Multiple GFIC Outlets

Communications/Data
• N/A

Furnishings
• N/A

Other
• N/A
2.02 STUDY ROOMS

Adjacency Requirements
• Dorm Rooms

Character
• Daylight
• Quiet
• Ability to Close up from Traffic Yet Appear Open

Space Required
• 250–350 s.f.
• 9' Ceiling

Occupants
• 4-8

Finishes
• Painted Walls and Ceiling
• Carpet

Architectural Elements
• Glazing Exterior and Interior Relights

HVAC
• Heating and Ventilation
• Cooling (Optional)

Plumbing
• N/A

Electrical/Lighting
• Ceiling Lights - Dimmable

Communications/Data
• Data Ports at Desk Locations
• WiFi

Furnishings
• Desks and Chairs
• Soft Seating, 4–6, Easily Movable
• Tables

Other
• N/A
ROOM ATTRIBUTES: 2.03 - Social Lounge

2.03 SOCIAL LOUNGE

Adjacency Requirements
• Central Location in Neighborhood

Character
• Daylight
• Quiet
• Ability to Rearrange for a Variety of Activities

Space Required
• 300-360 s.f.

Occupants
• 8-20

Finishes
• Painted Walls and Ceilings
• Carpet

Architectural Elements
• Exterior Glazing and Interior Relights

HVAC
• Heating and Ventilation
• Cooling (optional)

Plumbing
• N/A

Electrical/Lighting
• Overhead Lights
• Multiple Power Outlet Locations

Communications/Data
• Data Ports
• A/V Capable
• Flat Screen TV Location

Furnishings
• Tables and Chairs
• Soft Seating
• Projection Screen/Big Screen TV

Other
• N/A
ROOM ATTRIBUTES: 2.04 - Community Social Lounge With Kitchen

2.04 COMMUNITY SOCIAL LOUNGE WITH KITCHEN

Adjacency Requirements
• Central Location on Each Floor

Character
• Open
• Enclosable
• Daylight
• Flexible

Space Required
• 700-800 s.f.

Occupants
• 30+

Finishes
• Carpet
• VCT/Linoleum Floor
• Painted Walls and Ceilings
• Tile at Kitchen Area

Architectural Elements
• Cabinet Storage with Kitchen (Same Location)

HVAC
• Heating and Ventilation
• Spot Ventilation at Kitchen
• Cooling

Plumbing
• Sink with Disposal at Kitchen

Electrical/Lighting
• Ceiling Light; Dimmable with Occupancy Sensor
• Kitchen Range/Oven
• Microwave

Communications/Data
• Data Port
• A/V Capable
• Flat Screen TV Location

Furnishings
• Tables and Chairs
• Some Soft Seating Easily Movable
• Flexible Arrangement for a Variety of Functions

Other
• N/A
2.05 LAUNDRY

Adjacency Requirements
• Central Location on Each Floor or Larger Space on One Floor

Character
• Open
• Well Arranged Appliances
• Well Lit

Space Required
• 200-300 s.f./Floor
• 1,500 s.f. in One Central Location

Occupants
• 8-12

Finishes
• VCT/Linoleum Floor
• Painted Walls
• Acoustical Tile Ceiling

Architectural Elements
• Open Space, Visually Accessible to Adjoining Social Spaces

HVAC
• Heating and Ventilation

Plumbing
• Water for Washer, Soaking Sink
• Vents for Dryer

Electrical/Lighting
• Overhead Lighting
• WiFi

Communications/Data
• N/A

Furnishings
• Tables for Laundry Sorting/Folding
• Some Soft Seating
• Washers and Dryers in Laundry Room

Other
• N/A
<table>
<thead>
<tr>
<th>ROOM ATTRIBUTES: 3.01 - Gaming/TV Room</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>3.01</th>
<th>GAMING/TV ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjacency Requirements</td>
<td>• Central Location</td>
</tr>
<tr>
<td>Character</td>
<td>• Open</td>
</tr>
</tbody>
</table>
| Space Required | • 200 s.f.  
• 9’ Ceiling |
| Occupants | • 4-10 |
| Finishes | • Painted Walls and Ceiling  
• Carpet |
| Architectural Elements | • N/A |
| HVAC | • Heating and Ventilation  
• Cooling (Optional) |
| Plumbing | • N/A |
| Electrical/Lighting | • Overhead Lights; Dimmable  
• Power Outlets to Handle TV, Projectors, Game Modules |

| Communications/Data | • Minimum of Two Data Ports |
| Furnishings | • Large Flat Screen TV  
• Soft Seating for Up to 10 |

| Other | • N/A |
4.01 COMMONS/GREAT ROOM

Adjacency Requirements
• Lobby
• Admin Offices
• Public Restrooms

Character
• High Ceilings
• Homey with a Level of Elegance

Space Required
• 1,500-2,000 s.f.
• 12’-14’ Ceiling

Occupants
• Up to 200

Finishes
• Polished Concrete w/Area Rugs
• Painted Walls, Wood Wainscoat
• Wood Trim
• Acoustical Tile and Painted Gypsum Board Ceilings

Architectural Elements
• Fire Place (Optional)
• Exterior Glazing and Interior Relights

HVAC
• Heating and Ventilation
• Cooling

Plumbing
• N/A

Electrical/Lighting
• Decorative Ceiling Lights
• Overhead Lighting Dimmable
• Power Throughout with Some Floor Boxes for Soft Seating Arrangements

Communications/Data
• WiFi
• A/V Capable with Screen

Furnishings
• Soft Seating (Easily Movable)

Other
• N/A
**ROOM ATTRIBUTES: 4.02 - Servery**

4.02 SERVERY

Adjacency Requirements
- Commons/Great Room
- Service Loading Dock

Character
- Opens to Great Room with Ability to Close Off

Space Required
- 300 s.f.
- 9'-0" Ceiling
- Space for Heated Food Carts Arrangement

Occupants
- 4-8

Finishes
- Tile Floor and Walls
- Counters for Food Set-Up

Architectural Elements
- Counters

HVAC
- Heating and Ventilation, Especially at Heating Equipment
- Cooling (Optional)

Plumbing
- Sinks with Disposals

Electrical/Lighting
- Commercial Lighting
- Power for Heated Serving Carts (Coordinate with University Food Service)

Communications/Data
- N/A

Furnishings
- Counters

Other
- N/A
ROOM ATTRIBUTES: 4.03 - Seminar Room/Meeting Room

4.03 SEMINAR ROOM/MEETING ROOM

Adjacency Requirements
• Lobby/Entry
• Resident Life/Housing Office

Character
• Appointed like a Social Lounge but Flexible for a Variety of Uses

Space Required
• 400-500 s.f.
• 9’ Ceiling

Occupants
• 8-25

Finishes
• Carpet
• Paint Walls
• Acoustical Ceiling Tile

Architectural Elements
• Tables (gangable to form a conference table)

HVAC
• Heating and Ventilation
• Cooling

Plumbing
• N/A

Electrical/Lighting
• Overhead Lighting
• Power at Walls
• Floor Boxes with Power and Data for Conference Table

Communications/Data
• WiFi

Furnishings
• Tables
• Chairs
• White Board
• Provisions for a Screen or Flat Screen TV

Other
• N/A
ROOM ATTRIBUTES: 4.04 - Lobby

4.04 LOBBY

Adjacency Requirements
• Commons/Great Room
• Front Entrance
• Front Desk / Office
• R D Office
• Elevators
• Public Restrooms

Character
• Open
• Daylight

Space Required
• 900-1,200 s.f.
• 10-12’ Ceiling

Occupants
• Up to 20

Finishes
• Polished Concrete with Area Rugs
• Painted Walls and Ceilings
• Acoustical Tile Ceilings

Architectural Elements
• Walk Off Matt at Entry
• Ceiling

HVAC
• Heating and Ventilation
• Cooling (optional)

Plumbing
• Drinking Fountains

Electrical/Lighting
• Power at Perimeter
• Overhead Decorative Lighting and Down Lights

Communications/Data
• WiFi

Furnishings
• Soft Seating for 8–20 with Tables

Other
• N/A
ROOM ATTRIBUTES: 4.05 - Public Restrooms (Men’s & Women’s)

4.05 PUBLIC RESTROOMS (MEN’S & WOMEN’S)

Adjacency Requirements
• Lobby/Entry
• Common/Great Room

Character
• Durable

Space Required
• 350-400 s.f.

Occupants
• 3 Each Sex

Finishes
• Tile Floors and Walls
• Painted Ceiling

Architectural Elements
• Toilet Partitions and Accessories
• Accessible

HVAC
• Heating and Ventilation

Plumbing
• Lavatories, Water Closets

Electrical/Lighting
• Overhead Lighting
• Limited Power Outlets

Communications/Data
• N/A

Furnishings
• N/A

Other
• N/A
4.06 FRONT PORCH

Adjacency Requirements
• Front Entry
• Cafe

Character
• Covered/Trellises
• Residential Front Porch Character

Space Required
• 900–1,000 (Counts at ½ Square Footage)

Occupants
• 40-50

Finishes
• Concrete/Pavers
• Wood/Metal Cover Trellis

Architectural Elements
• Concrete Seating Walls as Part of Landscaping

HVAC
• N/A

Plumbing
• N/A

Electrical/Lighting
• Patio Style Lights
• Limited Overhead Lighting
• Outlets for Possible Music/Entertainment

Communications/Data
• N/A

Furnishings
• Adirondack and Patio Style Furniture
• Tables
• Chairs

Other
• N/A
## ROOM ATTRIBUTES: 5.0 - Residence Hall Administrative Office

### 5.0 RESIDENCE HALL ADMINISTRATIVE OFFICE

#### Adjacency Requirements
- Main Lobby/Entry
- Resident Life/Housing Office
- Elevators

#### Character
- Highly Visible, Open
- Front Desk/Reception Counter Arrangement

#### Space Required
- 9’ Ceiling
- Reception Area: 150–200 s.f.
- Staff Office: 150 s.f.
- RD Office: 200 s.f.
- Mail Room: 150 s.f.

#### Occupants
- 6-10

#### Finishes
- Carpet
- Painted Walls
- Acoustical Tile Ceiling
- Painted Gypsum Board Ceilings

#### Architectural Elements
- RD Office Entrance Separated from Admin Office
- Daylight

#### HVAC
- Heating and Ventilation
- Cooling

#### Plumbing
- N/A

#### Electrical/Lighting
- Overhead Lights
- Power for Office Equipment Including Printer/Copier

#### Communications/Data
- Multiple Data Ports
- WiFi

#### Furnishings
- Standard Office Furniture
- Storage Cabinets; Some Lockable

#### Other
- N/A
ROOM ATTRIBUTES: 5.05 - Conference Room

5.05 CONFERENCE ROOM

Adjacency Requirements
- Res Life/Housing Office
- Access by Multiple Users

Character
- Formal Meeting Room

Space Required
- 400 s.f.
- 9-10’ Ceiling Height

Occupants
- 12-16

Finishes
- Painted Walls and Ceiling (Soffit)
- Carpet
- Acoustical Tile Ceiling

Architectural Elements
- N/A

HVAC
- Heating and Ventilation
- Cooling (Optional)

Plumbing
- N/A

Electrical/Lighting
- Overhead Lighting; Dimmable
- Conference Table Power/Data

Communications/Data
- Data at Conference Table
- Projection Screen
- A/V Capable

Furnishings
- Conference Table; 12 x 4
- 10 Chairs

Other
- N/A
ROOM ATTRIBUTES: 6.01 - Cafe

6.01 CAFE

Adjacency Requirements
  • Front Entry
  • Front Porch

Character
  • Part of Residence Hall Look
  • Starbucks-Like Cafe

Space Required
  • 700-900 s.f.

Occupants
  • Up to 40

Finishes
  • Polished Concrete
  • Painted Walls
  • Acoustical Ceiling Tile

Architectural Elements
  • POS and Counter
  • Coffee Bar
  • Open to the Front Porch

HVAC
  • Heating and Ventilation

Plumbing
  • For Coffee Bar
  • Vending Machine

Electrical/Lighting
  • Overhead Lighting Retail Look
  • Power for Retail Operation

Communications/Data
  • WiFi

Furnishings
  • Café Style Tables and Chairs

Other
  • Connection to New Residence Hall but Open to All Resident Halls, 7 am-1 am
  • No Direct Access into New Residence Hall
### ROOM ATTRIBUTES: 7.01 - General Storage

#### 7.01 GENERAL STORAGE

**Adjacency Requirements**
- Exterior Access

**Character**
- Secure
- Unfinished with Storage Cubicles
- Separate Recycle Collection Room

**Space Required**
- 1,700-2,000 s.f.

**Occupants**
- N/A

**Finishes**
- Painted Walls and Ceiling Structure

**Architectural Elements**
- Storage Cubicles

**HVAC**
- Heat and Ventilation

**Plumbing**
- N/A

**Electrical/Lighting**
- Industrial Style Strip Lights

**Communications/Data**
- N/A

**Furnishings**
- N/A

**Other**
- N/A
7.02 BIKE STORAGE

Adjacency Requirements
• Lobby Entry

Character
• Secure

Space Required
• 800 s.f.

Occupants
• N/A

Finishes
• N/A

Architectural Elements
• Bike Racks for 25–40 Bikes

HVAC
• N/A

Plumbing
• N/A

Electrical/Lighting
• N/A

Communications/Data
• N/A

Furnishings
• N/A

Other
• N/A
ROOM ATTRIBUTES: 7.03 - Mechanical & Electrical Room

7.03 MECHANICAL & ELECTRICAL ROOM

Adjacency Requirements
• Street Access
• Loading Dock
• Connection to University Utility Tunnel/Utilidor

Character
• Raw and Unfinished
• Separate Spaces for Mechanical and Electrical Equipment

Space Required
• 4,000–5,000 s.f.

Occupants
• 2-4

Finishes
• N/A

Architectural Elements
• Loading/Service Dock

HVAC
• University Steam and Chilled Water Via Tunnel Access
• Potential Stand Alone System

Plumbing
• Main Water Riser Room and Fire Riser Room

Electrical/Lighting
• Primary Power from Tunnel Access
• Overhead Industrial
• Emergency Generator

Communications/Data
• University Loop from URC and Pearce Hall

Furnishings
• N/A

Other
• N/A
## ROOM ATTRIBUTES: 7.04 - Corridors

<table>
<thead>
<tr>
<th>7.04</th>
<th>CORRIDORS</th>
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| Adjacency Requirements | Stairways and Elevators  
Dorm Room  
Social and Study Lounges  
Toilet/Shower Rooms  
All Other Functional Areas of the Building |
| Character | Open  
Access to Daylight |
| Space Required | Minimum 6’ Wide  
8’-6” Ceiling Height |
| Occupants | N/A |
| Finishes | Carpet  
Painted Walls and Ceilings  
Wainscoating in High Traffic/Abuse Areas |
| Architectural Elements | N/A |
| HVAC | Heating and Ventilation  
Cooling |
| Plumbing | N/A |
| Electrical/Lighting | Overhead Light  
Sconce and Accent Lighting at Corridor Alcoves  
Convenience Outlets for Maintenance |
| Communications/Data | WiFi |
| Furnishings | N/A |
| Other | N/A |
ROOM LAYOUTS - Doubles

BUNKED BEDS

LAYOUT 1
ROOM LAYOUTS - Doubles

LAYOUT 2

LAYOUT 3

13'-8" Clear

15' Clear
ROOM LAYOUTS - Triples

300 SF

8'-6" Clear
11' Clear
15' Clear
300 SF

20' Clear
15' Clear
15' Clear
300 SF
ROOM LAYOUTS: Study Room & Social Lounge

STUDY ROOM

SOCIAL LOUNGE
ROOM LAYOUTS: Central Community Lounge

CENTRAL COMMUNITY LOUNGE, 750-800 SF
SITE DIAGRAMS: Prioritized Entry Points and Corners
SITE DIAGRAMS: Community
SITE DIAGRAMS: Vehicle/Pedestrian
SITE DIAGRAMS: Open Space
SITE DIAGRAMS: Identify Gateway
MASSING DIAGRAMS

- 5-STORY WEST COURTYARD
- 5-STORY SOUTH COURTYARD
- 5-STORY SOUTHEAST COURTYARD
- 6-STORY SOUTH COURTYARD
- 6-STORY NORTHWEST COURTYARD
- PARKING DIAGRAMS
5-Story West Courtyard

**PRO’S:**
- Tunnel Connection to Mechanical/Electrical Room
- Maximum Southern Exposure for Both of the East/West Wings
- Engaged Active East Face
- Large, Open Courtyard
- Convenience Store and ‘Front Porch’ Connected
- Two Story Volume at Commons/Great Room
- Courtyard Open and Connected to Street at West
- Internally Well Defined Neighborhoods

**CON’S:**
- One Story Taller Than Expected
- Cedar Street Face with Mechanical/Electrical Room
- 100% Corners Not Engaged Like 4 and 6 Story Schemes
5-Story West Courtyard
5-Story South Courtyard

**PRO’S**
- Tunnel Connection to Mechanical/Electrical Room
- 100% Corner can be Expressed as “Beacon”
- Clearly Defined Neighborhoods
- Building Scales Well With Surrounding Buildings (Streeter Hall & URC)
- Maximizes Opportunity For Open Space
- Active/Animated Courtyard
- Entry and Grade Are Compatible
- Maintains Existing Green Space
- Animated/Engaged South Face at Street Level (Cedar)
- Two Story Volume at Commons/Great Room

**CON’S:**
- One Story Taller Than Expected
- Less Engagement at the Corner at Street Level
- Front Entry is Hidden
- Convenience Store Not Connected with ‘Front Porch’
5-Story South Courtyard
5-Story Southeast Courtyard

**PRO’S**
- Tunnel Connection to Mechanical/Electrical Room
- Building Scales Well With Surrounding Buildings (Streeter Hall & URC)
- Maximizes Opportunity For Open Space
- Opens to the East Aligning with the URC Promenade and LA Open Space
- Active Courtyard
- Entry and Grade Are Compatible
- Maintains Most of Existing Green Space
- Engages the 100% As “Open Space”

**CON’S:**
- One Story Taller Than Expected
- Front Sits Back in Courtyard
- Convenience Store Sits Back from Cedar & North 10th
5-Story Southeast Courtyard
**PRO’S**
- Tunnel Connection to Mechanical/Electrical Room
- 100% Corner can be Expressed as “Beacon”
- Clearly Defined Neighborhoods
- Building Scales Well With Surrounding Buildings (Streeter Hall & URC)
- Maximizes Opportunity For Open Space
- Active/Animated Courtyard
- Entry and Grade Are Compatible
- Maintains Existing Green Space
- Compact Footprint
- Animated/Engaged South Face at Street Level (Cedar)
- Two Story Volume at Commons/Great Room

**CON’S:**
- Two Stories Taller Than Expected
- Less Engagement at the Corner at Street Level
- Front Entry is Hidden
- Convenience Store Not Connected with “Front Porch”
6-Story South Courtyard
**6-Story Northwest Courtyard**

**PRO’S**
- 100% Corner can be Expressed as “Beacon”
- Clearly Defined Neighborhoods
- Clean and Simple Arrangement
- Building Scales Well With Surrounding Buildings (Streeter Hall & URC)
- Maximum Opportunity For Parking and/or Open Space
- Active/Animated Courtyard
- Entry and Grade Are Compatible
- Maintains Existing Green Space
- Compact Footprint
- Animated/Engaged South Face at Street Level (Cedar)
- Two Story Volume at Commons/Great Room

**CON’S:**
- Two Stories Taller Than Expected
- Less Engage 100% Corner at Street Level
- Front Entry is Hidden
- Utilidor Connection to the Mechanical Electrical Room
- Convenience Store Not Connected with ‘Front Porch’
6-Story Northwest Courtyard
### Parking Diagrams

#### PARKING OPTION 1
29 Parking Stalls  
Surface Parking  

29 x 2,000/Stalls = $58,000

#### PARKING OPTION 2
108 Parking Stalls  
Structural Floor Above

108 x 16,000/Stalls = $1,728,000

#### PARKING OPTION 3
66 Parking Stalls  
Below Building Footings

66 x 13,000/Stalls = $858,000
ARCHITECTURAL NARRATIVE

Location and Context

The project site is located north of Cedar Street and flanked by North 10th Street and North 11th Street. The current parking lot on the site has low point near the southeast corner and rises to the northeast and northwest approximately 6’. The site adjoining 10th Street rises approximately 16’ from Cedar to the north lot line. The site is adjacent to Dryden and Louis Anderson Hall to the east, Streeter and Morrison to the north and Pearce and Dressler to the southwest. The University Recreation Center (URC) is directly south between Cedar and Elm Street with a major pedestrian promenade along the east side of the URC. The central location to existing residence halls, pedestrian traffic and campus utilities makes the site an excellent candidate a new Residence Hall and Residence Life Office.

Building Configuration

Initial massing studies indicate the viability of a 5- or 6-story configuration housing 350 beds and supporting amenities. A “U” shape structure with a courtyard oriented westward or southward offers the best opportunities for entry, natural daylight, service and campus connectivity. Resident entry points at the corner of Cedar Street and N. 10th Street and midway along 10th Street appear to be compatible with the existing topography. Service entry points are better suited along North 11th Street.

Exterior Character

Eastern Washington University has expressed the desire to reinterpret some of the architectural characteristics of buildings located in the historical district of Campus. The emphasis should be reinterpretation versus replication through the use of materials, details, massing and the concept of the “Front Porch” to create a unique memorable project that supports social interaction from the “outside-in” as well as the “inside-out”.

Interior Character

The residence hall rooms are to be flexible with ample daylight, good air quality and thermal comfort. Each neighborhood of approximately 30-35 students will house its own common bathroom facility along with a study and social lounge. Each floor will be supported by a community lounge/kitchen and a laundry room and will be wired for technology. Hallways and walls between rooms will maintain a sound transmission rating of 55 or better.

The residence hall will incorporate extensive use of natural daylight and will locate a residence commons, recreation area, and a kitchen/servery on the main floor. Finishes will be durable and easily maintained, supporting an atmosphere that encourages social interaction that promotes relationships between students, staff, parents and community.

The organization of the spaces will provide a safe, secure environment that is universally accessible with clear zoning and building systems that optimize energy performance and encourage student understanding of sustainability. The new residence hall will meet, at a minimum, LEED Silver requirements.
The purpose of this document is to provide an outline of the structural systems that will combine the best aspects of economy and quality for this project. Our goal is to provide meaningful and accurate information while at the same time recognizing that it is impossible to fully refine our schemes until the architectural design is more complete.

The project consists of a 350-room residence hall with related common and support spaces. Preliminary massing studies indicate that the building will likely be four stories of residential units over a basement level containing offices, storage, mechanical spaces, and a common room. Total size of the project is approximately 103,000 square feet.

The stacking nature of the room layout for the residential levels will allow us to use a bearing wall system if desired, which is the lowest cost framing system for this type of project. But the open nature of the spaces on the lowest level will demand a system that transfers these bearing wall loads. The usual solution is to provide a cast-in-place transfer slab over the bottom level, which carries the bearing wall loads from above to a more open column grid. This type of building is usually referred to as a “podium” structure.

Using a bearing wall system in the residential levels allows flexibility between rooms but limits expansion and reconfiguration through one or both sides of the corridor system depending on what structural system is used. We will address the levels of flexibility provided by each of the systems options below.

There are three basic structural systems that we believe should be considered for the project, and they are listed in order of ascending cost and quality:

1. **Wood Framing Over a Concrete Podium**

   This system will likely be the most cost-effective structural system considered for the project. It would consist of a wood-framed bearing wall system for the residential levels over a concrete transfer slab at the first floor. The wood framing is limited by code to four levels, but the preliminary massing studies indicate this is likely the maximum height considered. The various assemblies would be:

   - **Roof:** The roof would be framed with plywood over tapered wood I-joists or pre-manufactured wood trusses. The trusses generally span between exterior wall and corridor wall such that the partition walls between units are non-bearing and could be removed or relocated in a future remodel.

   - **Typical Residential Floor Framing:** The typical floor framing will consist of a concrete or gypcrete topping slab over plywood supported by wood I-joists. The joists will span from the corridor walls to the exterior walls to allow any required venting from the bathrooms or kitchens to stay within the joist space. This layout also allows the partition walls within and between the rooms to be non-bearing as at the roof, providing a measure of future flexibility. The most typical assembly would be a ¾” gypcrete topping over 23/32” plywood sheathing on 14” deep TJI’s at 16” on center.

   - **Podium Slab:** The ground level floor slab will be an elevated cast-in-place concrete transfer slab with a total thickness of approximately 12 inches. The slab would be supported by concrete columns and walls. The concrete walls would be located around the stair and elevator cores only, and where the grade requires a basement wall. The lack of interior bearing walls will allow this space to be configured and remodeled as desired.

   - **Lower Level Floor:** The basement floor would be a concrete slab on grade.

Wood framing has the lowest perceived quality level, but we have been very successful with providing a satisfactory wood system in many university residence halls. Engineered wood elements combined with the correct floor topping and partition wall detailing results in good sound transmission performance.

There is one complication with wood framing that would need to be addressed. Brick veneer can only be self supported of its base up to 30 feet, above that a ledger support angle supported by non-combustible framing would need to be inserted. This means that if the
exterior building sections have brick to the top levels or gables, we would need to provide an independent steel support system at the exterior wall as the veneer support angle cannot be supported by wood framing.

II. Light Gauge Metal Framing Over a Concrete Podium

This system is almost identical to System I in layout, but the residential levels and roof are framed with light-gauge metal decking, studs and joists instead of wood members. This system is slightly more expensive in our region, but would provide a non-combustible option if required by fire code, and would have a higher perception of quality and durability. It would be more resistant to insects and damage from water intrusion or leaks over the life of the building. Because the primary bearing walls would be the exterior and corridor walls, it would offer the same level of future flexibility as the wood system; that is, the interior room and partition walls could be reconfigured. The most typical floor assembly would be a 1” concrete slab over ½” metal form deck on 10” deep C-joists at 24” on center.

III. All Concrete Building

This system would provide the highest level of quality and durability of any of the systems considered, but would also have the highest initial cost. In this approach, every floor and roof level would be framed with a cast-in-place flat slab of approximately seven inches in total thickness. The slab would be supported by a combination of concrete walls and columns. But the walls would be located only at stair and elevator cores, so there would be almost no interior bearing walls. This would allow almost total flexibility for future remodels.

All of the systems are commonly and successfully used in projects of this type, and all the products are readily available in our region. In addition, none of the systems will have proprietary products that would inhibit bid competition.

There are a number of other systems we commonly investigate for this type of structure, but they are predominantly heavy bearing wall systems (e.g. precast plank and CMU bearing walls), which are best suited for plan layouts where the bearing walls continue to the foundation level. These heavier bearing wall systems become costly when open spaces on the first level require the bearing walls to be transferred to column supports. The masonry bearing walls are also very difficult to modify or move in future renovations, as has been discovered about many of the existing residential halls on campus.

Foundations

Based on our experience with other projects in the area and preliminary discussions with GeoEngineers, we believe that the loads will be light enough and the native soils of high enough quality to allow for conventional concrete spread foundations combined with some sort of shallow soil improvement program such as geopiers or overexcavation replaced with structural fill.
PLUMBING SYSTEMS

Plumbing Fixtures
- Toilet room water closets, urinals and lavatories will be constructed of commercial grade vitreous china. Water closets in public and community bathing rooms will be wall hung.
- Commercial grade flush valves will be utilized at water closets and urinals throughout. Sensor operated, battery powered flush valves will be used at all water closets and urinals except those within private living units.
- Hands free sensor operated electric (battery operated) faucets with integral thermostatic mixing controls will be provided on public toilet room lavatories but not at lavatories located within private living units or at lavatories within bathing/shower areas. Lavatory traps and supplies will be insulated per ADA requirements.
- Sinks will be stainless steel, with single lever faucets of cast brass construction.
- Custodial sinks will be provided with wall faucet and lever handles.
- Drinking fountains will have water filtered.
- Water Conservation: The following items will be reviewed by the design team and Eastern Washington University for Water Conservation and Long Term Campus Standardization/Maintenance considerations: Dual flush (1.6/1.0 GPF) water closets, ultra-low flow water closets (1.28 GPF), pint flow urinals, and 1.5 GPM showers. Lavatory faucets will deliver 0.5 GPM. Grey and black water reclamation are not being considered at this time due to budget restraints and increased maintenance.

Domestic Water Distribution
- A single water service will be provided to the building. Double check valve backflow prevention assemblies will be provided in the plumbing utility room.
- Water pressures on campus are generous (91 psi static pressure range). As customary on EWU campus buildings, pressure reducing stations have not historically been provided on the water service.
- A domestic hot, hot water recirculation, and cold water distribution system will be provided throughout the building. Hot water will be produced and stored at 140 degrees. Water will be mixed at a blending valve to 120 degrees and recirculated throughout the building.
- Two options for water heaters should be analyzed for their life cycle costs and energy saving potential.
  - Option #1: Campus Standard-instantaneous steam to hot water. This approach capitalizes on the campus steam network with high quality heat exchangers. The fuel efficiency at the source for using steam from the campus natural gas fired boilers is expected to be no more than 70% efficient.
  - Option 2-high efficiency gas fired water heaters. These water heaters with sealed combustion have efficiencies that approach 96%. This approach would utilize natural gas at the building for domestic hot water and would reduce fuel costs and emissions.
- Valves will be provided at all branch take-offs to individual fixture groups and at the base of vertical risers. Zone valves will also be provided. Balancing valves will be placed in return loops at connections of the hot water piping.
- Materials:
  - Water Piping (above grade): Copper type L
  - Gas Piping (above grade): Black steel, schedule 40

Sanitary Waste System
- A gravity sanitary drainage system will be provided to serve all plumbing fixtures and equipment. Sanitary waste lines will be routed to new connection points provided by the civil engineer within five feet of the building exterior.
- Materials:
  - Drain, Waste, Vent Piping (above grade): Cast Iron
  - Waste Piping (below grade): PVC, ABS

Rainwater Drainage System
- Gravity primary and overflow storm drainage systems will be provided for flat and low pitched roof drainage with each system piped separately to the exterior of the building. Rain leaders will be located within the heated portion of the building to prevent freezing of the pipe and will be insulated to prevent condensation from developing on the pipe. Overflow drains will terminate at grade level in splash blocks and primary drains will terminate within five feet of the building exterior for final termination by the Civil Engineer in the site scope of work. Rain harvesting is not anticipated due to limited amount of rain in Eastern Washington.
MECHANICAL NARRATIVE (cont.)

- Materials:
  - Storm Drain Piping (above grade): Cast Iron
  - Storm Drain Piping (below grade): PVC, ABS

HVAC SYSTEMS

Acoustics
- Recommendations for the project acoustician will be strictly adhered to. This includes allowable noise levels for mechanical equipment as well as required pipe and duct penetration isolation between living units.

Outdoor Design Conditions
- Heating Systems shall be sized for the ASHRAE median of extremes for Cheney, Washington which is -9°F.
- Cooling systems shall be sized for the ASHRAE 0.1% design condition temperature for Cheney, Washington which is 99°F dry bulb and 69°F wet bulb.

Indoor Design Conditions
- In cooling mode, the occupied spaces with air conditioning shall be designed to control to 74 to 76°F during occupied mode. Telecommunication rooms will control to 68-75°F 24 hours per day, 7 days per week. Mechanical and electrical spaces will control to 85-90°F.
- In the heating mode, the occupied spaces shall be designed to control to 68-70°F during occupied mode. Telecommunication rooms will control to 68-75°F 24 hours per day, 7 days per week. Mechanical and electrical spaces will control to 55°F.
- If the thermal comfort LEED credit is pursued for this project, the heating mode conditions may need to be increased to 71 to 72°F to meet published comfort standards established in ASHRAE Standard 55 for low humidity regions.

Exterior Envelope Requirements
- General: Components of the building envelope will be insulated to meet or exceed the Washington State Energy Code (2009) for Spokane County located in Washington State Climate Zone 2.
MECHANICAL NARRATIVE (cont.)

- Option #2-Variable Refrigerant Flow System: This option utilizes central air cooled heat recovery heat pumps to provide heating and cooling to indoor terminal units through zoned refrigerant piping systems. Advanced heat pump design allows for improved heating in low ambient conditions with efficiencies that exceed gas fired heating appliances (average 275 to 300%) and the central nature of the heat pumps allows for transfer of energy (heat recovery) between zones that require heat and zones that require cooling further saving. Supplemental heat for make-up air systems and booster coils at the terminal units for low ambient conditions can be electric or hot water provided from high efficiency gas fired boilers. Location of the outdoor heat pumps could be challenging on this small site.

- Option #3-High Efficiency Hot Water: In lieu of campus steam presented in option #1, this option provides hot water in the building through modular high efficiency condensing boilers located in the building. This system would be designed with lower supply and return water temperatures to allow the boilers to operate at their highest efficiencies at condensing temperatures. It is assumed that this system would average 90-92% efficient.

Refrigeration

- Option #1-Campus Chilled Water Plant: Chilled water to the building would be provided from the campus central chilled water plant. The campus water plant distributes chilled water to the buildings on campus via underground utility tunnels.
- Option #2-Variable Refrigerant Flow Systems: This option utilizes the same system described in heating option #2. The same system provides both heating and cooling.
- Materials:
  - Hydronic Piping (Hot water, chilled water, heat recovery, condenser water): Copper or steel

Ventilation

- Ventilation will be provided in accordance with ASHRAE Standard 62 (Ventilation for Acceptable Indoor Air Quality). Each programmed space will be designed to accommodate the appropriate occupancy requirements based on ASHRAE Standards and other applicable codes and standards as listed below in terms of minimum outdoor air volumes, as well as make up and exhaust air requirements.
- The ventilation system make-up air and exhaust will operate 24 hours per day. Heat recovered from the building exhaust air will be used to temper the fresh air with a heat recovery unit that contains air to air heat exchangers. The fans and heat exchanger units will likely be located in the attic space. Fresh air and exhaust ductwork will be ducted horizontally in the attic where it will be distributed vertically through the building in chases adjacent to each living unit.
- Fresh air for the living units and make up air for the exhaust systems will be conditioned at terminal units on each level and introduced into the hall way system. This supply air will be transferred from the hall way to the living units, toilet rooms, shower areas and custodial rooms where it will be exhausted.

Terminal Units

- Option #1-Hydronic Terminal Fan Coil Units with hot water and chilled water coils and minimum outside air in the dorm units (4 pipe or two pipe switchover). Areas that require winter cooling, such as residence life offices, commons and the store should consider fan coil units with economizer cooling (smaller zones) or air handling units with economizer cooling (larger zones).
- Option #2-Variable Refrigerant Flow Systems throughout
- Option #4-Same as 1 except hydronic fin-tube heating and minimum outside air only in the dorm rooms and small study rooms.
- Materials:
  - Supply/Return and exhaust ductwork: Galvanized steel
  - Shower exhaust: aluminum

Terminal and Packaged Units

- Packaged terminal cooling units will be utilized for isolated areas that have 24 hour process cooling loads such as the main telecommunication rooms. Due to difficulty in locating multiple outdoor condensing units on site for multiple telecommunication rooms (2 per floor), economizer winter cooling and chilled water fan coil units should be considered in all telecommunication rooms. This approach will save significant energy throughout the year.
HVAC Instrumentation and Controls

- The project will utilize a Direct Digital Control (DDC) for the control of the HVAC systems. Damper and valve actuators shall be electronic. Each two and 3 bedroom dorm room and apartment will have their own thermostat.
- The energy management control system will be compatible with the existing BACnet (Alerton or Delta) system on the Eastern Washington University campus. This building shall interface and communicate with the existing campus network and front end operator’s terminal for the purpose of remote operation and maintenance.

Testing, Adjusting and Balancing

- Air systems (supply, return, exhaust), hydronic and domestic hot water recirculation systems shall be completely balanced in accordance with Associated Air Balance Council or National Environmental Balancing Bureau. The Contractor shall secure the services of an independent Testing, Adjusting and Balancing (TAB) agency for the TAB of the mechanical systems.

FIRE PROTECTION SYSTEMS

- All interior spaces in the building will be sprinklered in accordance with NFPA 13. A wet-pipe system will be used in most areas. If the attic has combustibles and is naturally ventilated, it will be sprinklered with a dry pipe system to prevent the sprinkler pipe from freezing.
- Standpipes will be provided in each stairwell.
- The fire system will be divided into multiple zones by floor for identification and annunciation at the central fire alarm panel. Fire department connections, post indicator valve and backflow prevention shall be in accordance with the City of Cheney requirements.
- Consistent with EWU standards, the fire department pump connection will be mounted on the exterior of the building.
- The fire system will be provided with its own double check backflow prevention assembly.

SUSTAINABILITY

- This project will be designed to meet or exceed LEED Silver Standards. It is proposed that the systems identified in this narrative and summarized in the table below be examined in the schematic design phase for their first costs, life cycle costs and energy saving potential. Water conservation has already been discussed in this narrative as well as minimum building envelope construction.

<table>
<thead>
<tr>
<th>Option</th>
<th>Building Heat Source</th>
<th>Building Cooling Source</th>
<th>Domestic Hot Water heat Source</th>
<th>Ventilation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>Campus Steam</td>
<td>Air Cooled Heat Recovery Pumps</td>
<td>Campus Steam</td>
<td>Heat Recovery from Exhaust Air to pre-heat ventilation air</td>
</tr>
<tr>
<td>Option 2</td>
<td>VRV Heat Pumps</td>
<td>Air Cooled Heat Recovery Heat Pumps</td>
<td>High efficiency gas fired water heaters</td>
<td>Same as 1.</td>
</tr>
<tr>
<td>Option 3</td>
<td>High efficiency water heaters and boilers. Cooling throughout with campus chilled water.</td>
<td>Same as 1.</td>
<td>Same as 1.</td>
<td></td>
</tr>
<tr>
<td>Option 4</td>
<td>Same as 1. except no cooling in the dorm rooms (hydronic fin tube heat only)</td>
<td>Same as 1.</td>
<td>Same as 1.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Heat Recovery from Exhaust Air</th>
<th>Economizer cooling</th>
<th>DX (refrigerant) heat recovery fan coil units</th>
<th>Dedicated minimum outside air.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living units</td>
<td>4 pipe hydronic fan coil units (hot water/chilled water). Dedicated minimum outside air.</td>
<td>Economizer cooling</td>
<td>DX (refrigerant) heat recovery fan coil units. Dedicated minimum outside air.</td>
<td>Same as 1.</td>
</tr>
<tr>
<td>Store/Seminar</td>
<td>4 pipe hydronic fan coil units (hot water/chilled water). Dedicated minimum outside air.</td>
<td>Economizer cooling</td>
<td>DX (refrigerant) heat recovery fan coil units. Dedicated minimum outside air.</td>
<td>Same as 1.</td>
</tr>
<tr>
<td>Commons</td>
<td>Single zone air handling unit. Economizer cooling</td>
<td>Economizer cooling</td>
<td>DX (refrigerant) heat recovery fan coil units. Dedicated minimum outside air.</td>
<td>Same as 1.</td>
</tr>
<tr>
<td>Residence Life</td>
<td>Consider 4 pipe hydronic fan coil units and VAV air handling unit. Economizer cooling.</td>
<td>Economizer cooling</td>
<td>DX (refrigerant) heat recovery fan coil units. Dedicated minimum outside air.</td>
<td>Same as 1.</td>
</tr>
<tr>
<td>Apartment</td>
<td>4 pipe hydronic fan coil units (hot water/chilled water). Dedicated minimum outside air.</td>
<td>Economizer cooling</td>
<td>DX (refrigerant) heat recovery fan coil units. Dedicated minimum outside air.</td>
<td>Same as 1.</td>
</tr>
<tr>
<td>Telecommunication Rooms</td>
<td>4 pipe hydronic fan coil units (hot water/chilled water). Economizer cooling</td>
<td>Economizer cooling</td>
<td>DX (refrigerant) heat recovery fan coil units. Dedicated minimum outside air.</td>
<td>Same as 1.</td>
</tr>
</tbody>
</table>
Electrical Service
• The EWU Campus currently receives electrical utility power via two separate 13.2KV electrical service feeders from the City of Cheney. These two 13.2KV electrical service feeders are terminated within the EWU Rozell Substation at Campus Switchgear Bus #1 and Campus Switchgear Bus #2. Four separate 13.2KV campus feeders are routed from the Campus Switchgear to a system of 13.2KV switches located throughout the EWU campus in order to provide increased redundancy and flexibility to the campus electrical distribution system.

Telecommunications Service
• Data/Communication service is typically provided to each building on the EWU Campus from the EWU owned data/com distribution system. Fiber optic cabling is typically routed throughout the EWU Campus via a system of cable tray that is located within the existing campus utility tunnel system. New telecommunications building service pathways will be provided and installed by the contractor. New building service pathways will be routed from the existing campus utility tunnel system into the main telecom room. Telecommunications building service cabling will be provided and installed by EWU through a separate vendor.

Electrical Systems General
• The building electrical systems will be designed in accordance with the following codes:
  o National Electrical Code
  o International Building Code (IBC)
  o International Fire Code (IFC)
  o Regulations of the State Fire Marshal
  o Electrical Safety Order of the Washington State Department of Labor and Industries
  o Washington Administrative Code
  o Americans with Disabilities Act (ADA)
  o Washington State Non Residential Energy Code
  o Requirements of Washington State Industrial Safety & Health Administration (WISHA)

  • The building electrical systems will be designed in accordance with the following standards:
    o Illuminating Engineers Society of North America (IESNA)
    o Eastern Washington University Construction Standards

Service and Distribution
• Site Electrical: The New Residence Hall will receive power from the existing campus 13.2KV primary electrical distribution system. The existing 13.2kV primary distribution system feeders will be incepted and extended to a new 13.2kV vacuum switch which will be installed within existing tunnel Terminal #2. A new 13.2kV feeder will be installed from the new 13.2kV switch in Terminal #2 to the New Residence Hall pad mount transformer locations.
• Building Normal Electrical Service: Two new three-phase four-wire electrical services will be provided for the new building. These new electrical services will be derived from one new 480/277V outdoor pad mount transformer and one new 208/120V outdoor pad mount transformer, which will both be connected to the EWU campus 13.2KV primary electrical distribution system. Two new main switchboards will be located in a dedicated main electrical room located on the lower level. The dedicated main electrical room will be located as closely as possible to the new outdoor pad mount transformers.
• NEC Article 700 Emergency Electrical Distribution System: A new emergency electrical distribution system will consist of a 480/277V engine driven propane fueled generator system. The generator will be pad mounted outdoors, and will be provided with a weather proof sound attenuating enclosure. The emergency electrical distribution system will also be provided with an automatic transfer switch in order to automatically switch loads between normal EWU campus power and generator backed power. The new automatic transfer switch will also allow the generator to start automatically upon loss of normal EWU campus power. The emergency electrical distribution system will supply power to all life safety systems within the building such as egress lighting, exit lighting, and the fire alarm system.
• NEC Article 702 Optional Standby Electrical Distribution System: A new NEC 702 Optional Standby electrical distribution system shall be provided for the building. This optional standby electrical distribution system will
consist of a propane fueled engine driven generator system. Both the NEC Article 700 Emergency electrical distribution system and the NEC Article 702 Optional Standby electrical distribution system will be connected to the same generator system by using separate automatic transfer switches. The standby electrical distribution system will also be provided with an automatic transfer switch in order to automatically switch loads between normal EWU campus power and generator backed power. The new automatic transfer switch will also allow the generator to start automatically upon loss of normal EWU campus power. The primary intent of the optional standby power system is to provide generator backed power to non-life safety loads within the New Residence Hall such as the building telecommunications system, associated telecom room cooling, access control system and CCTV security camera system.

- Building Distribution: The building electrical distribution will originate from a main electrical room on the lower level and smaller stacked electrical rooms located on each floor. The building electrical distribution will be designed to provide separation of lighting, mechanical and computer equipment loads. Because the building is being provided with separate 480/277 and 208/120V electrical services, it will not be necessary to distribute dry type step down transformers throughout the building. Multi-stage surge suppression shall be provided by installing transient voltage surge suppressors at the main switchboard, distribution switchboards and appropriate panelboard locations.

- Switchboards: Switchboards shall be free-standing dead-front style. Main devices shall be equipped with ground fault protection. Distribution devices shall be factory-installed, group-mounted circuit breakers. Each main switchboard will have owner metering per EWU campus standards and integral TVSS protection. Switchboard shall be mounted on a 4” concrete housekeeping curb. All bus bars shall be copper.

- Panelboards: Circuit breaker panelboards shall be provided throughout the building as required to adequately serve the associated building loads. Lab spaces will typically receive dedicated power panels located within each lab room. Panelboards shall be dead-front circuit breaker type with proper interrupting capacity. All panelboards shall be provided with 42 available circuits and door in door construction. All bus bars shall be copper. Where appropriate, panelboards will be provided with integrally mounted TVSS units.

- Mechanical Equipment: Refer to mechanical narrative for proposed mechanical systems and possible equipment. Motor loads ½ HP and larger will be 480V three phase. Motor starters and disconnects will typically be located in close proximity to each associated piece of mechanical equipment. Motor control centers will be utilized when several pieces of mechanical equipment which require motor starters are located in close proximity to one another. Variable frequency drives will be provided by the mechanical contractor and installed by the electrical contractor for various pieces of mechanical equipment.

- Disconnect Switches: Safety switches shall be heavy duty type with interlocking door and spring loaded contacts. Safety switches used as motor disconnects shall be fused. Outdoor safety switches shall be NEMA 3R.

- Motor Controllers / Motor Control Centers: Motor controllers shall be magnetic motor starters with fused control power transformers, pilot lights, and auxiliary contacts as required for control functions. Motor control centers shall be free-standing, dead-front style. Motor control centers shall be mounted on 2” concrete housekeeping curbs.

- Engine/Generator: Emergency and standby power generation shall be provided by means of an engine driven propane fueled generator set. Generator set shall be sized to supply emergency and standby loads. Emergency power will not be provided for elevator operation. Generator set shall include a weather proof sound attenuating enclosure for outdoor installation. Operation of the generator will be monitored on a multi-function system designed to report most normal failures such as low cooling fluid temperature, low starting batteries, overcrank, overload, high water temperature, etc.

- Automatic Transfer Switch: The automatic transfer switches shall be 4-pole, switched neutral, open transition type.

- Medium Voltage Pad Mount Transformers: Transformers shall contain a dead front loop feed primary compartment. Provide transformers with integral secondary disconnect switch located within the transformer secondary compartment.

- Medium Voltage Cabling: 15KV medium voltage cables shall be shielded, copper MV-90 single conductors. 15KV cables shall be sized in accordance with EWU campus standards and the National Electric Code, and shall be installed with a 600V insulated equipment grounding conductor. 15KV cables shall be installed in continuous runs without splices.
• Medium Voltage Elbows: 15KV medium voltage cables shall be terminated by 200 amp rated load-break elbows manufactured by Cooper.
• Grounding: Grounding materials shall be copper, except ground rods shall be copper-clad steel. Grounding electrode shall be provided per code requirements. Equipment grounding conductors shall be run with all feeders and branch circuits. Separate grounding conductors shall be provided for isolated ground branch circuits. Equipment ground bars shall be provided within all electrical rooms and telecommunications rooms.

Lighting and Branch Wiring

- General Interior Lighting: Lighting throughout the interior building spaces will respond to the primary use of each space while maintaining a level of flexibility to react to future use of each space. Uniform ambient lighting will establish a basic minimum lighting level throughout each individual space with task. Display and accent lighting will be considered where appropriate. Lighting within the building will be primarily fluorescent. Fluorescent lamps shall be primarily T8, T5 and compact fluorescent. LED lighting may also be utilized within the building where deemed appropriate. Lighting system design foot candle levels will be in accordance with IES standards and EWU standards. In general, areas within the building will be illuminated to the following light levels:

<table>
<thead>
<tr>
<th>Building Area</th>
<th>Foot-Candles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorm Rooms</td>
<td>30</td>
</tr>
<tr>
<td>Classrooms/Learning Space</td>
<td>50</td>
</tr>
<tr>
<td>Offices</td>
<td>40-50</td>
</tr>
<tr>
<td>Restrooms</td>
<td>30</td>
</tr>
<tr>
<td>Corridors</td>
<td>10-20</td>
</tr>
<tr>
<td>Janitor Rooms</td>
<td>30</td>
</tr>
<tr>
<td>Storage Rooms</td>
<td>20</td>
</tr>
</tbody>
</table>

- Egress & Exit Lighting: Exit lighting will be LED type with integral battery backup. Emergency egress lighting will be provided throughout the path of egress, and will be supplied with power from the emergency generator system in the event of a failure on the normal power system.
- General Lighting Controls: Within normally occupied common spaces, multi-level switching will be provided in conjunction with occupancy sensors, and will utilize two or more manual wall switches. Manually dimmable lighting controls shall only be utilized within appropriate areas where specifically requested, such as conference rooms or learning spaces. Automatic dimmable or step-dimmmed lighting controls shall be considered for the purpose of daylight harvesting where required by energy code. A programmable low voltage lighting control system shall be provided for automatic control of lighting in corridors / common areas and exterior site lighting. The low voltage lighting control system shall also be interfaced to the campus energy management system (EMS) to allow EMS control of the exterior lighting.
- Programmable Low Voltage Lighting Control System: Provide programmable, low voltage relay based lighting control system with building management system interface. The programmable low voltage lighting control system shall be used to control lighting within interior corridors and large common areas. This will allow the building lighting to be automatically turned on and off at pre-programmed times. The low voltage lighting control system shall be manufactured by Nexlight in accordance with EWU campus standards.
- Occupancy Sensors: Occupancy sensors will be utilized to automatically shut off the lighting within offices, common restrooms and classrooms/learning spaces when these spaces are unoccupied. Occupancy sensors shall be dual technology type. Either ceiling mounted or wall mounted occupancy sensors will be utilized depending on the physical size and specific geometry of the room being controlled.
- Sustainable Design Considerations: All sustainable design measures considered will be evaluated completely with regards to their associated sustainable and economic aspects. Many opportunities are currently available to construct a building that is a model of sustainable design. The following is a brief list of items related to the building lighting and lighting control systems which are being considered for this project:
  - Energy efficient fluorescent lighting will be utilized as the primary light source within the building in order to reduce the energy consumption associated with the lighting system to the fullest extent possible.
  - Occupancy sensors will be utilized to automatically shut off the lighting when spaces are unoccupied. This will allow the interior lighting within these spaces to be automatically turned off during unoccupied times, thereby increasing the available energy savings associated with the interior lighting system.
Within normally occupied spaces, multi-level switching will be provided in conjunction with occupancy sensors, and will utilize two or more manual wall switches. The utilization of multi-level switching within these spaces will allow the user to manually reduce the light levels within their spaces if desired, further increasing the available energy savings associated with the interior lighting system.

Automatic dimmable or step-dimmed lighting controls shall be considered for the purpose of daylight harvesting within areas where required by the energy code. The utilization of automatic dimming or step-dimming and daylight harvesting will allow EWU to take advantage of the natural available daylight to the fullest extent possible. This will result in additional available energy savings associated with the interior lighting system.

A programmable low voltage lighting control system shall be used to control both the exterior lighting system and portions of the interior lighting system. This will allow both the interior and exterior lighting systems to be automatically turned on and off at pre-programmed times, thereby increasing the available energy savings associated with the interior and exterior lighting systems.

**General Exterior Lighting:** Exterior lighting will be selected to match the architectural building exterior and EWU campus standards. Exterior entry lighting which illuminates the path of egress will be supplied with power from the emergency generator system in the event of a failure on the normal power system. Exterior lighting will utilize full cut off light fixtures in order to avoid light trespass and meet associated dark sky lighting requirements. In general, exterior areas will be illuminated to the following light levels:

<table>
<thead>
<tr>
<th>Exterior Area</th>
<th>Foot-Candles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior Entry</td>
<td>5</td>
</tr>
<tr>
<td>Exterior Walkways</td>
<td>2</td>
</tr>
<tr>
<td>Parking Areas</td>
<td>1</td>
</tr>
</tbody>
</table>

**Exterior Lighting Controls:** A programmable low voltage lighting control system shall be used to control the exterior lighting. This will allow the exterior lighting to be automatically turned on and off at pre-programmed times, automatically controlled via outdoor photocell and automatically controlled by the campus EMS system.

**Telecommunications**

- **Telecommunications Building Distribution:** Telecommunications building distribution cabling and devices will be provided and installed by EWU through a separate vendor. A complete telecommunications distribution pathway system will be provided by the contractor in accordance with the EWU construction standards. Telecommunications rooms will be located throughout the facility in accordance with EIA/TIA 568 and 569. The main telecom room will be located on the lower level of the building, in a centralized location. Multiple secondary communication rooms will to be located on each floor and stacked vertically from floor to floor. Horizontal station cable pathways will be provided and routed to the telecommunications rooms located on each floor. Each telecommunications room shall be provided with a dedicated 120/208V standby power panelboard and an equipment ground bar. The building will be equipped with cabling pathway provisions for wireless local area networking. Telecommunications riser cabling pathways will be provided from the entrance location to the telecommunications room on each floor. Cable trays will be installed down corridors with conduits provided at hard (inaccessible) ceilings and were wall and floor penetrations are required.
• Telecommunication Outlet Distribution: Telecommunications devices will typically be located at dorm room study areas, ceiling mounted projector locations, computer work stations and other required student locations. Dorm rooms will typically be provided with one telecom outlet per bed. Offices shall typically be provided with two telecommunication outlet locations per room.

Low Voltage Systems
• Closed Circuit Television (CCTV) System: New CCTV System pathways will be provided by the contractor. Required locations for CCTV devices will be closely coordinated with EWU. Typical spaces which will include CCTV devices are all building entrances, main lobby area and the main reception area. All CCTV cameras, power supplies, cabling and active electronic equipment will be provided and installed by EWU through a separate vendor.
• Access Control System: A new access control system will be provided for the new building. Required locations for miscellaneous access control devices will be closely coordinated with EWU. Typical spaces which will include access controls are building entrances, office suites, utility rooms and dorm rooms. The access control system shall be furnished and installed by Engineered Control Systems (ECS).
• Audio / Video Systems: New AV system pathways will be provided by the contractor. Required locations for AV devices and equipment will be closely coordinated with EWU, but will typically include classrooms/learning spaces and conference rooms. Video projectors, sound reinforcement systems, cabling and all active electronic AV equipment will be furnished and installed by EWU through a separate vendor.
• Fire Alarm: A complete battery backed addressable fire alarm system with manual pull stations, automatic detection and ADA compliant speaker/strobes will be provided throughout the facility. Smoke detectors and heat detectors will be installed as required by the governing codes, and in accordance with EWU campus standards. Dorm room smoke detectors will be installed with sounder bases for local dorm room annunciation. A 30 second delay will be programmed in to the dorm room smoke detectors prior to activation of speaker strobes which will be located throughout the building. Each dorm room will also be provided with a speaker/strobe. The building fire sprinkler system will be monitored by the fire alarm system for system flow and shutoff valve tampering. Central reporting capabilities will be provided with the fire alarm system, and shall be compatible with the existing Edwards FireWoks EWU campus fire alarm monitoring system. The new fire alarm system shall be manufactured by Edwards System Technology (EST) Model EST-3 in accordance with EWU campus standards, and shall be furnished and installed by Engineered Control Systems (ECS).
• Clock System: New Clock System pathways will be provided by the contractor. Required locations for clocks will be closely coordinated with EWU. All clocks, cabling and clock equipment will be provided and installed by EWU through a separate vendor.
• Community Antenna Television (CATV) System: New CATV system pathways will be provided by the contractor. CATV System service pathways will be provided by the contractor to the main telecommunications room. New CATV System pathways shall also be installed by the contractor from the main telecommunications room to all other telecommunications rooms. Required locations for CATV will be closely coordinated with EWU. All CATV cabling, devices and equipment will be provided and installed by EWU through a separate vendor. CATV outlets will typically be provided within dorm rooms, student commons areas and classrooms/learning areas.
• Distributed Antennae System (DAS): New DAS system pathways may need to be provided by the contractor, depending upon the final selected building construction type. A DAS system would help ensure adequate wireless cell phone coverage for residents throughout the new building. If required, DAS System cabling, devices and equipment will be provided and installed by EWU through a separate vendor.

Site Lighting
• Site lighting will be selected in conformance with EWU campus standards, and will utilize full cut off light fixtures in order to avoid light trespass and meet associated dark sky lighting requirements. Site lighting which illuminates the path of egress will be supplied with power from the emergency generator system in the event of a failure on the normal power system. Site lighting will be controlled via a programmable low voltage lighting control system which will allow the site lighting to be automatically turned on and off at pre-programmed times, automatically controlled via outdoor photocell and automatically controlled by the campus EMS system.
The Eastern Washington University Residence Hall construction project is a 5- or 6-story residence hall. The project is located at the corner of 10th Street and cedar street on the EWU campus and in the City of Cheney, Washington. The siting of the structure provides easy access for residence to the existing mall and the student recreation center. Open outdoor spaces are being provided on the East and West sides of the site. The Easterly open space provides and active student feeling with the ingress and egress of users. The Characteristic of this area is a front porch feel.

The landscaping in this area will be comparable in residential nature but with a campus feeling. The building foot print provides a passive courtyard area either to the south or to the west. The landscaping in this area shall be deciduous and coniferous trees for screening to the west therefore providing a character of quiet dignity. Plantings in this courtyard shall be massing of similar species that respond to an intimate hardscape layout. This courtyard shall provide outdoor seating and passive recreation.

The site currently has existing trees to the north and east. Efforts shall be taken to preserve and protect this urban forest. Plantings shall provide seasonal color while minimizing maintenance needs. Cedar Street is lined with street trees located at back of walk. These will be maintained where practical. North 10th Street shall be open to provide early morning light while the Mall extension shall be highlighted with a tree lined pedestrian way.
# COST MODEL

## MACC Budget

<table>
<thead>
<tr>
<th>Construction Cost: $16,600,000</th>
<th>Building Area: 103,000</th>
<th>Cost/SF: $161.16</th>
</tr>
</thead>
</table>

## Base Construction Costs

### General Requirements
- 4% of Construction Cost: $656,000

### Site Development (200’ x 200’)
- Excavation/Export/Import/Piles: $200,000
- Site Utilities & Stormwater: $120,000
- Site Mechanical: $100,000
- Site Electrical: $100,000
- Site Landscaping: $200,000

### Total: $720,000

## General Construction

### Structural Framing:
- Lower Level Podium: $1,125,000
- Structural Frame (Floors 1-4): $1,760,000

### Total: $2,885,000

### Exterior Envelope:
- Masonry and Cast Stone Trim: $899,910
- Sheathing, Insulation, Interior Finish: $184,073
- Glass, Glazing System & Exterior Entry Systems: $1,090,750

### Total: $2,274,733

### Interior Construction:
- Wall Construction (studs & drywall): $800,000
- Ceiling Systems: $450,000
- Floor Finishes: $720,000
- Wall Finishes: $750,000
- Doors & Frames: $450,000
- Glazing & Relights: $100,000
- Specialties: $75,000
- Equipment:
  - Kitchen Appliances: $-
  - Laundry Appliances: $-
  - Storage Shelving: $45,000
  - Bike Storage Racks: $4,500

### Total: $3,394,500

### Roofing
- $216,000

### Mechanical
- HVAC: $2,266,000
- Plumbing: $927,000
- Fire Protection: $309,000

### Total: $3,502,000

### Electrical
- Electrical Power: $1,236,000
- Lighting: $618,000
- Telecom/Data (conduit & pathways only): $154,500
- Special Systems: $478,950

### Total: $2,487,450

### Total
- $16,035,683

### General Contractor OH & P, Bond & Insurance (12%)
- $1,924,282

### Total
- $17,959,964

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### Additional Costs

- Telcom/Data EWU Estimate: $546,000
- MW Estimate with Adjustments to Standards: $375,000
- EWU Provided Active IT Equipment: $126,000

- $672,000
## PROJECT BUDGET

**EWU Facilities & Planning Services**
C&P/Facilities Services  
Subtotal $530,000

**Consultant Services**
- Predesign Services  
  Basic Services  
  Consultant Additional Services  
  Reimbursables  
- Other Consultant Services:  
  - V/E Study  
  - Constructability Review  
  - L & I Review  
  - Special Inspection & Testing  
  - Commissioning  
Design Contingency  
Subtotal $100,000

**Construction Costs with Telcom & Data**
- General Requirements (4%)  
  Site Development (200’ x 200’)  
- General Construction:  
  - Structural Framing  
  - Exterior Envelope  
  - Interior Construction  
  - Roofing  
- Mechanical  
- Electrical  
Subtotal $16,035,680

**GC OH & P, Bond & Insurance (12%)**
Change Order Contingency  
Sales Tax  
Subtotal $1,924,282

**Total Construction Cost**
Subtotal $17,960,000
Sales Tax $1,328,000
Subtotal $1,679,985

**Telcom/Data**
- Telcom/Data EWU Estimate $546,000  
- MW Estimate with Adjustments to Standards $375,000  
- EWU Provided Active IT Equipment $126,000  
Subtotal $672,000

**Total Construction Costs with Telcom/Data**
Subtotal $21,639,985

**Furnishing & Equipment**
- Furnishing & Equipment $1,370,000  
- Sales Tax $130,000  
Subtotal $1,500,000

**Other Costs**
- Permits/Fees/Utilities $150,000  
- Financing Contract $50,000  
Subtotal $200,000

**Total Project Budget**
Subtotal $25,977,755

**EWU Project Budget**
Subtotal $24,997,736

Difference $980,019