



WASHINGTON STATE  
UNIVERSITY



# DESIGN GUIDELINES

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**SECTION**

**1**

**INTRODUCTION**

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## INTRODUCTION

The following WSU student was instrumental in developing this document with the direction of Facilities Services:

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Under the direction of

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## PURPOSE

The purpose of this document is to provide direction for the planning, design, and construction for facilities on Washington State University's (WSU) Pullman campus. The guidelines are intended to complement WSU's Design and Construction Standards (DCS), while addressing specific influences of the Pullman campus. Deviations from the DCS and these guidelines can be considered only if they benefit the project and gain approval from the WSU project manager.

It is the consultant's responsibility to comply with these documents and all applicable laws and regulations. Where conflicts arise as a result of these documents, established building codes adopted by the City of Pullman and the State of Washington shall take precedence. Discrepancies shall be brought to the attention of the WSU project manager.

## DEVELOPMENT RESPONSIBILITY

WSU Facilities Services is the organization that plans, designs, constructs, operates, and maintains the physical facilities and environments of the university. For each project, a WSU project manager will serve as the main point of contact for the university. The project manager's primary role is to administer the delivery of the project in a fashion that it is supportive of the project's program, the Pullman campus master plan, and the university's mission and strategic plan. During the initial planning stages, the project manager will help establish project requirements, and then facilitate collaboration between WSU stakeholders, the design team, and local jurisdictions to satisfy the requirements of the project.

The City of Pullman is the Authority Having Jurisdiction (AHJ). Pullman's *Planning Department* develops and administers the city's Comprehensive Plan while also, facilitating the orderly development of the community. With the city's role in on-campus construction projects, the WSU project manager and design team will work closely with the city throughout the project to facilitate the process, acquire necessary permitting, and build a strong working relationship.

## INTRODUCTION

### HISTORICAL CONTEXT

In 1890, the first governor of Washington State, Elisha P. Ferry, signed legislation establishing a State Agricultural College and School of Sciences. As the state's land grant institution, its purpose was to provide a practical education that was accessible to agricultural and industrial workers of Washington State. In January 1892, the college formally opened its doors to students in the farming community of Pullman, Washington. The inaugural class consisted of 75 students, and courses were held in a single-story 2,160 SF building which became known as the Crib.

Throughout its history, this institution has grown from a small state college, into a distinguished public research university which remains committed to its land-grant mission. Today, WSU has approximately 30,000 students enrolled in five campuses across the state and online. WSU also provides educational programs and services at research and extension offices in each of the state's 39 counties.



Washington State University circa 1910

### REGIONAL CONTEXT

Pullman is a rural town located in the Palouse region of Eastern Washington, and approximately 75 miles south of Spokane, WA. The Palouse is characterized by the agriculture industry and its iconic rolling hills. The region is home to two land grant universities, the University of Idaho in Moscow, and Washington State University in Pullman. Located just eight miles apart, the two universities provide a diverse and vibrant collegiate atmosphere.

The city of Pullman is laid out over four major hills – College Hill, Military Hill, Sunnyside Hill, and Pioneer Hill – in an arrangement that forms quadrants around downtown, which is nestled in the valley where the four hills come together. WSU is located on College Hill, overlooking downtown from the east. This adjacency establishes a crucial relationship between the campus and the city of Pullman, infusing the culture and pride of the university into the community. This interaction with the local community is highly valued and is an important element of the campus setting. The future development of the west side of campus should reinforce the connection to downtown.



View of the Palouse, picturing Moscow, ID (left) and Pullman, WA (right) as seen from Kamiak Butte

The following principles represent important elements of the university's strategic plan that should be considered in all aspects of design, construction, and operation of new facilities and physical environments at WSU:

### NATIVE TRIBAL ACKNOWLEDGEMENT

WSU Pullman is located on the homelands of the Nimiipuu (Nez Perce) Tribe and Palus people. The university expresses deep respect for and gratitude towards these original and current caretakers of the region. WSU continues to acknowledge the responsibility to establish and maintain relationships with these tribes and Native peoples, in support of tribal sovereignty and the inclusion of their voices in teaching, research, and programming.

### LAND GRANT MISSION

For the State of Washington, the designated land-grant research institution is Washington State University. As a land grant university, WSU is committed to providing accessible education, conducting impactful research, and serving communities both locally and globally. The university strives to improve lives through the delivery of a practical education as articulated in the Morrill Act of 1862 to establish the land-grant colleges.

### STRATEGIC PLAN

WSU Facilities Services strives to meet the overall strategic plan goals in providing essential services to support its mission.

#### GOAL 1: RESEARCH, INNOVATION, & CREATIVITY

Serving the needs of the communities through innovative research, scholarship, and creative activities.

#### GOAL 2: STUDENT EXPERIENCE

Preparing students to become future leaders, scholars, and global citizens.

#### GOAL 3: OUTREACH, EXTENSION, SERVICE, & ENGAGEMENT

Partnering through meaningful engagement to advance the quality of life, economic development, sustainability, and equity throughout the community and beyond.

#### GOAL 4: INSTITUTIONAL EFFECTIVENESS & INFRASTRUCTURE

Leveraging the physical, financial, human, and intellectual resources to become the social and economic drivers for the community and beyond.

WSU Facilities Services manages all capital projects across the WSU system. This includes all phases of the project (e.g., pre-design, design, construction, closeout) and all associated internal and external engagement. Each project is unique and the resulting engagement requirements may vary. WSU's project managers consider the following engagement strategies on each capital project and implement those required using a number of different procedural tools:

### INTERNAL ENGAGEMENT

- Project stakeholders (e.g., auxiliaries, faculty, staff, students)
- Approval authorities (e.g., university leadership, Board of Regents)
- Review committees (e.g., architectural, historic preservation, sustainability, landscaping)
- WSU Advisory Boards (e.g., college, campus, tribal)
- Supporting departments (e.g., real estate, parking services, student accommodations and disability resources, IT and security)

### EXTERNAL ENGAGEMENT

- Project awareness (e.g., local population, alumni, tribal)
- State agencies (e.g., OFM, DES, state government)
- Regulatory agencies (e.g., Authority Having Jurisdiction, L&I, Department of Ecology, DAHP)
- Local Utility District (e.g., public power, sewer, water, telecom, utilities providers)
- Community advisory groups (e.g., PBAC, local neighborhood associations)

### ENGAGEMENT TOOLS

- Facilities Services website and project websites
- News articles, recurring newsletters, QR codes
- Open house events
- Milestone ceremonies (e.g., ground-breaking, ribbon-cutting)
- Surveys (where applicable)
- Documentation (e.g., project charter, project agreement, email)
- Notifications (e.g., shutdowns, traffic impacts, disruption)

## RESOURCES

- **City of Pullman Planning Department**  
[pullman-wa.gov/services/community\\_development/planning/index.php](http://pullman-wa.gov/services/community_development/planning/index.php)
- **Washington State Building Code**  
[sbcc.wa.gov](http://sbcc.wa.gov)
- **University Communications**  
[ucomm.wsu.edu](http://ucomm.wsu.edu)
- **WSU Brand**  
[brand.wsu.edu](http://brand.wsu.edu)
- **WSU Transportation Services**  
[transportation.wsu.edu](http://transportation.wsu.edu)
- **WSU Facilities Services**  
[facilities.wsu.edu](http://facilities.wsu.edu)  
Includes;  
WSU Project Managers,  
WSU Construction Managers,  
WSU Engineering Services, &  
WSU Interior Designer
- **WSU Design & Construction Standards (DCS)**  
The WSU Design & Construction Standards (DCS) are critical tools to assist architects, engineers, other design professionals, contractors, and university staff in understanding the desired standards of Washington State University in developing, maintaining, and operating its facilities. The DCS are Standards, not Specifications. The components within these documents are to be conveyed within the specifications developed by industry professionals for all WSU projects.  
Any deviation shall be clearly communicated with the WSU project manager, and the legal responsibility for project document preparation shall continue to reside with the design professional.  
The DCS can be found at: [facilities.wsu.edu/facilities-services-capital/design-standards](http://facilities.wsu.edu/facilities-services-capital/design-standards)
- **WSU Public Safety**  
[police.wsu.edu](http://police.wsu.edu)
- **WSU Environmental Health and Safety**  
[ehs.wsu.edu](http://ehs.wsu.edu)
- **WSU Waste Management**  
[facilities.wsu.edu/facilities-services-operations/waste-management](http://facilities.wsu.edu/facilities-services-operations/waste-management)
- **WSU Interior Signage Standards**  
Can be found on the DCS, Division 10
- **WSU Exterior Signage Standards**  
Can be found on the DCS, Division 10

SECTION

2

SITE PLANNING



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## BUILDING SITING

WSU's topography, architecture, landscape, and broader geographic context to Pullman, its host community, blend together to form WSU's sense of place. These characteristics are all factors that can make building siting an opportunistic challenge.

Thoughtful planning starts with building siting and orientation. At a minimum, the placement of new buildings should promote the university's overall approach to pedestrian oriented development and facilitate interdisciplinary research and collaboration. Study existing campus connections and adjacencies for the opportunity to create new relationships and physical arrangements that shape courtyards, quadrangles, or enhance campus open spaces.

Verticality is significant to campus, influencing site and building design. Although it poses many design challenges, it also provides opportunities for creative design strategies. The terrain allows the campus populace to experience the reality of the Palouse hills, emphasizing the physical connection between the Palouse and students. Pullman campus's features could be enhanced through careful placement of future buildings so that the views of rolling hills are shown to the best advantage. Each new project should explore sustainable strategies and opportunities for efficient land use, low-impact development, effective storm-water management, and passive design.



Smith Center for Undergraduate Education, located on a hill with parking below.

## OPEN SPACES

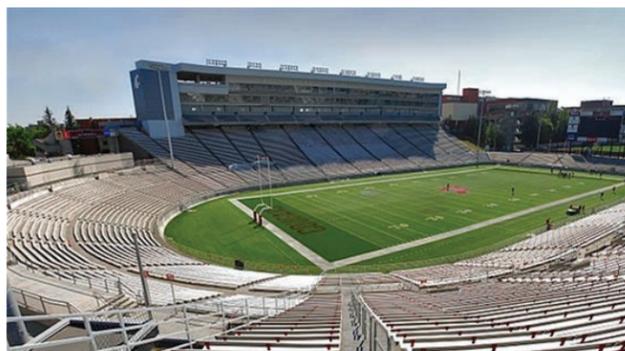
The campus landscape is characterized by a framework of open spaces that blend the urban landscapes of campus with the natural environment of the Palouse. The spaces on campus vary from places of relatively urban character such as Glenn Terrell Mall, with hard surfaces and rigidly aligned trees, to informally planted landscapes on the slopes of the hills. This unique blend of landscapes contributes to the character of campus and enhances the sense of place.



Glenn Terrell Mall, a Formal Open Space



Eggert Family Organic Farm, an Informal Open Space



Martin Stadium, a Functional Open Space

**FORMAL OPEN SPACES** are loosely characterized by the urban landscapes of campus. They typically incorporate streetscapes, paths, plazas, courtyards, campus lawns, and feature formal and ornamental plantings. These spaces often serve a variety of uses and generally receive more regular maintenance than informal open spaces.

**INFORMAL OPEN SPACES** are generally characterized by natural features of the Palouse. These spaces include wetlands, streams, forests, and grasslands of the Palouse, as well as campus amenities such as playfields, the WSU Arboretum and Wildlife Center, and the Eggert Family Organic Farm.

**FUNCTIONAL OPEN SPACES** could be characterized as either urban or rural areas that serve a particular purpose and often restrict access and use. These spaces include areas such as athletic fields, the golf course, and Martin Stadium, as well as agriculture fields and pastures.

The overall landscape design for each project should promote a healthy and safe atmosphere on campus. Consideration must be given to the placement of landscape elements and vegetation in order to minimize safety concerns, potential hazards, and maintenance requirements.

**PEDESTRIAN SAFETY**

Pedestrian safety is achieved through thoughtful selection of materials and placement. Near constructed pedestrian surfaces, avoid fruiting and cone-bearing plantings as well as species that may develop root systems that will heave, crack or otherwise damage constructed surfaces and create hazards for pedestrians. Designs shall not allow buildup of mud or ice on constructed pedestrian surfaces to avoid unsafe conditions, especially in the winter when daily freeze/thaw cycles can create icy conditions and damage constructed elements.

Consideration must be given to the placement of trees and other vegetation near buildings, as they may obscure a building's entrance and potentially cause maintenance issues and safety concerns. Landscaping shall not hinder area lighting and visibility, nor provide hiding places or harbor pests adjacent to buildings. Arrange vegetation in a way that won't inhibit maintenance, emergency access, or obstruct building air intakes and exhaust vents. Additional consideration shall be given to visibility requirements at vehicular traffic and pedestrian sight lines.

**Design & Construction Standards: Division 32**

**LANDSCAPING & IRRIGATION - DCS: 32 80 00 and 32 90 00**

Plants selected for the campus landscape should define exterior space and provide beautiful views. Plants should be located to complement the built environment while also reflecting the unique native Palouse setting. The campus landscape should incorporate native species and similar adaptive plants that promote species diversity and longevity while still providing efficient maintenance and safety. All turf and planted areas adjacent to major buildings shall be irrigated unless specifically designed to thrive without supplementary watering. Even if permanent irrigation is not required, temporary irrigation will be needed for up to 3 years after planting.

To meet the goals and requirements established in WSU's Water System Plan, WSU has implemented several actions to reduce the impact of landscaping practices on water usage. WSU's Water System Plan establishes specific goals and requirements to reduce the impact of landscaping practices on water usage. Future projects shall explore options that reduce the area of irrigated planting beds to minimize water use. To further reduce water usage and irrigation needs, use native and drought-tolerant plants for new landscaping.



Paths and Plantings of Thompson Flats Lawn Area



Gateway Entrance with Ornamental Grasses on the Pullman Campus

**WSU's Water System Plan** can be found at: [ehs.wsu.edu/public-health/drinking-water-quality/](https://ehs.wsu.edu/public-health/drinking-water-quality/)

**Design & Construction Standards: Division 32****TURF AREAS - DCS: 32 92 00**

On the Pullman campus sod or hydroseeding are the preferred methods for turf installation, as determined by available funds and schedule. Preferred methods at other WSU locations must be developed in consultation with the project manager and WSU professional staff. Due to wildfire hazards and maintenance issues, native wildflower or meadow mixes should not be used. The university also prefers to avoid groundcover plants due to the need for hand weeding.

**TREE POLICY - DCS: 32 93 43**

Existing trees are a valuable asset to the campus and should be maintained as much as possible. WSU Facilities has inventoried the majority of the Pullman campus trees. By request and on a project by project basis, WSU can provide the landscape architect the location, description, and assessment value for existing trees. This must be requested as part of Inventory and Analysis at the beginning of the preliminary design phase. The project manager will consult with the WSU Tree Committee before deciding to remove any existing trees as special specimens should be maintained as much as possible. If, at the close of a project, the value of the new landscaping and irrigation are less than the assessed value of any removed trees, the difference will be transferred from the project budget to the Tree Replacement Fund. While this difference is a cost only to the university, consultants and contractors should be aware the university prefers to keep this cost to a minimum.

**Design & Construction Standards: Division 33****DRAINAGE SYSTEMS - DCS: 33 40 00 and 33 46 00**

All foundation drains must connect to the storm drain system. Do not drain to percolation pits, drainage pits, or cisterns as the local soils in Pullman provide poor percolation rates and do not allow for percolation of storm runoff. Do not design for storm water dissipation. As the soils do not percolate, dissipation then comes in the form of evaporation and this process is impractical in the winter months.

**Design & Construction Standards: Division 31****SITE GRADING - DCS: 31 00 00**

The Pullman campus is located near the eastern edge of the Columbia Plateau Geologic Province. The geologic substructure is characterized by a thick zone of basalt, of the Columbia River Group, which is as much as 5,000 to 10,000 feet thick in this area and consists of separate flows and occasional interlayers of sedimentary materials. Blanketing the basalt is a material commonly referred to as the "Palouse Loess". This soil consists of wind-deposited clay and silt particles and usually classifies as CL or ML in the Unified Soil Classification System. It has a relatively low dry unit weight, is highly sensitive to moisture content changes, and some phases are considered collapsible. The thickness of the Palouse Loess stratum varies throughout the campus from only several feet to 100 feet or more. A geotechnical analysis and a geotechnical baseline report may be necessary for proper evaluation of site characteristics.

Due to the close proximity of classrooms and residence halls, pile hammer noise is detrimental to the campus environment. Consequently, auger cast pile is the preferred method of pile foundation on the Pullman campus. All other methods must be approved by the project manager.

# SITE PLANNING

Designers Shall Specify One of the Following Control Methods:

1. Auto on/off using lighting control system astronomical clock control option; Auto on/off using photocell may be necessary and acceptable at a few specific locations.
2. Independent astronomical clock control.

\*WSU Building Automation System (BAS) shall not be used to control exterior lighting.

## SITE LIGHTING

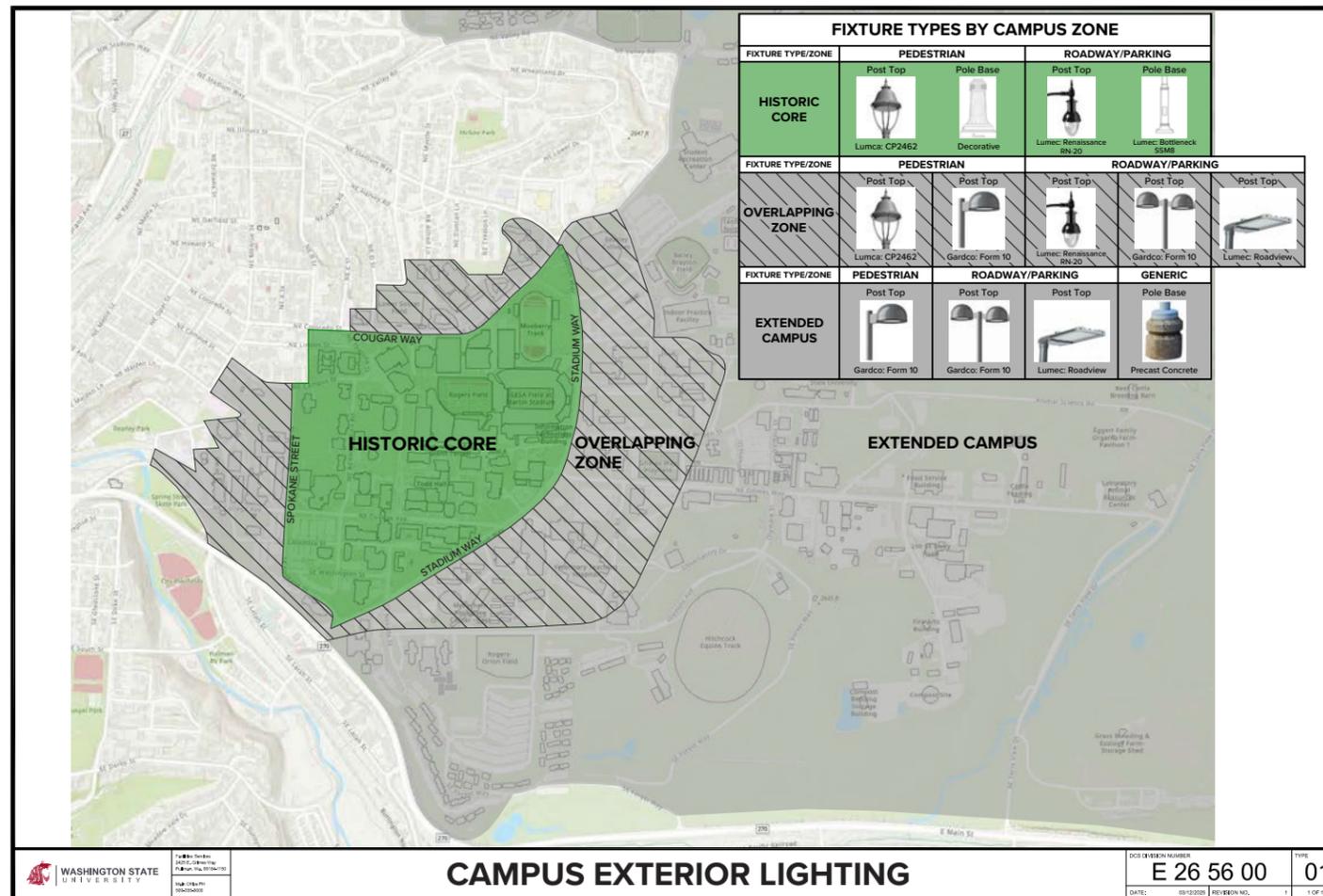
### Design & Construction Standards: Division 26

#### EXTERIOR LIGHTING - DCS: 26 56 00

Exterior lighting is to comply with IENSE standards at a minimum, and priority must be given to safety considerations. WSU must insure adequate levels of light for nighttime activity and safety. If possible, meet the current LEED requirements for light pollution reduction to improve night sky access and reduce development impact on nocturnal environments. In general, exterior lighting cutoff optical systems shall allow no more than 1% up light. Exceeding this rating requires approval from WSU Engineering Services.

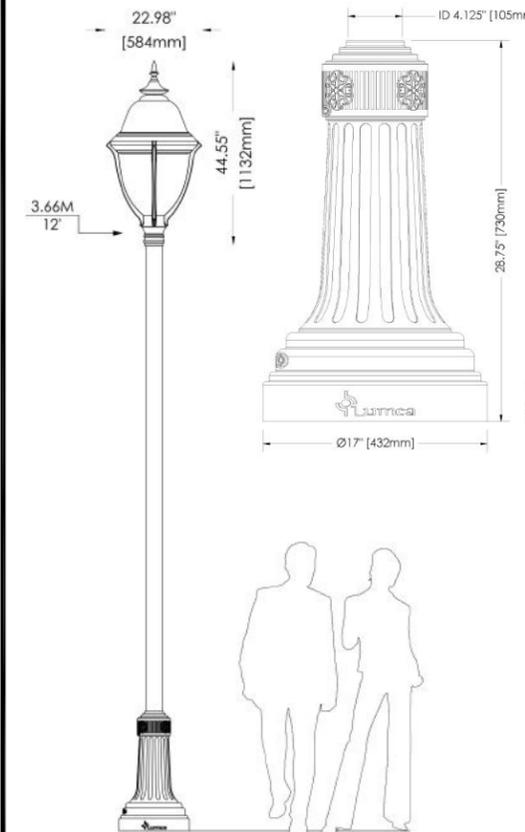
New fixtures shall complement nearby light fixtures and the overall character of campus, especially in historic zones. Limit the variety of fixture types to be specified in new construction and do not specify non-standard or custom-made luminaires or fixtures, unless specifically approved by WSU Engineering Services.

Fixtures shall be designed and installed in locations readily accessible for maintenance and replacement. Exterior lighting along walkways, roadways, and parking lots shall be mounted on precast concrete pole bases. Light fixtures shall not be encased or embedded in concrete (i.e., stair lights, sign lights, etc.). These are very difficult to maintain and replace. Light poles also serve as opportunities for branding as WSU banners are commonly attached. Banners on light poles indicate that you are on a WSU campus, they also can be used to announce major campaigns or events associated with WSU.



A Larger Version of this Map can be found in WSU's DSC Division 26

#### Historic Pedestrian Light Pole Base & Fixture



By LUMCA: Post-Top - CP2462 with Decorative Pole Base

#### Banners on Historic Street Light Pole



By LUMEC: Post-Top - Renaissance RN-20 with Bottleneck SSM8 Pole Base

SIGNAGE

Design & Construction Standards: Division 10

Exterior and Interior signage are both major components of campus branding, wayfinding, and building identification. Washington State University has developed **Exterior Signage Standards** and **Interior Signage Standards** for all WSU campuses.



SECTION

3

CIRCULATION

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In the past, the development of campus facilitated the use of vehicles and provided parking within the campus core. As the campus grew, however, the use of vehicles on campus created conflicts and safety concerns for pedestrians. Campus planning efforts now promote a pedestrian friendly environment that relies less on personal vehicles. Limiting vehicular traffic at the campus core and focusing on pedestrian circulation promotes efficient campus movement, encourages health and physical exercise, helps decrease traffic congestion, and limits carbon emissions.

Pedestrian circulation is the most common mode of transportation on campus. The academic core provides a 10-minute walking radius to allow students and faculty to make it to their next class within the designated 10-minute period. However, with the expansion of campus to the east, new academic buildings fall well outside the ideal 10-minute walking radius. As development continues, campus circulation will require a more organized approach to provide an efficient means of circulation throughout campus.

The Pullman campus Strategic Plan prioritizes pedestrian travel over other transportation methods. Path location should generally follow the natural “desire line” between destinations, with the recognition that in most cases abrupt turns are not comfortable and therefore are not realistic for pedestrian movement. Landscaping can be used to encourage a certain pedestrian movement but will not be adequate to force an action that does not approximate the desire line. Instead, paths should flow in a rounded but efficient direction so that pedestrians reach their destinations in a comfortable and straight-forward manner. Major components of the pedestrian system are major pathways, standard pathways, plazas, building approaches and entrances.

**PATHWAYS** provide a way for people to efficiently reach their destinations. To maintain a cohesive environment and strengthen the campus sense of place, new pathways should be designed to blend with existing paths and follow desire lines to their destinations. At major intersections, especially those in the campus core, consider implementing seating areas, pedestrian-scaled plantings, shade trees, lighting, wayfinding elements, and other landscape features.

Ramps and stairs are classified as pedestrian surfaces and therefore must comply with ADA and ANSI A117.1 standards. Do not design elements that form potential trip hazards. Snowmelt systems are to be incorporated into all major building entrances. Minimize stairs that require hand shoveling.

**MAJOR PATHWAYS** will be the primary desire line between two or more major destinations. Often these paths will lead to the entrances of major buildings; to and from heavily used transportation centers like bus stops, large parking lots, and the parking garages; or be a conduit that provides links to many other paths. Major paths act as the spine of the pedestrian system and must consider the following.

- The width of any particular path is a factor of the amount of traffic it accommodates and the scale of the landscape it intersects. Most major pathways should be 10-12 feet wide. In cases where they accommodate an unusually large number of people or multiple transportation types, they can be much wider. In no cases should a major path be less than 7 feet wide for snow removal and at least 8 feet wide if they are alongside a vertical retaining wall.
- A walkway might need to double as a fire lane, in which case it should be widened and strengthened appropriately with additional concrete and rebar.
- The intersections of pathways, especially those in the campus core, should be emphasized and accommodate seating areas, special plantings, and wayfinding elements.
- Paths should be concrete, and they should be designed to blend with other major campus paths to make a cohesive whole.

**MAJOR PATHWAYS** continued

- All paths should accommodate the use of alternative wheeled transportation such as bicycles, scooters, and wheelchairs.
- All paths should be ADA accessible and should not have stairs. However, if stairs are needed, also include a ramp.
- Trash and recycling bins should be located along paths at regular intervals and at intersections of major paths.
- Paths should be well lit. See [Site Lighting](#) for more information.
- Paths should merge when approaching roads to condense the number of street crossings to a minimum. When paths cross vehicular roads, they should always be at a right angle with an open view of the street.
- If a bus stop is near a pedestrian street crossing, the crossing should be behind the parked bus, if possible, to maximize the visibility of pedestrians by drivers approaching from behind.
- Major paths should not be used as service drives for vehicles. Adequate service access should be provided separately to minimize use of major paths as service access.
- Emergency phones should be dispersed along major pathways.



The Glenn Terrell Mall is a major pathway that provides students access to the CUB, Todd Hall, and many other major campus buildings.

**STANDARD PATHWAYS** accommodate fewer pedestrians than major pathways. They might connect a major destination with a minor destination or lead to a major pathway or secondary entrance of a building; the campus landscape is currently crisscrossed with standard paths. Projects should strive to reduce the number of paths to clarify the means to reach one's destinations, as well as allow larger areas of landscaping. However, by minimizing the number of paths, it becomes more critical to evaluate the location of each path, maximizing its efficiency to reach the desired destination. Standard paths must consider the following.

- The preferred width of a standard pathway is 7 feet. In some limited cases where the pathway is not to be plowed in the winter, it can be reduced to a minimum of 4 feet wide. However, it should be assumed that most standard pathways will require plowing by a truck with a 7-foot plow blade. If the pathway is alongside a vertical retaining wall, a minimum width of 8 feet is required for snow plow clearance.
- Pathways should follow desire lines to their destinations. In cases where the desire line is not appropriate, an alternative route can be built with extensive landscaping features to encourage the use of the alternative route.
- Stairs should be discouraged on pathways unless topography dictates otherwise.
- Most pathways will accommodate slower pedestrian speeds than major pathways and the surrounding landscape should accommodate smaller, more intimate scaled features.
- Paths should be well lit. See [Site Lighting](#) for more information.
- Where service drives intersect or parallel standard pathways, the service drive should be integrated into the pathway design while still maintaining adequate space for both functions to co-exist. Service vehicles should never park directly on pathways, but at designated service parking spaces adjacent to standard paths with appropriate landscaping to minimize the negative visual effect to pedestrians.

**PLAZAS** place emphasis on the pedestrian experience, and typically exist in areas of heavy and frequent use, for instance, near main building entrances or at the intersections of major pathways. The design should consider the relationship between the plaza, surrounding buildings, landscape features, and the microclimate, including sun exposure and seasonal conditions. The overall design of plazas must consider campus security and promote a safe and welcoming environment. Snow removal and snow storage also must be considered when designing a WSU plaza.

**PEDESTRIAN MALLS** support large volumes of pedestrian traffic and provide spaces for events. Glenn Terrell Mall is located at the heart of campus and extends East to West, connecting several major destinations such as Martin Stadium, the CUB, as well as Holland and Terrell Libraries. It intersects Library Road Mall on the West end, which travels along the North-South axis.



Glenn Terrell Mall: East to West Campus Connector



Library Road Mall: North to South Campus Connector

Library Road Mall passes along Owen Science Library and connects residence halls on the North and South sides of campus to the campus core. In 2016, both ends of the Library Road Mall were improved with the construction of two student-oriented buildings – the Chinook Student Services Building on the North end, and the Spark on the South.

Trees are a desirable feature to provide shade and scale to pedestrian malls. When including trees on malls, consideration must be given to branching structure, leaf removal, and aphid attraction. Trees also need adequate root zone to thrive, either through planting beds or large irrigated soil cell systems that are sized to support a mature tree root zone. This is generally recommended to be 1.5 to 2.0 cubic feet of soil per SF mature canopy. Approximately 1,000 cu. ft of soil is a good estimate for most plaza trees.

## CIRCULATION

Major Pullman Campus Roads Include:

- Stadium Way
- Spokane Street
- Grimes Way
- Cougar Way
- Fairway Road
- Olympia Avenue

### VEHICULAR CIRCULATION 1

**MAJOR CAMPUS ROADS** are defined as the primary vehicular routes around and through campus. A major road will have the following attributes.

- Major roads should be designed as parkways, with trees and landscaping lining the edges of the road, this is to encourage slower traffic speeds to ensure safe travel for both drivers and pedestrians. While the speed limits of downtown Pullman range from 25 to 35 mph, the campus speed limit is 20 mph.
- Low impact traffic calming methods should be considered along major roads, including varying paving surfaces at important intersections, neck downs at major pedestrian crossings, and roadside landscaping. These traffic calming methods should be balanced by the need for efficient transportation movement, winter snow plowing, and long term maintenance of the road system.
- Accommodations for bike lanes and other alternative transportation methods should be provided either within the road shoulders or immediately adjacent to the road. Follow the guidelines published by National Association of City Transportation Officials (NACTO) and the most current version of AASHTO Guide to Bicycle Facilities.
- Major roads should be separated from pedestrian paths by curbs and elevation changes.
- Allow for generous sight lines at intersections and crosswalks. Do not install landscaping elements that will obscure sight lines.
- Sidewalks should be provided along the entire length of road on at least one side, and on both sides of the road where possible.
- Incorporate accessible crossings at all intersections and where desire lines suggest a midblock crossing is needed.

**MINOR CAMPUS ROADS** are those that provide secondary access through the campus. They should be considered as a shared use road where pedestrians, bicycle and vehicles have equal priority.

- Minor campus roads should not include curbs and elevation changes that separate users. Pavement patterns can be used to identify preferred usage.
- Road design should encourage a maximum speed of 15 mph. These design methods could include varying pavement surfaces, neck downs, chicanes, and landscaping. These methods should be balanced by the need for efficient plowing in winter and long term maintenance of the travel surface.
- Minor campus roads should be well lit to promote safety for all users.

### **SERVICE ACCESS & WASTE MANAGEMENT**

WSU Waste Management provides recycling and waste collection services for the WSU Pullman campus and university community. Regular recycling and waste collection services are provided to all buildings and public areas on campus, for this reason, the service area of each new building needs to be able to accommodate two service vehicles as well as space for Waste Management vehicles to maneuver in and out. Frontload trucks and containers are typically used for waste collection. They require the following clearances.

Clearances: 20' wide, and 13'-6" overhead

Turning radius: 37' interior, 57' exterior

To prevent damage to buildings when clearances are restrictive, it is recommended to locate waste receptacles away from the building structure, rather than incorporating them into the loading dock. If adjacencies allow, consider grouping waste collection with neighboring buildings to increase efficiency of waste collection services, but easy access for custodial to deposit trash must also be considered. Sloped areas are not suitable for locating waste receptacles as this becomes hazardous during the icy winter months. Coordinate required equipment with your WSU project manager and WSU Waste Management.

The service area for a new building should be located away from the main entrance and must incorporate a loading dock or loading zone. Loading docks should be accessible via ramp or leveling device and be sheltered from the weather. Equipment and services for each building may vary depending on the functions within the building.

Whenever possible, separate service routes from pedestrian and bicycle routes to minimize conflicts with pedestrians and automobile traffic. Where service drives intersect or parallel pathways, the service drive should be integrated into the design with sufficient space for both functions to co-exist.

**BICYCLES** are an important alternative transportation option that should be encouraged and accommodated where possible on campus. To minimize potential conflicts with pedestrians, separated bike routes may be considered. Design standards for separated bike routes should follow the National Association of City Transportation Officials (NACTO) guidelines and the most current version of the AASHTO Guide to Bicycle Facilities.

Bicycle racks should be located at the primary entrances of all buildings. Reserve an appropriate amount of space for bike racks to serve the building occupants. Some projects, such as residence halls, may require bike shelters, green bike stations, or storage facilities. Coordinate with your WSU project manager to select the appropriate option for bike storage.



Bicycles Sharing Pedestrian Paths Atop Terrell Library

**PARKING**

Coordinate with the WSU project manager and WSU Transportation Services to determine specific project requirements, however new parking should follow the general standards below.

- All ADA and visitor spaces should be adjacent to the main building entry, while lots should also have the appropriate number of service and ADA spaces to accommodate the surrounding buildings.
- Provide setbacks in lieu of wheel stops in parking areas adjacent to lawns and sidewalks to assist with lawn mowing, and wheel stops tend to hamper snow removal.
- The layout of surface parking lots should allow for efficient snowplowing methods and provide locations to store snow, while also considering drainage.
- Whenever possible, lots should be double loaded to help with ingress and egress traffic, also to reduce wait times.
- Where parking lots border major sidewalks or campus roads, the edges of lots should be landscaped to provide a buffer zone and vegetative screening.
- Pedestrian access to and from lots should be carefully considered to minimize vehicular-pedestrian conflicts. Lots should also be appropriately lit to increase safety. Lights should be directional to minimize glare and light pollution.
- Entryways and vehicular circulation should be easily accessed with safe viewing angles for oncoming traffic, and clear signage should occur at each main entrance.

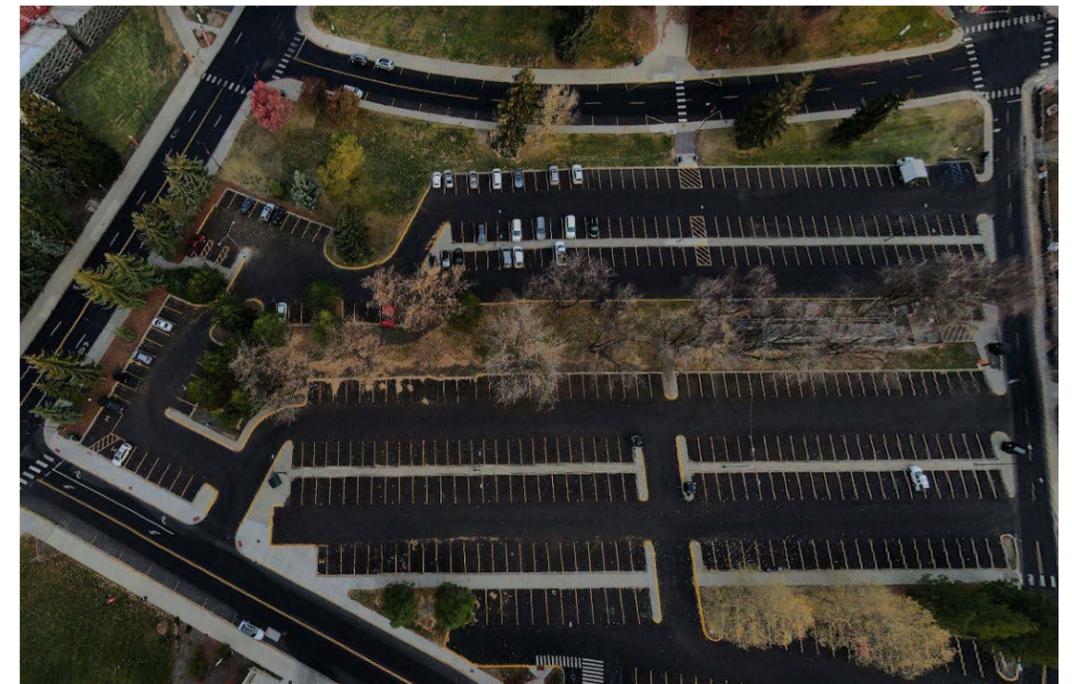
**CONSTRUCTION IMPLICATIONS**

If a project requires the use of a parking lot to support construction activities, WSU Transportation should be notified 6 weeks in advance to notify permit holders, establish detour routes, and make necessary adjustments to striping, signage, parking equipment, ADA parking, and other miscellaneous tasks. If a parking lot is going to be eliminated permanently and come offline, advance notice should be given prior to the start of the permit cycle so permit holders have adequate time to sign up for spaces in the surrounding lots. If no advance notice is given, parking lots will not be turned over to a contractor during the following periods:

First two weeks of the Fall or Spring semester.

Last two weeks of the Fall or Spring semester.

The first day after Thanksgiving, Winter, Spring breaks.



Parking Lot off Stadium Way, beside Beasley Coliseum & Bailey-Brayton Baseball Complexes. Double & Single Loaded with Vegetative Screening.

**CROSSWALKS & CURBS**

All crosswalks should meet the most current MUTCD standards for accessibility and visibility. Crosswalks on major campus roads should incorporate push button-activated flashing beacons and appropriate reflective signage. Methods to assist disabled users should be incorporated, including auditory cues and braille lettering. Curb cuts that meet the most current ADA guidelines must be incorporated at all crosswalks. Curb cut design should consider efficient snow plowing. Rolled curbs may be considered where varied service vehicle access is required; however, install rolled curb only after discussion with WSU project manager. Rolled curb should have a maximum back height of 2-1/2”.

**VEHICULAR TRANSPORTATION OPTIONS AVAILABLE TO STUDENTS**

As the campus expands and establishes an environment that relies less on personal vehicles, alternative transportation options will become increasingly important components of campus circulation. Coordinate with your WSU project manager to determine if your project will require accommodations for either of the following:

**PULLMAN TRANSIT**

Pullman Transit provides public transportation for commuters to and from campus, as well as an on-campus shuttle to travel between campus destinations. As the campus expands to the east, and parking is being moved from the center of campus, public transportation will become a greater component of campus circulation.

For projects that require a bus stop, specific locations of on-campus bus stops and shelters are to be coordinated with the WSU project manager and Pullman Transit. When space permits, incorporate a bus pull-off so stops don't impede traffic flow; for stops that serve multiple routes provide room for two busses to prevent backups.

**SPIN eBIKES & eSCOOTERS**

WSU and the city of Pullman have partnered with SPIN, a San Francisco-based micromobility service to provide e-scooters and e-bikes to WSU's Pullman campus and expanded services throughout the city of Pullman. There are approximately 100 e-scooters and 50 e-bikes readily available on WSU's Pullman campus. These services are available Spring semester through the start of Fall semester until winter conditions prohibit use.



Pullman Transit provides easy transportation around campus and the city of Pullman

WSU aims to provide a barrier-free campus, and therefore has made a commitment to accessibility. All construction must comply with accessibility laws outlined under WAC 162-38-070 Accessibility, ADA Standards for Accessible Design, and ANSI A117.1 compliance laws.

New projects should provide accessible parking and accessible paths to the main entrance of the building. To promote accessibility, stairs are discouraged on pathways unless topography dictates otherwise. Renovations of historic buildings should seek to improve accessibility in a manner which maintains the building's historic integrity.

### APPROACHES & ENTRANCES

Public entrances to buildings should be easily identified, accessed and be a welcoming feature on the campus.

- Appropriately-scaled landscaping should frame the building and lead to the entrance doors.
- Buildings should have at least one handicapped accessible entrance, ideally the main entrance, which provides push button door operators and easy access to the elevator.
- Building signs should be located near the main entrance of the building in view of the closest major walkway. Refer to WSU's **Exterior Signage Standards** for details concerning construction and locating of building signage.
- Small landscaped areas should be located near the building entrance to serve the building occupants during lunch breaks, between classes, etc. These areas should be relatively intimate in scale and frame views of the campus.
- Service entrances should not be located in view of the main entrances, but also should not be difficult to access for deliveries. For more information, see the **Service Access & Waste Management** section of this document.
- All buildings are to have bike racks provided near primary building entrances to serve the occupant load.
- Outdoor transition space should be designed between the building approach and indoor lobbies. This transition space should include materials that relate to the materials used in the building. This space should also provide some protection from the weather and include a walk-off system. For more information, see the **Entrance Lobbies** section of this document.
- All entrances and most new stairs require a snowmelt system. For more information, see the **Snowmelt & Winter Snow Removal** section of this document.

### EMERGENCY ACCESS

In order to easily identify buildings in an emergency, the building's street address must be viewable from the street. The address is to be located above the main entrance doors with 4" to 6" high vinyl numbers. Knox-Box, fire hydrants, fire department connections, and post indicator valve locations are governed by the NFPA and may affect emergency access routes. Coordinate with the Pullman Fire Department (PFD), local law enforcement, and WSU Public Safety.

The drive lane for building access must be suitable for Pullman Fire Department's largest piece of equipment, their ladder truck. The following radiuses and clearances are required at a minimum for a PFD Ladder Truck:

Clearances: 20' wide, and 13'-6" overhead

Turning radius: 37' interior, 57' exterior

**Design & Construction Standards: Division 32****SNOWMELT & WINTER SNOW REMOVAL - DCS: 32 17 43 26 and 32 17 43 60**

Winter weather can have a huge impact on campus circulation and building access. To promote safety and maintain access to campus facilities during winter weather, Facilities Services has established a Snow Removal Policy, which can be found on the Facilities Services – Operations website: [facilities.wsu.edu/winter-snow-removal/](https://facilities.wsu.edu/winter-snow-removal/)

For new projects, coordinate with the WSU project manager and Facilities Services - Operations to establish a Snow Removal Plan that considers safety and explores the following:

Snowmelt systems are required at primary building entrances (including ADA) to ensure continual building access and safer walking surfaces. If stairs or ramps are necessary to access the building, snowmelt must be incorporated into at least one continuous run that must be at least 4feet wide. Additional snowmelt may also be required in areas where it is difficult to maneuver equipment or manually remove snow. Manual snow removal requirements are to be avoided if possible. Coordinate requirements with the WSU project manager.

Hydronic snowmelt systems are preferred, but where the area is limited, electric snowmelt may be considered. Proper drainage shall be incorporated into areas of snowmelt. Runoff shall be directed to nearby landscape bedding or the storm drainage system to prevent surface flows from creating icy conditions on pedestrian surfaces.

Snow removal routes, ease of snow maintenance, and equipment clearances need to be considered during site design. If spaces are restrictive, obtain equipment clearances and turning radiuses from Facilities Services to ensure the area is accessible.

Snow storage may be required in designated areas during heavy snowfall in order to keep roads and walkways clear and safe for travel. If required, snow storage areas should be thoughtfully incorporated into the landscape design. Hardy plantings that die back in winter are preferred to minimize damage to the landscape during storage; avoid lawns in designated snow storage areas. Consider the potential impacts to site drainage and surface flows caused by runoff from melting snow.



Snow is cleared from a Major Pathway, Library Road Mall, and from a Standard Pathway that Leads to the Entrance of Holland Library. January 2020.



Snow is cleared from a Major Pathway, Library Road Mall. January 2020.

SECTION

4

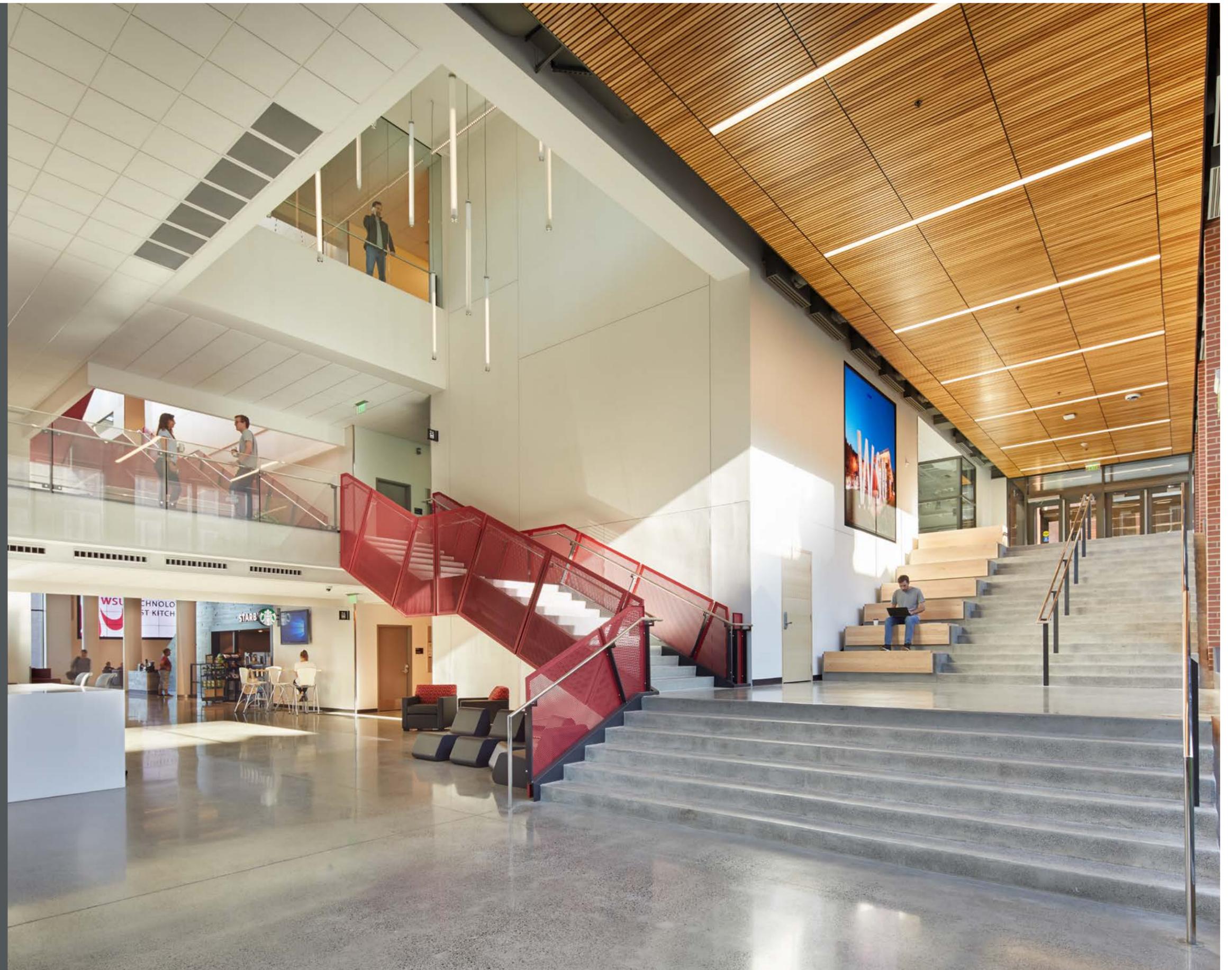
BUILDING PLANNING

IN THIS SECTION:

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EXTERIOR DESIGN CONTEXT 1

Few could deny that the historic campus core has a unique character reflecting its architectural evolution. Many of the historic buildings reflect the various revivalist styles of architecture. Whether they could be described as Georgian or Classical revival, they have a common origin and conform to a restrained sense of classism. Some buildings within the historic core are highly eclectic and combine several styles giving them character and identity of their own; nevertheless, their use of materials, vertically proportioned windows, architectural scale, and underlying symmetry link them stylistically to the other buildings. For the facades of new buildings it is important that each building has character and identity of it's own, while acknowledging the significance of its neighbors.

**SCALE**

Architectural scale is an important element that helps to unify the campus. The majority of campus buildings are four stories high, but some structures add an important element of variety. For example College and Van Doren Halls are smaller structures and help contribute to the human scale. Bryan Hall's Clock Tower, on the other hand, acts as a fine vertical feature which has become an icon for the entire community.

In many of WSU's historic buildings, the tripartite elevation was a common design element which further express the human scale. Buildings often feature stone and detailed brick patterns on the lower floors, and more refined brick patterns and vertical elements on the upper floors, which were capped by large cornices and overhanging eaves at the top. The tripartite division is further emphasized by the stone horizontal stringcourse.



Thompson Hall, a Tripartite Example

**Design & Construction Standards: Division 08**

**FENESTRATIONS & GLAZING - DCS: 08 51 00 and 08 80 00**

Rigidly aligned and vertically proportioned windows found in Georgian architecture became a common campus design element that is prominent in many older buildings, and it still influences fenestration on newer campus buildings.

The design for new buildings can utilize fenestration and glazing as an architectural element, but must consider passive design strategies, bird migration patterns, and energy code requirements. The implementation of fenestration is not to detract from the character of campus.

**Design & Construction Standards: Division 04**

**CLADDING/MASONRY - 04 00 00**

The use of red brick and basalt on campus is a historical precedent dating back to the first college buildings. This tradition was started because brick factories were conveniently located in the Palouse communities. These buildings were constructed on foundation walls, plinths constructed with basalt, and the facades using bricks that were made from clay found on College Hill. The builders of later structures respected the precedent that had been established on campus and chose masonry with sensitivity, beginning a tradition of red brick buildings that is still being used today.

Washington State University has established brick guidelines. It is desirable to select the blend which is most similar to adjacent buildings. Refer to the Appendix at the end of this document to see approved brick pallets and discuss with your WSU project manager before selecting a brick blend. Architectural elements and additional materials such as concrete, metal, and glazing should be incorporated into the façade in a manner that evokes the traditional materials and elements of the historical campus architecture and maintain a strong link to the fabric of the historic campus core. Any deviations from the traditional façade materials must be approved by the campus architect.



(Bryan Hall 1909)



(The Spark 2017)

Brick being used on an older building and a newer building, both on the Pullman Campus.

**Design & Construction Standards: Division 07**

**ROOFING - 07 00 00**

Buildings on the Pullman campus have both pitched roofs with broadly overhanging eaves, or flat with wide cornices to provide a termination at the top of brick facades. The projections of eaves and cornices are another design element that provides a unifying effect across campus.

For new construction, a flat roof system with membrane roofing is preferred. If equipment is to be placed on the roof, a 42 inch parapet is required to eliminate the need for fall restraints during maintenance. Penthouses for equipment is preferred, but a screenwall can be considered.

When selecting interior finishes for campus buildings, consider characteristics such as durability, visual appearance, cost, and ease of maintenance. The following information is provided to assist designers in understanding the general requirements for interior spaces on campus.

**Design & Construction Standards: Division 12**

**ENTRANCE LOBBIES - DCS: 12 48 13**

Entrance lobbies have a high level of visibility and public use, and as a result, they become a focal point of the building and warrant a higher level of detail and finish.

**ENTRY WALK OFF SYSTEM**

To help reduce debris from being tracked into the building, a walk-off system must be integrated into each primary entrance. Each walk-off system must be permanently placed in the entryway, it must stretch at least 10 feet long in the primary direction of travel to capture dirt and particulates, and meet the LEED requirement for entryway systems. WSU currently uses a walk-off system that includes the following;

**Outside Entrance: (EXTERIOR)**

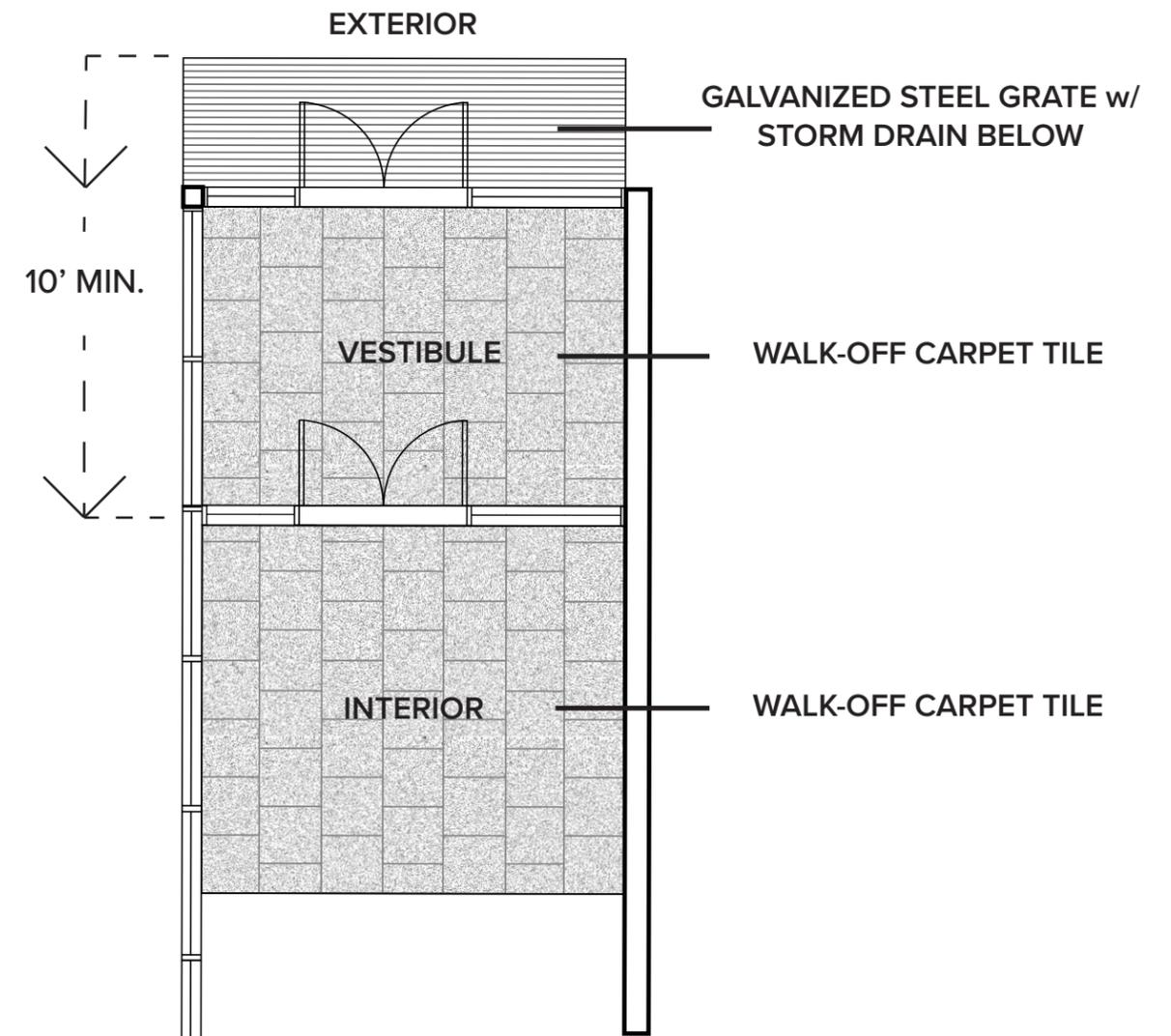
MFG: Grating Pacific  
 Style: Galvanized Steel,  
 Dove-tail Pressure Locked Bar Grating,  
 7-DT-4, Serrated Top,  
 w/ Counter-Bored Anchor Tabs  
 Anchored to Storm Drain below Grate

**Vestibule:**

Style: Commercial Grade Walk-Off Carpet Tile

**Interior:**

Style: Commercial Grade Walk-Off Carpet Tile  
 (If Spatially Applicable)



### CORRIDORS

A clear hierarchy should be visible in the treatment of corridors to guide visitors through the building. Sealed polished concrete, terrazzo, tile, or resilient flooring is acceptable. Carpet is not allowed in corridors.

#### **Design & Construction Standards: Division 05**

### STAIRWAYS - DCS: 05 51 00

Internal stairways used for general vertical circulation and emergency egress should have finishes consistent with the floors being served. Open stairs that connect the lobby with adjacent floors should have finishes consistent with the lobby and floors being served. Limit the use of glass panels in stairways.

### CLASSROOMS

New academic buildings should feature a variety of classroom types and sizes to provide options for different learning and teaching techniques, while offering flexibility for future uses. Daylighting and window placement in classrooms will be thoughtfully designed to enhance learning in these environments. Specific classroom requirements, however, may vary based on building type and user needs. The design team and the WSU project manager must coordinate with representatives of the user group, Pullman Integrated Academic Technologies (PIAT), Information Technology Services (ITS), and the Registrar's office to verify the needs and requirements of classrooms.

### RESEARCH & TEACHING LABS

Labs should support a collaborative, interdisciplinary research, and hands-on learning experience for faculty, scientists, and students. Spaces in these facilities should be flexible to accommodate shared uses, such as open modular labs, open offices, work areas, equipment rooms, autoclaves, growth chambers, and meeting rooms. These shared spaces are a place for collaboration between scientists, graduate/undergraduate students, and faculty.



The Spark, Classroom Corridor



Vancouver Life Sciences, Shared Use Nursing Lab w/ Modular Offices.

**OFFICES & CONFERENCE ROOMS**

The average areas listed below are intended to be used as guidelines for space allocation. Some projects may require more or less space than these averages.

**GENERAL AREA ALLOWANCES**

Private Offices:	Dean and Executive Offices	200 sq. ft. minimum
	Department Heads and Director Offices	175 sq. ft.
	Faculty Offices	140 sq. ft.
	Staff Offices	120 sq. ft.
Open Office Areas:	Staff Workstations	100 sq. ft.
	Graduate Student Cubicles	40-80 sq. ft.

**STANDARD ELEMENTS REQUIRED IN OFFICES**

- Commercial grade roller shades.
- Exterior window sill height is to be 3'-0" maximum above the floor with a solid surface sill or other durable finish.
- 4' x 4' dry erase board or as specified by user. Location is to be determined at the time of installation.
- Full height relite next to door where possible.
- 3' x 7' solid core wood door in metal frame.
- 2 coat hooks on back of door, 48" AFF for ADA compliance and 66" AFF.
- Electrical receptacles on each wall and telecommunications per WSU ITS standards.
- Locate thermostats and light switches near latch side of door; avoid installation in the middle of walls.

**GENERAL CONFERENCE ROOM GUIDELINES**

- Design for 25 occupants maximum, conferences for over 25 persons will be held in meeting rooms, classrooms, or assembly spaces.
- Use the total office space square footage to calculate the total space needed in conference facilities.  
(Total Office Space / 12 = Total Conference Room Space Required)
- Electrical receptacles and data as specified by user for digital content.
- In floor power/data box below conference table or as specified by user.
- Markerboard and tackboard as specified by user.

**Design & Construction Standards: Division 10**

**RESTROOMS - DCS: 10 21 13 and 10 28 13**

Restrooms should be located in easy to find locations on an accessible route in a public area that is available to all users. For ease of maintenance and custodial services, wall hung water closets with an accessible plumbing chase are required. Each restroom should have a hose bib and floor drains to aid custodial services.

Toilet compartments shall be floor mounted with overhead bracing. Panels, doors, screens, and pilasters shall be fabricated from high density polyethylene (HDPE) or solid reinforced composite containing a minimum of 50% recycled material.

**SINGLE-OCCUPANCY RESTROOMS**

The construction of single-occupancy ADA accessible restrooms shall be included in building design and major renovations. One single-occupancy restroom per wing or floor when applicable. Single-occupancy restrooms are facilities with a toilet, sink, and mirror, which also have user operated door hardware that includes an occupancy indicator to ensure privacy. Required elements in single-occupancy restrooms are listed below;

- Located on an accessible route.
- ADA compliant
- Sink with mirror
- Paper towel, soap dispenser, and waste receptacle.
- Include menstrual product dispenser and disposal.
- Changing station if square footage and wall space allows.
- Coat hook
- Restroom sign with the toilet pictogram and International Symbol of Accessibility. Signage must comply with the WSU Interior Signage Standards.

**RESTROOMS** *continued***MULTI-STALL GENDER INCLUSIVE RESTROOMS**

New capital and major renovation projects may incorporate a multi-stall gender inclusive restroom. Required elements in multi-stall gender inclusive restrooms are listed below;

- Located on an accessible route.
- ADA compliant
- One or more sinks with mirror, paper towel, soap dispenser, and waste receptacle.
- Include menstrual product dispenser and disposal.
- Baby changing station
- Coat hook
- Adequate light levels in each toilet room, the toilet rooms should not feel dark.
- Appropriate mechanical, electrical, and life safety requirements in each stall and common area.
- Include user operated door hardware with occupancy indicator.
- Minimum of 8'-0" floor to ceiling stalls constructed with stud walls or 1" thick floor to ceiling partition dividers that allow air flow. Stall doors will have overlapping (gap free) design.
- Room sign will read "Multi-Stall Restroom", with the toilet pictogram and International Symbol of Accessibility. Signage must comply with the WSU Interior Signage Standards.
- Stall signage will be provided on the outside of restroom stalls that are ADA compliant or contain urinals only. These stall signs will read "Accessible Stall" with the International Symbol of Accessibility or "Urinal Only" with the urinal pictogram. Signage must comply with the WSU Interior Signage Standards.

Preferred elements in multi-stall gender inclusive restrooms are listed below;

- Separate vanity area, in addition to lavatories, minimum of 3' in length with mirror when feasible.
- Full length mirror
- Consider visual site lines at the entry in the design.

**LACTATION/WELLNESS ROOMS**

New capital and major renovation projects shall incorporate a permanent lactation/wellness room. These rooms should be on an accessible route in a public area that is available to all users. If a building is already well served by an existing lactation/wellness room that meets the following standards, then the project is not required to add a dedicated lactation/wellness room, as the needs are already being met.

Lactation/wellness rooms cannot be a restroom, toilet stall, storage room, or janitorial closet. The room should be a minimum of 80 square feet (8'x10'). The lactation/wellness room shall conform to the following requirements.

Required elements in lactation/wellness rooms listed below;

- Located on an accessible route and floor.
- Single-occupancy room to include user operated door hardware with occupancy indicator.
- ADA accessible sink and faucet combination deep enough to wash supplies.
- Mirror, paper towel, soap, and trash receptacle.
- Multiple electrical outlets to allow for room flexibility.
- Resilient floors for easy cleanup.
- Designated space for a supportive chair and working surface or small table.
- Under counter refrigerator that does not take up the knee space beneath the work area or sink.
- ADA compliant
- Floor to ceiling walls with sound attenuation to minimize echoes and sound transmission.
- Counter surface material to be antimicrobial in nature and easily cleanable.
- Coat hook
- Dimmable lighting
- Windows will have shades or obscure glass for visual privacy.
- Room sign will read “Lactation/Wellness” and include the International Breastfeeding Symbol. Signage must comply with the WSU Interior Signage Standards.

Preferred elements in lactation/wellness rooms listed below;

- Calming environment and soothing color palette.
- Sharps container; responsibility of the department.
- Tack board
- Baby changing station
- Full length mirror
- Half height lockers or locking storage
- Separate thermostat for room to allow for comfortable temperatures.

### RENOVATIONS

WSU frequently executes renovations on existing buildings and their internal spaces. Departments may fund upgrades for internal finishes, signage, furniture, and carpet. Salvageable furniture unwanted by the department goes to WSU's Surplus Stores for resale and reutilization. When carpet is removed during a renovation, WSU Facilities prefers the contractor transfer retired carpet to recycling centers. This reduces the amount of renovation waste ending up in landfills.

### TRASH & RECYCLING AREAS

A dedicated space for trash and recycling receptacles is required to serve each floor. Place receptacles in a visible location that is centralized within the building and near the service elevator. Consider additional locations near the entrances or within the vestibules of large lecture halls.

#### **Design & Construction Standards: Division 26**

### INTERIOR LIGHTING - DCS: 26 51 00

All interior lighting should be specified with LED fixtures. Interior lighting levels are to comply with the current edition of IESNA lighting standards, and be kept to the lowest acceptable levels for the intended use.

Consideration of maintenance and future fixture/bulb replacements must be contemplated during fixture selection. In many cases, a lift may be required to access the fixtures for maintenance and the space must be designed to accommodate such lift.

**ACOUSTICS**

All major capital projects are to include an acoustician on the design team to review design in accordance with expectations of acoustical performance and standards.

**ACOUSTICAL SEPARATION**

The minimum STC requirements to meet LEED v4.1 acoustical separation is represented on the table below. The sound transmission class (STC) is presented in terms of composite STC (STCc) which addresses partitions that include doors, relites, ect.

**LEED PARTITION MINIMUM STCc REQUIREMENTS**

ADJACENCY COMBINATIONS		LEED STCc
Conference Room	Conference Room	50
Collaborative/Multi-Use	Hallway/Stairway	40
Collaborative/Multi-Use	Collaborative/Multi-Use	40
Collaborative/Multi-Use	Private	45
Collaborative/Multi-Use	Confidential	50
Private	Private	45
Private	Hallway/Stairway	35
Confidential	Confidential	50
Confidential	Hallway/Stairway	40
Mechanical Equipment Room*	Hallway/Stairway	50
Mechanical Equipment Room*	Occupied Area	60
*Minimum STCc has to be met unless proved that the equipment noise in conjunction with the sound isolation performance of the partitions and doors will not exceed the maximum background noise requirements of the adjacent space.		

ACOUSTICS continued

INTERIOR ACOUSTICS

The minimum reverberation time requirements to meet LEED interior acoustics are represented on the table below.

**LEED REVERBERATION TIME REQUIREMENTS**

ROOM & APPLICATION TYPE	T60 (sec)
Office Building - Conference Room	0.6
Classrooms 10,000-20,000ft <sup>3</sup>	0.7*
*Classrooms are not defined by LEED. Criteria used is from ANSI S12.60-2002	

MECHANICAL SYSTEMS NOISE CRITERIA

Use the Noise Criteria (NC) curves to ensure that the mechanical system meets the noise levels suggested in the design goals. The mechanical system noise criteria shown in the table below are suggestions drawn from previous WSU projects.

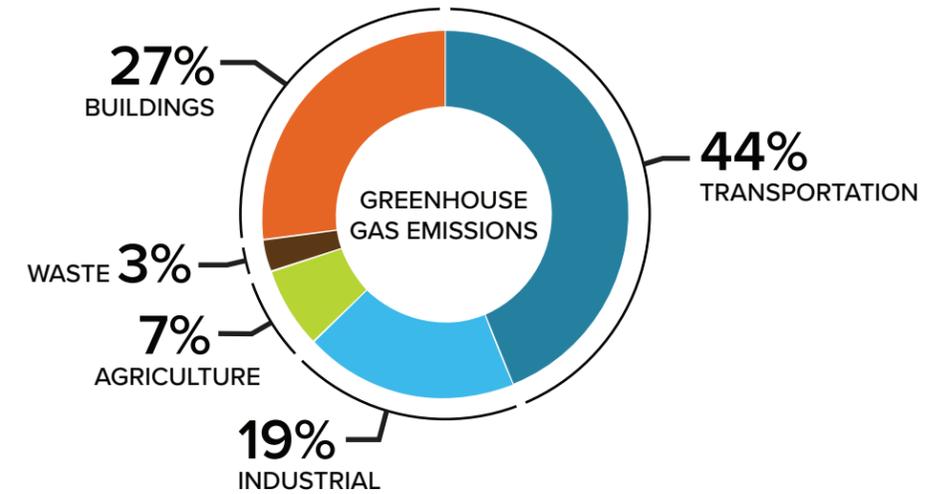
**SUGGESTED MECHANICAL SYSTEM NOISE CRITERIA**

ROOM & APPLICATION TYPE	NC
Classrooms	25 to 30
Makerspace	40
Conference Rooms	30 to 35
Offices	35
Learning Center	35 to 40
Food Vendor/Big Room	35 to 40

Washington State University strives to improve performance in all areas of operations to meet the needs of current and future generations. The campuses of WSU uphold campus culture and tradition while promoting sustainability through innovative engineering and creative design strategies for energy efficiency, safety, functionality, and practicality. WSU is committed to reducing its carbon footprint in all aspects of the institution. Students provide feedback and initiate incentives for the campus community through student led organizations.

**FACILITIES**

Building construction and operations account for 27% of greenhouse gas emissions in the state. WSU Facilities Services is implementing a new decarbonization plan to reduce the institution’s carbon footprint.



Buildings are the Second Largest source of Greenhouse Gas Emissions in Washington State (2015)

**LEED**

WSU adheres to the Leadership in Energy and Environmental Design (LEED) green building rating system for major capital projects on all campuses as a member of the U.S. Green Building Council (USGBC). WSU’s state funded projects are required to meet LEED Silver certification at a minimum. WSU Facilities Services has completed construction of LEED certified projects on each of WSU’s 5 campuses with additional projects in progress. Several innovative “green” strategies have been incorporated into these new buildings including but not limited to:

- Natural daylighting
- Sun shading devices to minimize heat load
- Site restoration with natural habitat and vegetation
- Water efficient landscaping
- High reflective roof to reduce heat island effect
- Low-carbon concrete
- Storm water control
- Geothermal heating and cooling
- Enhanced commissioning
- Thermal comfort surveys & verification
- Reduction of light pollution
- Educational signage system
- Water-use reduction in the building
- Construction waste management
- Use of regional materials
- Use of recycled materials
- Use of certified wood where possible
- Tobacco free campuses
- Proximity to transit systems
- Dedicated open space
- Optimize energy performance

SECTION

5

CAMPUS  
INFRASTRUCTURE &  
BUILDING SYSTEMS

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## CAMPUS INFRASTRUCTURE & BUILDING SYSTEMS

This section was developed under the direction of:

- Joe Kline
- Jeff Lannigan
- Phil Johnson

### INTRODUCTION

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The purpose of this section is to provide basic knowledge of the Pullman campus infrastructure and building systems that support the functionality of operations. For more detailed information, see our Design & Construction Standards (DCS) at [facilities.wsu.edu/facilities-services-capital/design-standards](https://facilities.wsu.edu/facilities-services-capital/design-standards). Specific queries and project-related matters shall be discussed with the WSU project manager.

### GOALS

- Meet climate challenges by reducing energy use and greenhouse gas emissions at all WSU properties to minimize the university's carbon footprint.
- New buildings and major renovations shall be designed and constructed to meet Energy Use Intensity (EUI) targets required by the Clean Building Performance Standard (CBPS). EUI targets exceeding CBPS requirements are not acceptable without express written permission.
- Reduce WSU's deferred maintenance by addressing aging infrastructure, building systems, controls, and building automation to improve operations, enhance reliability, and lower utility costs.
- Consider the age of everything and whenever possible, replace all aged infrastructure with each project, including adjacent infrastructure.
- WSU's campus infrastructure and building systems will be designed for ease of maintenance.
- Systems used on WSU's campuses and within buildings will be reliable and resilient.
- Consider the Cougar Energy Initiative NUP Plan and how all future projects can support the shift to utilizing strategically placed nodal utility plants.

### GENERAL NOTES

- The Life-Cycle Cost Analysis (LCCA) may drive decision making and equipment selection.
- To achieve WSU's decarbonization goal, some components of the system information may change.
- Coordinate new infrastructure requirements with existing locations and resolve conflicts between old and new systems.

**Design & Construction Standards: Division 33**

**WATER - DCS: 33 10 00**

The WSU Pullman campus owns, operates, and maintains its own domestic water system. The system includes four groundwater wells, three storage reservoirs, miles of distribution piping, and four emergency interties with the City of Pullman. These wells pump domestic water from the Grande Ronde Aquifer. The water network fed by these groundwater wells is divided into two pressure zones: high and low. Both zones are available for domestic water or fire protection. Fire hydrant testing is to be done with each project.

The Grande Ronde Aquifer has been declining slowly over time, therefore, WSU prioritizes good stewardship of water use.

**SANITARY SEWER - DCS: 33 30 00**

WSU Pullman's sanitary sewer system connects to the City of Pullman's wastewater treatment plant via gravity-fed lines.

**STORM SEWER - DCS: 33 40 00**

The Pullman campus storm sewer system ties into the City of Pullman's system. All projects are to provide storm drainage away from buildings and other hardscapes.

Retention is discouraged, while detention is encouraged (as feasible) to use swales to provide biofiltration prior to entering the piped system. Use subsurface detention as secondary to surface capacity in the hydrologic analysis of the site design.

With the increase in impervious surfaces on campus and in the City of Pullman, the existing storm system can be taxed during heavy rainfall events. The more the peak runoff can be slowed down, the better for the entire system.

Storm water mitigation options may vary from project-to-project, but consideration must be given to the cost/ease of maintenance, physical footprint, aesthetic, landscape selection, and renewal complexity.

**CHILLED WATER - DCS: 33 60 00**

WSU Pullman has a central chilled water system that generates and distributes campus chilled water for HVAC cooling and process cooling loads. Chilled water is produced by nine chillers (located in two plants and a couple strategic buildings) and distributed around campus through miles of direct buried piping infrastructure.

System capacity is limited so added loads should be minimized where possible and coordinated with WSU prior to connecting to the system.

**Design & Construction Standards: Division 27**

**TELECOM**

Telecom infrastructure shall support voice, data, video, Building Automation Systems (BAS), and other systems that convey information to operate facilities. A WSU Facilities Services project manager will engage with an ITS representative in the early stages of design for any project, (new or renovation) that requires IT infrastructure.

**Design & Construction Standards: Division 23**

**STEAM & CONDENSATE - DCS: 23 22 00**

Washington State University's Pullman campus is served by two natural gas-powered steam generation plants that produce steam for building heat, domestic hot water, sterilization for veterinary medical facilities, and humidification for libraries and greenhouses.

Steam is distributed through a looped piping system in utility tunnels serving a majority of campus. The tunnels provide maintenance access, future installations, inspections, and pathways for the condensate return. The condensate return system runs parallel to the steam lines in the tunnels, primarily with gravity drainage. Direct bury steam or condensate piping is not acceptable without express permission.

The mechanical engineer shall coordinate connections to the existing steam system with WSU Facilities Services to ensure the anchoring and support systems are not structurally compromised and can handle additional loads.

All buildings shall utilize low-temperature hot water (120 degrees) for HVAC heating demands. Buildings fed by steam infrastructure must transition to hot-water upon entry into the building and provide for a district low-temperature hot water connection in the future.

**Design & Construction Standards: Division 26**

**ELECTRICAL**

WSU owns, operates, and maintains a 5kV distribution system using two 5kV substations with radially-fed individual feeders to campus loads that are primarily routed in campus utility tunnels. The local utility, Avista, has a 13.2kV feeder system near portions of WSU's Pullman campus. Where possible, new construction shall expand to the utility 13.2kV system.

WSU's feeder EB 13 is distributed across campus and should be utilized as the source for building NEC 700 loads wherever possible. Feeder EB 13 is backed by an emergency generator located at the Grimes Way Steam Plant.

**BUILDING POWER DISTRIBUTION**

Each facility is to be served by outside transformers 277/480v and 120/208v three phase transformers, feeding a 277/480v distribution and 120/208v distribution. The maximum size of any transformer is 2,000KVA. All lighting load and mechanical load such as motors, snowmelt and mechanical equipment loads are to be served from the 277/480v distribution. All general loads are to be served by the 120/208v distribution. If the total building load is 300kVA or less, then only one 208Y/120V service is required.

The electrical consultant shall prepare all load calculations, fault current calculations, and all other data required to submit to the Washington State Department of Labor Industries.

BUILDING SYSTEMS 1

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**Design & Construction Standards: Division 22**

**PLUMBING**

WSU's plumbing standards are enacted to allow for proper maintenance, troubleshooting, custodian ease of care, and the overall life cycle of the system components to withstand heavy and long-term use.

Fixture counts must meet the code minimum. The university is incorporating single user gender-neutral restrooms to respond to the inclusive rights of all.

**Design & Construction Standards: Division 23**

**HVAC**

As per the Washington State Energy Code, more efficient HVAC system performance is essential to WSU's goal to enhance energy efficiency and decarbonize.

Mechanical equipment shall be housed in a penthouse or within the building. Exposed rooftop equipment should be avoided.

All buildings shall utilize low-temperature hot water (120 degrees) for HVAC heating demands. Buildings fed by steam infrastructure must transition to hot-water upon entry into the building and provide for a district low-temperature hot water connection in the future.

**Design & Construction Standards: Division 25**

**BUILDING AUTOMATION SYSTEMS/CONTROLS**

WSU utilizes Building Automation Systems to centrally monitor and control building systems and utility production.

The primary control and monitoring software for all Building Automation Systems is the Siemens Desigo CC platform. All proposed control solutions must be compatible with Desigo CC. The sequence of operation must balance reliable operations and energy efficiency.

**Design & Construction Standards: Division 33**

**METERING - DCS: 33 00 01**

WSU requires utility meters to measure, monitor, and record energy and water consumption connected to campus utility distribution systems. Submetering may be required by the Washington State Energy Code.

Projects dealing with metering shall use network communications to connect back to the data analytics software platform. The project team shall coordinate with WSU Facilities Services project managers and energy group to determine the project's submetering requirements.

**DATA ANALYTICS**

WSU Facilities Services uses the Skyspark historian and data analytics platform to monitor energy and water use gathered by utility meters, along with what's recorded by the Desigo controls platform.

Any new metering and/or building automation system components shall be compatible with Skyspark.

**Design & Construction Standards: Division 08**

**ACCESS CONTROL, SECURITY, & DOOR HARDWARE - DCS: 08 70 00**

WSU incorporates a CougarCard access control system on building entrances and within interior areas requiring additional security. This CougarCard access system is supported by CBORD and allows for a lockdown scenario from a remote site in the event of an active threat.

Automatic door operators are to be installed on building main entrances. Coordination is required to install wired card readers and ADA automatic door operators on building entrances.

Security cameras are installed at building entrances and throughout circulation zones within the building. Determination of scope responsibility is on a case-by-case basis.

TRANSITION TO SUSTAINABLE OCCUPANCY

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Washington State University includes a two-year TSO period after receiving substantial completion on most major capital projects. The building energy use is to be monitored throughout the first four seasons to compare to the original energy model and to meet the design criteria provided by the general contractor, subcontractors, and designers engaged during this time.

This two-year TSO period designates time for necessary adjustments to meet the energy goals as there may be considerable differences between the design and the real-time operation. Develop a plan with the WSU project manager for navigating this TSO period as all adjustments are to be monitored to ensure the building systems meet the intended energy model and design criteria. Review the basic maintenance and operations of the building with the owner to ensure future work is properly scheduled and executed for building system resilience.

**APPENDIX**



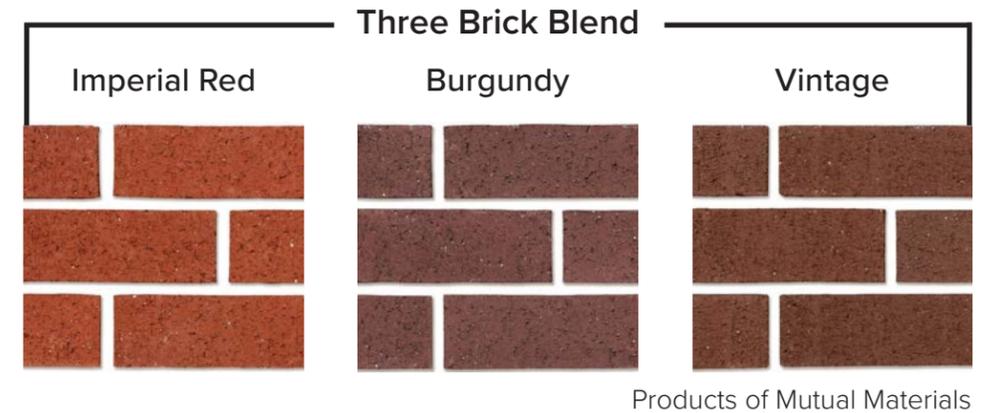
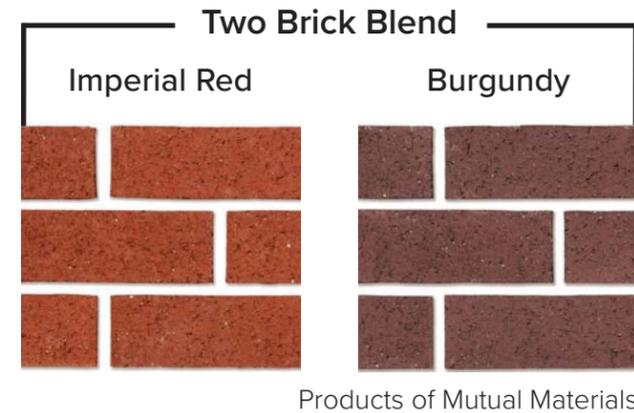
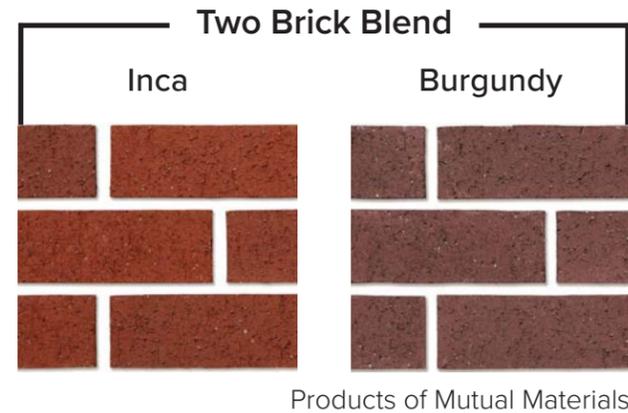
**IN THIS SECTION:**

**Brick Guidelines . . . . . 45**

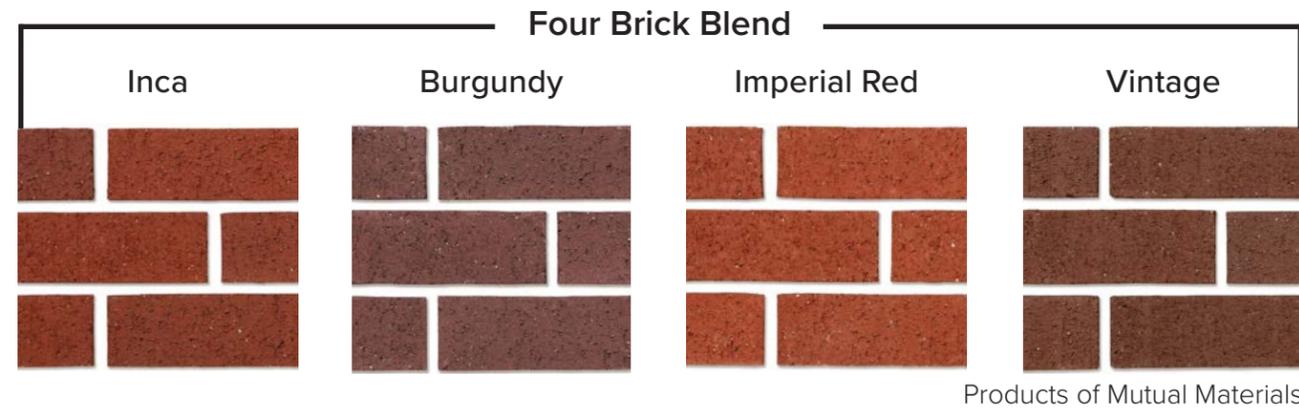
**BRICK GUIDELINES**

The character of the project’s surrounding neighborhood will significantly influence the brick blend chosen during the selection process. This guide establishes a framework for selecting clay masonry colors and blends, while also providing insight into the colors and blends previously used on WSU’s campuses. The brick blend, its color percentages, and mortar color shall be reviewed with the WSU project manager.

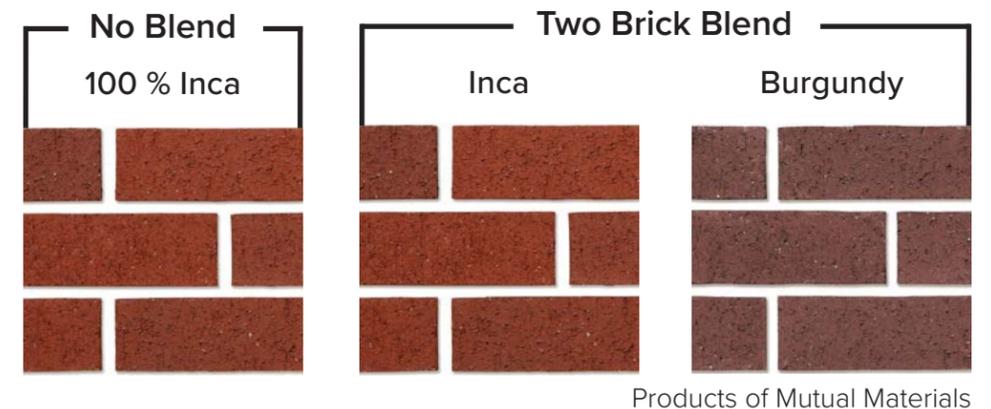
**PULLMAN BLENDS**



**PULLMAN BLENDS CONTINUED**



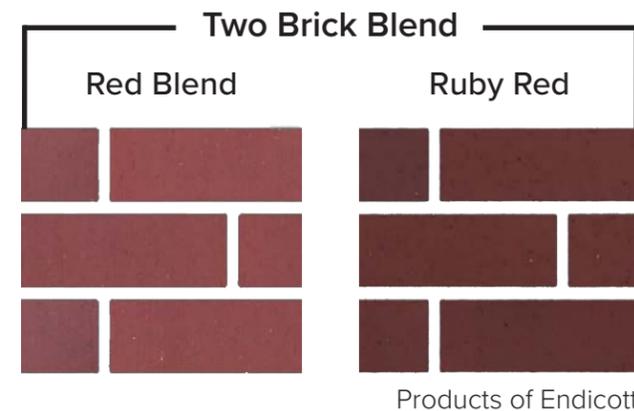
**SPOKANE BLEND**



**THIN BRICK VENEER: PREFAB EXTERIOR WALLS**

When the projects circumstances are suitable, prefabricated and/or modular construction may be applicable.

WSU has utilized prefabrication for the design of exterior wall panels on a few select buildings. This required the use of thin brick veneer, alternative to traditional brick and mason.



**VANCOUVER BLENDS**



Brick Vendors:

Traditional Vendor  
- Mutual Materials  
mutualmaterials.com

Brick Veneer Vendor  
- Endicott  
endicott.com