

Owner Project Requirements

Olympic South Building Restoration
Pierce College Fort Steilacoom Campus, Lakewood WA
Project No. 2021-192

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1. OPR Introduction

This Owner’s Project Requirements (OPR) document outlines the project’s functional requirements and expectations of how the facility and its systems will be used and operated. This document is considered a “living” document throughout the design phase; thus, it is subject to change with the Owner/DES approval. By establishing goals for the Olympic South Restoration Project, the OPR becomes a record by which Pierce College and other parties involved in the project can judge the degree of success in meeting the Owner’s defined objective and criteria.

The OPR serves three primary and vital purposes:

1. Provides the design team with the information necessary to develop the Basis of Design (BOD) during program verification and schematic design, which serves as a “road map” for developing the design and construction documents.
2. Provides the commissioning (Cx) team with tangible benchmarks to measure success & quality and confirms that the building and systems constructed will align with Pierce College’s expectations and requirements.
3. BOD, and contractor deliverables such as “as-built” documents are outlined below as the foundation for the O&M Manuals.

The Owner will develop and update the OPR through program verification and schematic design. When selected, the design-build team will then assume responsibility for refining and augmenting the OPR throughout the design, construction, and post-occupancy period of one year following Substantial Completion of construction.

As decisions are made during the life of this project, this document shall be updated to reflect the College’s current requirements. For this project, the Owner is Pierce College. Primary stakeholders include the Leadership Team, Early Childhood Education Team, Fine Arts Team and Central Washington University Extension Team. Each represent their respective faculty, staff & students. The entity responsible for project management and delivery is Pierce College Facilities Capital Projects in conjunction with the Engineering and Architectural Services (E&AS) division of the Department of Enterprise Services (DES). The organization responsible for the operation and maintenance of the facility is the Pierce College Facilities Department.

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Basis of Design (BOD)

The BOD records the concepts, calculations, decisions, and product selection used to meet the Owner's project requirements and to satisfy applicable regulations, standards, and guidelines. This document shall include the designers' narrative descriptions and specific assumptions during design development. The BOD documents the assumptions the designers make as well as the reasoning behind these assumptions. This includes appropriate studies that the designers conducted to determine which building components best suit the new facility, such as seismic, heat loss mitigation, HVAC system, etc. The studies then become part of the BOD, which is compared with the OPR. For any criterion exceeding the requirements or those criteria could not be achieved, documentation detailing what was performed, its impact on the OPR, and how the OPR was modified and yet still meets the project and OPR intents shall be included.

3D Building Information Modeling (BIM)

This project shall be designed and documented using BIM to the extent and level determined practicable by the Owner and Design-Build Team. The Design-Builder is expected to develop a BIM Execution Plan that clearly defines Level of Development (LOD) appropriate for this project. It is expected that the Professional build the project in virtual 3D to ensure conflict mitigation and that the Builder's real-world construction process goes smoothly. The BIM shall be the Owner's property and available to the Builder and their subcontractors to understand better the design and details for the bidding process and construction.

Project & Construction Management

The Design-Build Team shall utilize suitable construction management software to permit cloud-based collaboration and to store project data at minimum. Pierce College shall be granted permission to access project documentation, collaborate with team members and as deemed necessary to assist in supporting the project.

2. Understanding Pierce College & This Project

Mission

Pierce College creates quality educational opportunities for a diverse community of learners to thrive in an evolving world.

Vision

Possibilities realized: Innovative and engaged learners enriching our local and global communities.

Values

- Learning
- Integrity
- Respect
- Accountability
- Sustainability

Core Themes and Objectives

Access

The community Pierce College serves will have access to comprehensive educational offerings and support services.

1. Learning opportunities will align with students' educational and career goals and will be consistent with workforce needs.
2. Students will have timely access to the support services they need to accomplish their educational and career goals.
3. We will engage with, and equitably serve, our diverse communities.

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Excellence

Pierce College will assure quality and continuous improvement in all endeavors.

1. Departments and programs will meet or exceed their stated outcomes.
2. We will meet the requirements for accreditations, fiscal viability, compliance measures, and other elements necessary to sustain our work.
3. We will provide, and employees will engage in, learning and development opportunities that contribute to mission fulfillment.

Contribution to the Community

Pierce College will be a recognized leader in building and sustaining academic, industry, and broad-based community partnerships to advance educational opportunities and align with economic development.

1. We will initiate, lead, and sustain mission-driven partnerships and collaborations within our community.
2. Our community will recognize Pierce College's value and impact.
3. We will foster economic equity and development within our community.

Equity, Diversity and Inclusion

Pierce College will promote an equitable, diverse environment for teaching, learning, and working, with collaborative decision-making and mutual respect.

1. Our infrastructure will foster positive teaching, learning, and working opportunities.
2. Employees and students will be engaged in, and support, shared governance.
3. We will engage students, employees, and community members in ways that respect human dignity and lead to equitable, inclusive experiences.

Student Learning and Success

Students will experience quality, relevant learning that maximizes their potential for success.

1. Students will make timely progress toward their educational and career goals.
2. Students will achieve institutional and programmatic learning outcomes.
3. Students will be successful when they transfer for further education or move directly into the workforce.

Project Description

The Olympic South Building has recently undergone interior demolition and abatement for asbestos. Asbestos was found in 2021 during interior renovation work on the first floor. Further sampling and testing on all three floors detected more asbestos containing dust and asbestos containing materials at less than 1%. The building has been closed to undergo abatement, which included the demolition of all interior walls, interior finishes, and utilities. What remains is the concrete structure, metal brace frames, some utility chase between floors, roof and building envelope, The building envelope is a mixture of metal panel on rainscreen (recent) and EIFS over marbelcrete (older and failed). The portion of remaining EIFS over marbelcrete exterior also has evidence of fungal growth. Asbestos was later detected in soil at various locations around the building.

A Program Report including test-to-fit program information is included in the attachments to the RFQ/RFP for this project. The 38,800 square foot program includes an early childhood education lab, open space studios for music,

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fine art, and printing, an art gallery, classrooms, offices, 1 kitchen, and related storage rooms distributed throughout the building. This project is to construct demising walls where required and to restore the building utilities to include a modern HVAC system & controls, lighting & lighting controls, plumbing, fire alarm, sprinklers, communications, and an elevator. There will be building envelope replacement at the EIFS/marbelcrete portions to include new windows and roof and entry systems.

3. Project Specific Design Goals

1. Flexibility for Future Reconfiguration

- The facility will be designed with provisions to accommodate future staff, faculty, and students over the next thirty to fifty years. Interior space will be designed to facilitate future reconfiguration of office, classroom and laboratory spaces to meet changing needs with minor renovation work. Interior areas must have the required mechanical and electrical infrastructure to support future reconfiguration.
- The design must also consider present and future utility requirements for the building. In present condition temporary utilities provide minimal tempered conditioning of the interior. The professional must perform the necessary investigation and calculations to determine the necessary building requirement for utilities such as chilled water, water, sanitary sewer, gas, electric, telecommunication, etc. If any of the required utilities are currently insufficient, planning must identify additional utilities from the nearest practicable location. Electrical and mechanical infrastructure shall accommodate future reconfiguration with minimal extra work. Project as-built drawings and Good Faith Survey provide documentation of present conditions.

2. Quality and Context

The site is located at the Pierce College Fort Steilacoom campus, 9401 Farwest Dr. SW, Lakewood, WA 98498. When complete, it is critical that the building interior be constructed of quality materials and the portion of the exterior to be replaced enhance the aesthetic appearance in context of adjacent buildings and to generally be “in tune” with the campus overall. Owner objective is to develop a high-quality teaching facility and successful project by applying sustainable, maintainable principles in a practical, well planned, and cost-effective manner that will meet:

- The occupants need to fulfill the mission of Pierce College and of Central Washington University.
- Operation and maintenance needs, featuring an easily maintainable facility that has the lowest possible utility and maintenance costs
- An excellent indoor environmental quality requirement that facilitates occupants’ productivity by providing a comfortable environment while avoiding the design attributes related to poor HVAC system performance, low space utilization, poor acoustical qualities, inconsistent interior style, and low durability finishes.
- Pierce College desires to minimize environmental impacts and maximize energy savings where possible. Features such as water-efficient plumbing, energy-efficient HVAC and lighting systems, and design for pathways and strategies to support future onsite-energy production. Additionally, there should be a focus on designing systems to be in compliance with the Washington State Clean Buildings Act.
- The program requirements outlined in the test to fit document - Programming Report authored by Rolluda Architects. Note the program, like this OPR is a baseline for the Design-Build Team as a starting point and defines minimum requirements at the time it was published. The Design-Build Team is encouraged to verify and challenge this baseline within the limits of the MADACC.
- Limitations and opportunities presented by the existing structure and connection to the Cascade Building and Olympic North Buildings via skybridges to the south and north respectively.
- A full understanding and innovative use of the existing utility infrastructure serving the Olympic South building from other campus buildings and interconnected utilities

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- The overall facility shall be served by infrastructure (wireless telephone and data, electricity, chilled water, etc.) that must be capable of meeting current and future requirements of all areas in the building. For example, conference rooms used for A/V presentation shall include the ability to dim/turn off lighting around the projector screen or other areas with a lighting model to satisfy general occupancy requirements. The mechanical, electrical, controls, and piping system shall be flexible and functional enough to accommodate future expansion; all systems shall be easily accessed for maintenance without removing walls or equipment. Design of the HVAC system shall include efficient methods such as energy recovery devices, and integration of a platform for monitoring and adjusting purposes. The integration of the Building Automation System (BAS) shall allow remote monitoring from the Metasys system to monitor critical building systems, energy usage, preventive maintenance, scheduling, and distribution of required information to maintenance staff and outside service providers. All utilities will have meters and submeters as appropriate.
- Design Build Institute of America (DBIA) Best Practices for Design-Build Done Right
- The stringent attention to AHERA standards set in the prior asbestos abatement removal project and heightened attention to human health and safety in all decisions surrounding the project.

4. OCCUPANCY & USE

The facility will be normally occupied from 7:00 AM to 6:00 PM on Mondays through Friday, except for Holidays and scheduled College breaks. The HVAC system shall be designed to allow for occupied and unoccupied periods for breaks, evenings and weekends, and holidays. The design shall focus on maximizing energy savings while maintaining adequate environmental and comfort standards along with providing a MERV 13 or higher filtration level for indoor air quality.

The HVAC system will bring the occupied space to within the occupied setpoint temperature range from 6:30 AM to 5:30 PM initially on Monday through Friday. An informal study of class schedules vs building occupancy should be conducted to identify opportunities for reduction in energy use.

5. SUSTAINABILITY and ENERGY EFFICIENCY

As part of Washington State's Energy Performance Standards, sustainability, and the goal of achieving "carbon neutrality" by the year 2030, Pierce College constructs its buildings to last and promotes environmental quality and resource conservation through sustainable design and construction.

The Design-Build Team, in collaboration with Pierce College will determine which LEED rating system and version are most applicable to this project to meet or exceed LEED Silver certification. Specific, high-priority goals for this project include, but are not limited to:

- Maximizing State and Tacoma Power (TPU) grants or programs.
- Provide Indoor Environmental Quality (IEQ) monitoring to include air temperature, humidity, CO2 concentration, air pollutants concentration, airflow rates, ambient noise levels, and daylighting maximization.
- Utilization of the Building Automated Systems (BAS) and other controls to efficiently maintain and track key building systems' performance, particularly HVAC and lighting.
- Use of low-VOC, regionally available, and high recycled content materials.
- Adoption of "daylight harvesting" to minimize electric lighting usage where functionally practical.
- High-efficiency lighting shall be used appropriately to reduce lighting power densities. Utilize daylighting strategies wherever applicable. Options for a range of light color temperatures to enhance learning and creativity is encouraged, as are CPTED principles in consideration of the restoration of the exterior environment.
- Override light switches will be placed in a location not accessible to the general public.
- Other sustainable initiatives and design innovations as identified by the Design-Build Team

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The Basis of Design (BOD) shall establish specific plans and strategies for achieving these goals, and the construction documents should incorporate LEED best practices for construction systems and techniques, including:

- Segregated collection and recycling of construction waste
- Proper erosion and sedimentation control techniques
- Procurement and use of low-VOC, regionally available, and high recycled content materials

Process Energy –components of the new construction may require energy efficiency requirements, including:

- Lighting
- Motors
- Energy recovery ventilation
- Solar, green, or cool roofs
- Demand control ventilation
- High efficient chillers
- Occupancy sensors
- Thermal energy storage

To verify compliance and conformance with rebates available to this project, the design-build team, with support from the Cx team, will review the 60% Construction Documents with TPU to determine eligibility for any grants or programs. The Cx team will measure and report a final energy model and will inspect the building at completion to ensure all design and specifications were achieved. Specific portions of the final MEP drawings/schedules, energy model, and other information will be used to perform calculations necessary to determine each component's available rebates. Pierce College expects all components of this project/building to be the most efficient and highest quality systems to qualify for applicable rebates.

6. BUILDING SITE

The building site is located on the Pierce College Fort Steilacoom campus and is connected to the Cascade Building and Olympic North Buildings by skybridges. The site is an existing concrete and steel reinforced shell. All utilities that served the building prior to abatement have been capped and made safe at or near the building perimeter.

7. TRANSPORTATION & PARKING

As this renovation is contained within the existing building footprint (no increase or decrease in square footage) there are no impacts to the number or availability of parking spaces on campus resulting from this project. The Design-Builder is expected to manage and maintain the project site perimeter, including laydown area to minimize disruption to campus operation, and to keep it fenced to deter intruders. Parking on campus for the Design-Builder and their employees is available at no-charge. Pierce College cannot guarantee parking will be available in the parking lot nearest to the project site.

Pierce Transit operates two bus routes onto the Fort Steilacoom campus; however, the location of this project site is removed from the bus route, no conflicts are anticipated.

8. BUILDING AS-BUILT

As-built drawings will provide accurate information in an understandable drawing technique, allowing future contractors to perform construction tasks. For this project, maintain and submit as-built in accordance with the procedure per DES and contract requirements. If modifications are made, mark the contract drawings to show the actual installation when installation varies from that shown on the conformed set of contract drawings. Include a cross-reference on contract drawings to identify that a modification has occurred. Identify and date each record drawing. Record and check markups before enclosing concealed installation. The Contractor is responsible for maintaining a record of redlined as-built during construction. All redline drawings will be inspected monthly by the

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Owner and associated consultants. The Contractor is responsible for providing the final hard copies and digital copies of the as-built to the Owner.

In addition to As-Built drawings, virtual twin or 360 degree “in progress” construction documentation at key construction milestones is required to document concealed conditions. The platform, format and milestones of this documentation will be determined in design as mutually acceptable to the Design-Build Team and Pierce College.

9. INDOOR ENVIRONMENTAL QUALITY

1. Indoor Lighting and Lighting Controls

Occupancy sensors to control lighting usage in accordance with the demand in fully occupied spaces. All other spaces with no occupancy sensors shall have “time-of-day” lighting controls with temporary overrides located at the thermostat, which places the HVAC and lighting system into the occupied mode.

2. Thermal Comfort

The HVAC system shall provide outside air volume that meets ASHRAE standards and maintains the necessary level of building pressurization. The humidity level in the space must be maintained. The system shall never allow condensation to form on HVAC equipment or any other building components or elements such as piping, interior glazing, etc. Building HVAC shall be designed to contribute to overall building energy efficiency goals as defined in this document. The HVAC system shall have a low life-cycle cost and provide an excellent indoor environmental quality to facilitate occupant’s productivity while minimizing maintenance requirements. The HVAC system shall support future reconfiguration of offices and labs to meet the organization’s changes with minimum HVAC modification needed to maintain comfort associated with indoor environmental quality.

- HVAC system shall be designed to provide the required cooling and heating to meet varying load requirements while maximizing energy efficiency.
- HVAC system shall be zoned to maximize comfort while minimizing the cost of operation.
- Effectively maintain building pressurization and humidity control 24/7.
- Provide at minimum MERV 13 air filtration and locate fresh air intakes away from the path of potential exhaust containing odors or other irritants as best practice.
- Building occupancy schedule for the HVAC system will be easily modified by zones. The system must be designed so the Facilities Department, not the users, make these modifications.
- Provide energy use, demand, and environmental data via BAS.
- All MEP systems and components must be accessible for maintenance.
- Separate HVAC systems for office areas and teaching lab areas that use hazardous materials or other contaminants.
- Consider the use of solar power for building heating / re-heating requirements. Provide cost and savings.

3. Acoustics

Soundproofing and acoustical treatments shall be incorporated in the design and construction of all private offices, small group session areas, conference rooms, and specific laboratories requiring acoustic treatments to prevent sound transmission to adjacent offices, corridors, or other space in the building. Do not design bathrooms adjacent to private offices, conference rooms, or lecture rooms. The acoustic engineer shall discuss all acoustical criteria with the Owner users and project manager during design.

4. Accessibility Requirements

The building design shall be assessed for all ADA requirements. This project may be subject to State Facilities Accessibility Committee (SFAC) review at the Design Development stage. In addition, a meeting shall be held with

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the Pierce College Facilities Department and the college ADA representative to review all design aspects before approval of the 40% (or closest established milestone) design.

Systems requiring routine maintenance, such as HVAC, shall be designed to provide adequate access and clearance for all the maintenance tasks (i.e., space to remove, replace, or service system components such as filters, coils, fans, motors, valves, controls, cleanouts, etc.) while minimizing interference with staff, faculty, students, and building operations. Systems must be designed with the consideration that maintenance activities will occur during regular business hours.

5. Health, Hygiene, and Indoor Environmental Requirements

The creation of good indoor environmental quality requires the coordination of many design parameters and construction activities, including acoustic quality, ventilation rates, and materials used to construct the facility, installation sequence, and other parameters that may affect occupant comfort.

The following are the known activities that generate pollutants in or near the facility that impact the health, hygiene, and indoor environments of occupants and the countermeasures which will be utilized during the construction process:

Specifically:

- Non-toxic caulk, paint, adhesives, sealants, and cleaning products shall be used. Paint surfaces that have frequent contacts must be durable and may require other types of paint.
- Smoking or the use of smokeless tobacco is prohibited on all Pierce College campuses. Smoking will only be allowed in designated areas. This includes construction sites and parking lots.
- The construction manager and the contractors shall implement procedures to minimize construction-related contaminants in the building. These procedures include control of moisture, dust, regular cleaning activities, and protection of delivered equipment and material before and after installation, starting with HVAC systems. All HVAC systems and components will be kept clean and sealed before and after installation. The Contractor will be required to clean all ductwork and associated equipment if they fail to keep the system free of dust.
- Moisture sensitive material shall be stored in weather-tight, temperature controlled and clean areas before unpacking for installation.
- Any porous construction materials such as insulation, drywall, carpet etc., shall be protected from moisture in a clean and dry area. Should these materials be found to get wet, they shall be replaced at no cost to the Owner.
- Approved VOC emitting finish material shall be installed during non-business hours. Schedule all VOC emitting elements before installing any absorbent material such as ceiling tiles, carpets, wall insulation, gypsum products, fabric-covered furnishing, etc.
- Outside-air (OA) intakes shall not be accessible from grade.
- OA intakes shall be located at a distance sufficient enough, so pollutants emitted from exhaust points and bathroom exhaust fans or any other harmful emissions are not mixed with outside air entering the HVAC system.
- All building entry points to employ design strategies to reduce the amount of outside dirt, dust and particulates and toxins brought into the building. Exceeding the LEED requirements is encouraged to create a cleaner environment and cut down on the amount of routine cleaning necessary to maintain the facility.

6. Vibration Requirements

Prevent occupants adjacent to any HVAC equipment and corridors, chases, roof, etc., from sensing vibrations from structural deflection due to occupant traffic and equipment operation. Scheduling of any portion of the construction that would cause any vibration to adjacent buildings must be considered for off-hour periods. The construction manager will coordinate all activities and provide a monthly schedule to be presented to appropriate occupants of

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the adjacent buildings showing the approximate level of vibration (and noise) for all conditions during the construction. Each of the monthly schedules shall be updated weekly, showing the next four weeks of activity.

10. EMERGENCY or BACKUP POWER

Integrate existing emergency power into the new design. Identify and prioritize critical systems requiring emergency power.

11. TELECOMMUNICATIONS and AUDIO/VISUAL SYSTEMS

Each installing Vendor/Contractor for their section shall possess a current and valid Washington State 06 Electrical Low Voltage License. The Low Voltage Contractor shall have a BICSI certified RCDD (Registered Communications Distribution Designer) assigned to the project. The installing vendor/contractor shall be manufacturer approved to purchase the equipment, have a local office staffed with manufacturer-certified installers that are capable of maintaining, servicing, and warranting the equipment being installed; and are capable of programming, testing, inspecting, maintaining, warranting, and inventorying parts for the life of the system and shall be located within a 100 mile radius of the project site.

Pierce College IT Services Department shall approve standard and design for all Low Voltage, A/V systems and materials to be installed. The Contractor shall be responsible for all pathways and installation of all fiber, low voltage and A/V wiring, testing, and warranty for the building cabling systems per the Pierce College approved design. The design professional will coordinate with the Pierce College IT Services Department and Facilities Project Manager during the design process to ensure that proper rough-ins, raceways, and backbone are included as part of the building design, which will be installed by the Contractor before any A/V or Network hardware installation work by Pierce College IT Services and Media Department. All IDF rooms and racks must be clean prior to installation of any Pierce College network equipment.

All structured cabling within the building to be Cat 6e. Maintain existing fiber and network to other buildings during construction. Any scheduled power or network service outages shall be coordinated with Owner's Representative a minimum of 10 working days prior.

The Design-Build Team to establish color coding of systems cabling with Pierce College IT Services prior to procurement and installation of any materials.

Pierce College standard clock and paging system is Valcom Emergency Mass Notification. System to be designed and installed by an authorized Valcom integration partner. Design-Builder to coordinate with college and Valcom to expand the existing paging system into Olympic South.

12. SECURITY & HARDWARE

All exterior doors and floor level entrances, IDF's, entrances to office suites, custodial closets and maintenance spaces shall be secured utilizing Continental Access electronic access control equipment, compatible with the existing Pierce College system. The college's vendor for this equipment is ProComm.

All occupied spaces including but not limited to offices, classrooms and labs to be secured with door hardware with an inside ADA compliant thumb turn lock, and outside key lock override.

Touchless auto-operators at exterior entrances doors, restrooms and other common access areas are preferred.

All keyed doors shall utilize the Medco-Keymark proprietary keyway with interchangeable cores. Kinship Door and Hardware Solutions (formerly Contract Hardware) holds the license for Pierce College. The college, in conjunction with the Design-Builders hardware consultant, will develop the key-core schedule for the Design-Builder to provide all permanent cores.

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13. HAZARDOUS MATERIALS

Refer to the Olympic South Post Abatement Hazardous Materials Survey and the Olympic south Abatement and Repairs Closeout Report for a full description of the asbestos abatement process, findings, and hazardous materials that remain in the building.

14. FURNISHINGS & EQUIPMENT

All casework and fixed equipment will be shown with solid lines on drawings and will be furnished and installed by the Builder as Contractor Furnished and Contractor Installed (CFCI).

All building movable furniture (e.g., office furniture, studio furnishings) and equipment will be shown as dashed lines on the drawings will be purchased and installed by the Owner as Owner Furnished and Owner Installed (OFOI). The design shall incorporate all necessary utilities, space, etc., for all user OFOI equipment. The OFOI items' installation will occur between the substantial and final completion of the project. The delivery and installation will be coordinated with the Contractor. As part of the project, the Owner and Design-Builder will jointly identify and determine infrastructure requirements for Owner furnished equipment.

15. COMMISSIONING, INSPECTION, and QUALITY ASSURANCE

The Commissioning (Cx) consultant will be selected prior to completion of the Conceptual/Advanced Schematics phase and will be responsible for:

- Peer review of the design and construction documents
- Development of the project specific Cx Specification
- Development of the project specific Cx Plan
- Construction and acceptance phase commissioning and documentation
- Development of the facility's Systems Manual
- Post-occupancy commissioning, testing, and documentation.

It is anticipated that the following building systems will be commissioned:

- Mechanical and HVAC systems
- Electrical (including generator, if applicable) and lighting systems
- Domestic hot water systems
- Building Automation System
- Lighting Controls
- Access Controls
- Building Envelope, air barrier testing, if applicable
- Others, as required by the design

16. CONSTRUCTION COMPLETION and TURNOVER

Substantial completion is determined by the conditions of the contract. This date establishes both the beginning of the warranty period and commencement of operation and maintenance by Pierce College. Details on the project closeout process can be found on the DES website.

Starting from the date of Substantial Completion for this project, the Contractor will have a specified number of days per the schedule to complete all punch list items. The Design-Builder is expected to pre-punch their own work prior to requesting a punch list inspection by the Owner/DES.

17. OPERATION & MAINTENANCE

The entity responsible for the maintenance and operation of the Olympic South Building and its systems is the Facilities Department. Operation and Maintenance Criteria will be established by the project team based on the installed equipment requirements. The Facilities Department will monitor, maintain, and perform preventive maintenance on the building systems and building envelope. To ensure maintenance does not compromise class instruction schedules, the following maintenance issues must be considered during the design:

- Designers shall ensure access and clearances are provided by design to perform routine maintenance tasks (e.g., Filter replacements, clearance to equipment motors). These access areas shall be outside of student, faculty, and staff workstations to the best extent practicable.
- Building Information Model (BIM) shall be developed to coordinate building equipment and components to maximize the space available for service.
- Systems manuals shall include any changes made to components and systems after substantial completion and shall comprise the final set points established through the Cx process.
- Updated as-built drawings that detail any subsequent changes must be provided to the Facilities Department as the changes are made.
- In addition to the Cx Plan, field reports, and test reports, the Cx consultant's primary deliverable is an electronic Systems Manual. This manual provides the College with a single source of information and instructions for proper operation and maintenance of primary building systems. As opposed to equipment-oriented "O&M manuals," the Systems Manual is to be systems-oriented to provide operators with easy access to both narrative and technically detailed reference material, descriptions, diagrams, schedules, and other information on stand-alone and, particularly, integrated systems.

Like the OPR and BOD, the Systems Manual will be a living document. Unlike the OPR and BOD, though, the Systems Manual should evolve throughout the life of the building— compiled by the Cx from documentation developed by the Owner, design team, contractors, and the Cx process itself, then turned over for perpetual use and upkeep by building operators and future consultants and contractors throughout the building's life.

Maintenance and replacement costs must be considered over the life of the facility, and selection of materials will be based on minimizing life cycle costs. Design of mechanical, electrical, and plumbing systems shall allow required maintenance and replacement of key system components to be performed without deconstruction. All systems and their components shall be easily accessible for adjustments to the respective system components. Access to the building exterior, specifically on the south and east sides of this new building, shall be provided in such a way to allow easy maintenance, repair, replacement of the building exterior, including windows, sealants, etc.

18. OWNER TRAINING

Pierce College Facilities Department will provide preventive maintenance after building acceptance in addition to required repairs after the warranty period. Facilities personnel must receive detailed training on all systems so these systems can be properly maintained. The training provided will educate Facilities staff on systems and assemblies which will be installed in the facility. Training shall include a description and overview of system components and locations, safety provisions and concerns, as well as normal operating and energy conservation procedures.

Training shall also include a review of the written O&M instructions, discussion of relevant health and safety issues or concerns, discussion of warranties and guarantees, discussion of common troubleshooting problems and solutions. Hands-on training shall include start-up, operation in all possible modes (including manual, shut-down process, and any emergency procedures), and preventive maintenance for all pieces of equipment. Training is a progressive on-going process that will occur during construction and after substantial completion inspection, but prior to final completion inspection. A final training exercise will be conducted for special systems onsite before Owner occupancy. This is typical of a training exercise for all components of the building.

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The intent of the training is to instruct the Owner's Staff and Users clearly and completely on all capabilities of the mechanical, electrical, plumbing, controls, fire protection, elevators, and all other equipment requiring maintenance. Training will also be conducted on user-specific equipment if applicable. It is not expected that the attendees will memorize everything from the training sessions, but that they know where the information is, can find it, and understand how to walk through the key steps to troubleshoot the problem and resolve it. Facilities and IT requires that all training sessions be videotaped and converted to DVD (or as agreed upon) format for the Owner's use as part of the deliverables prior to Project final completion. Relevant training will be witnessed and documented by the Commissioning authority; the Contractor will develop and execute the training program. All persons performing tasks related to building operations and maintenance shall receive the required number of hours of training related to building systems to comply with the latest LEED requirement at the time the training is conducted.

Building systems that the Facilities Department shall be trained on includes, but is not limited to:

- HVAC / Mechanical Systems
- BAS/controls
- Electrical systems, including Emergency Power system
- Lighting controls
- Security System
- Elevators or Wheelchair Lifts
- Other systems as appropriate

Building systems that the occupants/users shall be trained on include but not limited to:

- Lighting controls
- Audio/Visual System
- Security System
- Other systems as appropriate

Warranty Requirements

Generally, the warranty period provided by the Construction Manager, equipment suppliers, and all trade contractors for building materials and systems is for a period of one year after substantial completion acceptance. However, some specific systems have longer warranty periods through either the trade contractor or the manufacturer. Longer warranty periods will be determined prior to acceptance of the GMP.

19. POST-OCCUPANCY and WARRANTY

The Contractor shall ensure that final completion construction deliverables are documented, coordinated, assembled, and delivered to the Owner at or prior to Substantial Completion. Draft deliverables will be submitted to Pierce College and reviewed by Facilities Staff and their consultants.

During the warranty period, the Contractor shall respond to the Owner's request to review design and construction issues. The Contractor will also coordinate and participate at the end of warranty period inspection in accordance with the DES Terms & Conditions of the Contract. The Contractor will produce a summary report documenting deficiencies, problems, or other outstanding items. All deficiencies discovered will be corrected at no additional cost to the Owner.

The Cx consultant, Design-Builder, and all subcontractors whose systems were commissioned shall meet with the Owner's O&M staff quarterly during the first year after Substantial completion to offseason test, optimize, and otherwise troubleshoot all commissioned systems.

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The Cx agent shall also provide a list of warranty issues at the 10-month milestone and provide a copy to the Owner, Professional, and Builder to review and immediately perform corrective action as required. The final commissioning report shall be produced and distributed after the warranty period to document the final result of commissioning.

20. PERFORMANCE GUARANTEE

The Performance Guarantee will be a separate contract outside the Design-Build contract, held with the Design-Build entity. The terms, extent of verification and performance will be determined in cooperation with the Design-Builder after acceptance of the GMP. The preliminary goals for the Performance Guarantee are enhanced energy savings, enhanced data capture for benchmarking, predictive maintenance, and the implementation of a smart building analytics package. The Design Builder and Pierce College will work together to define objectives for the program, terms, and the most suitable platform. The design of all equipment and systems shall be developed to support a smart building analytics package.

END OF OPR