Eastern Oregon University Master Plan
Building & Site Utilities Assessment

SERA Architects
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INTRODUCTION

SERA Architects and its engineering consultants performed cursory, visual assessments of buildings and campus utilities for Eastern Oregon University in February, 2012. The University requested these assessments during the course of the campus master planning process for the purpose of prioritizing capital improvement requests. Buildings were included in the assessment scope if they had not been recently constructed, renovated or assessed.

Initial 'Overview' Assessment

The Eastern Oregon University campus master planning process led by SERA Architects initially included an overview of campus building assets. That review, conducted in October, 2011, was intended to set the context for the master planning process. It entailed a visual observation of all campus buildings to record gross architectural characteristics and general conditions. It was brief, impressionistic and involved no engineering consultants or specific observations. That document, "EOU Master Plan – Building Assessment," is attached to this report for reference as Appendix B.

Enhanced Assessment

During the course of the master planning process, the University requested an enhanced assessment for the purpose of prioritizing capital improvement requests. Buildings were included in the assessment if they had not been recently constructed, renovated or assessed. Outbuildings and other minor structures were excluded. Ultimately 16 buildings were identified for inclusion in the enhanced assessment scope.

Assessed Buildings

- Ackerman Hall (not including the Gym or Annex)
- Alikut Hall
- Badgley Hall
- Community School of the Arts
- Community Stadium
- Eocene Courts
- Facilities Central Plant
- Facilities Services
- Facilities Warehouse
- Highland House (President's residence)*
- Hunt Hall
- Integrated Services Building*
- KEOL
- La Grande Head Start*
- Loso Hall
- Student Health Services

* Not included in October, 2011, overview assessment.

Assessment Scope

The assessments consisted of physical tours of the buildings to make visual observations of building conditions including structural systems, roof and envelope systems, basic accessibility (ADA) of building entries, mechanical and electrical systems, and civil infrastructure. Observations were intended solely to identify distinct visual deficiencies. The scope of work did not include drawings, calculations, testing or cost modeling.

In addition, for Hunt Hall only, the assessment included an evaluation of basic fire and life safety conditions and a cost-benefit opinion for renovation versus replacement.

The civil assessment focused on a high-level, campus-wide overview of civil infrastructure, with review of building-specific infrastructure connections as feasible within the broader framework.

The scope of work was also to include review and organization of existing digital archive drawings (for buildings covered by the assessment scope). However, only one or two digital drawing sets were available to the assessment team. In lieu of that work, SERA created a preliminary catalogue of drawing sets stored in the Facilities plan room. See 'Organization of Archive Drawings,' below, for more information.

Assessment Logistics

SERA Architects led an assessment team that included PAE Consulting Engineers (mechanical, electrical and plumbing) and KPFF Consulting Engineers (structural and civil). Team members were Michael Miller, SERA; Brett Cournoyer and Justin Stenkamp, PAE; Erik Kabusreiter, KPFF (structural); and Mike Beyer, KPFF (civil). The team was on campus Monday, February 20, through Thursday, February 23, 2012.

The assessment team reviewed portions of some buildings *en masse*, whereas the team split into smaller groups depending on varying assessment requirements for each discipline. Civil's assessment, due to its focus on the campus scale, generally did not directly coincide with the individual building reviews by the rest of the team, with the exception of the Facilities Central Plant.

Overall coordination of the assessment visit was with Director of Facilities & Planning David Lageson. The Facilities department provided excellent availability of personnel with relevant expertise throughout the assessment visit to provide access to buildings and point out known issues. In addition, the Facilities personnel provided invaluable historical background and context to the team's observations.

Assessment Conditions & Limitations

This report is based on cursory observations of building systems and components that were readily accessible to view, in order to identify distinct visual deficiencies. Described conditions are to be understood as representative and illustrative of a building's general conditions: The presence of specific condition descriptions does not indicate that no other deficiencies exist, nor does the absence of specific condition descriptions indicate that no deficiencies exist. Concealed conditions and other items that were not described in this report were not included in this review.

Building Envelope Assessments

The scope of this assessment did not include detailed, specialist assessment of the building envelope (i.e. exterior walls and roofing systems). Observations and described conditions, or the absence thereof, are not intended to suggest that any component of the building envelope systems functions at a given level of performance, nor should they be relied upon for the sole determination of required maintenance, repairs or replacements.

It is recommended that the University periodically have building envelope systems reviewed by a specialist building envelope consultant in order to safeguard the value of campus building assets.

Review of Archive Drawings

Archive construction drawings for most of the buildings in the assessment scope were not available to the assessment team before the site visit. It was also not feasible for the team to efficiently utilize archive drawings in the Facilities plan room in the time available on campus.

Electronic copies of a variety of campus utility and infrastructure plans and surveys were provided, although they were inconsistently labeled, piecemeal in coverage and produced independently at various times throughout the history of the campus.

Organization of Archive Drawings

The original scope of work included the review and organization of existing digital archive drawings for buildings covered by the assessment scope. However, only one or two digital drawing sets were available to the assessment team. In lieu of that work, SERA created a preliminary, partial catalogue of drawing sets stored in the Facilities plan room, which lacks an index of stored documents.

Only buildings covered by the scope of this assessment were included in the catalogue. (Drawing sets which had previously been relocated for safekeeping to a mechanical room at Loso Hall were also included, regardless of their inclusion in the assessment scope.)

Data is limited to what was readily visible on the exterior of the roll, box or tube, or alternately on drawing title blocks. The set's general location in the room is indicated. A column has been provided for the addition of a future filing index number.

The plan room catalogue is attached to this report as Appendix D and will be provided electronically to the university (as an Excel file). It should be noted that the usefulness of this catalogue depends on the institution of an indexing / filing system for archive drawings and ongoing maintenance of that system.

Assessment Organization – UniFormat 2010

The building assessments and site assessment in this report have been organized per the UniFormat 2010 classification system.

UniFormat is an arrangement of building information based on physical parts of a facility called functional elements, otherwise known as systems and assemblies. These elements are characterized by their function, rather than through a breakdown of building materials, products, and construction activities (as in the MasterFormat classification system used in construction specifications).

UniFormat is particularly well-suited to organizing information about buildings for those whose primary interest is in how a building *functions*, rather than in how it is *constructed*. For this reason, it can be a valuable tool for facilities operators and managers, planners, and others concerned with the ongoing life of a building.

UniFormat top-level organization

INTRODUCTION
A SUBSTRUCTURE (Sub-grade Enclosure)
B SHELL (Superstructure, Vertical Enclosure, Horizontal Enclosure)
C INTERIORS

D SERVICES (Conveying, MEP, Fire Protection, Communications)
E EQUIPMENT & FURNISHINGS
F SPECIAL CONSTRUCTION & DEMOLITION
G SITEWORK
Z GENERAL

See Appendix A for an expanded explanation of UniFormat and a more-detailed outline of classification headings and sub-headings.

BUILDING ASSESSMENTS

Key Observations & Recommendations

Ackerman Hall

Alikut Hall

Badgley Hall

Community School of the Arts

Community Stadium

Eocene Courts

Facilities Central Plant

Facilities Services

Facilities Warehouse

Highland House (President's Residence)

Hunt Hall

Integrated Services Building

KEOL

La Grande Head Start

Loso Hall

Student Health Services

KEY OBSERVATIONS & RECOMMENDATIONS

These observations and recommendations are a selection of findings from the assessment process. They are not exhaustive. See individual building assessments for other observations and additional detail. See the Introduction for information about the assessment process.

Ackerman Hall

- Only accessible entry to upper floors is via basement elevator lobby; Accessible route from some portions of basement to rest of building requires exiting and re-entering the building.
- Structural system is unlikely to meet current seismic codes.
- Much of plumbing system is recommended for replacement.
- Minor HVAC upgrades are recommended.
- Addition of heat trace to sprinkler main should be investigated for resolution of freezing problem.

Alikut Hall

- Building appears to be generally compliant with accessibility requirements.
- Structural system would be expected to perform reasonably well in a seismic event.
- EIFS (Exterior Insulation and Finish System) cladding should be evaluated for potential moisture-control problems.
- Building envelope should be investigated for suspected and potential problems with air, moisture and thermal control.
- Code review should be performed to determine whether new Oregon fire regulations require installation of carbon monoxide detectors in sleeping units.

Badgley Hall

- Building appears to be generally compliant with accessibility requirements.
- Structural system would be expected to perform reasonably well in a seismic event.
- Severe slab deflection at northwestern corner is not believed to be a structural strength or safety concern.
- Building envelope should be investigated for known, suspected and potential problems with water intrusion and consequent moisture damage.
- HVAC systems require various miscellaneous repairs and replacements.
- Emergency generator starting problems should be systematically addressed.

Community School of the Arts

- Building has limited accessibility beyond main entry; primary instruction space is on inaccessible second floor.
- Structural system should be evaluated for seismic deficiencies prior to any renovation.

- Water intrusion at basement walls results in standing water, which has caused damage to at least one wood column, and poses a hazard to electrical and communications equipment.
- All plumbing and mechanical (HVAC) systems are recommended for replacement.
- Code review should be performed to determine whether fire protection and detection/alarm systems are required.

Community Stadium

- Building appears to be generally compliant with accessibility requirements, but stands do not provide equal accommodation.
- Structural system would be expected to perform reasonably well in a seismic event.
- Masonry construction is of below-average quality, with widespread efflorescence and water intrusion evident.
- Addition of insulation and other protective measures should be investigated to address risk of pipe and equipment freezing and/or wasted energy to run HVAC between sporadic, seasonal use of the building.

Eocene Courts

- Structural system would be expected to perform reasonably well in a seismic event.
- Stairs to exterior upper deck provide only egress path from several apartments:
    - Non-compliant stair geometry presents a safety hazard and code violation.
    - Code review should be performed to determine whether wood upper deck complies with fire protection requirements for egress path.
- Hidden-gutter detail at laundry/storage building has caused significant water damage to roof deck.
- Plumbing, HVAC, and electrical systems are recommended for replacement.
- Code review should be performed to determine whether fire protection and detection/alarm systems are required.
- Code review should be performed to determine whether new Oregon fire regulations require installation of carbon monoxide detectors in apartments.

Facilities Central Plant

- Entry to the building is accessible, but mechanical equipment spaces are not required to be accessible.
- Structural system would be expected to perform reasonably well in a seismic event.
- Code review should be performed to verify mezzanine compliance with allowable construction type, required access and allowable storage.
- Boiler and chiller systems are in generally very good condition, but miscellaneous replacements or upgrades are recommended.
- Emergency power is recommended for selected loads due to the critical nature of the heating and cooling water supply for the rest of campus.
- Code review should be performed to determine whether fire protection and detection/alarm systems are required.

Facilities Services

- Entries to the buildings are generally accessible, but many of the work and storage spaces are not readily accessible.
- Structural system would be expected to perform reasonably well in a seismic event.
- Some HVAC equipment is recommended for replacement.
- Code review should be performed to determine whether a fire detection/alarm system is required.

Facilities Warehouse

- Building appears to be generally compliant with accessibility requirements.
- Location of single thermostat for office / plan room section results in overheating.

Highland House (President's residence)

- Basic accessibility is provided to areas of house used for university functions, but exterior access is circuitous.
- Structural system would be expected to perform reasonably well in a seismic event.
- Crawlspace drainage and ventilation should be investigated for heightened risk of existing or potential damage due to spring which emerges beneath house.
- Some HVAC equipment is recommended for replacement or addition.
- Electrical panel should be lowered to comply with code requirements.
- Code review should be performed to determine whether new Oregon fire regulations require installation of carbon monoxide detectors in sleeping area of house.

Hunt Hall

- Building has limited accessibility.
- Building lacks a fire protection system; Exit stairs do not comply with current code requirements, particularly regarding guardrails and handrails.
- Structural system should be evaluated for seismic deficiencies prior to any renovation.
- Exterior doors and windows generally need repair or replacement.
- Roofing systems are recommended for replacement.
- All plumbing, HVAC, electrical, communications and fire detection/alarm systems are recommended for replacement; Fire protection system should be installed.
- Code review should be performed to determine whether new Oregon fire regulations require installation of carbon monoxide detectors in sleeping units.
- See report for cost-benefit of renovation versus replacement (section Z30).

Integrated Services Building

- Appears to be generally compliant with accessibility requirements.
- Structural system would be expected to perform reasonably well in a seismic event.
- Causes of combustion gas and bathroom exhaust odors should be investigated and resolved.
- Fire protection valve system should be investigated to resolve pressure problem.

KEOL

- Building is not accessible.
- Structure is in poor condition; floor framing is visibly deflecting due to excessive storage loads.
- Structural system should be evaluated for seismic deficiencies prior to any renovation.
- Exterior cladding is failing or in poor condition.
- Plumbing and HVAC systems are recommended for replacement.
- Code review should be performed to determine whether a fire detection/alarm system is required.

La Grande Head Start

- Buildings appear to be generally compliant with accessibility requirements.
- Structural system of the office building does not appear to provide a load path to transfer lateral forces (i.e. seismic or wind loads) between the building structure and the ground.
- Code review should be performed to determine whether a fire protection system is required.

Loso Hall

- Building appears to be generally compliant with accessibility requirements, although access from two of the heaviest travel directions (i.e. the quad and south parking) is indirect.
- Structural system should be evaluated for seismic deficiencies prior to any renovation.
- Gas water heater is recommended for replacement.
- Various HVAC equipment and systems are recommended for replacement or upgrade.
- Upgrade various lighting and lighting controls for potentially significant energy savings.
- Fire detection/alarm system is recommended for upgrade.

Student Health Services

- Main entry and some areas at main floor are accessible; offices and counseling areas in basement are not accessible.
- Structural system would be expected to perform reasonably well in a seismic event.
- Code review should be performed to determine whether a fire detection/alarm system is required.

Site Utilities

- A survey of subgrade utilities should be performed for the entire campus to establish an inventory for planning and maintenance purposes.
- Visual inspections are recommended for all building sewer laterals older than 20 years.
- Condition and capacity of campus drainage system should be investigated in light of history of flooding.
- Visual inspections are recommended for all building storm laterals older than 20 years.
- Non-destructive testing is recommended on utility-tunnel steam, condensate and chilled water piping to evaluate remaining piping life.
- Pooling water near electrical equipment in utility tunnel should be addressed.

Ackerman Hall

Number:	003
Constructed:	1935
Renovated:	1998 (limited)
GSF:	38,978
Use/Occupancy:	Academic / Administrative

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data.

10 FACILITY DESCRIPTION

1010 Facility Summary

Ackerman is two stories with a basement and was originally built as a model elementary school as a component of EOU's original role as a normal school (teacher training). It now serves as an academic building, housing programs such as the social sciences and humanities.

The building has generally maintained historic character and contributes to the historic building zone on campus. It is not listed on the state historic building registry.

1030.21 Accessibility

The accessible exterior entry leads to a basement elevator lobby. This secondary entry is not connected to all other areas of the basement level, which means that access between some basement level areas and the upper floors requires one to exit the building.

Access to the south section of the basement is at-grade, but requires opening heavy doors that likely exceed allowable pull forces, without the assistance of an automatic operator.

Interior stairs are not compliant with accessibility or egress requirements for handrails, etc.

1040.31 Assessment Conditions & Limitations

Ackerman Gymnasium and Annex were not included in the scope of this assessment.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The classroom building has concrete exterior wall framing with wood framed floors and roof. The center portion of the building has steel trusses spanning between exterior walls which support wood joists. The foundations for the building are presumed to be continuous concrete foundations supporting the bearing walls.

Lateral Force Resisting System:

It does not appear that the building has a code compliant lateral force resisting system. The lateral force resisting system for each phase is the exterior concrete walls acting as shear walls. The wood floors and roof act as diaphragms which transfer the lateral forces to the exterior walls. Both building phases were designed and built before the Type C2A 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, further evaluation of the lateral force resisting system is warranted.

Conclusions:

The structure of both phases appears to be in generally good condition with no visible signs of overstressed framing observed. There are no signs of differential settlements within each phase.

Prior to any remodel of Ackerman Hall, we recommend a Tier 1 screening of the building structure be performed to identify deficiencies in the lateral force resisting system. This Tier 1 screening will be based upon the procedures and guidelines of ASCE/SEI 31-03, "Seismic Evaluation of Existing Buildings", published by the American Society of Civil Engineers and the Structural Engineering Institute.

Given the age and construction type of the building, it is likely that the report will identify seismic deficiencies that would need to be addressed in order for the building to perform well in a seismic event. The corrective work typically entails upgrading the diaphragm with new plywood sheathing, steel straps, and connecting the floor framing to the exterior walls. Additionally, additional shear walls and foundations may need to be added to transfer seismic forces to the foundations. This report is based on a visual observation of framing readily accessible to view.

Concealed conditions and items that were not described in this report are not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

Exterior walls are painted concrete with cast concrete ornamentation.

Windows are operable aluminum with insulated glazing and exterior screens.

The main west entry doors are original wood with glazing. Other major entries have been replaced with insulated aluminum storefront systems (with original wood remaining at the interior side of vestibules).

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roofs are tile-clad mansards, with low-slope, black single-ply membranes at the top of each roof section (central, north wing and south wing).

At the connection to the center portion of the building, the north and south tile roofs slope to the exterior walls of the taller, central portion. Water then drains along a gutter towards an (original) roof drain at either end of the wall. There was no obvious path for water to overflow from this gutter, and Facilities personnel indicated that this drain has clogged before with resultant leaks.

The upper, flat membrane roofs are very low slope, with no provision for overflow drainage. The transition from flat membrane to tiled slope is nearly level, with the cap tile basically sitting on the flat membrane.

The flat roofs are all highly exposed with no parapets or guardrails. The hatch at the central roof is particularly exposed, opening within four feet of the top of the tiled mansard. None of the flat roofs have

any fall protection anchors or guards as required for maintenance access by current codes and OSHA regulations.

C10 INTERIOR CONSTRUCTION

The 1998 renovation appears to have avoided modifications to interior walls whenever possible. Therefore many walls still have original (or early) electrical outlets, etc. (including a central clock system – see D60 COMMUNICATIONS).

D20 PLUMBING

The plumbing system appears to be in working order. Much of the piping appears to be original with the building. Hot water is provided by 1990's era electric hot water heater water.

Recommendations:

- Replace galvanized domestic water piping with new piping.
- Replace the existing hot water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating is provided by campus steam. There have been steam leaks in the building. The equipment and piping appears to be original with the building.

The fire sprinkler main is in the exhaust air plenum for AHU-2/3. The sprinkler main was freezing in the winter when the unit shutdown. To prevent freezing of the sprinkler main the unit is operated without any outside air to occupied spaces in the winter and the exhaust air louver is covered with insulation. Code minimum outside air is not being provided to the spaces during the winter.

Recommendations:

- Replace the steam system (equipment and piping) with a new steam to hot water converter and hydronic heating system.
- Refer to D40 FIRE PROTECTION below for recommendations regarding the fire sprinkler main in the AHU-2/3 exhaust air plenum.

D40 FIRE PROTECTION

The portion of the building included in this report is equipped with a wet fire sprinkler system.

The fire sprinkler main is located within the exhaust air plenum for AHU-2/3. This results in freezing of the main during winter months. To prevent freezing of the sprinkler main the unit is operated without any outside air to occupied spaces in the winter and the exhaust air louver is covered with insulation.

Recommendations:

- Install heat trace on the fire sprinkler main. This is allowed by NFPA 13 with the Authority Having Jurisdiction's permission. Branch lines cannot be heat traced.

D50 ELECTRICAL

D5010 Facility Power Generation

No emergency generation is provided for the building.

D5020 Electrical Service and Distribution

The building is served from the campus electrical loop #1. The main electrical service is rated at 208Y/120V, 3-phase, 4 wire, 800A. No SCCR labeling is provided. The main electrical room consists of a dirt floor in the basement. The floor slopes up from the location of the gear to a level approximately 4' higher. There currently is not a code issue with this arrangement. However a concrete floor and retaining wall would serve to improve the workability of the area and serve to extend the longevity of the equipment.

Recommendations:

- Provide concrete floor where equipment resides and retaining wall if not entire room.
- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.
- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

The interior of the building is illuminated using primarily linear fluorescent fixtures. Control is provided by local wall switches.

Recommendations:

- Providing automatic controls such as occupancy sensors or time clock sweeps to turn lights off would result in energy savings. Also this building has opportunities for daylighting which result in further energy conservation.

D60 COMMUNICATIONS

Telecommunication systems appear to be in working order and free of deficiencies.

The building is equipped with a central clock system. The campus electrician has indicated that replacement parts are difficult to obtain.

Recommendations:

- Provide new central clock system, wireless should be considered to allow for more economical retrofit.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The building is provided with a Silent Knight fire alarm system. It appears that due to the vintage of the installation primary initiation is being performed by manual pull stations only. The building does not have full sprinkler protection or full smoke detection coverage. In a modern installation these would be required. Annunciation is performed with horns and strobe devices.

Recommendations:

- Although the fire alarm system does not meet current code, it likely meets the code of its installation date. An upgrade of the system would most likely trigger an upgrade to either full sprinklerization of the building or to full smoke detection. It may be in the best interest of the building from a property protection and life safety perspective to opt for these upgrades.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from an 8-inch water main on the western side of 8th Street. The 4-inch double check detector valve assembly (DCDVA) for fire and the 3-inch domestic backflow are located in the mechanical room on the north side of the basement. Both backflows appear to be in good condition. Irrigation is served from the 8-inch water main in 8th Street with a backflow and meter located in an underground vault on the southwest corner of Ackerman Hall.

G3020 Sanitary Sewerage Utilities

The sanitary service connects to a 12-inch sanitary sewer on the south side of the building.

G3030 Storm Drainage Utilities

Although there is an existing stormwater main on the west side of Ackerman Hall along 8th Street, university staff believe the roof stormwater collection system drains to sanitary. This has not been confirmed through as-built research or visual site assessment.

G30 Conclusions

Based on visual observation of building utilities and supporting building infrastructure readily accessible to view, Ackerman Hall appears to be in good condition with no known utility deficiencies or capacity issues.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

ALIKUT HALL

Number:	006
Constructed:	1997
Renovated:	
GSF:	33,648 (43,820)
Use/Occupancy:	Residence Hall

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data.

10 FACILITY DESCRIPTION

1010 Facility Summary

Alikut Hall is a three-story residence hall located at the southern end of campus. Housing units are four-bedroom, suite style with two in-unit bathrooms and a kitchen.

1030.21 Accessibility

The building appears to be compliant with accessibility requirements. The west entry has an automatic operator. Floor plans indicate that four first-floor suites were designed for accessibility, with two of four bedrooms and both bathrooms shown as accessible.

1040.31 Assessment Conditions & Limitations

The assessment team was unable to access housing units, with the exception of the Housing Director's apartment and a brief observation of a partial suite used for guest accommodations (occupied at the time of the assessment).

Archive construction drawings were available to the assessment team electronically before the site visit only for architectural floor plans. Structural and M/E/P drawings were not available.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

Alikut Hall is wood framed with plywood roof sheathing supported by pre-manufactured wood trusses spanning between the exterior and corridor wood-framed bearing walls. The floor framing is engineered wood joist framing supported by the exterior and corridor wood-framed bearing walls. The wood walls are likely supported by continuous concrete foundations. The ground floor is slab on grade.

Lateral Force Resisting System:

The building's lateral force resisting system is the plywood shear walls at the exterior of the building. The plywood roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. It is likely that certain demising walls between units were also used as shear walls. This building

was designed and built after the Type W1 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. Due to the large amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES

B2010 Exterior Walls

Exterior walls are wood framed with an EIFS (Exterior Insulation and Finish System) cladding.

It is unclear from site observations whether the existing EIFS has currently recommended details such as proper window flashing and drip details at soffits and head conditions. In addition, the sloped EIFS ledge which surrounds the building at the floor level below the roof lines is a concern due to its relatively shallow slope.

Water staining was observed coming off the sloped EIFS ledge at some locations. Facilities personnel indicated that this was probably caused by hose spraying to remove an insect nest, but the condition could also indicate a potential water problem and should be monitored.

Exterior Insulation Finish Systems can be highly problematic from a moisture control perspective if they are not correctly detailed and carefully constructed. Damage to wall components can remain hidden for extended periods. Of particular concern is the fact that Alikut was constructed at a time when updated guidelines for proper EIFS detailing were not yet well disseminated in the construction industry.

The university should engage an envelope consultant to investigate and assess the EIFS system due to the uncertainty of proper detailing and the potential for damage to remain hidden for long periods of time.

B2020 Exterior Windows

Typical windows are aluminum sliders with insulated glazing, with screens at the operable sash. Because of limited access to residential units, only a couple of these windows were observed from the interior. One set, at the residents' laundry room, showed significant water staining at the frame. The source of this staining was not clear, but it should be investigated further.

The lobby entries and windows are aluminum storefront. The west lobby entry has a vestibule, but the east entry does not, which can lead to significant energy loss if it is used regularly.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The gabled roof structure is roofed with architectural asphalt shingles. Eaves are vented.

B20 / B30 [ENVELOPE CONTINUITY]

There are significant concerns about the continuity of the building's envelope and its performance with regards to air, moisture and thermal control.

Facilities personnel described several significant, known problems that suggest there may be widespread problems with continuity of the envelope's control layers. First, there are significant air leaks from the small, third-floor attic over the Housing Director's apartment. The Housing Director must keep kitchen cabinets open throughout cold weather to keep the insulated water line that runs laterally through the cabinets from freezing. At the soffit above the apartment's entry alcove, cold air could be felt flowing above an access panel and through openings in the recessed can fixture.

Secondly, corridors become so cold when the outside temperature is below approximately 15°F that the university added multiple electric resistance heaters into the third-floor corridor. (See also the problems with freezing sprinkler pipes in the attic described in D40 FIRE PROTECTION.)

The specific causes of air intrusion, its extent and possible hidden damage due to moisture vapor intrusion are unknown. The risk of hidden damage is enhanced by the unknown performance of the EIFS system, coupled with its ability to conceal damage (see B2010 Exterior Walls).

The university should engage an envelope consultant to investigate and assess the performance of the exterior envelope.

D20 PLUMBING

The plumbing system appears to be in good working order. Hot water is provided by a standard gas water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating is provided by a conventional gas boiler. The rooms and corridor are served by a 2-pipe Lennox fan coil unit with hydronic heat. Outside air is served to units by a common outside air ducted down from the roof. Some of the ductwork was insulated with a bubble wrap product that provides almost no insulation value. The data/electrical room has a household fan blowing on equipment to keep it cool.

Recommendations:

- Insulate ducts with fiberglass blanket insulation meeting the requirements of the current energy code.
- Install a dedicated cooling system or fan for electrical room cooling.

D40 FIRE PROTECTION

The building is fully sprinklered with a wet sprinkler system. Wet fire sprinkler piping is installed in the vented attic. Facilities staff reported pipes freezing in the attic.

Recommendations:

- Replace that attic system with a dry system or insulate the underside of structure and install an attic fan connected to a thermostat and humidistat.

D50 ELECTRICAL

D5010 Facility Power Generation

No emergency generation is provided for the building.

D5020 Electrical Service and Distribution

The building is served from the campus electrical loop #1. The main electrical service is rated at 208Y/120V, 3 phase 4 wire, 1600A. No SCCR labeling is provided.

Recommendations:

- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.
- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

The interior of the building is illuminated using primarily linear fluorescent fixtures. Control is provided by time clock in corridors and entry area.

D60 COMMUNICATIONS

Telecommunication systems appear to be in working order and free of deficiencies.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The building is provided with a Silent Knight fire alarm system. Initiation is done primarily by water flow, exits are also provided with manual pull stations and the fire alarm control panel is protected with smoke detection. Horn strobe systems devices are provided for annunciation.

Recommendations:

- Oregon fire code now requires carbon monoxide detection in all rental units which meet certain criteria. A code review should be performed to determine whether CO detection is required.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from an 10-inch water main on the western side of 8th Street. The 10-inch DCDVA for fire is located in an underground vault on the corner of 8th Street and G Avenue. The 1-1/2-inch domestic backflow is also located in an underground vault on the west side of Alikut Hall along 8th Street. Both backflows appear to be in good condition.

G3020 Sanitary Sewerage Utilities

The sanitary service connects to an 18-inch sanitary sewer main on the north side of the building.

G3030 Storm Drainage Utilities

The stormwater collection system drains to a 12-inch storm main on the west side of Alikut Hall along 8th Street.

G30 Conclusions

Based on visual observation of building utilities and supporting building infrastructure readily accessible to view, along with the relatively new construction (1996), Alikut Hall appears to be in good condition with no known utility deficiencies or capacity issues.

BADGLEY HALL / SCIENCE CENTER

Number:	5 (5.1/5.2)
Constructed:	1966 (East wing) 2004 (West wing; atrium; lecture hall)
Renovated:	2004 (East wing)
GSF:	72,296
Use/Occupancy:	Academic

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses.

10 FACILITY DESCRIPTION

1010 Facility Summary

Badgley Hall is a three-story classroom building (science center) located near the northwest corner of campus. The building was built in two phases. The original building is the eastern wing. The western wing as well as the connecting atrium, south-side atrium and large lecture hall at the southeast corner were added in a second phase. It has a small basement which houses the mechanical units for the building.

There is a separate standalone group of structures within the northwest parking area including greenhouses, a chiller enclosure, and backup generator. These structures were not assessed beyond the building-related mechanical equipment and generator.

1030.21 Accessibility

The building appears to be generally code-compliant. The addition of an automatic door operator at the east entry would facilitate access from the small adjacent parking lot. The north exterior courtyard has no access.

1040.31 Assessment Conditions & Limitations

Due to heavy utilization of classrooms during the times of the site visit, the assessment team was only able to access a couple of classroom spaces.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The original phase is a concrete building with concrete pan joist floors and roof. The elevated floors and roof of the second phase are post-tensioned concrete. The ground floor is slab on grade with the exception of a portion above the basement mechanical room which is a conventional concrete slab. The roof framing of the atrium and large lecture hall is structural steel supporting metal roof deck.

Lateral Force Resisting System:

The building's lateral force resisting system is concrete shear walls. The concrete floor diaphragms transfer lateral forces to the shear walls. This building was designed and built after the Type C2 1976 UBC

benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. The only exception is in the northwestern corner of the building over the mechanical room. The slab at the first floor has noticeably deflected a few inches between the supporting walls. Cracks in the gypsum sheathing were noted around most doors. The deflection was also noticeable in the cabinetry. This issue has been reviewed by KPFF as part of a previous effort which concluded that the deflections are not a strength concern and are not dangerous. The deflection is most likely caused by the method in which it was constructed rather than a design issue. Please see attached letter from KPFF dated January 26, 2010, regarding this issue.

It was noted that floor tile was coming loose in other portions of the building including areas of slab on grade. The tile was coming loose in areas not exhibiting large deflections. A tile that had come loose was observed. There didn't appear to be a lot of mortar adhesion to the back of the tile. The tiles that are reinstalled with proper mortar adhesion should be monitored to see if they come loose. If they stay in place, the lack of adhesion of the tiles in the original installation is likely the reason for the loose tiles.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES

B2010 Exterior Walls

Exterior walls are clad in Portland cement stucco. Wall cladding and windows appear to be of consistent age at both wings of the building, indicating that the original building was re-clad as part of the renovation/expansion.

Mechanical penthouse

At the northwest and southwest corners of the mechanical penthouse, water leaks onto the interior concrete floor from the base of the exterior wall. Facilities personnel indicated that during and/or after heavy rains, the rate of intrusion is high enough that water can be seen to flow. The source of this intrusion is undetermined.

Possible sources of water penetration into the penthouse wall assembly include leaks in the roofing membrane; the transition between base of stucco and roofing membrane; wall penetrations, including the large louver in the east penthouse wall; flashing / detailing problems at penthouse parapet wall; and other potential problems with the penthouse roofing (see B30 EXTERIOR HORIZONTAL ENCLOSURES). Facilities should make a focused investigation of this water intrusion, including potentially engaging an envelope consultant, as it is unknown what other paths water from this intrusion may be following, with consequent potentials for damage.

Stucco cladding

Cracking in the stucco was observed at a number of locations, such as the south-side trellis-support column in line with the building expansion joint near the main entry, and the exterior walls at Huber auditorium. While cracking is neither unexpected nor necessarily problematic in cement stucco, unusual patterns of

cracking or extensive cracks should be investigated to rule out underlying problems and determine whether repair is advisable.

At the northwest corner of Huber auditorium, the roof-level stucco cladding is severely degraded due to roof drainage which discharges via a scupper directly down the wall. This damage is likely exacerbated by this southwest-facing wall's extreme sun and wind exposure, as evidenced by more minor, scattered areas of cracking. In addition there is a very localized spot on the same wall where adhesion between the stucco finish coat and the underlying brown coat appears to have failed. Stucco at the northeast-facing wall exhibits staining and possible abrasion in a similar pattern below the corresponding scupper. These conditions warrant investigation of the roof and parapet above, modifications to the roof drainage to avoid discharge onto the stucco, and repair of the damaged stucco. (See also B30 EXTERIOR HORIZONTAL ENCLOSURES.)

Trellis attachment at building expansion joint

One of the south-side trellis supports (a pair of steel tubes) attaches to the exterior wall at the building expansion joint, straddling the joint. A thin steel plate or gasket behind the trellis attachment plates spans across the expansion joint. One of the two strips of the gasket that span the joint has snapped and sealant along the stucco cladding on the west side of the joint appears to have experienced adhesion failures.

B2020 Exterior Windows

Windows are predominately aluminum storefront in punched openings. Facilities personnel did not note any pattern of problems with the windows.

The atrium between the two wings is enclosed by curtain wall at the south end and at the north access to the exterior patio. At the north entry, water stains extend down the length of at least one of the vertical members (most noticeably at the west jamb). The source of this leak is unknown but may be the small flat roof over the atrium where it extends beyond the exterior walls. That roof was not observable by the assessment team.

At the south curtain wall, which extends beyond the south façade of the east wing, joints at several locations between the glazing system and adjacent wall surfaces and sheetmetal details have failed (or in one case appears to have never been sealed). The design of this area presents several challenges to periodic maintenance of joints: The narrow gap between the curtain wall west return and the west wing façade would make it very difficult to apply sealant or make other repairs, while access to the east return at the east wing façade would be extremely difficult, as the adjacent skylight complicates the placement of a ladder or scaffolding.

B30 EXTERIOR HORIZONTAL ENCLOSURES (Roofing)

The two wings of the building have mansard-style roofs with a central well. The visible, steep-slope roofs are clay tile, while the well is a low-slope, single-ply white membrane, surrounded by vertical metal panels at the back of the clay tile sloped roofs. A mechanical penthouse and equipment enclosure connects the two roof wells. The penthouse was not accessible but presumably also has a low-slope membrane roof.

The first-floor atrium space along the south side of the east wing has a low-slope, single-ply white membrane as well as a linear, shed, engineered skylight running nearly the full length of the east wing. Huber auditorium at the southeast corner was not accessible but presumably also has a low-slope membrane roof. Small roofs over the north and south atrium extensions and the east and west stairways were not accessible. These are low-slope roofs, but roofing type is unknown.

Membrane at roof wells

The single-ply white roofing membranes in the wells appear to be in fair condition for their age. However, slopes to drains are generally poor, resulting in ponding after rainfall. At the west well, drainage slope to at least two of the roof drains are completely ineffective, leading to significant ponding on either side of, but not reaching, the drain / overflow sumps.

Clay tile at mansards

Facilities personnel believe that the clay tile eave detail at the mansards may contribute to moisture intrusion into the roof assembly, allowing wind-driven rain to penetrate beneath the roofing underlayment. A spot check of the record drawings reinforces this possibility: the details specify that the formed metal trim piece immediately below the clay tile eave extend only 2" beneath the underlayment. This lap seems to provide inadequate protection for such an exposed condition.

Facilities personnel are not aware of any provision for maintenance access into any of the mansard roof areas. The ability to inspect these areas is critical given the suspected intrusion of moisture into this area from the clay tile eave detail and the potential for hidden damage. Facilities personnel should review the record drawings for indication of any access hatches through the roof deck from below. If none exist, the university should explore options for installing weather-tight access panels into the vertical metal panel cladding or retrofitting existing ventilation louvers to allow maintenance access.

Membrane at mechanical penthouse

The single-ply membrane roofing within the mechanical equipment enclosure is subject to a number of conditions which threaten its long-term viability: difficult detailing at transitions, the building-expansion joint, and penetrations; small, irregular areas, some of which do not drain properly; accumulation of debris; and incompatible materials (e.g. plywood) lying on the membrane, possibly employed as a walking pad. The roofing in this area should be subject to a periodic inspection and maintenance schedule at a greater frequency than typical roofing areas.

The roof over the mechanical penthouse was not accessible, and Facilities personnel did not know when this roof had last been accessed. It is therefore unknown whether the condition of the membrane, the presence of debris, etc., may threaten the performance of the roofing system and potentially contribute to the water intrusion problem at the floor of the mechanical penthouse. (See B2010 Exterior Walls.)

Level one roofs

At the roof over the south atrium area, two roof drains were observed to be completely clogged with organic debris. This condition has persisted long enough for small weeds to take root.

The linear, shed, engineered skylight against the south exterior façade of the east wing has no history of moisture intrusion or other problems.

The upper roof over Huber auditorium was not accessible. No roof drains were visible below the roof deck, thus all drainage appears to be via two scuppers which discharge directly down the stucco wall to the roof below. (See B2010 Exterior Walls.) Facilities personnel did not know when this roof had last been accessed, thus it is unknown whether the condition of the membrane, the presence of debris, etc., may threaten the performance of the roofing system.

Level three ceiling staining

The building experiences recurring leaks at multiple locations, which stain ceiling tiles at the third floor (see C20 INTERIOR FINISHES). The origin of this water intrusion is not known with any certainty. However, Facilities personnel believe that water potentially enters the envelope at the tile mansard eave condition and at the stucco to roofing membrane transition.

B20 / B30 Exterior Enclosures Conclusions

Given the variety of observed and potential instances of water intrusion and damage, it would be prudent for Facilities to prioritize regular envelope maintenance (particularly of roofing systems); inspection of the exterior enclosure by an envelope consultant, with particular attention to roofing systems and associated detailing; and resolution of identified deficiencies.

Failure to regularly maintain roof drains, remove debris and visually inspect all accessible areas of the roofing can exacerbate moisture intrusion problems, accelerate deterioration of roofing systems and lead to their early failure, and may negatively impact roof warranty coverage. Adoption of a formal Roof Asset Management program would provide a framework for proactive management of roofing systems. In light of the ongoing water management problems experienced below the roofs of both Huber auditorium and the mechanical penthouse, access to these areas for inspection and maintenance by Facilities personnel should be incorporated into periodic maintenance schedules.

Due to the diversity of known and suspected water intrusion and damage conditions, the university should engage an envelope consultant for a detailed assessment of the building envelope. Aside from the observed effects of moisture intrusion, there is the risk of hidden ongoing and/or future damage of building assemblies, as well as creating conditions for biological growth. Timely assessment of the envelope would allow the university to prioritize any required repairs in order to safeguard its investment in this asset.

C20 INTERIOR FINISHES

According to Facilities personnel, there have been widespread problems with floor tiles popping up. This problem appears to be related to improper installation of the tiles, rather than structural in origin. See B10 SUPERSTRUCTURE.

According to Facilities personnel, many ceiling tiles are replaced at the third floor every year due to staining believed to be caused by roof leakage, possibly related to the tile roof eave condition. See B30 EXTERIOR HORIZONTAL ENCLOSURES.

D20 PLUMBING

The plumbing system appears to be in good working order. Hot water is provided by steam heat exchangers with a standard gas hot water heating in the summer. The gas hot water heater can also provide backup heating water.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating and cooling is provided by campus steam (via a steam to hot water converter) and building water cooled chillers. The HVAC system is controlled by a Seimens DDC system. Most of the equipment in the building was replaced in during the 2004 expansion and renovation. In general the equipment is in good operating condition with a few exceptions.

The AHU-1 air handler is original to the 1966 building and is generally in good condition with exception of the steam coil. The facilities personnel reported repairing multiple leaks in the steam coil. AHU-3A/3B

supply air plenum is not properly supported and deforming due to air pressure. The cooling towers were reused from the original building and are nearing their end of life. Humidifiers on two units are not in operation. Access was not provided to all fire and smoke dampers. CO2 control on AHU-1 & 2 is disabled.

Recommendations:

- Replace the AHU-1 steam coil with a heating water coil.
- Flexible couplings on the heating water pumps should be replaced.
- Replace the pneumatic controls system with a DDC system.
- Refurbish or replace the cooling towers.
- Repair or replace humidifiers.
- Properly support supply air plenum for AHU-3A/3B.
- Re-commission the building to ensure that energy saving measures like CO2 control are operating as designed. Re-commissioning could also help with the greenhouse control system and issues with alarms on the lab exhaust hoods.

D40 FIRE PROTECTION

The building is fully sprinklered.

D50 ELECTRICAL

D5010 Facility Power Generation

Emergency power is provided via a 400kva pad mounted emergency generator. Two transfer switches are located within the building from which emergency power is distributed to emergency lighting and standby mechanical loads.

During our survey the Campus Electrician mentioned that he was having some issues with starting of the emergency generator. During cold days it was not firing in the required 10 seconds. He mentioned that the service technicians have been out many times and have not been able to correct the problem.

Recommendations:

- Starting problems should be documented. Starting time, weather conditions and temperature should be noted. We would then suggest consulting the factory directly, they may have other ideas on what is causing the inconsistent starting conditions. If a faulty generator is installed a replacement should be provided.

D5020 Electrical Service and Distribution

The building is served from the campus electrical loop #1 at 4160V and then stepped down to utilization voltage. The buildings original service is rated at 208Y/120V, 3 phase 4 wire, 2400A and is not labeled with a SCCR. The buildings newer service is rated at 480Y/277V 3 phase 4 wire, 1600A this service is provided with a SCCR on the medium voltage gear but not on the downstream distribution equipment.

Recommendations:

- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.
- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

Lighting within the building is primarily performed using linear fluorescent fixtures. Control is provided through programmable networked lighting control panels.

D60 COMMUNICATIONS

Telecommunication AV and Sound systems appears to be free of defects and in functioning order.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The system is a Simplex 4020 and is in working order. The system initiates on water flow, manual pull and smoke detection. Annunciation is performed using horn strobe devices. The Campus Electrician informed us that the panel was having issues communicating with central station

Recommendations:

- Repair auto dialer so that central station communication is operating properly.

G20 SITE IMPROVEMENTS

G2030 Pedestrian Plazas and Walkways

The pedestrian plaza at the north entry does not slope properly to drain.

G2060 Site Development

At the north entry pedestrian plaza, the corner sections of the precast benches at the plaza walls were designed as corner cantilevers. The connections at the northeast corner have failed, leaving the precast corner section hanging. This is a safety and liability risk and should be resolved. The northwest corner section has been removed, presumably due to failure of the connections.

The trellis outside the south (main) entry has rust streaks at many connections between perpendicular steel tube members, which have stained the concrete below. Because rust is typically only on the lower member and not the upper member, the problem may be caused by water entering the upper steel tube and exiting at the bolt hole where the two tubes connect, rather than being caused by fastener corrosion. This should be further investigated to determine whether or not the fasteners are at fault, in which replacement could be relatively straightforward.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from a 6-inch water main on the south side of K Avenue. The 6-inch DCDVA for fire, as well as the 3-inch domestic backflow are located in an underground vault south of Badgley Hall along K Avenue. Both backflows appear to be in good condition.

G3020 Sanitary Sewerage Utilities

The sanitary service connects to a 6-inch sanitary sewer on the north side of the building to L Avenue.

G3030 Storm Drainage Utilities

The stormwater collection system is partitioned into two basins. Roof runoff from the original 10,000 square foot Badgley Hall, constructed in 1966, drains to a stormwater main in L Avenue, north of Badgley Hall. In 2004, Badgley Hall was significantly renovated and expanded. The renovation added approximately

30,000 square feet of building which included an underground stormwater detention facility to mitigate flow rates from this new impervious addition. The stormwater detention facility is a 78 linear foot, 60-inch storm pipe located on the north portion of the building and connects to a storm main in L Avenue.

G30 Conclusions

Utility services appear to be in good condition with no known utility deficiencies, localized ponding or capacity issues.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

COMMUNITY SCHOOL OF THE ARTS

Number:	(28)
Constructed:	(1945)
Renovated:	
GSF:	(3,000)
Use/Occupancy:	Academic

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data. The Community School of the Arts does not appear to be included in the OUS report.

10 FACILITY DESCRIPTION

1010 Facility Summary

The building is a traditional, two-story, early 20th century house with original character intact on the exterior and largely intact on the interior.

The basement of the building houses most building systems, but is accessed by a steep, awkward stair. The basement walls leak in several locations, and standing water was observed throughout the basement. See B10 SUPERSTRUCTURE, D5020 Electrical Service and Distribution and D60 COMMUNICATIONS for instances of specific damage and risks observed.

1030.21 Accessibility

The building has limited accessibility. A steel access ramp has been constructed at the north main entry so users can access the entry area. Interior access is limited by thresholds and tight passage at several rooms. The second floor, which includes professor offices and the primary instruction space, is not accessible.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The Community School of the Arts is wood framed with 2x wall framing supporting both the wood framed roof and floors. The basement of the building has concrete floors and walls. The basement has beams acting as headers supporting the interior bearing walls. These beams span between wood columns.

Lateral Force Resisting System:

The building's lateral force resisting system is the wood shear walls at the exterior of the building. The wood roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. This building was designed and built before the time of the Type W1 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, further evaluation of the lateral force resisting system is warranted.

Conclusions:

The structure of the building appeared in fair condition and no visible signs of differential settlement or overstressed framing were observed. In the northwest corner of the basement, the bottom of a wood column was damaged by standing water. Steps should be taken to remove the water from the basement where it can come into contact with structural framing. Further investigation of the wood column is also warranted to determine if it should be replaced due to the water damage.

Prior to any remodel of the Community School of the Arts Building, we recommend a Tier 1 screening of the building structure be performed to identify deficiencies in the lateral force resisting system. This Tier 1 screening will be based upon the procedures and guidelines of ASCE/SEI 31-03, "Seismic Evaluation of Existing Buildings", published by the American Society of Civil Engineers and the Structural Engineering Institute. Given the age and construction type of the building, it is likely that the report will identify seismic deficiencies that would need to be addressed in order for the building to perform well in a seismic event.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The building is clad in the original, painted, rabbeted wood siding. Windows are single-glazed wood without storm windows.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roof is asphalt shingles. The roof on the entry porch is ribbed metal.

D20 PLUMBING

The plumbing system appears to be in working order. Domestic hot water is provided by an electric hot water heater. The plumbing piping appears to be original with the building.

Recommendations:

- Replace all plumbing piping in the building.
- The electric hot water heater is nearing the end of its useful life and will need to be replaced soon.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

The building is served by a conventional gas fired boiler in the basement that serves radiators and convectors in the building. There is a window air conditioner installed for spot cooling.

Recommendations:

- The gas boiler is nearing the end of its useful life. Recommend replacing with a high efficiency condensing boiler.
- Recommend replacing the radiators and convertors.
- Hydronic heating piping is old and will need to be replaced soon.

D40 FIRE PROTECTION

There is not a fire protection system in the building.

Recommendations:

- A code review of the use and occupancy classification should be performed. A fire sprinkler system should then be installed if occupancy classification deems necessary.

D50 ELECTRICAL

D5010 Facility Power Generation

No emergency power generation is provided to the building.

D5020 Electrical Service and Distribution

Electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). The main electrical service is located in the basement and is 240/120V, 200A, 28 pole, single phase 3 wire. The main panel appears to have been replaced in 1985. The service itself does not appear to have and deficiencies however its location is of concern. The basement of the structure is quite old and water infiltration appears to be occurring. Pooling water around electrical equipment is the major concern. The equipment is not rated for wet locations and has the possibility of ground faulting if saturated with water.

Recommendations:

- Address water infiltration issues in areas where electrical equipment is installed.

D5040 Lighting

Interior Lighting utilizes primarily linear fluorescent lighting fixtures. Wall switches are provided for lighting controls. No automatic or occupancy controls have been installed.

Emergency Egress lighting is provided by means of emergency battery ballasts. The system was not tested and adequate lighting levels were not confirmed.

Exterior lighting is performed by HID wall packs. They were not operating at time of visit but appear to function by means of photocell control.

Recommendations:

- It's likely that retrofitting occupancy sensor wall switches will have energy saving impacts. We recommend this retrofit in areas other than the main entry room and stairways.
- EM ballasts should be tested and replaced as needed to meet egress lighting levels should a code review require such lighting.

D60 COMMUNICATIONS

The buildings incoming telecommunication cabling enters the building within the basement. They are then distributed throughout the building by network switches also located in the basement. The location of the equipment is prone to water infiltration, pooling water was observed during visit.

Recommendations:

- Address water infiltration issues in areas where telecommunication equipment is installed.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The building is not provided with a fire alarm system.

Recommendations:

- A code review of the use and occupancy classification should be performed. A fire alarm system should then be installed if occupancy classification deems necessary.

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

COMMUNITY STADIUM

(Concessions / Restrooms / Press Box)

Number:	031 (20?)
Constructed:	2004 (1987)
Renovated:	
GSF:	832 (750)
Use/Occupancy:	Athletic

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data.
It is unclear whether the OUS and Sightlines reports are referring to the same building.

10 FACILITY DESCRIPTION

1010 Facility Summary

Community Stadium is a two-story building located directly behind the grandstands on the western side of the school's football field. The first story of the building contains restrooms and the concessions area for the field. The second story is used as a press-box with rooms for coaches and media to overlook the field. An elevator to the second level is in a free-standing structure connected to the main building by a bridge.

In addition to University sports and other events, the facility is heavily utilized for community events.

1030.21 Accessibility

An elevator provides access to the second level (boxes).

Access to the bleachers requires ascending a gravel ramp, and there are no accommodations for wheel chairs.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The roof of Community Stadium is framed with 2x pre-manufactured wood trusses spanning between masonry exterior walls. The second floor is framed with engineered wood joists spanning between walls. The foundations are presumed to be continuous concrete foundations. The ground floor is concrete slab on grade.

Lateral Force Resisting System:

The building's lateral force resisting system is the masonry walls acting as shear walls. The plywood floor and roof act as diaphragms to transfer the lateral forces to the masonry walls. This building appears to have been designed and built around the time of the Type RM1 1997 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which been found to

perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the buildings appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. The construction of the masonry is below-average quality with uneven joints and broken blocks used in visible areas. At the transition from the building to the back of the grandstands, efflorescence and water running down the inside face of the masonry was observed. It appears that there is a condition which allows rainwater to collect on an elevated walkway which in turn runs down the wall. Steps should be taken to determine the source of the water and limit it's movement as to not damage the wall or finishes below.

Due to the large amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event.

There is a wooden light standard at the southeastern corner of the field which appears to be leaning to the north. This light pole should be monitored to determine if the amount of tilt increases.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

Exterior walls are architectural CMU, with operable vinyl windows in the second-level boxes and overhead coiling doors at the concession area.

Masonry work at the exterior walls is of poor quality, as noted in B10 SUPERSTRUCTURE. Efflorescence and leaks were noted at several locations. These should be further investigated and resolved to minimize the risk of progressive damage from moisture intrusion.

The masonry walls and piping are un-insulated. (The plumbing chases between restroom pairs extend to an un-insulated, exterior masonry wall.) Plumbing lines have to be completely drained each season to prevent freezing and breakage of supply/waste lines, and fixtures. The university should investigate whether it would be cost-effective and advisable (with regards to vapor drive) to add insulation to the interior of the masonry walls, as energy usage could be greatly reduced between events during the heating season.

Approximately two years ago, the original, operable aluminum window sashes were replaced with vinyl sliders in-filled into the aluminum frames. The window glazing is insulated.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The main roof and the lower roof over the concessions area are pitched, with architectural asphalt shingles. A flat-roofed portion in the center, east side of the roof is used for video recording of events.

The visible shingled roof areas appeared to be in relatively good condition, although the upper roof was mostly covered with snow and was thus not visible. The upper roof has a ridge vent. Downspouts from the upper roof are located only on the back (west) side of the building. It is unclear whether the resulting gutter lengths provide adequate slope to the downspouts, which may cause drainage problems.

The small, flat roof area is covered in a smooth, black membrane of unknown type. The membrane shows widespread alligatoring, which can progress to cracks and hidden moisture damage to roof structure. The

roof should be evaluated by a roofing consultant or contractor to determine whether repair is recommended. All roofs should be inspected regularly as part of a preventive maintenance program.

The flat roof is accessed via retractable stairs and a roof hatch. The retractable stairs are labeled as "residential use only" and are thus not suitable for use in a commercial structure, particularly in a location subject to regular access.

D20 PLUMBING

The plumbing system appears to be in working order. Hot water is supplied by an electric hot water heater.

Due to the building's un-insulated envelope, plumbing systems have to be winterized when HVAC systems are shut down during the winter. The restroom plumbing is particularly at risk because the plumbing chases extend to an exterior, un-insulated, masonry wall.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building is conditioned using a Lennox gas furnace with a split system DX coil. There are two sidewall exhaust fans for the concession area.

HVAC systems are typically shut down during the winter, requiring winterization of plumbing systems and refrigeration equipment (standalone beverage coolers and retail freezers). However, HVAC systems, coolers and freezers were operational at the time of the assessment. Facilities personnel did not indicate why the typical winterization had not taken place. Facilities should ensure consistent implementation of winterization policies to avoid wasted energy usage, as well as the increased likelihood of freezing damage in the event of HVAC equipment malfunction.

D40 FIRE PROTECTION

There is not a fire protection system in the building.

D50 ELECTRICAL

D5020 Electrical Service and Distribution

Electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). The building is provided two electrical services. The first rated at 208Y/120V, 3 phase 4 wire, 200A is located in the concession area and serves the concession and announcers building. The second rate at 400A is located in a utility shed at the rear of the building and serves the stadium lighting. It is assumed that this service is rated at 208Y/120V however we were not able to determine this at the time of our survey. Services are not provided with SCCR (Short Circuit Current Rating).

<u>Recommendations:</u>

- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.
- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

Lighting within the concession building is a mix of fluorescent and incandescent and is controlled by local wall switches

The building is not provided with any emergency egress lighting.

Recommendations:

- Review code egress requirements and provide integral battery backup packs where required.

D60 COMMUNICATIONS

Telecommunication system appears to be free of defects and in functioning order.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The buildings are not provided with a fire alarm system.

Recommendations:

- Review building code group classification and provide fire alarm system as required.

G20 SITE IMPROVEMENTS

G2030 Pedestrian Plazas and Walkways

As noted under 1030.21 Accessibility, the main stands do not provide accessible, comparable facilities for viewing events.

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

G40 ELECTRICAL SITE IMPROVEMENTS

G4050 Site Lighting

Stadium lighting system is control by control system within utility shed. We were informed by the campus electrician that the stadium lighting has some maintenance issues. Re-lamping stadium fixtures require a boom truck that must be rented from a local contractor. Also access with the truck is limited, some of the seating is located directly under the fixture clusters which make it extremely difficult to access with the boom truck.

There is a wooden light standard at the southeastern corner of the field which appears to be leaning to the north. This light pole should be monitored to determine if the amount of tilt increases.

Recommendations:

- Since re-lamping of stadium lights is problematic, schedule re-lamping prior to lamp failure. To help access these fixtures consider planning for a larger boom lift rental, the larger boom may allow for easier access.

EOCENE COURTS

(Apartments and Utility Building)

Number:	016 (15)
Constructed:	1962
Renovated:	
GSF:	11,353 (9,853)
Use/Occupancy:	Residence Hall

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data.

10 FACILITY DESCRIPTION

1010 Facility Summary

The Eocene Courts are a group of four two-story quad-plexes which total 16 units for married / family student housing. There is an additional single-story building on site which houses a laundry facility in one half and a maintenance shop for the groundskeeper in the other half.

1030.21 Accessibility

The residences are not believed to have any particular accessibility accommodations. The entries to the first-floor units are at-grade and are thus at least minimally accessible, although entries are likely not wide enough for current new-construction requirements.

1040.31 Assessment Conditions & Limitations

No units were available for access during the assessment.

A SUBSTRUCTURE /

B10 SUPERSTRUCTURE

No units were available for us to tour during our site visit. Consequently, the tour was limited to the exterior of the buildings and little information about the building's framing was observed.

Gravity Framing:

The Eocene Courts are presumed to be wood framed with 2x decking at the roof supported by wood rafters spanning between exterior wood framed bearing walls of the apartment buildings. The second floor framing is likely plywood floor sheathing supported by 2x joist framing supported on wood framed bearing walls. The laundry and storage building is framed with 4x rafters supporting 2x decking. The rafters are supported by the exterior walls and at the ridge by an interior bearing wall.

Lateral Force Resisting System:

The building's lateral force resisting systems are likely plywood shear walls at the exterior of the buildings. The roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. This building appears to have been designed and built around the time of the Type W1 1976 UBC

benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition and no visible signs of differential settlement were observed at the exterior of the building. Due to the amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event. The concrete sidewalks between the buildings and the laundry building were quite deteriorated. The damage seemed to be due to freeze-thaw cycles and differential settlement of the subgrade. Additionally, the northern end of the laundry storage building has settled slightly. This settlement is noticeable in the slab on grade. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B1010 / B1080 [EXTERIOR WOOD DECK AND STAIRS]

Access to several second-floor units at three of the quad-plexes is provided via a wood deck which spans between the three buildings. The stairs to this upper deck present a safety hazard and code violation, due to horizontal gaps between consecutive treads and an inconsistent rise and run at the landing riser.

The wood deck and (non-compliant) stairs provide the only egress from these second-floor units. A code review should be performed to determine whether the deck complies with fire protection requirements for its role in the egress system.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The apartment buildings are believed to be standard light wood framing, clad with painted stucco at the first floors and board-and-batten siding at the upper floors.

Windows are aluminum with single pane glazing and aluminum storm windows.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

Roofs on all buildings are gabled with asphalt shingles. Drainage is provided via a gutter hidden behind the eave fasciae.

The hidden gutter detail, while visually “clean”, can be problematic, particularly in a winter climate with alternating freeze and thaw weather cycles. The gutters at the apartment buildings are only visible from the underside, where the painted metal gutter takes the place of the last tongue-and-groove board at the roof eave. At the several locations observed, there was no obvious water damage to the roof deck. However, since the gutters themselves are not visible from the ground, it is unknown whether they may be blocked or otherwise causing damage to the roof structure.

At the laundry/storage building, the gutters are a shallow, break-metal pan which sits on top of the tongue-and-groove roof deck. Extensive water damage to the T&G roof decking is visible around the building, but is particularly pronounced at the east side, where the gutter configuration includes down-slope runs from the upper to lower eave sections.

All gutters should be inspected and cleaned at least annually.

D20 PLUMBING

The plumbing system could not be observed. Facilities staff reported that the domestic water is galvanized piping and they have been repairing leaks. They also reported that the traps and sanitary piping is starting to rot out. Hot water is provided from local gas fired water heaters.

Recommendations:

- Replace all plumbing piping
- Install new gas fired hot water heaters.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Access to the apartments was not available. The facilities staff reported that the apartments are served by wall mounted gas furnaces that are old and are hard to find parts for. The shop area and laundry room have gas fired unit heaters. The sidewall exhaust fan for the laundry room does not operate.

Recommendations:

- Replace the apartment heating system.
- Replace the laundry and shop unit heaters.
- Replace the laundry exhaust fan.

D40 FIRE PROTECTION

There is not a fire sprinkler system in the buildings.

Recommendations:

- A code review of the use and occupancy classification should be performed for the buildings. A fire protection system should be installed if occupancy classification deems it necessary.

D50 ELECTRICAL

D5020 Electrical Service and Distribution

Housing units:

Electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). Each unit is metered individually. Main boards with metering clusters are located on the exterior of each building. The equipment service equipment appears to be original to the building and of early 1960's vintage. Each unit is provided with a single phase 100A 240/120V electrical service. equipment is not labled with an SCCR (Short Circuit Current Rating). The equipment is functioning properly but nearing the end of its expected lifespan. Replacement parts such as circuit breakers will be difficult to obtain should they be needed.

Workshop and laundry building:

This building is served by a single phase 200A, 240/120V panel. The equipment appears to be free of defects but is nearing the end of its expected life span.

Recommendations:

- Make plans to renovate the electrical services serving these buildings. If a renovation is planned electrical work should be included in that scope. If no renovations are planned replacement of electrical services should be considered, as they age they will become more prone to failure and cause maintenance issues.
- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.

- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

We were not able to gain access to the residential units however based on the vintage of the building we would expect lighting to be incandescent or screw-in fluorescent (CFL) based with wall switch control.

Exterior lighting is delivered via HID wall packs with photocell control.

Recommendations:

- Upgrade lighting to modern energy efficient fixtures and control.

D60 COMMUNICATIONS

The buildings telecommunication systems are provided by the serving utility and distributed on the outside of the building.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The building is not provided with a fire alarm system.

Recommendations:

- A code review of the use and occupancy classification should be performed. A fire alarm system should then be installed if occupancy classification deems necessary.
- If not already installed smoke detection should be provided in each unit to meet current code requirements.
- Oregon fire code now requires carbon monoxide detection in all rental units which meet certain criteria. A code review should be performed to determine whether CO detection is required.

G20 SITE IMPROVEMENTS

G2030 Pedestrian Plazas and Walkways

The concrete walks which access the various units are in poor condition. A few have been replaced recently, but additional repairs are necessary.

See also B1010 / B1080 [EXTERIOR WOOD DECK AND STAIRS].

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

FACILITIES CENTRAL PLANT

Number:	009 (8)
Constructed:	1970
Renovated:	
GSF:	4,662
Use/Occupancy:	Support

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data.

10 FACILITY DESCRIPTION

1010 Facility Summary

The Central Plant building contains mechanical systems which provide steam and chilled water to other buildings around campus via a tunnel system. It is a one-story building with exterior grade occurring about mid-height of the south and west exterior walls. An open, covered area to the east of the building protects the gas and electrical service entries to the Central Plant.

1030.21 Accessibility

The exterior entries to the building are at-grade, but facilities and equipment within the building are minimally accessible. (Spaces used only for mechanical equipment are typically not required to be accessible.)

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The central plant building's roof is metal deck roof spanning between steel wide flange beams and girders that are supported by the exterior concrete walls. The exterior walls of the building are cast-in-place concrete and are presumably supported by continuous wall footings. The floor of the central plant building is a concrete slab on grade.

On the east side of the building there was a large wood-framed roof creating a covered utility entrance and storage area which extends approximately 25-feet from the eastern edge of the building. This framing consists of open-web wood joists spanning between a ledger bolted to the concrete wall, and two glulam beams at the open end of the roof which is supported by a concrete column at the glulam splice. The exterior ends of the glulam framing were not visible, but appeared to be supported by the exterior wall framing of the Facilities Services Buildings which are adjacent to these buildings.

Lateral Force Resisting System:

The central plant building's lateral force resisting system is the exterior concrete walls which act as shear walls. These walls transfer lateral forces from the roof to the foundation through their in-plane stiffness.

The metal roof deck acts as a diaphragm which transfers lateral forces to the exterior shear walls. This building appears to have been designed and built around the time of the Type C2A 1976 UBC benchmark building, as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. . Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. Due to the large amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event. Several pieces of mechanical equipment in the Central Plant were found to have no positive attachment to the supporting structure to resist lateral loads. Anchorage of mechanical equipment will help resist movement of the unit during a seismic event. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

Exterior walls are cast-in-place concrete. Windows are operable steel frames, single-glazed. Doors are hollow metal.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roofing system is low-slope with a white single-ply membrane. According to Facilities personnel, the roof areas were re-roofed approximately two years ago.

Staining on the membrane suggests that slope to drain is inconsistent. Overflow is provided by through-wall 'scuppers' formed of the membrane material. Parapet cap flashing is poorly executed, with at least two corners observed to have gaps at the inner flange corner joint. Parapets and equipment curbs are not counter-flashed.

The roof over the covered area east of the Central Plant contains several unit skylights.

Maintenance access to one of the cooling towers requires working immediately adjacent to a low parapet. Current codes and workplace safety regulations require guards or tie-off when working within a certain distance of a drop-off.

C10 INTERIOR CONSTRUCTION

There are two wood framed storage mezzanines over offices in the Central Plant building. The facilities staff indicated that these mezzanines were added after the original building was constructed to add additional storage inside the building. Access to one mezzanine is by ladder and to the other by steel stair. A code review should be performed to verify mezzanine compliance with allowable construction type, required access and allowable storage for a building of this construction type and occupancy (use).

D20 PLUMBING

The plumbing system appears to be in working order. Hot water is supplied by an electric hot water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building houses the campus district steam boilers and water cooled chillers. In general the mechanical room is in great shape.

(See also the Site Utilities section of this assessment report, G3050 Site Energy Distribution, for additional information about distribution of heating and cooling energy (steam and chilled water) to other buildings on campus.)

Recommendations:

- Chemical feed system is outdated and should be replaced.
- Consider performing non-destructive testing on tunnel steam, condensate, and chilled water piping to evaluate piping life.

D3020 Heating Systems

There are two gas fired steam boilers that serve the district steam system. One of the boilers was recently replaced and the older boiler has a newer burner. The boiler feed tank is not a deaerating feed tank. The facilities staff reported finding large amounts of corrosion products in the feed tank and steam strainers. The tunnel steam line dirt leg was recently replaced due to failure.

Recommendations:

- Add variable speed control of the combustion air to the older boiler.
- Recommend replacing the existing boiler feed tank with a deaerating feed tank.

D3030 Cooling Systems

The chillers and chilled water pumps were replaced approximately two years ago. The facilities staff reported that the chilled water system had no chemical treatment for 20 years. There are two cooling towers on the roof of the building. One of the towers was recently replaced and the other was installed during original construction. The facilities staff has a box of magnetic filings they have kept from chilled water filter cleaning.

Recommendations:

- Replace or refurbish the original cooling tower.
- Consider performing non-destructive testing on tunnel steam, condensate, and chilled water piping to evaluate piping life.

D40 FIRE PROTECTION

There is not a fire sprinkler system in the boiler room.

Recommendations:

- A code review of the use and occupancy classification should be performed for the buildings. A fire protection system should be installed if occupancy classification deems it necessary.

D50 ELECTRICAL

D5010 Facility Power Generation

The plant building is not provided with emergency power generation.

Recommendations:

- An emergency power generation system should be considered for selected loads at the plant building. The plant provides heating and cooling water for the majority of the campus buildings. Emergency power should be provided to back up heating water operations for freeze protection.

D5020 Electrical Service and Distribution

Electrical utility is provided by OTEC (Oregon Trail Electric Co-op) at a voltage of 4160V. This service is used to energize this building via step down transformation and to feed the majority of the campus via Feeder #1. (See also the Site Utilities section of this assessment report, G4010 Site Electric Distribution Systems, for additional information about distribution of electrical service to other buildings on campus.)

The building is provided with two electrical services, the original service is rated at 480Y/277V, 3 phase 4 wire 800A. The second service is rated at 480Y/277V, 3 phase 4 wire 1600A and was installed fairly recently < 10 years.

Both services are in working order and free of defects. We observed two code concerns to take note of:

- Conduits extending from the 4160/480V step down transformer and feeding the newer electrical service were supported by 4x4 wood studs. The conduits did not appear to be properly fastened or the wood fastened in place.
- Electrical distribution equipment did not have SCCR's (Short Circuit Current Rating) displayed. This is a current code requirement. Equipment in place and permitted prior to the code change is not required to have this labeling. However, any work done ahead of the main gear may trigger the local inspector to require the labeling.

D5040 Lighting

Within the building linear fluorescent fixtures are provided with manual wall switch control. Emergency egress illumination is delivered by emergency battery wall packs.

Exterior lighting is delivered via HID wall packs with photocell control.

Recommendations:

- Emergency battery packs should be tested and illumination levels verified.

D60 COMMUNICATIONS

The building is provided with telecommunication connections and has network connections to the main campus. Most rooms and workshop have telephone connections and offices have Ethernet connections.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The Central Plant is not provided with a fire alarm system and does not have sprinkler protection. Sprinkler main piping is located within the central plant but feeds Facilities Services building. Sprinkler mains are equipped with a water gong for annunciation.

Recommendations:

- A code review of the use and occupancy classification should be performed for the Central and Physical Plant. A fire alarm system should be installed if occupancy classification deems necessary.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from a 10-inch water main in 12th Street on the east side of the university. The 6-inch DCDVA for fire is located within the facilities building along the southern wall in the boiler room. The 4-inch domestic water meter is located in an underground vault on the west side of

12th Avenue. Both backflows appear to be in good condition. Irrigation backflow is located within an underground vault on the south side of the facilities building.

G3020 Sanitary Sewerage Utilities

The sanitary service is assumed to connect to an 18-inch sewer main on the south side of the building. The 18-inch sewer main flows east to 12th Avenue.

G3030 Storm Drainage Utilities

The stormwater collection system connects directly to a 60-inch storm main on the north side of the facility.

G3060 Site Fuel Distribution

Two underground fuel tanks which serve the two boilers are located just south of physical plant, adjacent to the boiler room.

G30 Conclusions

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

FACILITIES SERVICES
(North and South buildings)

Number:	022 (17)
Constructed:	1980
Renovated:	
GSF:	10,078
Use/Occupancy:	Support

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses after the OUS data.

10 FACILITY DESCRIPTION

1010 Facility Summary

Facilities Services is two single-story buildings. They are used as offices, storage and workshops for the Facilities department. The uses contained in the buildings are:

- Main offices
- Paint shop
- Carpentry shop
- Receiving/Shipping
- Metal shop
- Tire Shop
- Grounds Maintenance

See the separate Facilities Central Plant assessment report for the covered area which contains electrical and natural gas service entries to the Central Plant.

1030.21 Accessibility

Entries to the buildings are generally accessible, but many of the maintenance and storage-oriented spaces are not readily accessible.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The Facilities Services Buildings' roofs are framed with open web wood joists spanning between wood-framed walls at the front and back of the building. The wood framed walls are supported by an approximately 3' tall cast-in-place concrete stemwalls. The stemwalls are presumably supported on continuous concrete wall foundations. The ground floors of the buildings are concrete slabs on grade.

Lateral Force Resisting System:

The Facilities Services Buildings' lateral force resisting system is presumed to be plywood-sheathed wood-framed shear walls at the perimeter of the buildings. The exterior sheathing was not visible due to interior wall finishes. The plywood sheathing at the roof acts as a diaphragm transferring lateral forces to the exterior walls of the buildings. The concrete stemwall transfers the lateral forces from the wood shear wall to the foundation. The connection between the base of the shear walls and the concrete stemwall was not visible due to interior wall finishes. This building was built around the time of the Type W1 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which been found to perform reasonably well in a seismic event. . Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the buildings appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. The rear and end walls of the buildings are solid walls with no large openings. There are large portions of wall between the roll-up doors at the front walls that will act as shear walls. Due to the large portions of exterior wall and that it was designed to a modern building code, we expect these will perform reasonably well in a seismic event. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The walls are wood framed with vertical metal siding above a concrete stem wall. At the Facilities offices, there is no stem wall.

Doors and frames are hollow metal with large transom lites with insulated glazing. Windows are operable vinyl (sliders) with insulated glazing.

There are multiple overhead doors for vehicular and equipment access to various department spaces, most of which are predominantly glazed. This glazing is not insulated.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roofs are low-slope. The south building (main offices, etc.) has a grey membrane. The north building was re-roofed approximately two years ago with a white single-ply membrane. (These roofs were not accessed but were only observed from a distance.)

D20 PLUMBING

The plumbing system appears to be in working order.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

The facilities services' building has a carpenter shop and paint room that is heated with steam heaters. The fans in the unit heaters are not operating and replacement parts are no longer available. The wood shop has an old dust collector that is operational.

Recommendations:

- Replace the steam unit heaters in the carpenter's shop and paint room.
- The dust collector is approaching the end of its useful life and will need to be replaced soon.

D40 FIRE PROTECTION

Sprinkler protection is provided. Sprinkler water mains are located within the Central Plant and annunciate a water gong.

D50 ELECTRICAL

D5010 Facility Power Generation

The Services building is not provided with emergency power generation.

D5020 Electrical Service and Distribution

The Facilities Services area is provided with a 480Y/277V 3 phase 4 wire 400A service switch and 112.5kva transformer labeled T2. Power is then distributed through the building at 208Y/120V by means of a sub distribution board and branch panels. Equipment is in working order and appears free of defects, but is not labeled with SCCR's.

Recommendations:

- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.
- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

Within the building linear fluorescent fixtures are provided with manual wall switch control. Emergency egress illumination is delivered by emergency batter wall packs.

Exterior lighting is delivered via HID wall packs with photocell control.

Recommendations:

- Emergency battery packs should be tested and illumination levels verified.

D60 COMMUNICATIONS

The building is provided with telecommunication connections and has network connections to the main campus. Most rooms and workshop have telephone connections and offices have Ethernet connections.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The Services Building is not provided with fire alarm annunciation or initiation. Sprinkler protection is provided. Sprinkler water mains are located within the Central Plant and annunciate a water gong.

Recommendations:

- A code review of the use and occupancy classification should be performed. A fire alarm system should be installed if occupancy classification deems necessary.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from a 10-inch water main in 12th Avenue.

G30 Conclusions

Based on limited as-built information, the location, condition and size of other existing utilities serving this facility are not known.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

FACILITIES WAREHOUSE

Number:	021 (16)
Constructed:	1989 (Warehouse) 2004 (North corridor)
Renovated:	
GSF:	3,840
Use/Occupancy:	Support

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses.

10 FACILITY DESCRIPTION

1010 Facility Summary

The Facilities Warehouse is a single-story, pole barn warehouse used as storage for Facilities. There is a shed roof along the northern side of the main storage area of the building consisting of a long corridor giving access to several offices and storage, including the university plan room. There is a large U-shaped mezzanine in the main storage area of the warehouse.

1030.21 Accessibility

The building appears to meet basic ADA requirements, although the parking area is gravel.

A SUBSTRUCTURE /

B10 SUPERSTRUCTURE

Gravity Framing:

The Facilities Warehouse's roof is wood framed with 2x wood framing spanning between wood trusses which span between columns along the sides of the building. The columns in this type of building are typically cast in circular concrete piers extending below grade. The mezzanine is framed with plywood sheathing supported by engineered wood joists spanning between the exterior wall of the building and glu-lam framing at the interior edge of the mezzanine. The glu-lam beams are supported by structural steel columns. The columns have base plates which are installed on top of a concrete slab on grade. It is not clear if there are foundations below the slab on grade at the steel columns. The shed portion at the north side of the building is presumed to be of similar construction as the rest of the building.

Lateral Force Resisting System:

The Facilities Warehouse's lateral force resisting system is presumed to be shear wall action of the exterior walls.

Conclusions:

The structure of the buildings appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. Due to the age of the building and that it has relatively solid shear walls and diaphragms, we believe further evaluation of the lateral force resisting system is not warranted

at this time. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The exterior walls are vertical metal siding.

The interior surface of at least some walls at the warehouse area is clad only in a plastic sheeting, which may function as a vapor barrier. (All walls are dry-walled at the north corridor rooms.)

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roofs are ribbed metal.

The interior surface of the roof at the warehouse area is clad only in a plastic sheeting, which may function as a vapor barrier. The sheeting has torn away from the framing in several areas.

D20 PLUMBING

The plumbing system appears to be in working order. Hot water is supplied by an electric hot water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

The Facilities Warehouse office areas are served by a gas furnace with the thermostat located in the hall way. (During the time that members of the assessment team worked in the plan room, it was discovered that the room became very hot if the door was left closed.)

The warehouse area is served by a gas radiant heater. The equipment in this area appears to be in good working condition.

D50 ELECTRICAL

D5010 Facility Power Generation

The building is not equipped with emergency power distribution.

D5020 Electrical Service and Distribution

The Warehouse electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). The main service is rated at 240/120V single phase 125A.

D5040 Lighting

Within the buildings linear fluorescent fixtures are provided with manual wall switch control. Emergency egress illumination is not provided but may not be required.

Exterior lighting is delivered via HID wall packs with photocell control.

<u>Recommendations:</u>

- Review egress requirements and provide emergency lighting if required.

D60 COMMUNICATIONS

The building is provided with telecommunication connections and has network connections to the main campus. Most rooms and workshop have telephone connections and offices have Ethernet connections.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The Facilities Warehouse is not equipped with a fire alarm system.

Recommendations:

- A code review of the use and occupancy classification should be performed. A fire alarm system should be installed if occupancy classification deems necessary.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from a 10-inch water main in 12th Avenue.

G30 Conclusions

Based on limited as-built information, the location, condition and size of other existing utilities serving this facility are not known.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

HIGHLAND HOUSE
(President's Residence)

Number:	091 (23)
Constructed:	1998 (1987)
Renovated:	
GSF:	2,650 (3,500)
Use/Occupancy:	House

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses.

10 FACILITY DESCRIPTION

1010 Facility Summary

The President's House is a one-story, ranch-style house located in a residential subdivision south of campus. The building is used as the personal residence of the President of the University. The President occasionally hosts official functions in the house.

1030.21 Accessibility

Access to the house is provided by a circuitous routing from a parking space at the west side of the garage, around the back of the house, to a ramp on the east side which leads to a deck outside the formal living room. Non-standard grab bars have been added in a half bathroom used by guests.

1040.31 Assessment Conditions & Limitations

The team did not access the bedroom section of the house. The crawlspace was only briefly observed and no access was made to the attic.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The President's House is wood framed with plywood roof sheathing supported by pre-manufactured wood trusses spanning between exterior wood framed bearing walls of the house. The first floor framing is 2x joist framing supported on wood-framed pony walls at the interior of the building and an exterior concrete stem wall at the perimeter. The stem walls and pony walls are supported by concrete foundations.

Lateral Force Resisting System:

The building's lateral force resisting system is the plywood shear walls at the exterior of the building. The plywood roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. The interior face of wood pony walls at the exterior of the house has been sheathed with oriented-strand board sheathing. The sill plate at the base of the exterior walls is bolted to the top of the concrete stem wall. This building appears to have been designed and built around the time of the Type W1 1976

UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. Due to the large amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

A6010 Building Subdrainage

The floor of the crawlspace is gravel. A vapor barrier is laid loose over top of the gravel, between footings, but does not provide consistent cover.

According to Facilities personnel, a trickle of water emerges from the ground in the gravel in the crawlspace, dampens the ground over 200 to 300 square feet, and infiltrates back into the ground at the lower portion of the crawlspace. There is no drainage provided in the crawlspace. It is unknown what effect this seep may have on the humidity levels in the crawlspace.

Most of the crawlspace wall vents were observed to have insulation plugs inserted, but at least two sets were open.

Because of the unusual condition of a spring emerging in the crawlspace, the university should engage a consultant to investigate and assess the crawlspace floor, moisture levels, ventilation, and existing or potential damage to wood framing components.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The exterior walls are presumably residential wood framing with wood lap siding. Windows are wood, with insulated glazing. Some windows on the south façade were replaced in 2010 due to deterioration caused by weather exposure.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The gabled roof is covered with architectural tabbed shingles. The current roof replaced a shake roof in 2010.

D20 PLUMBING

The plumbing system appears to be in working order. Hot water is supplied by an electric hot water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building is conditioned using a Lennox gas furnace with a split system DX coil. There is a heat recovery ventilator in the garage that is no longer in service. There are two bathrooms showers that are not exhausted.

Recommendations:

- The condensing unit is near its end of life and should be replaced.
- Install exhaust fans in both bathrooms with showers.

D40 FIRE PROTECTION

There is not a fire protection system in the building.

D50 ELECTRICAL

D5020 Electrical Service and Distribution

Electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). The main electrical service is located in the garage and is 240/120V, 200A, single phase 3 wire. The main panel appears to have been replaced in 1989. The panel is mounted in excess of code limitations, too high from the ground. No other issues were observed during our survey.

Recommendations:

- Lower the height of the electrical panel so that it complies with current National Electric Code requirements. The existing installation has been inspected and permitted, so this item is not a high priority. However, if an emergency condition occurred and a shorter individual needed to operate the upper circuit breakers, it could pose a significant safety risk.

D5040 Lighting

The house is residential in nature and has a mix of incandescent and CFL lamping controlled by wall switches. The exterior of the building is equipped with area floor lights and wall sconces controlled by wall switches.

Recommendations:

- Consider installing occupancy sensors in areas with infrequent use such as utility rooms and garage.

D60 COMMUNICATIONS

Telecommunications are provided by the local utility and routed through the building.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

No fire alarm system is provided.

G20 SITE IMPROVEMENTS

G2030 Pedestrian Plazas and Walkways

The formal entry to the house is via a long stair from the cul-de-sac. Portions of the stair are concrete, the lower portion is precast concrete pavers, and the entry steps and porch are wood. A commercial, round-pipe handrail runs the length of the stairs. See 1030.21 Accessibility for the handicapped-accessible access route.

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

HUNT HALL

Number:	002 (2.1/2.2/2.3)
Constructed:	1939 (Section A) 1948? (Section B) 1963? (Section C) 1955 (Section D)
Renovated:	
GSF:	72,296
Use/Occupancy:	Residence Hall / Administrative / Vacant (Section A)

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses.

10 FACILITY DESCRIPTION

See Section [Z30] COST-BENEFIT OF RENOVATION VERSUS REPLACEMENT for overall conclusions of this assessment.

1010 Facility Summary

Hunt Hall was constructed in four major stages beginning in 1939. The first phase of the building, Section A, is the north wing, which is four stories high. Section B, comprising the 'hinge' and a section southwest of the hinge, is four and five stories respectively, while Section C, at the southwest end, is five stories. Section D, at the east side of the hinge, is three stories. The lowest floor of Sections B, C and D is a basement at the north side but at grade on the south side. Section C appears to have been designed for vertical expansion (see B10 SUPERSTRUCTURE, below).

The original, north wing of the building (Section A) was abandoned for active use due to progressive failures in the mechanical system (radiators and steam distribution piping). It is now used only for storage.

Portions of Section B are used for offices, some of which are temporary during the renovation of Pierce Library. Sections B, C and D are used for student housing.

1030.21 Accessibility

Hunt Hall has limited accessibility. There is no elevator, and accessible entry to the building is limited to the north-side, level-one entries into Section C.

Doors into residence rooms are not wide enough to allow for fully accessible entry width. However, current code allows for exceptions to accessibility requirements for dwelling and sleeping units in existing buildings undergoing alteration. A full code analysis should be performed to determine accessibility requirements applicable to any renovation.

At bathrooms in Section A, a two-inch stone curb, to accommodate a full-depth tile grout bed, prevent access from the hallway. Bathrooms in the occupied sections were not observed, but fixtures are assumed to not comply with current accessibility requirements.

1030.23 Fire & Life Safety

The building is non-sprinklered. Exit stairs do not comply with a number of current code requirements, including handrail height and continuity, handrails on both sides of stairs, guardrail height, allowable gaps in guardrails (at Section A), and gates to prevent descent beyond the level of exiting. Stair rise and runs were not measured, but are probably allowable under code provisions for existing buildings.

Egress from the west end of Section B is via a fire escape on the south side of the building. The need for this exit, however, could potentially be eliminated by reopening the connection between Sections B and C at all levels. A fire escape at the north end of Section A was presumably provided to eliminate dead-end corridors on the third and fourth floors. The addition of a sprinkler system would extend the allowable length of dead-end corridors, likely eliminating the need for the exit provided by the fire escape at the north end of Section A.

A complete fire and life safety analysis should be conducted to determine specific requirements prior to any renovation.

1040.31 Assessment Conditions & Limitations

The assessment team was unable to access dormitory rooms or bathrooms in the occupied sections (B, C and D) of the building.

A SUBSTRUCTURE /

B10 SUPERSTRUCTURE

Gravity Framing:

Section A is framed with wood floor framing supported by interior wood framed bearing walls and the exterior concrete walls of the building. The roof rafters are presumed to be wood framing supported by the interior wood bearing walls and the exterior concrete walls. The foundations for this section are presumed to be continuous concrete foundations under the bearing walls.

Section B is framed in a similar manner as section A with concrete exterior walls and wood framed floors. The northern portion of Section B has a flat wood framed roof with the remainder of the roof being sloped in a similar manner to the roof in Sections A and C. The foundations for this section are presumed to be continuous concrete foundations under the bearing walls.

Section C is framed in a similar manner as both Sections A and B with the exception being that the interior walls for this section are concrete the entire height of the building. Additionally, the attic space has a concrete floor which appears to have been designed to be used as a floor in a future vertical expansion of the building. The roof is wood rafters supported by the exterior walls of the building. The foundations for this section are presumed to be continuous concrete foundations under the bearing walls.

Section D is framed with concrete exterior walls and wood framed floors and roof. The foundations for this Section are assumed to be continuous concrete foundations under the bearing walls.

Lateral Force Resisting System:

The lateral force resisting system for each phase is the exterior concrete walls acting as shear walls. The wood floors and roof act as diaphragms which transfer the lateral forces to the exterior walls. Phases A, B, and C also utilize the concrete walls at the stairs as shear walls. All four phases were designed and built before the Type C2A 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, further evaluation of the lateral force resisting system is warranted.

Conclusions:

The structure of all four sections appears to be in generally good condition with no visible signs of overstressed framing observed. There are no signs of differential settlements within each section. At the intersection of sections, there was visible cracking either in the flooring or the exterior wall where one building has settled more than the building adjacent to it. These cracks are relatively minor and could be addressed during a remodel of the building.

Prior to any remodel of Hunt Hall, we recommend a Tier 1 screening of the building structure be performed to identify deficiencies in the lateral force resisting system. This Tier 1 screening will be based upon the procedures and guidelines of ASCE/SEI 31-03, "Seismic Evaluation of Existing Buildings", published by the American Society of Civil Engineers and the Structural Engineering Institute.

Given the age and construction type of the building, it is likely that the report will identify seismic deficiencies that would need to be addressed in order for the building to perform well in a seismic event. The corrective work typically entails upgrading the diaphragm with new plywood sheathing, steel straps, and connecting the floor framing to the exterior walls. Additionally, additional shear walls and foundations may need to be added to transfer seismic forces to the foundations. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report are not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES (Exterior Walls)

Exterior, cast in place concrete walls are devoid of ornament, although they show varying degrees of texture from wooden formwork. The exterior walls appear to be in fair condition (see section B10 SUPERSTRUCTURE).

Windows in Sections A and B are wood-framed, double-hung; Section C, aluminum; and Section D, steel. All are single-glazed.

Some windows at Section A have been blocked or in-filled with plywood. It is unclear whether this was done due to deterioration of the sashes, or simply to cover or prevent glass breakage. Wood windows have not been properly maintained (painted) in recent years and therefore require varying degrees of patching or repair, particularly in Section A and at south facades. In a renovation, the wood windows should be evaluated for either replacement with new high-performance windows or repair and restoration, with consideration of additional measures to increase energy performance (e.g. interior storm windows).

Aluminum and steel windows at Sections C and D are thermally unbroken and should be replaced with new high-performance windows as part of any renovation.

B30 EXTERIOR HORIZONTAL ENCLOSURES (Roofing)

The main roofs (Sections A, B and C) are gabled with asphalt shingles. The hinge portion of Section B has an aged built-up membrane with a sheetmetal-clad parapet. Section D has a black single-ply membrane, with no parapet (gravel-stop style edge). Overflow drainage at flat roof sections is via scuppers discharging over the edge of the building.

The gabled, asphalt-shingle roofs appear to be at the end of their service life and may need improved detailing at transition conditions. Drainage needs to be improved at the Section D roof, with consideration given to the addition of a parapet.

D20 PLUMBING

The plumbing systems appear to be the original with the building. There was not any backflow protection on the incoming domestic water in the original wing of the building. The facilities staff reported leaking piping.

Recommendations:

- Replace all domestic and waste piping in the building.
- Install new low flow fixtures.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating is provided by campus steam (via steam to hot water converter for one wing). There are window air conditioners installed in some rooms for spot cooling. The HVAC system is controlled by a pneumatic control system. Most of the equipment in the building appears to be original with the building. In general the equipment is in poor condition and should be replaced. There have been numerous pipe leaks in the building. The original wing of the building (Section A) is shutdown.

Recommendations:

- Replace the building heating system (including piping) downstream of the new steam pressure reducing station with a new hydronic heating water system.
- Replace all mechanical equipment (fans, air conditioners, etc.) with new equipment.
- Replace the pneumatic controls system with a DDC system.

D40 FIRE PROTECTION

The building does not have a sprinkler system.

Recommendations:

- Install a fire sprinkler system per current codes.

D50 ELECTRICAL

D5010 Facility Power Generation

Emergency power is not provided for this building.

D5020 Electrical Service and Distribution

The building is served from the campus electrical loop #1 at 4160V. Overall the electrical system is in poor condition. The building has two main electrical rooms. The first is located in Section A and is rated at 120/240V single phase 400A. It is of 1930's vintage and is at the end of its expected life span. The second service is located in Section C. It is rated at 240/120V single phase 800A. It is of 1960's vintage, but is also

close to the end of its expected life span. Distribution panels throughout the building are in poor condition. One panel in particular was located in a steam trap room; years of moisture have resulted in the deterioration of the panel exterior and likely interior components. None of the electrical equipment is labeled with SCCR (Short Circuit Current Ratings).

Recommendations:

- Full renovation of electrical system to current code standards.

D5040 Lighting

Lighting within the building is done primarily with linear fluorescent, a mixture of current T8 and out dated T12 technology is used. Corridors appear to be controlled by time clocks or circuited directly to circuit breakers. Some emergency ballasts were observed to be installed however it is unlikely that these ballasts will provide adequate egress levels.

Outdoor lighting is performed with wall packs and photocell control.

Recommendations:

- Replace lighting fixtures and controllers with modern equipment.

D60 COMMUNICATIONS

Telecommunication system appears to installed in certain areas of the building. They appear to be functioning however cable routing is exposed and can be easily damaged.

Recommendations:

- Provide new cabling and pathways to properly support and protect telecommunication cabling.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The fire alarm system is manufactured by Johnson Controls and is of 1960's vintage. It is located in the C section electrical closet. It appears to have manual pull station initiation and uses bells for annunciation. This system does not meet current code standards.

Recommendations:

- Replace fire alarm system with current technology that meets current building codes.
- Oregon fire code now requires carbon monoxide detection in all rental units which meet certain criteria. A code review should be performed to determine whether CO detection is required.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Domestic water and fire protection are served from a 6-inch water service located on the west side of the building within the adjacent parking lot. Two 4-inch water laterals branch from the 6-inch water main and provide domestic and fire protection. Based on limited as-built information and discussions with campus maintenance personnel, there are no known backflow devices for domestic or fire protection serving the building. The water meter vault, domestic meter and associated valves appear to be in poor condition with significant corrosion.

G3020 Sanitary Sewerage Utilities

The 6-inch sanitary service is assumed to connect to an 12-inch sewer main on the south side of the building. The 12-inch sewer main flows east to 12th Avenue.

G3030 Storm Drainage Utilities

The roof downspout collection system appears to drain into the 6-inch sanitary lateral to the east.

G30 Conclusions

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

[Z30] COST-BENEFIT OF RENOVATION VERSUS REPLACEMENT

Eastern Oregon University requested that SERA Architects provide a cost-benefit opinion on the question of renovation versus replacement for Hunt Hall. While our scope of work did not include detailed analysis of the building or cost modeling, our opinion is based on general observations of the building and subsequent consideration through the master planning team's understandings of approximate costs for renovation and construction of comparable campus housing structures.

Hunt Hall's structure (see Section A/B10 above) is in generally sound condition and appears to be adequately designed to accommodate the gravity loads of the building, but would require seismic upgrades to meet current codes for lateral resistance. Openings in the exterior envelope (B20) are not performing well and would require repair, upgrade or replacement, while all roofing systems (B30) should be replaced in the event of a renovation.

Many interior partitions can likely be retained where they coincide with programmatic needs. Interior finishes such as applied flooring and suspended ceilings should be assumed to need replacement.

All building mechanical systems (see Section D) are beyond their expected service lives and in some cases have failed (One portion of the building has lain vacant since the 1970's because the mechanical systems are beyond repair.). The building lacks a fire protection system (D40) required by current codes and has a fire detection and alarm system (D7050) which is no longer code-compliant. All mechanical systems in the building should be replaced.

Current accessibility requirements (see Section 1030.21) would necessitate the addition of an elevator, as well as reconstruction of bathrooms, widening of entry doors to several dorm rooms and miscellaneous other changes. Compliance with fire and life safety codes (1030.23) would require the fire protection and fire alarm systems noted previously. (Full accessibility and fire/life-safety analyses should be performed prior to any decision to proceed with renovation.)

Given the condition of the building and its systems, any renovation should be assumed to be a complete removal and replacement down to the load-bearing structure and interior partitions, with total replacement of building systems. Costs for such a renovation can be expected to approach or even exceed those achievable for construction of a new facility.

There are other considerations as well. A new facility could be designed to provide far better organization of residential spaces, student life areas, and other desired programmatic elements. Energy performance

could be better than that readily attainable within a reconstructed Hunt Hall. On the other hand, a new structure at that cost range would be built of light-gauge framing, with a life expectancy less than that of a fully renovated, concrete-frame building.

For a building of greater historical value or architectural merit, the kind of renovation needed for this building may be warranted. However, it is the opinion of the master planning team that replacement of Hunt Hall would provide a better cost-benefit to the University than renovation.

INTEGRATED SERVICES BUILDING

Number:	(25)
Constructed:	2003
Renovated:	
GSF:	(32,400)
Use/Occupancy:	Administrative – State Offices

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. The Integrated Services Building is not listed in the OUS report.

10 FACILITY DESCRIPTION

1010 Facility Summary

The Integrated Services Building is a one-story building located at the southern end of campus. The overall form is defined by the large, shallow slope, hipped roof with a mechanical well in the center and deep eave overhangs.

The building contains primarily open office space for the Department of Human Services and other smaller state agencies.

1030.21 Accessibility

The building appears to be generally compliant with accessibility requirements.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The roof framing of the Integrated Services Building is engineered wood joists spanning between glulam beams spanning between glulam and steel columns. The glulam columns are supported on masonry plinths. The floor is a concrete slab on grade. The exterior wall of the building is concrete masonry and supports the exterior edge of the roof framing. The interior portion of roof is steel wide flange framing which supports a slab on metal deck mechanical well. The foundations for all columns are presumed to be concrete spread footings. The foundations for the exterior bearing walls are presumed to be continuous concrete foundations

Lateral Force Resisting System:

The building's lateral force resisting system is the masonry walls at the perimeter acting as shear walls. The plywood roof acts as a diaphragm to transfer the lateral forces to the masonry walls. This building appears to have been designed and built around the time of the RM1 1997 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition. There are settlement cracks in the visible portions of the slab on grade that appears to be due to uneven sub-grade settlement. There are cracks in the interior gypsum sheathing at both the north and south entrances which should be monitored for further movement. These cracks and others in the gypsum sheathing around the building appear to be differential settlement of the supporting framing.

Due to the large amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event. This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

Exterior walls are stacked-bond unit masonry. At certain locations, these walls appear to be structural (see B10 SUPERSTRUCTURE), while at ribbon window conditions, the wall is pulled inboard of masonry clad columns.

Windows are aluminum, configured in long ribbons at open-office areas. Entries are an aluminum storefront system. Glazing systems are insulated.

Movement at the non-structural, ribbon-window walls has led in the past to noticeable air infiltration beneath the interior window sills. Foam sealant has been sprayed into these gaps.

Clerestory windows

Clerestory windows at all four sides of the mechanical well overlook the open office space and internal corridors. The head condition of these windows is minimally sheltered by a narrow vented soffit, and head flashing may not provide positive drip away from the window head. The window sills are low enough to be readily covered by drifting snow. These windows should be monitored for signs of water intrusion, and snow accumulations at the mechanical well should be monitored and removed as necessary.

At the east clerestory window, overlooking the open offices, glazing film was added after occupancy, possibly due to glare or heat gain from the western sun. This film has failed. Consider removing and replacing film with a professionally applied product suitable for harsh exposures.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The main, shallow-sloped, hipped roof is clad in standing-seam metal, with a skylight on a raised curb at each of the hips. The center mechanical well is a low-slope, white single-ply membrane. The well is surrounded by clerestory windows (see B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]).

Facilities personnel indicated that winds have uplifted the standing seam at the eaves, particularly at certain locations on the west façade, allowing for wind-driven rain to enter the building underneath the roofing. This condition should be monitored and evaluated for potential remediation.

The deep eave overhangs surrounding the building have a narrow perforated ventilation strip, with a similar strip at the soffit above the clerestory windows surrounding the mechanical well. The university should consider having the roof insulation and ventilation systems evaluated for design and capacity to provide adequate moisture removal.

At the mechanical well, the roof/overflow drains sump has a heavy accumulation of organic debris. In addition to drainage problems, failure to adequately maintain the roof may lead to premature membrane damage and potential impacts on any remaining roof warranty.

C10 INTERIOR CONSTRUCTION

Internal clerestories at private offices are not sealed between butted glazing, according to Facilities personnel, which sometimes presents privacy concerns.

C20 INTERIOR FINISHES

Drywall cracking is evident at multiple intersections with roof structure, at the perimeter walls, under the roof deck and at interior full-height partitions (see B10 SUPERSTRUCTURE). It appears that the drywall may not have been detailed to allow for movement independent of adjacent structure.

D20 PLUMBING

The plumbing system appears to be in working order. Domestic hot water is provided by an electric hot water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating is provided by a conventional gas fired boiler. Cooling and air distribution is provided by two roof top VAV units. The air handling units have gas furnaces for preheat. The building HVAC system is controlled by a Trane Tracer Summit DDC system.

Open office perimeter heat is supplied by a terminal unit fed from the main air handling units. The thermostat controlling the perimeter heat zone is located in the interior of the open office area. The facilities staff has reported that they receive many hot and cold comfort complaints. These complaints may be a result of drafts at the windows, poor perimeter zoning, and location of the thermostats.

The air handling units are located in an approximately 10-foot deep well on the roof. The boiler exhaust and restroom exhaust discharge into this well area. The facilities staff has received complaints of odor and combustion gas smells from building occupants. The facilities staff put a combustion gas meter in the unit to see if there was an issue with the unit. They reported that there was not an issue with the unit furnace. Odors may be coming from the gas regulator vents and/or the building boiler flue gases. The facilities staff has taken the gas furnace in the units out of service to deal with the odor. As a result, the units are not currently providing any outside air to the space because the gas furnace is no longer in use and the air cannot be preheated.

Vestibule heat is from a terminal unit tied to the main air handling unit.

Recommendations:

- Route the boiler flue above the level of the parapet to prevent the air handling units from drawing in combustion gases.
- Install a heavy gauge sheet metal plenum on the air handling unit combustion gas exhaust and route ductwork to the parapet level.
- Install a pipe on the gas regulator (there should be a threaded connection) and route the pipe to above the level of the parapet. This may require replacement of the regulator.
- Replace the existing rooftop exhaust fan with a ducted fan and route fan ductwork to discharge above the parapet.

- Provide minimum outside air to the space after the above recommendations are completed.
- Move the thermostats for the perimeter terminal units closer to the perimeter area to reduce draft and cold complaints.
- Install a cabinet unit heater in the vestibule so it is not served from the main air handling system.

D40 FIRE PROTECTION

There is a wet and dry fire sprinkler system in the building.

When performing our survey the facilities personnel informed our team of an issue concerning the sprinkler main valves, and primarily the dry system valves.

The sprinkler riser is fed from the city main water line. The city pump house is located within approximately 200 feet of the ISB. The water service within the building is equipped with an appropriate backflow device and pressure gauges. The pressure downstream of the check valves was reported to reach 145 psi on a fairly regular occurrence. However the pressure at the city side of the backflow device is maintained at approximately 80 psi. The current theory is that when the city pump house initiates its pumps there is a corresponding pressure boost which charges the line to the higher pressure observed. The backflow device then allows the pressure to enter the building side of the system. After the city pumps are running pressure drops and returns to normal. However, the backflow device does not allow system pressure to bleed off or return to normal.

The building dry sprinkler system had past issues with water leaking into the dry segment of the line and freezing, this resulted in unintentional activation of the system. The facility staff believed that the water was leaking past the dry system valve due to the high pressure of the sprinkler water as mentioned above. To combat this problem the air pressure on the dry side of the system was raised to 265 psi. After reviewing the issue in further detail we believe that the pressure difference in the dry and wet systems is not the root cause of the water leakage into the dry system. Dry system valves are designed to operate at approximately a 6:1 ratio, meaning that 1 psi of air pressure should be able to hold back 6 psi of water pressure. We do recognize that the incoming water pressure is higher than normally encountered, however if the valve is functioning properly it should only require approximately 30 psi to hold back the water pressure of 145 psi. Based on this information we believe a faulty valve is the root cause of the water leakage. The valve should be replaced.

<u>Recommendations:</u>

- Recommend replacing the dry side valve.
- Consider installation of a relief valve on the downstream side of the double check valve assembly.
- Recommend having a fire protection engineer evaluate the dry system to verify that there are not any other issues with increasing the air pressure.

D50 ELECTRICAL

D5010 Facility Power Generation

No emergency power generation is provided to the building.

D5020 Electrical Service and Distribution

Electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). The main electrical service equipment is rated at 480Y/277V 3 phase 4 wire, 800A. SCCR (Short Circuit Current Rating) is not provided.

Recommendations:

- SCCR ratings are not required at this time. Ratings should be addressed when upstream modifications are to take place.
- Overall all new electrical equipment should be provided with SCCR labeling, we recommend adding this requirement to campus standards.

D5040 Lighting

Interior illumination is provided by linear fluorescent fixtures and controlled via relay-based lighting control panels. At the time of the visit the lighting control system was malfunctioning; the campus electrician is having difficulty in obtaining replacement parts for the system.

Emergency Lighting is provided by battery ballast integral in lighting fixtures.

Recommendations:

- Replace lighting control system with modern controller. Integration with existing relays should be explored, as this will help to limit overall replacement cost.
- The space is situated in such a way that it receives high quality natural lighting. Integration of photo controls for daylighting is likely to result in substantial energy use reduction.

D60 COMMUNICATIONS

The building contains many workstations and private offices, which are all equipped with Ethernet and telephone connections. One of the cable routing options taken, attaching cable directly to a column and stringing it overhead to an air duct, is not appropriate for the environment. Other routing options should be explored.

The building is also provided with duress alarms in the meeting rooms.

Recommendations:

- Correct telecommunication routing issues. The open-office area is provided with a under-floor raceway system that at the time of our visit appeared to have adequate spare capacity.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The building is provided with a fire alarm system manufactured by Silent Knight. The building has full sprinkler coverage. Primary fire alarm initiation is initiated by water flow.

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

KEOL
(Radio Station)

Number:	105 (24)
Constructed:	1946
Renovated:	
GSF:	1,843 (1,600)
Use/Occupancy:	Student Life

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses.

10 FACILITY DESCRIPTION

1010 Facility Summary

KEOL is a one-story building used as the radio station for the University. The building has a basement level.

1030.21 Accessibility

The building is not accessible.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The KEOL Building is wood framed with wood floor, roof and exterior wall framing. The basement is concrete exterior walls and floor slab. The original roof has been covered with a new sloped wood frame. The first floor framing is 2x joist framing and supported on wood framed walls or the exterior concrete wall.

Lateral Force Resisting System:

The building's lateral force resisting system is presumed to be wood shear walls at the exterior of the building. The roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. This building was designed and built before the time of the Type W1 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, further evaluation of the lateral force resisting system is warranted.

Conclusions:

The structure of the building appeared in poor condition with visible signs of settlement and overstressed floor framing. The ground floor rooms not used as the studio were filled with large storage racks which extended to the ceiling. These racks stored compact discs and records. The floor framing was likely not designed for this use. The floors were noticeably deflecting due to the weight of the racks.

Prior to any remodel of the KEOL Building, we recommend a Tier 1 screening of the building structure be performed to identify deficiencies in the lateral force resisting system. This Tier 1 screening will be based upon the procedures and guidelines of ASCE/SEI 31-03, "Seismic Evaluation of Existing Buildings", published by the American Society of Civil Engineers and the Structural Engineering Institute. Given the age and construction type of the building, it is likely that the report will identify seismic deficiencies that would need to be addressed in order for the building to perform well in a seismic event.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The building is clad with cement plaster stucco, with wood, single-glazed windows.

The stucco finish is failing and windows and doors have been left unpainted for long periods of time.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The building has metal roofing on the gabled roof structure, which was apparently added over the original flat roof due to water damage.

D20 PLUMBING

The plumbing system appears to be in working order. Domestic hot water is provided by a small electric hot water heater. The plumbing piping appears to be original with the building.

Recommendations:

- Replace all plumbing piping in the building.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

The building is served by an outdoor ducted air conditioning unit. The unit is nearing the end of its useful life. Building heat is through electric wall heaters. There is a steam and condensate system in the building that is no longer in use due to steam leaks.

Recommendations:

- Install a new HVAC system in the building.

D40 FIRE PROTECTION

There is not a fire protection system in the building.

D50 ELECTRICAL

D5010 Facility Power Generation

Emergency power is not provided

D5020 Electrical Service and Distribution

The building is served with an overhead lateral from the library adjacent to it. The lateral is not properly supported. This may be due to the library currently being under construction. The main electrical panel is rated at 240/120V single phase 100 amps. It is in working order and appears to be free of defects or code concerns.

Recommendations:

- Adequately secure service lateral per code requirements.

D5040 Lighting

Lighting within the building is a mix of linear fluorescent and incandescent. Control is provided by means of standard wall switch.

Lighting on the exterior of the building is accomplished by wall mounted HID fixtures controlled by photocells.

No emergency lighting is provided.

Recommendations:

- Perform a code review of the occupancy group and egress requirements. Provide emergency lighting as required.

D60 COMMUNICATIONS

Telecommunication phone and AV systems appear to be functioning properly.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

No fire alarm system is installed in the building.

Recommendations:

- Perform a code review of the occupancy group. Provide fire alarm system as required.

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

LA GRANDE HEAD START
(Childcare and Offices)

Number:	091 (30 & 31)
Constructed:	1999 (Building 1) 2004 (Building 2)
Renovated:	
GSF:	1,800 (Building 1) 2,700 (Building 2)
Use/Occupancy:	Academic

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses. See 1040 Assessment Conditions & Limitations for apparent internal discrepancies in the Sightlines data.

10 FACILITY DESCRIPTION

1010 Facility Summary

The La Grande Head Start buildings are two pre-manufactured modular buildings located to the east of campus. These buildings are used as a preschool. One building is two modules wide and is used as offices and storage. The other building is three modules wide and is used as childcare and kitchen space.

1030.21 Accessibility

The buildings appear to be generally accessible.

1040.31 Assessment Conditions & Limitations

The 2010 'Sightlines' report lists Building 1 as 1,800 SF, built in 1999, and Building 2 as 2,700 SF, built in 2004. However, the state registration tag on the Childcare building, which is clearly the larger of the two, indicates that it was manufactured in 1998, suggesting that it is probably the earlier of the two buildings. The Sightlines report, therefore, appears to be incorrect in its assignment either of GSF or construction year.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

Both buildings are wood framed above a steel sub-frame. The office building is supported by masonry piers sitting on grade. The childcare building is supported by concrete pier foundations in the center of the building and a continuous concrete foundation and stem wall at the building's perimeter.

Lateral Force Resisting System:

The buildings' lateral force resisting system is wood framed shear walls at the exterior of the building. The plywood roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. The office building does not appear to have a load path to transfer lateral forces between the

bottom of the building and the ground. The concrete stem wall at the perimeter of the classroom building will transfer lateral forces to the ground.

Conclusions:

The structures of the buildings appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. We recommend providing positive attachment of the office building to a foundation system designed to support the code required lateral forces.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The buildings are clad in plywood siding ("T1-11" or similar).

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

Roofs are asphalt shingles.

D20 PLUMBING

The plumbing system appears to be in working order. Domestic hot water is provided by an electric hot water heater in one building and a gas fire hot water heater in the building with the dishwasher.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Buildings are served by gas furnaces with DX coiling coils located in the ceilings. The assessment team did not access the ceiling space and could not observe the units. The facilities staff reported that the units operate well but are hard to work on. There are two outdoor units for each building. There is one thermostat for each building that was recently replaced (approximately 5 years ago) by the facilities staff.

One of the buildings has an industrial type dishwasher. There is no exhaust system for the kitchen with the dishwasher and the facilities staff reported problems with the pressboard cabinets. Bathrooms have exhaust fans that are controlled from the light switch.

Recommendations:

- Install an independent exhaust system for the kitchen to operate in conjunction with the dishwasher.

D40 FIRE PROTECTION

There is not a fire sprinkler system in either building.

Recommendations:

- A code review of the use and occupancy classification should be performed for the buildings. A fire protection system should be installed if occupancy classification deems it necessary.

D50 ELECTRICAL

D5010 Facility Power Generation

No emergency power generation is provided to the building.

D5020 Electrical Service and Distribution

The buildings are temporary mobile structures, the main electrical service entrance is provided exterior of the main building. Service is provided and metered directly by OTECC (Oregon Trail Electric Co-op). Four (4) electrical service switches are provided and distribute branch panels located within the buildings.

D5040 Lighting

Interior illumination is provided linear fluorescent fixtures with standard wall switches.

Exterior lighting is delivered via HID wall packs with photocell control.

Recommendations:

- Energy savings would likely be realized by installation of motion detectors in bathrooms and other areas that have intermittent use.

D60 COMMUNICATIONS

The buildings telecommunication systems are provided by the serving utility and distributed on the outside of the building.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The main building is provided with a fire alarm system, while the smaller secondary (office) building is not. The fire alarm system is an Edwards 2400. Smoke detectors and manual pull stations are provided throughout the main building, horn strobes are provided for annunciation.

G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

LOSO HALL

Number:	010 (9)
Constructed:	1987
Renovated:	
GSF:	83,137
Use/Occupancy:	Academic

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses.

10 FACILITY DESCRIPTION

1010 Facility Summary

Loso Hall is a Fine Arts building with a multi-purpose theater as well as a small black-box theater. The southern portion of the building is two stories and is used as classroom, studio and office space, as well as back-of-house functions for the theater. The northern wing is one story.

1030.21 Accessibility

There is no access to the main entry, directly from the quad. The only entry with an automatic operator is to the north where many students enter, but the parking is to the south of the building. The 450 seat theatre has two platforms for ADA seating at the same level which doesn't meet current code requirements.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

Loso Hall is a steel framed building supported by concrete spread footings. The roof of the building is a structural metal deck supported by open web joists spanning between steel wide flange beams. In some areas the roof is supported by wide flange beams. The second floor framing is slab on metal deck spanning between wide flange steel framing. The columns were not observed due to finishes, but are presumed to be structural steel. The foundations are presumed to be concrete spread footings.

Lateral Force Resisting System:

The building's lateral force resisting system is a combination of CMU walls and braced frames. The metal roof deck and second floor slab on metal deck act as diaphragms which transfer forces to the walls and frames. This building was built before both the Type S2 1988 UBC and Type RM1 1997 UBC benchmark buildings as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is warranted.

Conclusions:

The structure of the buildings appeared in good condition and no visible signs of differential settlement or overstressed framing were observed.

See G2030 Pedestrian Plazas and Walkways regarding deterioration of the concrete stairs outside the main (east) entry.

Prior to any remodel of Loso Hall, we recommend a Tier 1 screening of the building structure be performed to identify deficiencies in the lateral force resisting system. This Tier 1 screening will be based upon the procedures and guidelines of ASCE/SEI 31-03, "Seismic Evaluation of Existing Buildings", published by the American Society of Civil Engineers and the Structural Engineering Institute. Given the age and construction type of the building, it is likely that the report will identify seismic deficiencies that would need to be addressed in order for the building to perform well in a seismic event.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

The building is clad in an EIFS (Exterior Insulation and Finish System). According to Facilities personnel, the EIFS was systematically repaired approximately two years ago.

Windows are aluminum frames with insulated glazing, with fixed lites over hoppers typically. Windows and entries at public areas are storefront systems.

The operable hoppers are frequently not closed fully, leading to water intrusion and mechanical system problems.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roofs of this building were not accessed.

The theater portion of the building has hipped gables with the fly tower penetrating through. The tower is also hipped with a well at the center. The hipped roofs are clad with Gerard-brand stone-clad metal tiles. The well at the top of the fly is a flat membrane roof of unknown type. The classroom wing's long, shallow-slope roof is covered with snap-lock metal panels, with three unit skylights over one studio space.

The stone-clad metal tiles replaced the original tiles approximately four years ago. The membrane roof at the fly tower was replaced approximately four years ago, as well. The metal panel roofing is approximately 10 years old.

Facilities personnel indicated that leaks occur at the northwest corner of the hipped roof where the metal tile roofing ties into the metal panel roofing below.

In addition, Facilities personnel said that the metal panel roofing consists of very long (50') sections, with minimal overlap (3"). Leaks occur from water working its way under this minimal overlap.

There is no eave overhang at any of the roof / wall intersections.

D20 PLUMBING

The plumbing systems are in working order with no apparent problems. Existing gas water heater is nearing its end of life.

Recommendations:

- Replace the gas water heater with a high efficiency condensing water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating and cooling is provided by campus steam (via steam to hot water converter) and chilled water. The HVAC system is controlled by a pneumatic control system. There are multiple ceramic kilns in the building; several are not under an exhaust hood per current mechanical code. Overall the mechanical system is in working order, maintained well, and free of defects. Vintage of equipment appears to be original to the building circa 1989.

Recommendations:

- Replace the existing pneumatic controls system with a modern DDC system.
- Install hoods for all kilns per current mechanical code.
- Replace pneumatic switches for kiln exhaust fans.
- Install a dedicated cooling system for the building electric room.
- Install dedicated cooling systems for the theatre control rooms.
- Remove inlet vanes and replace fan motors with an inverter rated motors with shaft grounding and VSD's for VAV units that have not been converted yet.
- Install a separate cooling system for the dimmer room.
- Verify that fan motors on AHU-1 have shaft grounding. If they do not they should be replaced shaft grounded motors to extend the life of the bearings.
- Heating water pumps appear to be over 20 years old and will need to be replaced soon.

D40 FIRE PROTECTION

The building is fully sprinklered and the system appears to be in working order.

D50 ELECTRICAL

D5010 Facility Power Generation

Emergency power is provided via pad mounted emergency generator. A single transfer switch is located within the building from which emergency power is distributed.

D5020 Electrical Service and Distribution

The building is served from the campus electrical loop #1. Overall electrical system is in working order. A minor issue concerning access to an outdoor compressor disconnect was observed. Otherwise equipment was free of electrical defects. The vintage of equipment appears to be original to the building circa 1989. The main service is rated at 480Y/277V, 3 phase 4 wire, 2000A. SCCR labels are provided on this electrical equipment.

Recommendations:

- Relocate existing disconnect switch serving outdoor pad mounted compressor to location accessible from doorway of enclosure. Disconnect is currently located at the back of the unit and cannot be reached in the event of an emergency. An outdoor location would be ideal but will require switch replacement.

D5040 Lighting

Lighting within the main entry is a mix of 250W incandescent down lights and CFL sconces. Lamp life and energy use of these fixtures are of concern. The corridors, majority of classrooms and general use areas utilize T8 linear fluorescent fixtures.

Control of fixtures is performed through GE lighting control panels, however the system is dated and difficult to reprogram or find replacement parts for. Attempts have been made to integrate daylighting controls into the controllers on an on/off basis. However this system is not performing as expected and does not switch lights off often.

Recommendations:

- It is likely that considerable cost savings and maintenance saving could be realized by upgrading the lighting control system and retrofitting the main entry lighting with a more efficient and longer lasting (lamp life) lighting fixture. We recommend investigating this further.

D60 COMMUNICATIONS

Telecommunication system appears to be free of defects and in functioning order. AV and sound system serving Black Box and Performance Theater appear to be in need of modernization. They systems have been extensively modified over the life of the installation and function in a limited capacity. Complaints of a grounding hum were voiced. The dimming system serving the performance lighting is functioning however the vintage of equipment being used is dated. Energy efficiencies could be realized from a lighting modernization.

Recommendations:

- Consider decommissioning existing sound board and sound control system and install new control equipment. Speakers should be evaluated and reused if determined to be in appropriate condition. This upgrade maybe considered during a larger renovation of the theaters or as a standalone project.
- AV system functions but uses energy intensive lighting elements. If the fixtures were phased over to newer LED based fixtures a decrease of energy from electrical and HVAC cooling could be realized. We recommend studying the feasibility of this option.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The system is a Simplex 4002 and is in need of repair or replacement. The Facility staff has been experiencing issues with burnt out leads and fuses on the fire alarm control board. The system alarms locally only; it is not believed to have central station monitoring.

The system is initiated by manual pull stations and water flow. Audible notification is performed by a bell system. No visual notification was observed.

Original automatic elevators are not equipped with smoke detection in vestibules and likely do not have automatic recall.

Recommendations:

- Upgrade the fire alarm system to a modern controller with central station monitoring. Decommission bell annunciation and provide modern visual and audible notification appropriate for the building occupancy.

G20 SITE IMPROVEMENTS

G2030 Pedestrian Plazas and Walkways

There is a cast-in-place concrete stair at the main entry on the eastern edge of the building that has appeared to have weathered more severely than the rest of the building. There are locations on the stair where the reinforcing in the stair is exposed and has corroded. Steps should be taken to prevent further weathering of this concrete. This typically entails removing deteriorated concrete and reinforcing and replacing with new concrete.

The location of handrails at the main entry stair does not appear to comply with current codes.

Facilities personnel indicated that the electric snowmelt system in the main entry stairs has failed.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities

Loso Hall's domestic water and fire protection is served by a 6-inch water main on the east side of the building. The 6-inch double check detector valve assembly (DCDVA), 3-inch domestic backflow and water meter are located within the mechanical room of the building. Both backflows appear to be in good condition.

G3020 Sanitary Sewerage Utilities

Sanitary sewer effluent from the building flows to a 10-inch main on the east side of the building.

G3030 Storm Drainage Utilities

The building's stormwater collection system connects directly to a 12-inch storm main on the south side of the building.

G30 Conclusions

Loso Hall appears to be in good condition with no known utility deficiencies, localized ponding or capacity issues.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

STUDENT HEALTH AND COUNSELING CENTER

Number:	088 (22)
Constructed:	1945?
Renovated:	1998?
GSF:	2,600
Use/Occupancy:	Administrative

Building data is taken from documentation provided to SERA by EOU: OUS Building Condition Report dated 12.07.2010 and Sightlines Building Inventory dated 10.11.2011. Where these sources conflict, the Sightlines data is in parentheses. The OUS report gives 1998 as construction date, which is feasible for the date of renovation.

10 FACILITY DESCRIPTION

1010 Facility Summary

The Student Health Center is a one-story medical office located at the northwestern edge of campus. It has a daylight basement which faces the rear of the building. The building was originally a mid-century, ranch-style, single-family residence before it was remodeled to its current use.

1030.21 Accessibility

The building has limited accessibility. A new concrete ramp at the south main entry provides access to the entry and reception area, but most building facilities have not been upgraded. Offices and counseling areas at the basement are not accessible.

1040.31 Assessment Conditions & Limitations

Exam rooms, offices and other rooms were not available to the assessment team due to clinic operations.

A SUBSTRUCTURE /
B10 SUPERSTRUCTURE

Gravity Framing:

The Student Health Center is wood framed with plywood roof sheathing likely supported by wood rafters spanning between exterior wood framed bearing walls of the house. The first floor framing is likely 2x joist framing supported on wood framed interior bearing walls or the exterior concrete basement walls.

Lateral Force Resisting System:

The building's lateral force resisting system is likely plywood shear walls at the exterior of the building. The roof and floor sheathing act as a diaphragm transferring lateral forces to the exterior walls of the building. This building appears to have been designed and built around the time of the Type W1 1976 UBC benchmark building as identified in ASCE 31-02. Benchmark buildings are identified as the oldest buildings of that type which have been found to perform reasonably well in a seismic event. Therefore, we believe further evaluation of the lateral force resisting system is not warranted at this time.

Conclusions:

The structure of the building appeared in good condition and no visible signs of differential settlement or overstressed framing were observed. Due to the large amount of shear walls at the exterior of the building and that it was designed to a modern building code, we expect the building will perform reasonably well in a seismic event.

There was a crack in the masonry veneer near the front door. This crack appeared to be limited to the veneer and did not appear to affect the interior framing of the building.

This report is based on a visual observation of framing readily accessible to view. Concealed conditions and items that were not described in this report were not included in this review.

B20 EXTERIOR VERTICAL ENCLOSURES [EXTERIOR WALLS]

Exterior walls are clad in brick veneer and painted wood lap siding. The garage is painted plywood siding (i.e. T1-11).

Windows are double-glazed wood, and vinyl at some locations where the originals were replaced. Windows have external aluminum storms. The basement has a residential aluminum sliding door to the back yard.

B30 EXTERIOR HORIZONTAL ENCLOSURES [ROOFING]

The roof is gabled with asphalt shingles.

D20 PLUMBING

The plumbing system appears to be in working order. Hot water is supplied by a conventional gas water heater.

D30 HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

Building heating is provided by a conventional gas fired boiler. The boiler is new and in good condition. The bathrooms are exhausted individually and controlled using the bathroom light switch. There is a ducted rooftop type unit sitting on cinder blocks on the back patio. There are electric wall heaters in the corridors. The attic area was not accessed as part of the assessment.

Recommendations:

- Seismically restrain air handling units as required by state and local codes.

D3070 Special Purpose HVAC Systems - Snow Melting

Snow melt tubing has been installed in the new entry ramp, but has not yet been connected.

D40 FIRE PROTECTION

There is not a fire protection system in the building.

D50 ELECTRICAL

D5010 Facility Power Generation

Emergency power generation is not provided.

D5020 Electrical Service and Distribution

Electrical utility is provided and metered directly by OTEC (Oregon Trail Electric Co-op). The main electrical service is located at the rear of the first floor. It is rated at 240/120V, 200A, single phase 3 wire. The main panel appears to be free of deficiencies.

D5040 Lighting

Interior Lighting utilizes primarily linear fluorescent lighting fixtures. Wall switches are provided for lighting controls. No automatic or occupancy controls have been installed.

Emergency Egress lighting does not appear to be provided.

Recommendations:

- It's likely that retrofitting occupancy sensor wall switches will have energy saving impacts. We recommend this retrofit in areas other than the main entry room and stairways.
- Review code egress requirements and provide EM ballasts should they be required.

D60 COMMUNICATIONS

The buildings incoming telecommunication cabling enters at the rear of the 1st floor. They are then distributed throughout the building by network switches also located at the rear of the first floor. Telecommunication systems appeared to be operating properly and free of deficiencies at time of visit.

D70 ELECTRONIC SAFETY AND SECURITY

D7050 Fire Detection and Alarm

The building is not provided with a fire alarm system.

Recommendations:

- A code review of the use and occupancy classification should be performed. A fire alarm system should then be installed if occupancy classification deems necessary.

G20 SITE IMPROVEMENTS

G2030 Pedestrian Plazas and Walkways

See 1030.21 Accessibility and D3070 Special Purpose HVAC Systems - Snow Melting regarding the entry ramp.

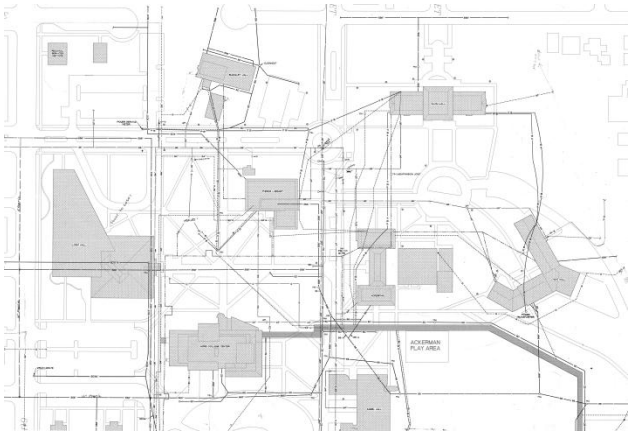
G30 LIQUID AND GAS SITE UTILITIES

Site utility connections were not observed for this building. See general campus Site Utilities section of this report.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building laterals (sewer and storm) older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

SITE UTILITIES

SITE UTILITIES



1040.31 Assessment Conditions & Limitations

The purpose of this cursory site assessment report is to evaluate the current condition of infrastructure for portions of the Eastern Oregon University campus and several existing buildings. This report is based on visual observations, and a review of available record drawings, with a focus on existing infrastructure and utility service connections that could be visually confirmed. Concealed conditions and items which are not described below were not included in this evaluation.

Civil Assessment

KPFF joined the assessment team led by SERA Architects on a 4-day site reconnaissance visit February 20th through February 23rd, 2012. Prior to the site visit, the university provided electronic copies of available record drawings for campus infrastructure. While onsite, KPFF met with various university staff including maintenance and operations personnel to discuss any known problems or limitations with the existing infrastructure; maintenance and irrigation staff to discuss their understanding of the irrigation controls and distribution system; and City of LaGrande public works personnel to identify public infrastructure within and adjacent to the university campus.

KPFF's Site Utilities assessment was limited to section G30 LIQUID AND GAS SITE UTILITIES.

Mechanical/Electrical Assessment

As part of the Central Plant Building Evaluation, PAE extended our mechanical and electrical survey into the steam tunnel which feeds steam, chilled water and electrical power to a large part of the campus. This was not in our building scope, but it is associated with the Central Plant system, and we feel it to be important information to include when evaluating the Central Plant.

PAE's Site Utilities assessment was limited to a portion of section G3050 Site Energy Distribution Systems and sections G4010 Site Electric Distribution Systems; G5010 Site Communications Systems; and G9010 Tunnels.

Architectural and Structural Assessments

No Architectural or Structural assessments were made of campus site improvements beyond any building-associated improvements documented under individual Building Assessments in Section II.

Existing Conditions

According to available record drawings, the original campus utility infrastructure was constructed in 1929. The university has extended, upgraded and repaired utilities as necessary over the years.

Building Utility Connections

In addition to this Site Utilities assessment, see individual Building Assessments for specific utility connections.

G30 LIQUID AND GAS SITE UTILITIES

G3010 Water Utilities (Domestic Water & Fire Protection Water)

Domestic water and fire protection supply to the university is provided by the City of La Grande. There are several deep water wells within the city system to meet the domestic water demands. These wells are drawn on by pump stations throughout the city, and the water is pumped directly to two cisterns located on Glass Hill, south of the city. There is an upper and lower city distribution system fed from these two large cisterns with a capacity of 3.5 million and 8 million gallons, respectively. All domestic and fire protection mains on the university campus are public mains within a city easement, and are ductile iron pipe. Domestic and fire protection pressures are provided by gravity, which range in pressures between 60 and 90 psi throughout the campus. There are no known pressure, capacity or flow deficiencies within the campus. The university operation and maintenance staff tests and records all double check detector valve assemblies (DCDVA) annually for proper operation.

G3020 Sanitary Sewerage Utilities

The sanitary sewer collection system within the university is a gravity system. Many of the buildings on the outer edge of the campus have lateral sewer connections to the public sewer system in the adjacent streets off campus. However, the central campus is served by an 18-inch public sewer main flowing from 7th Street to 12th Street with an east-west alignment. Effluent from this university main continues off campus by gravity flow to a city owned lift station, “East H,” located on the southern edge of the city. Lift station “East H” pumps sanitary flows to the city-operated waste water treatment plant approximately seven miles from the university along Highway 30.

There are several public utility easements within the campus for city access and maintenance.

There are no known sanitary capacity deficiencies within the university. The City of La Grande is currently scheduled to video inspect all sanitary mains within the university, along city easements, in summer 2012.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building sewer laterals older than 20-years. This inspection should be from the building’s point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

G3030 Storm Drainage Utilities

Storm runoff is collected and conveyed throughout the campus with surface drains and a closed conveyance system. The age and condition of these systems were not thoroughly evaluated at this time. Most buildings on campus appear to have direct downspout connections to the conveyance system.

Historically, there was an open drainage (Mill Creek) that ran across the campus. However, this channel was filled to create more developable land and the drainage was put into a pipe. The primary conveyance of this

old drainage through campus is a 60-inch concrete storm main with a west to east alignment that passes below Zabel Hall. The condition and design capacity of the 60-inch storm sewer pipe is unknown.

Two 36-inch storm sewer pipes west of the university convey runoff from the upper portions of the drainage basin, before joining at the upstream end of this 60-inch pipe. The 36-inch line along H Avenue intercepts the flows of Mill Creek, and the 36-inch line along I Avenue conveys additional runoff from the basin. On February 21, 2012, KPFF observed the end of Mill Creek where it entered the 36-inch sewer pipe at the corner of H Avenue and 7th Street. This storm sewer pipe appeared to be flowing at approximately 90% full at the inlet.

The downstream end of the 60-inch line daylights at the intersection of 16th Street and H Avenue within a residential sub-division and continues flowing in the open drainage of Mill Creek.

We understand that there has been some flooding in the past at the western edge of the campus. Efforts to alleviate this flooding by providing surface storage capacity within the bermed area at the volleyball courts have yet been unsuccessful. Further investigation regarding the condition and capacity of the campus drainage system is highly recommended.

Due to the lack of as-built information and the age of existing building utilities, it is recommended the university conduct visual inspections (CCTV) on all gravity building storm laterals older than 20-years. This inspection should be from the building's point of connection to the city owned main to determine leaks, joints separation, settlement and overall condition of the pipe lateral.

G3050 Site Energy Distribution

The campus is equipped with a boiler at the Central Plant toward the east edge of the campus, north of H Avenue. Steam is distributed in a 6-foot by 7-foot underground tunnel to provide heating for a handful of buildings in the middle of campus. Refer to the Mechanical narratives for each building for additional information.

The facilities staff reported finding large amounts of corrosion products in the utility tunnel steam strainers. The tunnel steam line dirt leg was recently replaced due to failure. The facilities staff reported that the chilled water system had no chemical treatment for 20 years which may impact condition of utility tunnel piping. The facilities staff has a box of magnetic fillings they have kept from chilled water filter cleaning.

Recommendations:

- Consider performing non-destructive testing on tunnel steam, condensate, and chilled water piping to evaluate piping life.

G3060 Site Fuel Distribution

Natural gas is provided by and distributed by Vestas.

G40 ELECTRICAL SITE IMPROVEMENTS

G4010 Site Electric Distribution Systems

The University's campus electrical loop Feeder #1 is routed through the utility steam tunnel. This feeder operates at 4160V and serves a large portion of the buildings on campus. The feeder is provisioned with load breaks and fused service switches within the tunnel, with these switches feeding buildings along the tunnel route.

We observed pooling water around some of these switches that was of concern. Also they are installed in rather cramped areas. It is likely that due to the limited working clearances all work on these feeders should be performed while the feeder is un-energized.

Recommendations:

- Address pooling water issue by clearing drains or adding sump pumps where electrical equipment is installed.
- Try to limit installing electrical equipment in the tunnel as much as possible. If it must be installed there allocate working space around it.

G50 SITE COMMUNICATIONS

G5010 Site Communications Systems

Campus telecommunications cabling is run through the tunnel. It appears to be in working order with no deficiencies.

G90 MISCELLANEOUS SITE CONSTRUCTION

G9010 Tunnels

Within the tunnels, lighting is provided by incandescent fixtures in vapor tight enclosures. They are controlled by 3-way switches at either end of the tunnel.

APPENDICES

A UniFormat 2010 Classification System

B EOU Master Plan – Building Assessment, October, 2011

C KPFF Badgley Hall Slab-deflection Letter, January 26, 2010

D Plan Room Catalogue, February, 2012

APPENDIX A
UniFormat 2010 Classification System

UniFormat 2010 Classification System

UniFormat™ is an arrangement of construction and building information based on physical parts of a facility called functional elements, otherwise known as systems and assemblies. These elements are characterized by their function without identifying the work results that compose them. Elements render a view of a constructed facility different from the view rendered by a breakdown of building materials, products, and activities that comprise work results. In this way, UniFormat complements MasterFormat™. UniFormat subdivides a facility by functional elements and MasterFormat subdivides by work results.

As an outcome of this differing view, UniFormat is able to achieve consistency in economic evaluation of existing and new projects, enhance reporting of design program information, especially for preliminary project descriptions and performance specifications, and provide a basis for systematic filing information for facility management, drawing details, BIM objects, and construction market data. It also provides a means for the sustainable design evaluation of systems and assemblies in contrast to evaluating individual products.

Arranging Facilities Management Information

As UniFormat is used for preliminary project descriptions to communicate element concepts to a building owner, preliminary project descriptions can be refined and used to communicate the building's functional elements for real estate due-diligence reports and organizing maintenance and operation programs and data. UniFormat is an ideal organizational framework to describe systems design intent for facility commissioning purposes. UniFormat can be used to document how elements function. Preliminary project descriptions can be refined and can evolve through all design phases, ultimately making the commissioning authority's system performance testing and acceptance easier. Descriptions can then be used by the facility operators and maintenance personnel to store information about systems maintenance and operations.

UniFormat Abridged Outline

See the following pages for an abridged, high-level outline of the UniFormat 2010 classification system. Not all of these elements are necessarily present in the current document.

INTRODUCTION	
10	PROJECT DESCRIPTION
A SUBSTRUCTURE	
A10	FOUNDATIONS
A20	SUBGRADE ENCLOSURES
A2010	Walls for Subgrade Enclosures
A40	SLABS-ON-GRADE
B SHELL	
B10	SUPERSTRUCTURE
B1010	Floor Construction
B1020	Roof Construction
B1080	Stairs
B20	EXTERIOR VERTICAL ENCLOSURES
B2010	Exterior Walls
B2020	Exterior Windows
B2050	Exterior Doors and Grilles
B2070	Exterior Louvers and Vents
B30	EXTERIOR HORIZONTAL ENCLOSURES
B3010	Roofing
B3020	Roof Appurtenances
B3060	Horizontal Openings
C INTERIORS	
C10	INTERIOR CONSTRUCTION
C1010	Interior Partitions
C1020	Interior Windows
C1030	Interior Doors
C20	INTERIOR FINISHES
C2010	Wall Finishes
C2020	Interior Fabrications
C2030	Flooring
C2040	Stair Finishes
C2050	Ceiling Finishes
D SERVICES	
D10	CONVEYING
D1010	Vertical Conveying Systems
D20	PLUMBING
D30	HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)
D40	FIRE PROTECTION
D50	ELECTRICAL
D5010	Facility Power Generation
D5020	Electrical Service and Distribution
D5030	General Purpose Electrical Power
D5040	Lighting
D60	COMMUNICATIONS
D6010	Data Communications
D6020	Voice Communications
D6030	Audio-Video Communication
D70	ELECTRONIC SAFETY AND SECURITY

E EQUIPMENT & FURNISHINGS	
E10	EQUIPMENT
E20	FURNISHINGS
F SPECIAL CONSTRUCTION & DEMOLITION	
F10	SPECIAL CONSTRUCTION
F20	FACILITY REMEDIATION
F2010	Hazardous Materials Remediation
F30	DEMOLITION
G SITEWORK	
G10	SITE PREPARATION
G20	SITE IMPROVEMENTS
G2010	Roadways
G2020	Parking Lots
G2030	Pedestrian Plazas and Walkways
G2080	Landscaping
G30	LIQUID AND GAS SITE UTILITIES
G3010	Water Utilities
G3020	Sanitary Sewerage Utilities
G3030	Storm Drainage Utilities
G3050	Site Energy Distribution
G3060	Site Fuel Distribution
G40	ELECTRICAL SITE IMPROVEMENTS
G4010	Site Electric Distribution Systems
G4050	Site Lighting
G50	SITE COMMUNICATIONS
G5010	Site Communications Systems
G90	MISCELLANEOUS SITE CONSTRUCTION
G9010	Tunnels
Z GENERAL	
Z10	GENERAL REQUIREMENTS
Z1090	Life Cycle Activities
[Z30]	[COST-BENEFIT OF RENOVATION VERSUS REPLACEMENT]

APPENDIX B
EOU Master Plan – Building Assessment
October, 2011

Overview Assessment – October, 2011

The Eastern Oregon University campus master planning process led by SERA Architects initially included an overview assessment of campus building assets. Conducted in October, 2011, that review was intended to set the context for the master planning process. It entailed a visual observation of all campus buildings to record gross architectural characteristics and general conditions. It was brief, impressionistic and involved no engineering consultants or specific observations.

Observations in this building assessment were conducted during a single-day visit on 27 October 2010. General observations were made of the exteriors and interiors of 26 buildings. This assessment was intended to provide Eastern Oregon University with an inventory of campus buildings including gross general condition, use, accessibility, and types of construction.

Data was collected based on visual observations and discussions with Facilities personnel. The condition assessment for each building was based on a scale of zero to ten: Zero (0) represents an unoccupied and unsafe, dilapidated building, while ten (10) represents a brand-new building with all construction defects addressed.

SERA ARCHITECTURE URBAN DESIGN + PLANNING INTERIOR DESIGN

EOU Master Plan – Building Assessment

Building Number: 1	
Building Name: IH Inlow Hall	
Year Built: 1929	
Significant Renovations: 2005,2010	
Use/Occupancy: administrative	
LEED GOLD	

Configuration:

Shape: linear, symmetrical

Number of stories: two

Roof slope/material: low-slope membrane, tile mansard

Window material: original-wood with single pane glazing hung and casement configurations, renovations-hung windows at wings were provided with new jamb inserts with original sashes, new aluminum casements at second level casements

Skin material: painted concrete with cast concrete ornamentation

General Condition: 0 1 2 3 4 5 6 7 8 (9) 10

Opportunities and Constraints:

Building Design: this first building on campus was originally constructed as the Eastern Oregon Normal School and has maintained historic character but it is not listed on the State's historic register http://www.eou.edu/eou75/decades/files/EOU%201930s%20thesis.pdf, contributes to the historic building zone on campus

Fire & Life Safety: appears to be code compliant, fully sprinkled

Accessibility/ADA: appears to be code compliant

Building Envelope & Energy: limited envelope upgrades were made during 2010 renovation, the first floor walls were furred out and insulated, utilizes campus steam

Other: Cracked and peeling paint was observed on many exterior windows, especially those occurring at grade

Building Number: 2	
Building Name: HH Hunt Hall	
Year Built: 1929	
Significant Renovations: 1939, 1950, 1960	
Use/Occupancy: residence hall	

Configuration:

Shape: agglomeration of straight and hinged wing, with rectilinear portion at hinge

Number of stories: five

Roof slope/material: wings-gabled roofs with asphalt shingles, hinge area-aged membrane

Window material: wood-typical throughout, south wing-original aluminum

Skin material: painted concrete

General Condition: 0 1 2 (3) 4 5 6 7 8 9 10

Opportunities and Constraints:

Building Design: The first portion of the building was originally constructed as the Eastern Oregon Normal School dorm and has maintained original character. It is not listed on the State's historic register however. The building does not possess architectural significance but being 5 stories tall it does provide a visual anchor at the east side of campus.

Fire & Life Safety: egress and life safety requirements do not meet code, non-sprinkled

Accessibility/ADA: inaccessible building, no elevator

Building Envelope & Energy: uses steam radiators for heating but poor windows and mass wall render the building very inefficient to maintain interior comfort, utilizes campus steam and chilled water

Other: The north wing (Section A) is the original building. Then it was added on to in 1939(Section B). The south wing was added in 1950(Section C), then a portion was added in 1960(Section D) at the east side of the hinge potion. Now the north wing is used only for storage. Many of the windows are broken and/or blocked with plywood, and the sewer line has irreparable damage as it connects to 12th.

The balance of the building is completely occupied with students. There is no accessibility provided other than access through the level 1 doors. Building materials observed included

ceiling tiles, VAT, and pipe insulation, all possibly containing asbestos. According to campus staff floor to floor heights would create challenges with building renovation.

Building Number: 3	
Building Name: ACK Ackerman Hall	
Year Built: 1935	
Significant Renovations: 1998	
Use/Occupancy: admin/classroom	

Configuration:

Shape: linear, symmetrical with wings

Number of stories: three

Roof slope/material: low-slope membrane, tile mansard

Window material: wood hung

Skin material: painted concrete with cast concrete ornamentation

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: has generally maintained historic character but it is not listed on the State's historic register, contributes to the historic building zone on campus

Fire & Life Safety: appears to be code compliant, fully sprinkled

Accessibility/ADA: appears to be code compliant; the ADA entry is at gabled porch to the right of the main entry, this very unceremonious entry leads to a basement elevator lobby

Building Envelope & Energy: no energy efficiency upgrades noted, utilizes campus steam and chilled water

Other: The fire service, within the air return plenum, has frozen in cold weather causing maintenance to insulate many of the operable louvers.

The north entry and main entry are those most highly utilized.

Building Number: 4		
Building Name: ACK Ackerman Gym		
Year Built: 1935		
Significant Renovations: 2011(main gym only)		
Use/Occupancy: flex space		

Configuration:

Shape: vault with expressed ribs

Number of stories: single with mezzanine

Roof slope/material: asphaltic sheet on dome, flat roof leaks at studio addressed in renovation

Window material: single pane glazing within steel sashes

Skin material: painted concrete

General Condition: 0 1 2 3 4 5 6 (7) 8 9 10

Opportunities and Constraints:

Building Design: has maintained historic character but it is not listed on the State's historic register, being hidden behind Ackerman Hall its contribution to the historic building zone is limited; original windows, ribbed vault, and expressed concrete buttresses all contribute to its character

Fire & Life Safety: appears to be code compliant, non-sprinkled

Accessibility/ADA: south ramp provides access but code compliance is questionable, mezzanine has new handrails but no elevator access

Building Envelope & Energy: new mechanical systems were added in 2011 renovation but limited envelope upgrades were performed, utilizes campus steam and chilled water

Other: The artists' studios need a restroom. The University is planning to add a canopy over the new wood fired kiln to the south of the artists' studios. A design opportunity exists at the south entry to the gym(now referred to as"flex space"). ADA improvements and exterior covered pedestrian space could improve the entry.

Building Number: 5	
Building Name: BH Badgley Hall – Science Center	
Year Built: 1966	
Significant Renovations: 2004 addition	
Use/Occupancy: science/research	

Configuration:

Shape: linear in the form of a 'Z', with an attached auditorium to SE

Number of stories: three

Roof slope: low-slope membrane, tile mansard

Window material: aluminum storefront

Skin material: EIFS

General Condition: 0 1 2 3 4 5 6 (7) 8 9 10

Opportunities and Constraints:

Building Design: building design is historically respectful of other campus buildings and builds upon existing materials palette

Fire & Life Safety: appears to be code compliant, fully sprinkled(wet system)

Accessibility/ADA: appears to be code compliant, consider addition of ADA door operator at the east entry, the Level 1 north exterior courtyard has no access

Building Envelope & Energy: appears to be code compliant, utilizes campus steam

Other: There is a separate standalone group of buildings within the NW parking area including greenhouses, a chiller enclosure, and backup generator.

Leaks were noted within the tile mansard roof area, especially adjacent to the parapet wall. The Firestone low-slope roof membrane leaks in locations. Maintenance noted that 1 pallet of ceiling tiles is replaced on the third floor each year due to staining caused by roof leakage.

The original building (east portion of the 'Z') has a steel frame structure with floors of concrete on steel decking. The newer building structure is comprised of post tensioned concrete slabs supported by concrete beams and columns on spread footings. Differential settling appears to be causing significant drywall cracking, casework displacement, and doorframe alignment issues in limited areas.

Service access to the building is typically provided via the courtyard at the main building entry. This causes challenges with pedestrian access at the same location. Improvements to pedestrian circulation in this area could be possible via stronger links to the quad directly to the south.

The aluminum skylight system providing daylight into the lobby appears to be functioning properly with no noticeable leaks.

Building Number: 6	
Building Name: AH Alikut Hall	
Year Built: 1996	
Significant Renovations: none	
Use/Occupancy: residence hall	

Configuration:

Shape: linear, offset

Number of stories: three

Roof slope/material: gabled roofs with asphalt shingles

Window material: aluminum sliders

Skin material: wood frame with EIFS

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: typical late century construction with tall vent caps breaking up silhouette, the residence hall respects the existing campus material palette

Fire & Life Safety: appears to be code compliant, fully sprinkled

Accessibility/ADA: appears to be code compliant, west entry has ADA operator, 1 four bed unit is ADA compliant

Building Envelope & Energy: no energy efficiency upgrades noted, independent of campus central plant

Other: The heating system utilizes a building-wide hot water system. It is not on the campus steam system. The boiler has another 8 years left on its expected service life.

Building Number: 8		
Building Name: F Physical Plant		
Year Built: 1970		
Significant Renovations:		
Use/Occupancy: support		

Configuration:

Shape: rectilinear

Number of stories: single

Roof slope/material: low-slope with membrane

Skin material: concrete

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: utilitarian

Fire & Life Safety: not observed

Accessibility/ADA: not observed

Building Envelope & Energy: not observed

Building Number: 9	
Building Name: LH Loso Hall	
Year Built: 1987	
Significant Renovations:	
Use/Occupancy: academic / theatre	

Configuration:

Shape: square auditorium with intersecting trapezoid classroom wing

Number of stories: two with mechanical mezzanine

Roof slope/material: auditorium-hipped gable with fly tower penetrating through clad with Gerard stone clad metal tiles, classroom wing-long single slope roof with snap-loc metal

Window material: aluminum storefront

Skin material: EIFS

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: This building follows a late century modernist style. Its materials reflect those on other campus buildings but its massing and set it apart. The east elevation facing the quad addresses the campus yet the other sides, especially the south and west, create an uninviting approach, especially for those less used to the campus possibly coming only for a performance.

Fire & Life Safety: appears to be code compliant, fully sprinkled

Accessibility/ADA: There is no ADA access to the quad; the accessible entry is to the north where many students enter but the parking is to the south of the building. The 450 seat theatre has two platforms for ADA seating at the same level which doesn't meet current code requirements.

Building Envelope & Energy: appears to be code compliant, utilizes campus steam and chilled water

Other: The main steps as you enter at west from the quad appear to be aging. There is damage to nosings and exposed rebar which appears to be a construction defect.

The building is constructed primarily of steel with floors of concrete on metal decking. The fly tower is a combination of grouted CMU and concrete.

The two masses of the exterior enclose the theatre on the interior with the exception of the fly tower which protrudes through the roof in an abrupt form on the diagonal axis. The space between the theatre and the square mass at the west is back-of-house for the stage while the east becomes the lobby and is used as a lounge and study area.

There is one small stairway open to the lobby which is most heavily used. It is located between the north entry and the north classroom wing. Although student activity in this area makes it a welcoming space, the congestion between classes could be alleviated by modifying the circulation pattern.

The north entry site design requires navigating through a less direct route through diagonal hardscape and often ends in pedestrian traffic walking through landscaping.

Building Number: 10	
Building Name: CS Quinn Community Stadium	
Year Built: 1987	
Significant Renovations:	
Use/Occupancy: athletic	

Configuration:

Shape: linear with concession node at west and elevator tower to south

Number of stories: three

Roof slope/material: hipped gable roof with asphalt shingle

Window material: aluminum hung

Skin material: CMU

General Condition: 0 1 2 3 4 5 6 (7) 8 9 10

Opportunities and Constraints:

Building Design: utilitarian structure with modernist details and hipped roof which recalls other campus roof forms

Fire & Life Safety: appears to be code compliant, non-sprinkled

Accessibility/ADA: there is an elevator traveling from grade to the observation level but access to the bleachers requires those who are disabled to ascend a gravel ramp to access but there are no accommodations for wheel chairs.

Building Envelope & Energy: uninsulated, independent of campus central plant

Other: The plumbing within the concession area and restrooms is served via an accessible chase. The walls and piping are uninsulated and have to be completely drained each season to prevent freezing and breakage of supply/waste lines, and fixtures.

Building Number: 11	
Building Name: QC Quinn Coliseum	
Year Built: 1958	
Significant Renovations: 1987, planned in 2013	
Use/Occupancy: athletic	

Configuration:

Shape: primarily rectilinear

Number of stories: single with mezzanines at pool and gymnasium

Roof slope/material: rolled asphalt roofing typical, pool area at east has membrane with lightweight concrete ballast panels

Window material: original-aluminum with single pane glazing, renovation-aluminum storefront

Skin material: painted concrete, cmu, and brick

General Condition: 0 1 2 3 4 5 (6) 7 8 9 10

Opportunities and Constraints:

Building Design: The butterfly roof form dominates the roofline above the building's rectilinear massing. Concrete and brick masonry forms anchor the north, south, and west sides, while the late 80's cmu form occupies the east. Color, material, window systems, and canopies all tell a story of an additive structure. Entry improvements at the exterior and transparency on the interior would be of benefit for occupants.

Fire & Life Safety: assembly spaces appear not to meet current code requirements, non-sprinkled

Accessibility/ADA: building has limited accessibility; modifications have been made to locker rooms and restrooms to meet some standards

Building Envelope & Energy: levels of insulation and window systems create uncomfortable zones at exterior, utilizes campus steam

Other: The primary gymnasium structure is comprised of steel long span trusses bearing on concrete walls. The balance of the roof structure is primarily wood beams and decking with the exception of the pool area where the roof structure is comprised of precast concrete T-joists.

The pool, originally at the west side of the building has been recently filled in with a wood framed floor system designed to carry maintenance equipment. It is currently being used as a practice facility for the track and field program.

The east wing, added in ’87 is a fitness center shared by students and athletes. Partially constructed over the old wrestling gym, the floor in the fitness center is buckling in places due to lack of adequate movement joint.

Building Number: 12	
Building Name: HUB Hoke Union Building	
Year Built: 1973	
Significant Renovations: planned in 2013	
Use/Occupancy: student life/dining	

Configuration:

Shape: rectilinear terraces stepping back broken by vertical circulation at north and several tapered volumes

Number of stories: three

Roof slope/material: low-slope with membrane, and steep-slope with standing seam copper clad stainless steel roofing

Window material: aluminum curtainwall, storefront, zipper-gasket systems

Skin material: painted concrete, standing seam copper clad stainless, and EIFS

General Condition: 0 1 2 3 (4) 5 6 7 8 9 10

Opportunities and Constraints:

Building Design: The northeast corner of the HUB is a successful activity spot. The balance of the grade level exemplifies late brutalist design with limited or no windows. The tan concrete and EIFS elements reflect campus materiality while the copper clad parapet and pitched roofs

Fire & Life Safety: additional exits needed from upper story assembly spaces, low terrace railings and untempered glass create life safety hazards, clear exit paths are not provided pr indicated, are fire sprinklers only cover the greater portion of the basement

Accessibility/ADA: restrooms, stair railings, and building entries do not comply with current accessibility requirements

Building Envelope & Energy: The building has a very poor envelope from both the perspective energy efficiency and maintenance. Terraces over occupied space, especially in climates like in Eastern Oregon, require robust assemblies, good detailing and construction, and ongoing maintenance; the terraces here have seen little of this. Non-thermally broken window systems with single pane glazing are prevalent throughout and need to be replaced. The roofing membrane is at the end of its service life. The building utilizes campus steam and chilled water

Other: Mac's Grill is a popular stop for many students and faculty. Unfortunately the balance of the building is not accessed by much of the student population, save trips up to eat in the

cafeteria. Wayfinding, increased transparency, and access to student organizations would make the building more active.

In additional to the roofs, terraces, and windows mentioned above, there are other envelope systems that require maintenance. The skylight at the south entry is leaking and damaging interior finishes. The EIFS is cracking and requires to maintenance to prevent leaks, interior damage, and further damage to the skin system. And finally the concrete retaining walls and exterior building walls need cracks repaired and elastomeric finish replaced to prevent further degradation, spalling, and corrosion of reinforcing.

Building Number: 13	
Building Name: ZH Zabel Hall	
Year Built: 1974	
Significant Renovations: planned in 2011-12	
Use/Occupancy: academic	

Configuration:

Shape: rectilinear with accentuated vertical circulation and auditorium at northwest

Number of stories: two

Roof slope/material: low-slope with membrane

Window material: aluminum storefront

Skin material: painted concrete

General Condition: 0 1 2 3 4 (5) 6 7 8 9 10

Opportunities and Constraints:

Building Design: late brutalist design with no windows at grade, very uninviting and militaristic

Fire & Life Safety: appears to be code compliant, non-sprinkled

Accessibility/ADA: appears to marginally fulfill ADA requirements

Building Envelope & Energy: no energy efficiency upgrades noted, utilizes campus steam and chilled water

Other: The lack of windows at grade and brush-hammered concrete really make the building difficult to approach. The west courtyard has potential to be a nice space but is capitalized by yet another brutalist wall. The auditorium mass to the northwest juts into a primary north/south pedestrian corridor.

Classroom configurations are inefficient and uninviting. Many teachers prefer other facilities when faced with choices about available classrooms.

Building Number: 14	
Building Name: PL Pierce Library	
Year Built: 1949	
Significant Renovations: 2011	
Use/Occupancy: academic	

Configuration:

Shape: tripartite, large rectilinear volume to north and smaller rectilinear volume to south oriented symmetrically about central 3 story volume

Number of stories: two/three with basement

Roof slope/material: low-slope membrane, tile mansard (discussing with Allied Works, sounds like they are retaining the existing roof assembly)

Window material: steel (discussing with Allied Works, sounds like new insulated glazing in existing windows)

Skin material: painted plaster on concrete

General Condition: not observed, under construction

Opportunities and Constraints:

Building Design: contributes to the historic building zone on campus

Fire & Life Safety: not observed, under construction

Accessibility/ADA: not observed, under construction

Building Envelope & Energy: (discussing with Allied Works, sounds like no thermal performance improvements to roof or exterior walls), utilizes campus steam and chilled water

Building Number: 15	
Building Name: FSH Eocene Courts	
Year Built: 1962	
Significant Renovations:	
Use/Occupancy: residence hall	

Configuration:

Shape: quad-plex development

Number of stories: two

Roof slope/material: gable roof with asphalt shingle

Window material: aluinum with single pane glazing, and aluminum storm windows

Skin material: painted T 1-11 siding, painted stucco

General Condition: 0 1 2 3 (4) 5 6 7 8 9 10

Opportunities and Constraints:

Building Design: utilitarian structure

Fire & Life Safety:

Accessibility/ADA: residence has no accessibility features

Building Envelope & Energy: gas water and gas wall heater with fan

Other: The four quad-plexes total 16 family housing units. There is an additional single story building on site which houses a laundry facility in half and a shop for the groundkeeper in the other half.

The concrete walks which access the various units are in poor condition. Many have been replaced recently, or will be replaced soon with the replacement of water service to each of the buildings.

All units were occupied, or planned to be occupied at the time of SERA's visit.

Building Number: 16		
Building Name: F Physical Plant Storage		
Year Built: 1989		
Significant Renovations:		
Use/Occupancy: support		

Configuration:

Shape: rectilinear

Number of stories: single

Roof slope/material: gable roof with metal roofing, shed roof at north also metal

Window material: vinyl

Skin material: metal siding

General Condition: 0 1 2 3 4 5 6 7 8 (9) 10

Opportunities and Constraints:

Building Design: utilitarian

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: appears to meet basic ADA requirements

Building Envelope & Energy: only the shed portion is insulated, the main part of the building is for storage only, independent of campus central plant

Other: Within the shed roof portion is the head custodian's office, locksmith's office, and campus blueprint room

Building Number: 17	
Building Name: F Physical Plant Services	
Year Built: 1980	
Significant Renovations:	
Use/Occupancy: support	

Configuration:

Shape: U-shaped around central parking area

Number of stories: single

Roof slope/material: low-slope with membrane

Window material: vinyl

Skin material: wood frame with metal siding

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: The building functions well by compacting services into a single courtyard and providing each department -offices, carpentry, painting, grounds, maintenance, mechanical/tires, and shipping receiving- with their own space.

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: appears to be code compliant

Building Envelope & Energy: appears to be code compliant, utilizes campus steam

Other: Challenges were witnessed in storage area even though a physical plant storage building was added in 1987. There were many things stored outside around the perimeter of the yard and waste recycling areas were not under cover. This could be challenging for the facilities department, especially during the winter months.

Building Number: 18		
Building Name: Physical Education Storage (370 SF)		
Year Built: 1984		
Significant Renovations:		
Use/Occupancy: athletic		

Configuration:

Shape: rectilinear

Number of stories: single

Roof slope/material: gabled with asphalt shingle

Window material: n/a

Skin material: painted T1-11 siding

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: utilitarian

Fire & Life Safety: not observed

Accessibility/ADA: not observed

Building Envelope & Energy: unconditioned

Other: The building is located on the south fields, between the track and baseball field.

Building Number: 19		
Building Name: Hazmat Storage (270 SF)		
Year Built: 2004		
Significant Renovations:		
Use/Occupancy: support		

Configuration:

Shape: rectilinear modular structures

Number of stories: single

Roof slope/material: gabled with asphalt shingle

Window material: n/a

Skin material: painted T1-11 siding

General Condition: 0 1 2 3 4 5 6 (7) 8 9 10

Opportunities and Constraints:

Building Design: utilitarian pair of gabled storage sheds

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: not observed

Building Envelope & Energy: unconditioned

Building Number: 20	
Building Name: Old Concession Stand (750 SF)	
Year Built: 2004	
Significant Renovations:	
Use/Occupancy: support	

Configuration:

Shape: rectilinear

Number of stories: single

Roof slope/material: gabled with asphalt shingle

Window material: none

Skin material: painted cmu

General Condition: 0 1 2 3 4 5 6 (7) 8 9 10

Opportunities and Constraints:

Building Design: Utilitarian structure which served as the concession stand before 1987. Serving windows can still be seen on the east façade. Hazmat placards are posted on the southeast door.

Fire & Life Safety: recommend looking at code required separation requirements for office and chemical storage

Accessibility/ADA: not observed

Building Envelope & Energy: not observed, independent of campus central plant

Other: The building is used as the grounds keeper's office. It includes pesticide and fertilizer storage and required eyewash/shower, and other supplies. The ventilation in the storage area may not be adequate to occupy other parts of the building safely. The separation between building functions may want to be reviewed.

This building has clearly been repurposed, which is generally good, but the location is not inviting for attendees at games. It may also be best to have the grounds keeper's facility at the facilities services building.

Building Number: 22		
Building Name: SHC Student Health		
Year Built: 1945		
Significant Renovations:		
Use/Occupancy: administrative		

Configuration:

Shape: rectilinear with gabled garage and front pop-outs

Number of stories: single

Roof slope/material: gabled with asphalt shingle

Window material: vinyl and wood with aluminum storm windows

Skin material: brick veneer and painted wood lap siding, garage is painted T1-11 siding

General Condition: 0 1 2 3 4 (5) 6 7 8 9 10

Opportunities and Constraints:

Building Design: typical mid-century ranch style home with more recent garage addition, the creative routing of mechanical ductwork up the north side of the structure detracts from the building's appeal at the northwest entry to campus

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: the building has limited accessibility; there is a new concrete accessible ramp at the south main entry so patients can access the entry area, once in the building facilities have not been upgraded, and the entire basement houses offices and counseling areas with no access

Building Envelope & Energy: storm windows assist in interior comfort, heating/cooling are provided via a heat pump in the back yard and a mini-boiler, lack of insulation on exterior and within attic minimize efficiency of ductwork, independent of campus central plant

Other: The plumbing within the concession area and restrooms is served via an accessible chase. The walls and piping are uninsulated and have to be completely drained each season to prevent freezing and breakage of supply/waste lines, and fixtures.

Six employees work full time in the space and many students and faculty visit each day.

Building Number: 24	
Building Name: KEOL Radio Station	
Year Built: 1946	
Significant Renovations:	
Use/Occupancy: student life	

Configuration:

Shape: rectilinear

Number of stories: single with full basement

Roof slope/material: low-sloped gable with metal roofing

Window material: wood

Skin material: painted stucco

General Condition: 0 1 2 (3) 4 5 6 7 8 9 10

Opportunities and Constraints:

Building Design: The building is compact, has arched openings, and window canopies with bracketed supports. It does not detract from the campus fabric but would not be considered a necessary structure to retain either.

Fire & Life Safety: the small wood framed structure has steep narrow stairs and is sited too closely to the Pierce Library to its south

Accessibility/ADA: the building is not accessible

Building Envelope & Energy: not observed, independent of campus central plant

Other: Prior to installation of the metal roof the building experienced water damage. It is suspected that dry rot is prevalent throughout many areas of the structure.

The building in general is in poor condition. The stucco finish is failing and windows and doors have been left unpainted for long periods of time.

Areas of potential settling were observed in the basement.

Building materials observed included ceiling tiles, and pipe insulation which have a high likelihood of containing asbestos.

Building Number: 28	
Building Name: CSB Community School of the Arts	
Year Built: 1945	
Significant Renovations:	
Use/Occupancy: academic	

Configuration:

Shape: typical 4-square

Number of stories: two

Roof slope/material: hipped gable with asphalt shingle

Window material: aluminum replacements in wood frames

Skin material: painted rabbeted wood siding

General Condition: 0 1 2 3 4 5 (6) 7 8 9 10

Opportunities and Constraints:

Building Design: traditional early century house with original character intact on both interior and exterior

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: the building has limited accessibility; there is a new steel accessible ramp at the north main entry so patients can access the entry area and a few rooms on the first floor, once in the building facilities have not been upgraded, the second floor consists of various rooms which are regularly utilized

Building Envelope & Energy: gas forced air furnace and water heater, independent of campus central plant

Other: The Community School of the Arts provides art and music lessons for both EOU students and children within the community. There are various classrooms for visual and vocal arts

Building Number: 29	
Building Name: Eocene Manager's House	
Year Built: 1975	
Significant Renovations:	
Use/Occupancy: private residence	

Configuration:

Shape: rectilinear

Number of stories: single with crawspace

Roof slope/material: gabled with asphalt shingle

Window material: aluinum with single pane glazing, and aluminum storm windows

Skin material: painted T 1-11 siding

General Condition: 0 1 2 3 (4) 5 6 7 8 9 10

Opportunities and Constraints:

Building Design: utilitarian structure

Fire & Life Safety: not observed

Accessibility/ADA: residence has no accessibility features

Building Envelope & Energy: gas water and space heat have no efficiency measures, independent of campus central plant

Building Number: 33	
Building Name: DH South Dorm / Daugherty Hall	
Year Built: 2006	
Significant Renovations:	
Use/Occupancy: residence hall	

Configuration:

Shape: L-shape

Number of stories: two

Roof slope/material: hipped gable with asphalt shingle

Window material: fiberglass

Skin material: painted fiber cement siding

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: two wings with common space at hinge

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: appears to be code compliant

Building Envelope & Energy: code minimum insulation, utilizes campus steam

Other: The dorm buildings were budgeted, designed, and constructed to be an immediate need buildings with a shorter lifespans(10-15 years). The panelized construction allowed for short construction schedule and minimalist finishes.

Residence life maintenance finds earlier decisions about durability of systems and products cause more maintenance time and cost money. Specific items most troubling to them include the storefront entry systems, vertical blinds, entry level residential toilets, and lack of abuse resistant drywall.

Building Number: 34	
Building Name: NH North Hall	
Year Built: 2006	
Significant Renovations:	
Use/Occupancy: residence hall	

Configuration:

Shape: L-shape

Number of stories: two

Roof slope/material: hipped gable with asphalt shingle

Window material: fiberglass

Skin material: painted fiber cement siding

General Condition: 0 1 2 3 4 5 6 7 (8) 9 10

Opportunities and Constraints:

Building Design: two wings with common space at hinge

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: appears to be code compliant

Building Envelope & Energy: code minimum insulation, utilizes campus steam

Other: The dorm buildings were budgeted, designed, and constructed to be an immediate need buildings with a shorter lifespans (10-15 years). The panelized construction allowed for short construction schedule and minimalist finishes.

Residence life maintenance finds earlier decisions about durability of systems and products cause more maintenance time and cost money. Specific items most troubling to them include the storefront entry systems, vertical blinds, entry level residential toilets, and lack of abuse resistant drywall.

Building Number: 35	
Building Name: Dorm Maintenance Shop	
Year Built: 2006	
Significant Renovations:	
Use/Occupancy: support	

Configuration:

Shape: rectilinear

Number of stories: single

Roof slope/material: hipped gable with asphalt shingle

Window material: fiberglass

Skin material: painted fiber cement siding

General Condition: 0 1 2 3 4 5 6 7 8 (9) 10

Opportunities and Constraints:

Building Design: utilitarian structure

Fire & Life Safety: appears to be code compliant

Accessibility/ADA: appears to be code compliant

Building Envelope & Energy: code minimum insulation, utilizes campus steam

Other: This structure houses the water/steam heat exchanges and domestic hot water for the two adjacent dorm buildings. Waste facilities, a restroom, and Residential Life's maintenance shop are also spaces included.

APPENDIX C
KPFF Badgley Hall Slab-deflection Letter
January 26, 2010

January 26, 2010

Mr. John Blumthal
Yost Grube Hall Architecture
1211 SW Fifth Avenue Suite 2700
Portland, OR 97204-3782

RE: Eastern Oregon University - Badgley Hall

Dear John,

We have reviewed the Badgley Hall drawings relative to the issue of first floor doors binding and sheet rock cracking in the area of the Geology Department. The area reviewed was the first floor shown on our drawing S2.1b between grids 9A-12A/A1-C1, rooms 119, 119B,119C, 127 and 128. The floor construction in these areas is a 12" beam supported conventionally reinforced flat slab. It appears from the photos you sent that at the slab has deflected as much as 1½" inch with low points near the east and west walls of room 119. Cracking was first noticed over a year ago and was reported to recently become more noticeable.

Concrete flat slabs are susceptible to deflection if a number of factors are not carefully maintained. Here are some factors that can lead to slab and beam concrete construction deflection:

- Timeliness of form removal and re-shoring.
- Concrete water/cement ratio. A higher water cement ratio results increased shrinkage cracking and reduced strength.
- Positioning of reinforcing especially top bars which help reduce the affects of long term creep.

Please note the condition on site is not dangerous. This is not a strength issue but rather a serviceability issue. The floor live load design is 125psf. The fact that the labs include stores of rocks for the geology student's work is not a concern.

The floor performance suggests that long term creep is a factor. One explanation would be that the top bars called out in detail 4/S4.2 may have not been placed. The other factor that we see time and time again is forming removed too early or forms removed with the intent to back shore, a stripping and shoring sequence that is very localized not allowing the concrete to support its own self weight versus re-shoring where an entire bay is stripped allowing the slab to carry its self weight before re-supporting.

Either of these factors or both could be expected to affect floor deflections.

In room 127 the sheet rock cracking at the exterior window can be attributed to differential settlement between the grid F1/9A spread footing and the adjacent grid 9A/E1 basement walls.

If you have any questions or require further information, please call me.

Sincerely,

Nathan T. Charlton, P.E., S.E.
Principal/Manager Structural Engineering

APPENDIX D
Plan Room Catalogue
February, 2012

INCLUDES ONLY BUILDINGS COVERED BY FEBRUARY, 2012, BUILDING ASSESSMENT + SITE DRAWINGS (Also includes all drawings stored at Loso Hall mechanical room)								General location of drawings (Initial order on shelves is R to L)																	
Building	Year (ca)	Project	Package / Set / Scope	Disciplines	Phase	Size (4" box; roll; etc.)	Filing Index	E - Upper Shelf	E - Lower Shelf	N - Floor @ E Win	N - Wire Rack W E win	N - Upper Shelf	N - Middle Shelf	N - Lower Shelf	N - Rack @ W Win	W - Shelf	W - Rack 1 (N)	W - Rack 2	W - Rack 3	W - Rack 4 (S)	S - Floor W	S - Plan Table	S - Floor E (@ Door)	Loso Mechanical Rm	Condition / Completeness / Etc
Ackerman Hall	1999		"Duplicates"	HVAC		sm box			x																
Ackerman Hall	___		Misc			sm box			x																
Ackerman Hall	___		Window replacement "duplicate"			sm tube								x											
Ackerman Hall	1988	Ackerman/Pierce	Elevator additions			lrg box								x											
Ackerman Hall	1988	Ackerman/Pierce	Elevator additions		As-builts	clip												x							
Ackerman Hall	2000/2001		Interior renovations			sm box															x				
Alikut Hall	1996		Construction		Bid	sm roll		x																	
Alikut Hall	___		___			sm box		x																	
Alikut Hall	___		Misc sheets			sm roll																			separate sets / sizes
Alikut Hall	1996		Alikut		As-builts	clip														x					
Badgely Hall	2004		Architectural Plan Set	A/?		sm box			x																
Badgely Hall	___		Fire Alarm	FA		med tube			x																
Badgely Hall	2002		"Duplicates"	AV		sm box			x																
Badgely Hall	2002		As-builts "duplicate"	HVAC	As-built	sm box			x																
Badgely Hall	2001		Bid Set	Misc	Bid	sm box			x																
Badgely Hall	2002		"Duplicate"	M/P		sm box			x																
Badgely Hall	1963 1990	Original construction; HVAC modifications	___ HVAC Modifications	Full [?] HVAC	Constr [?]; Constr [?]	lrg box				x															
Badgely Hall	2001		Addition	Full [?]	30% CD	lrg roll				x															
Badgely Hall	2002		Framing Plan	S		sm roll				x															single sheet
Badgely Hall	___		Old HVAC	HVAC		med tube					x														
Badgely Hall	___		Misc Duplicates			sm tube					x														
Badgely Hall	1997	Cooling system replacement duplicates		M		sm tube					x														
Badgely Hall	___		Badgely Misc			sm box					x														
Badgely Hall	2002		Various	Various	Various	loose							x												half-size; loose sheets
Badgely Hall	2002		Revisions			sm roll								x											
Badgely Hall	2001		CD Estimate		CD	lrg roll								x											half-size
Badgely Hall	2003[?]		Plumbing As-builts	P	As-built	med tube								x											
Badgely Hall	2001		Add-alternates		Bid	sm box								x											
Badgely Hall	2004		Lab FFE "duplicate"			sm box								x											
Badgely Hall	2001			A/?	Bid	sm roll								x											
Badgely Hall	2002			A/S	Constr	lrg roll								x											some loose sheets
Badgely Hall	___		Plumbing Plan	P		lrg tube								x											
Badgely Hall	2003		Room Nums / Furniture		Constr	med tube								x											
Badgely Hall	___		___			lrg box								x											
Badgely Hall	2003		[Misc sheets]		Constr	clip									x										
Badgely Hall	1990	HVAC Modifications		HVAC		clip									x										
Badgely Hall	2004		Fire Alarm	FA		clip									x										
Badgely Hall	2004		Record Set		As-built	clip									x										
Badgely Hall	2002/2003		PR#1 + OHSU		Constr	clip									x										
Badgely Hall	2003[?]		Elec / AV As-builts	E/AV	As-built	clip									x										
Badgely Hall	2002		Construction Set Vol 1 / Electrical		Constr	lrg box										x									
Badgely Hall	2001		Permit Set Vol 1		Permit	lrg box										x									
Badgely Hall	2001		Permit Set Vol 2		Permit	lrg box										x									
Badgely Hall	2004		Lab Record Set	LP	As-built	med tube										x									
Badgely Hall	___		"Master" [keying?]			sm roll										x									
Badgely Hall	1963	Badgely II				clip														x					
Badgely Hall	1963	Badgely Hall				lrg box															x				
Badgely Hall	2001		Lab planning / Mech / Elec	LP/M/E	Estimate	lrg tube																x			
Badgely Hall	2001				30% CD	bound																x			half-size

Building	Year (ca)	Project	Package / Set / Scope	Disciplines	Phase	Size (4" box; roll; etc.)	Filing Index	E - Upper Shelf	E - Lower Shelf	N - Floor @ E Win	N - Wire Rack W E win	N - Upper Shelf	N - Middle Shelf	N - Lower Shelf	N - Rack @ W Win	W - Shelf	W - Rack 1 (N)	W - Rack 2	W - Rack 3	W - Rack 4 (S)	S - Floor W	S - Plan Table	S - Floor E (@ Door)	Loso Mechanical Rm	Condition / Completeness / Etc
Badgely Hall	2001		Permit Set		Permit	loose																x			half-size
Badgely Hall	2004[?]		Structural	S	As-built	clip									x										
Badgely Hall	2004		Architectural / Lab FFE	A/LP	As-built	clip													x						
Badgely Hall	2004		Controls		As-built	bound																x			half-size; plastic cover
Badgely Hall	___		Badgely Bid Set		Bid	lrg box																	x		
Badgely Hall	___		Badgely Misc			lrg box																	x		
Badgely Hall	2001		Badgely Bid Set		Bid	lrg box																	x		
Badgely Hall	___		Badgely Blank [sic] Plans / FP / AV	?/FP/AV		lrg box																	x		
Badgely Hall	2002		Construction Set Mech Vol II	M	Constr	lrg box																	x		
Badgely Hall	2001		Design Development		DD	lrg box																	x		
Badgely Hall	2002		Construction Set Civil Vol I "duplicate"	C	Constr	sm box																	x		
Badgely Hall	2001		Bid Set		Bid	sm box																	x		
Badgely Hall	___	New addition; Greenhouse [?]	Draft Baseline Schedule			sm box																	x		
Badgely Hall	2002		Duplicates	A		lrg box																		x	
Badgely Hall	2001		Bid Set Vol II		Bid	lrg box																		x	
Community Stadium	1982		"Duplicates"			sm box			x																
Community Stadium	1984		"Duplicate"			sm box			x																
Community Stadium	2003	Stadium Renovation				clip											x								
Community Stadium	Various		Football Field / Stadium			clip														x					
Community Stadium	___	Stadium Renovation			90%	sm tube															x				
Eocene Courts	1961		"Duplicates"			sm box		x																	
Eocene Courts	1961		Eocene Courts			clip														x					
Facilities Central Plant	1990	Expansion				sm box		x																	
Facilities Central Plant	___		Misc duplicates			sm box		x																	
Facilities Central Plant	___		Misc			lrg box										x									
Facilities Central Plant	___		Physical Plant			sm roll										x									
Facilities Central Plant	1969	Central Heating Plant Relocation				sm roll										x									
Facilities Services	1978/1991/Etc	Physical Plant: Various Projects				clip													x						
President's Residence (Highland House)	1998/1973		"Duplicates"			sm tube		x																	
President's Residence (1410 'L' Ave)	1998	President's Residence Remodel				clip												x							
Hoke Hall		Remodel	Copy			lrg box																		x	
Hunt Hall	1946		___	M/S		sm box		x																	
Hunt Hall	1938	Section A	___			sm tube		x																	
Hunt Hall	1954	Section D	___			sm box		x																	
Hunt Hall	___	Fire Alarm System Improvements		FA		sm tube		x																	
Hunt Hall	1961	Section C (partial)	___			lrg box		x																	
Hunt Hall	___		"Misc Duplicates"			sm tube		x																	
Hunt Hall	1938	Section A	"Duplicates" [?]			sm box		x																	
Hunt Hall	1993		Level 3 as-built		As-built	sheet										x									
Hunt Hall	Various		Hunt II			clip													x						

Building	Year (ca)	Project	Package / Set / Scope	Disciplines	Phase	Size (4" box; roll; etc.)	Filing Index	E - Upper Shelf	E - Lower Shelf	N - Floor @ E Win	N - Wire Rack W E win	N - Upper Shelf	N - Middle Shelf	N - Lower Shelf	N - Rack @ W Win	W - Shelf	W - Rack 1 (N)	W - Rack 2	W - Rack 3	W - Rack 4 (S)	S - Floor W	S - Plan Table	S - Floor E (@ Door)	Loso Mechanical Rm	Condition / Completeness / Etc
Hunt Hall	Various		Hunt I			clip													x						
Inlow Hall			As-builts		As-built	lrg tube																		x	
Inlow Hall	2010	Inlow Phase I				lrg box																		x	
Integrated Services Building	2002		Construction	C/L/Misc		sm roll		x																	a few sheets; half size
Integrated Services Building	2002		Construction	C/Misc		sheets		x																	a few sheets; large format
Integrated Services Building	2002		Construction; Duplicates; As-builts		Design/As-builts	lrg box		x																	
Integrated Services Building	2002		Structural Plans	S	Constr [?]	lrg roll				x															
Integrated Services Building	2002		ISB II: Various As-builts		As-builts	clip													x						
Integrated Services Building	2002		"Complete"			lrg box																		x	
La Grande Head Start	___		"SHC Misc"			sm box		x																	
La Grande Head Start	___		___			sm tube		x																	
La Grande Head Start	Various		Head Start / SHC			clip													x						multiple issues
Loso Hall	___		"Misc"			lrg box			x																
Loso Hall	1988		___			lrg box			x																
Loso Hall	___		Roof			tri box			x																
Loso Hall	1988		___			lrg box			x																
Loso Hall	1988		"Misc"			lrg box								x											sm roll
Loso Hall	___		[misc rolls]			lrg box								x											multiple, small, misc rolls
Loso Hall	1988		___		Constr [?]	clip									x										
Loso Hall	1990		Loso V	Various	As-builts	clip													x						
Loso Hall	1988/1989		Loso IV	Various	Shop dwgs	clip													x						
Loso Hall	1988		Loso III Acme Steel		Shop dwgs	clip													x						
Loso Hall	1987/1992		Loso II Construction / HVAC Modifications			clip													x						mixed issues
Loso Hall	1988		Loso I Record Drawings		As-builts	clip													x						
Loso Hall						lrg tube																		x	transparencies
Loso Hall						lrg tube																		x	
North & South Halls	2005		100% CDs			lrg box																		x	
Quinn Coliseum	2001	Remodel				lrg box																		x	
Student Health Services	___		___			sm tube		x																	
Zabel Hall			"Misc"			lrg box																		x	
Zabel Hall			"Originals"			lrg box																		x	
Campus site / utilities	1973	Pedestrian Mall	"Duplicates"			sm box		x																	
Campus site / utilities	1968	City of La Grande		C (incl campus util)		sm roll			x																
Campus site / utilities	2009	Dorian [site] infrastructure		C		sm tube				x															
Campus site / utilities	2002	Steam Upgrade - all steam-served buildings		M		sm roll						x													
Campus site / utilities	___	Chilled Water Distribution				med tube						x													

Building	Year (ca)	Project	Package / Set / Scope	Disciplines	Phase	Size (4" box; roll; etc.)	Filing Index	E - Upper Shelf	E - Lower Shelf	N - Floor @ E Win	N - Wire Rack W E win	N - Upper Shelf	N - Middle Shelf	N - Lower Shelf	N - Rack @ W Win	W - Shelf	W - Rack 1 (N)	W - Rack 2	W - Rack 3	W - Rack 4 (S)	S - Floor W	S - Plan Table	S - Floor E (@ Door)	Loso Mechanical Rm	Condition / Completeness / Etc
Campus site / utilities	1968	Utilities				sm box										x									
Campus site / utilities	___	Campus Plans Misc	[box 1]			lrg box										x									
Campus site / utilities	___	Campus Plans Misc	[box 2]			lrg box										x									
Campus site / utilities	___	Campus Misc				lrg box										x									a few loose sheets
Campus site / utilities	2002	Steam Upgrade	"duplicates"	HVAC		sm box										x									
Campus site / utilities	1988	EOSC Heating & Cooling System Replacement				lrg box										x									
Campus site / utilities	2002	Steam Upgrade	pricing		Pricing	sm roll										x									
Campus site / utilities	Varoius	Utilities II				clip											x								multiple surveys, utilities, etc.
Campus site / utilities	Varoius	Utilities I				clip											x								multiple surveys, utilities, etc.
Campus site / utilities	1973/1974	Pedestrian Mall				clip											x								various sheets
Campus site / utilities	1990	Telephone Improvements				clip											x								
Campus site / utilities	Varoius	Irrigation				clip											x								multiple sheets
Campus site / utilities	Varoius	Parking Lots I				clip												x							multiple sheets
Campus site / utilities	Various	Irrigation I				clip												x							multiple sheets
Campus site / utilities	2002	Steam Upgrade - all steam-served buildings		M	Pricing	clip													x						
Campus site / utilities	1988	Energy Conservation Improv III				clip														x					
Campus site / utilities	___	Energy Conservation Study II [sic] [Accessibility Renovation]				clip														x					actually is accessibility renovation; which building?
Campus site / utilities	1988/1989	Energy Conservation Improv I - Central chillers / lighting upgrades		M/E		clip														x					
Campus site / utilities	Various	City Plots				clip														x					multiple sheets
Campus site / utilities	___	EOU Basic Utilities				lrg tube															x				
Campus site / utilities	1932	Site Plan				sm box																x			
Master planning	1987	Facilities Utilization Study				lrg box		x																	
Master planning	Various	Campus - Various Master Plans				clip													x						
Master planning	1987	Facilities Utilization Study				clip														x					