

FACILITIES PLAN TECHNICAL REPORTS

Building Summary

In partnership with:





CASCADE

CASCADE CAMPUS

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CASCADE

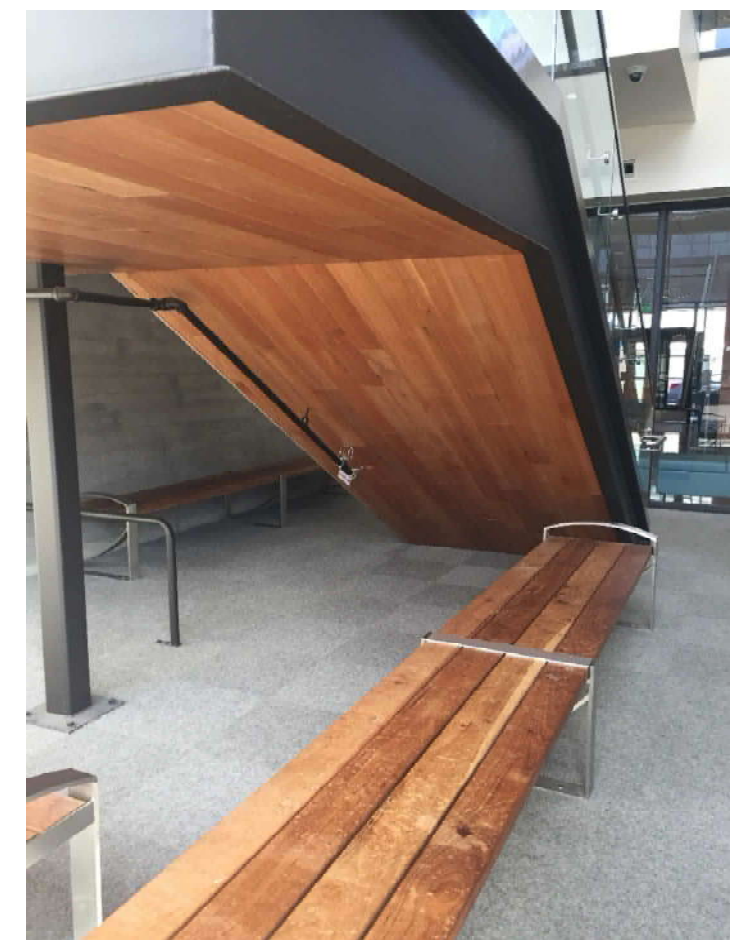
Academic Building

The Academic Building is a 49,210-square foot three-story structure. The building was constructed in 2015. The design relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- Roof and floor construction consists of reinforced concrete topping slabs over metal deck and steel framing.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete shear walls.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity. Design of the gravity supporting system meets current building code basis of design criteria for live loading.

Cracking in the floor slabs is exacerbated by the polishing process. The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

Jackson Hall

The Jackson Hall building is a 48,457-square foot two-story structure. The building was constructed in 1985 and renovated in 2002. Design relied upon the 1982 Uniform Building Code and the 1998 Oregon Structural Specialty Code. Construction consists of:

- Roof construction consists of steel open web joists supported by steel beams.
- The second floor consists of a reinforced concrete slab over metal deck supported by steel beams.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete shear walls and steel braced frames added in 2002.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

Moriarty Arts and Humanities

The Moriarty Arts and Humanities building is a 42,173-square foot two-story structure. The building was constructed in 2005. Design relied upon the 1998 Oregon Structural Specialty Code. Construction consists of:

- Metal roof deck supported by steel framing
- 2nd floor: 2 ½" concrete topping slab over 3" metal deck supported by steel framing
- Roof and floor are supported by steel columns
- The foundation system consists of reinforced concrete spread and strip footings
- Lateral forces are resisted by special concentric braced frames in each direction

The structural design utilized a recent building code with standards similar to current building code. Building structural performance under gravity loading, wind loading, and seismic loading is expected to match that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. The first-floor concrete slab-on-grade exhibits areas of cracking exceeding what we would expect for a building of this use and vintage; see adjacent photos. Cracking likely occurred during construction. We recommend repairing the cracks to avoid long term maintenance and possible tripping hazards.



CASCADE CAMPUS

Library and Student Center Building

The Library and Student Center Building is a 34,441-square foot four-story structure. The original building was constructed in 1970, an addition added in 1993, and renovation in 2015. The original building was removed in 2015. The addition relied upon the 1991 Uniform Building Code (UBC). The addition Renovations relied upon the 1991 Uniform Building Code and 2014 Oregon Structural Specialty Code.

Construction consists of:

1993 Addition:

- Roof construction consists of steel framing supporting metal deck.
- Floor construction consists of reinforced concrete slab on metal deck supported by steel beams and girders.
- Columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by steel braced frames.

2015 Addition:

- Roof construction relies upon the existing steel open web joists from the 1993 addition.
- Floor construction consists of reinforced concrete slab on metal deck supported by steel beams and girders.
- Columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by sure-board sheathed shear walls.

The structural designs relied upon recent building codes employing detailing requirements reflecting that necessary for a region of high seismicity.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

Physical Education Building

The Physical Education building is a 31,882-square foot two-story structure. The building was constructed in 2004. Design relied upon the 1998 Oregon Structural Specialty Code. Construction consists of:

- Roof construction consists of steel trusses and beams supporting metal deck.
- The second floor consists of a post tensioned reinforced concrete slab supported by concrete columns.
- Columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete shear walls at level 1 and steel braced frames at level 2.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

Public Services Education Building

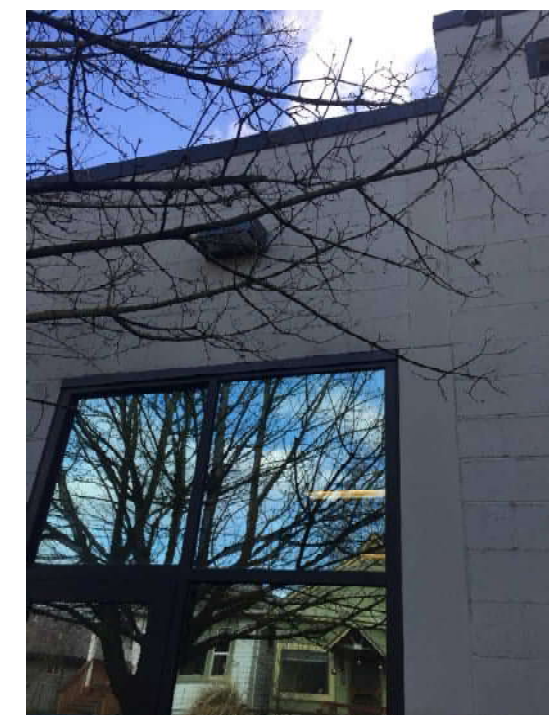
The Public Services Education Building is a 28,400-square foot one-story structure. The original building was constructed in 1950's and was renovated in 2003. Original drawings are unavailable. The latest renovation utilized the 1998 Oregon Structural Specialty Code.

Construction consists of:

- Original building roof construction consists of 2x joists supported by glu-laminated beams and steel pipe columns.
- New addition roof constructed using steel open-web joists supporting metal decking and spanning to bearing walls and steel wide flange beams.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by concrete and masonry shear walls.

The structural design for the renovation and addition utilized a recent building code with standards similar to current building code. Building structural performance under gravity loading, wind loading, and seismic loading is expected to match that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

Student Services Building

The Student Services Building is a 34,000-square foot three-story structure. The building was constructed in 1996. The design relied upon the 1991 Uniform Building Code. Construction consists of:

- Roof construction consists of metal deck supported by steel framing.
- Floors consist of reinforced concrete slabs on metal deck supported by steel beams.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by steel braced frames.

The structural design relied upon the 1991 Uniform Building Code employing detailing requirements necessary for a region of high seismicity.

The stair tower exhibited signs of moisture accumulation. We recommend addressing the moisture to avoid long term maintenance issues. The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

Technology Education Building

The Technology Education Building is a 50,500-square foot two-story structure. The building was constructed in 2004. The design relied upon the 1998 Oregon Structural Specialty Code. Construction consists of:

- Roof construction consists of metal deck supported by steel open web joists.
- The second floor consists of a reinforced concrete slab on metal deck supported by steel beams.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by steel braced frames.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Photographs show typical maintenance conditions observed.



CASCADE CAMPUS

Terrell Hall

The Technology Education Building is a 48,192-square foot two-story structure. The original building was renovated in 1971. Additions were added in 1974, 1988, and 2004. The latest renovation utilized the 1998 Oregon Structural Specialty Code. The original building was replaced in 2004. Construction consists of:

1974 Addition, two-stories north of the original construction:

- Roof consists of tongue and groove decking supported by glue-laminated beams and steel columns
- Second floor consists of reinforced concrete waffle slab supported by reinforced concrete columns.
- Reinforced masonry walls resist lateral loads.

1988 Addition, two-stories east of the 1974 addition:

- Roof consists of metal decking supported by steel open-web joists and wide-flange beams.
- Second floor consists of concrete on metal deck supported by steel open-web joists and wide flange beams. Steel columns transfer loads to the foundations.
- The addition is seismically isolated from the 1974 addition.
- Steel ordinary moment frames resist lateral loads at the second level.
- Reinforced masonry walls resist lateral loads at the ground level.

2004 Addition, two-stories in place of the original building:

- Roof consists of metal decking supported by steel wide-flange beams.
- Second floor consists of concrete on metal deck supported by wide flange beams. Steel columns transfer loads to the foundations.
- The addition is seismically isolated from other structure.
- Steel braced frames resist lateral loads.

The structural designs rely upon more recent building codes giving varying degrees of ductility in the structural systems. Performance of the additions will vary based upon vintage of construction. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

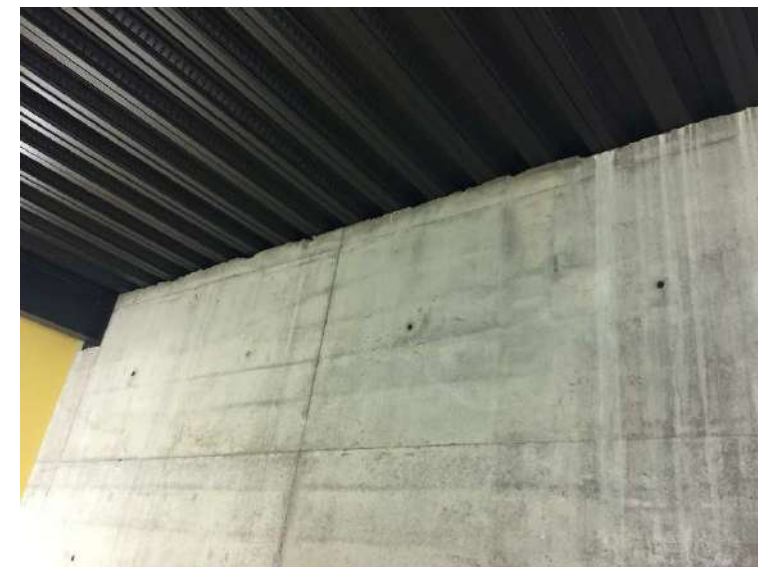
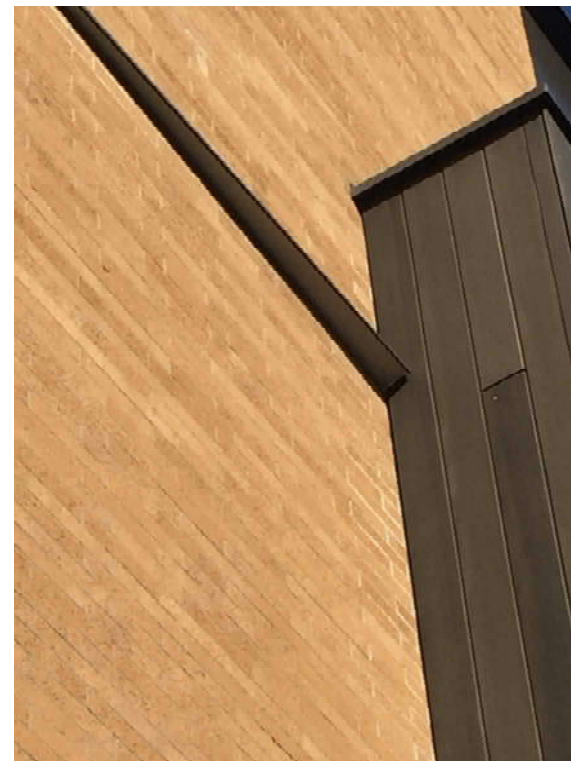
Student Union Building

The Student Union building is a 37,606-square foot three-story structure. The building was constructed in 2015. Design relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- Roof and floor construction consists of reinforced concrete topping slabs over metal deck and steel framing.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete shear walls.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity.

While conducting a walkthrough, we noted loose flashing within the brick veneer shown in the adjacent photo. We alerted maintenance personnel of the issue. In general, the building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



CASCADE CAMPUS

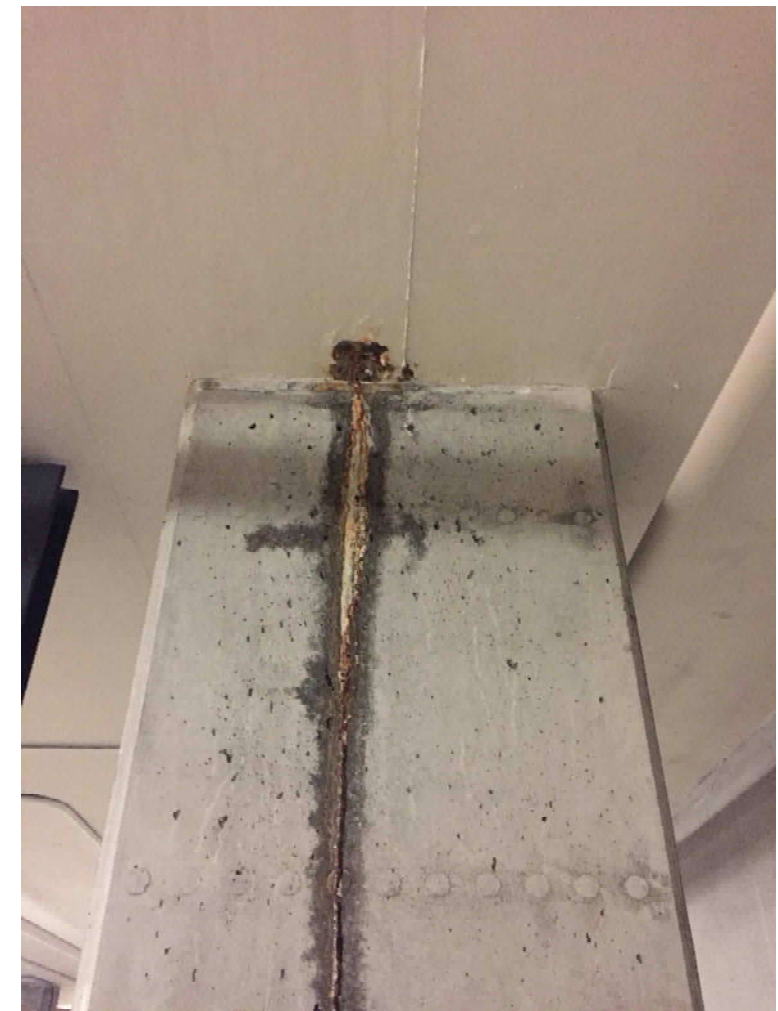
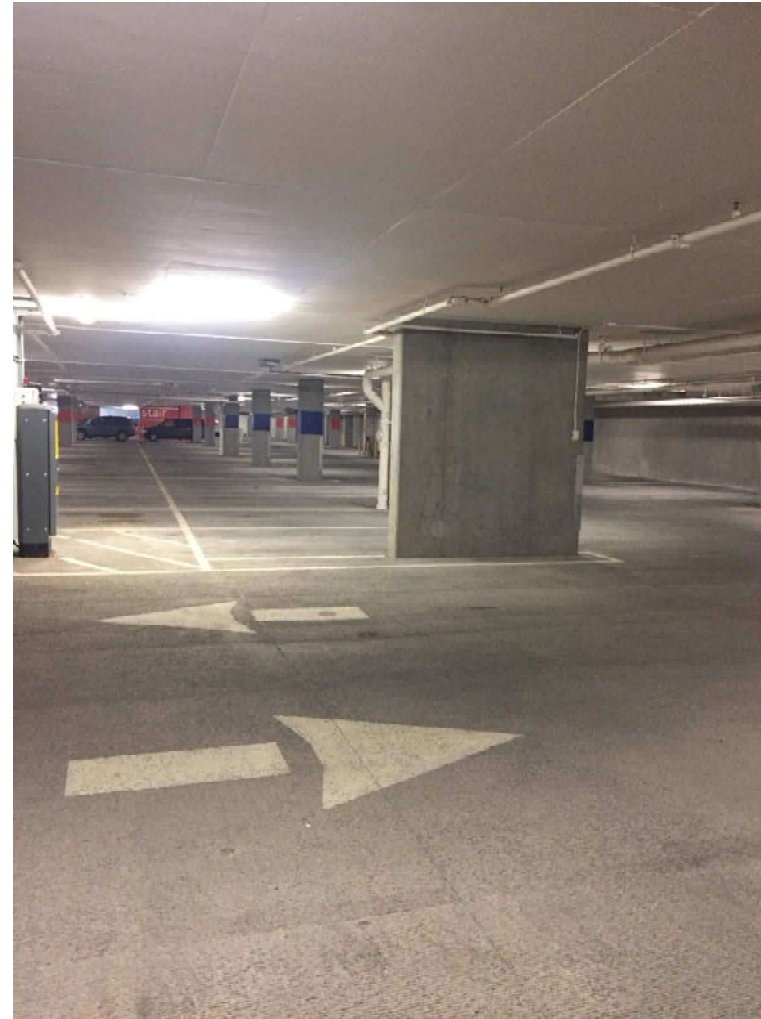
Underground Parking

The Underground Parking building is a 68,571-square foot one-story structure. The building was constructed in 2013. Design relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- Roof construction consists of post tensioned reinforced concrete slab supported by reinforced concrete columns.
- Columns transfer loads to the foundations.
- The floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete shear walls.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity.

Cracking in the post tensioned concrete slab was observed at the southern end of the garage and water intrusion is apparent in some areas of the garage. We recommend addressing the issues to help avoid long term maintenance issues.



CASCADE

Paragon Building

The Paragon Building is a 4,165-square foot one-story structure. The building was constructed in 1950. The design relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- Light wood roof framing supporting plywood sheathing.
- Timber columns and unreinforced masonry bearing walls.
- The first floor is a concrete slab-on-grade.
- The foundation system is assumed to be reinforced concrete spread and strip footings.

The original construction was not likely designed or engineered to a specific code given the vintage of the building. A voluntary upgrade was applied to the building in 2012. The upgrade added plywood roof sheathing and a new ordinary steel moment frame at the southern façade.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.





ROCK CREEK

ROCK CREEK CAMPUS

- 16 Building 1
- 17 Building 2
- 18 Building 3
- 19 Building 4
- 20 Building 5
- 21 Building 6
- 22 Building 7
- 23 Building 9

ROCK CREEK

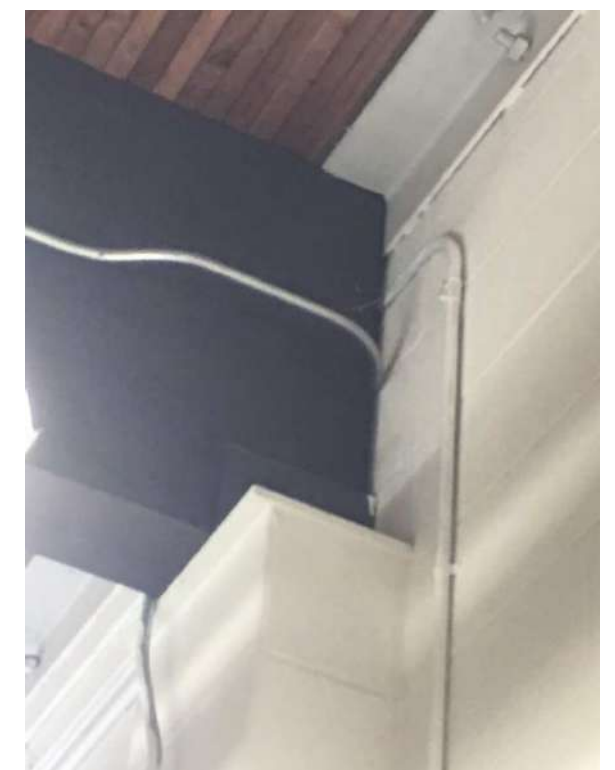
Building 1

Building 1 is a 16,200-square foot two-story structure. The building was constructed in 1976 and had minor renovations in 2013. Original design relied upon the 1973 Uniform Building Code. Renovations used the 2010 Oregon Structural Specialty Code. Construction consists of:

- Wood framed floor and roof with plywood sheathing.
- Interior reinforced concrete columns and perimeter reinforced concrete walls support the 2nd floor and roof.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete walls.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. Renovations in 2013 did not alter or address the original lateral force resisting system.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 2

Building 2 is a 179,947-square foot two-story structure. The building was constructed in 1976 and had renovated in 2015. Original design relied upon the 1973 Uniform Building Code. Renovations used the 2014 Oregon Structural Specialty Code. Construction consists of:

- The roof consists of plywood sheathing supported by heavy timber trusses, beams and wood stud walls.
- The second floor consists of a reinforced concrete waffle slab supported by reinforced concrete columns and walls.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by plywood shear walls at Level 2 and reinforced concrete walls at Level 1.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. Renovations addressed major structural deficiencies in the lateral force resisting system.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 3

Building 3 is a 80,877-square foot two-story structure. The building was constructed in 1977 and had renovated in 2015. Original design relied upon the 1973 Uniform Building Code. Renovations used the 2014 Oregon Structural Specialty Code. Construction consists of:

- The roof consists of plywood sheathing supported by tongue and groove decking, timber joists, and timber beams.
- The second floor consists of a reinforced concrete waffle slab supported by reinforced concrete columns and walls.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by plywood shear walls at Level 2 and reinforced concrete walls at Level 1.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. Renovations addressed major structural deficiencies in the lateral force resisting system.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 4

Building 4 is a 3,739-square foot one-story structure. The building was constructed in 1993. Original design relied upon the 1991 Uniform Building Code. Construction consists of:

- Pre-manufactured metal building by Butler Manufacturing Company.

Original building drawings are not available. Original metal building shop drawings were reviewed.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 5

Building 5 is an 87,743-square foot two-story structure. The building was constructed in 1982 and expanded in 2014. Original design relied upon the 1976 Uniform Building Code. The addition used the 2010 Oregon Structural Specialty Code. The original building measures 25,428-square feet and is isolated from the 62,315 square foot addition. Construction consists of:

1982 Original:

- The roof consists of plywood sheathing supported by timber joists and steel trusses.
- Perimeter reinforced concrete walls transfer loads to the foundation.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Reinforced concrete walls resist lateral loads.

2014 Addition:

- Roof and floor construction consists of reinforced concrete topping slabs over metal deck and steel framing.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Buckling Restrained Braced frames resist lateral forces.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. The addition meets current code requirements for lateral force resisting systems.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 6

Building 6 is an 32,692-square foot one-story structure with a 3,200-square foot mezzanine. The building was constructed in 1979. Original design relied upon the 1976 Uniform Building Code. Construction consists of:

- The roof consists of metal decking supported by metal girts and steel beams.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Diagonal tie-rod frames resist lateral forces.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 7

Building 7 is a 121,585-square foot two-story structure. The building was constructed in 1996 and expanded in 2002 and 2012. Original design relied upon the 1991 Uniform Building Code. Renovations used the 1997 Uniform Building Code and the 2010 Oregon Structural Specialty Code. Construction consists of:

1996 Original:

- Roof and floor construction consists of reinforced concrete topping slabs over metal and steel framing.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Ordinary concentric braced frames resist lateral forces.

2002 Addition:

- Roof and floor construction consists of reinforced concrete topping slabs over metal deck and steel framing.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Ordinary concentric braced frames and CMU shear walls resist lateral forces.

2012 Addition:

- Roof and floor construction consists of reinforced concrete topping slabs over metal deck and steel framing.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Buckling Restrained Braced Frames resist lateral forces.

The original structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity. The addition meets current code requirements for lateral force resisting systems.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



ROCK CREEK

Building 9

Building 9 is an 72,000-square foot two-story structure. The building was constructed in 2004. Original design relied upon the 1998 Oregon Structural Specialty Code. Construction consists of:

- Roof and floor construction consists of reinforced concrete topping slabs over metal deck and steel framing.
- The clear story roof above the library consists of tongue and groove decking supported by heavy timber joists.
- Steel columns transfer loads to the foundations.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by ordinary concentric braced frames at the second level and reinforced concrete shear walls at the first level.



The original structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SOUTHEAST CAMPUS

- 25 Administration Hall
- 26 Community Hall Annex
- 27 Library
- 28 Mt Scott Hall
- 29 Mt Tabor Hall
- 30 Student Commons

SOUTHEAST



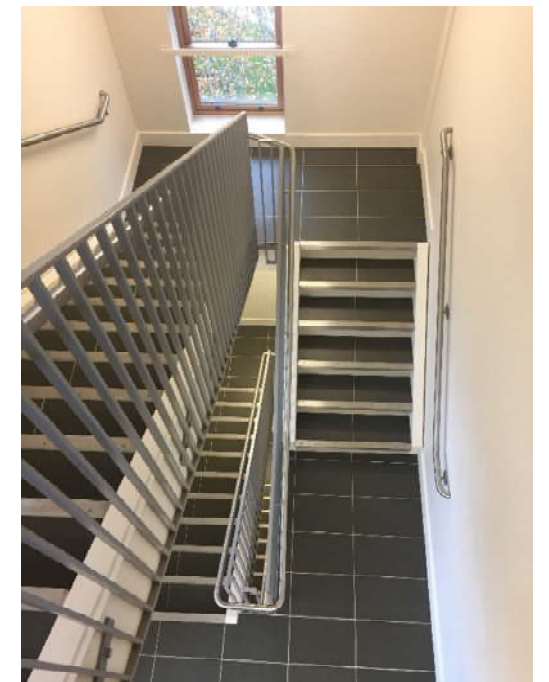
SOUTHEAST CAMPUS

Administration Building

The Administration Building is a 13,561-square foot three-story structure with a basement. The building was originally constructed in 1911 and renovated in 2014. The renovation relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings with a reinforced concrete slab-on-grade as the floor system.
- Roof and floor construction consists of wood dimensional framing with plywood sheathing.
- Exterior walls are unreinforced masonry construction.
- The renovation added a new internal lateral force resisting system using reinforced concrete walls to meet code required loading.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SOUTHEAST CAMPUS

Annex Building

The Annex Building is a 15,863-square foot single-story structure. The building was originally constructed in 1978 and 1982 and renovated in 2015. Renovations were mainly cosmetic. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings with a reinforced concrete slab-on-grade as the floor system. The wing constructed in 1982 utilizes stem walls and strip footings with a crawl space.
- The is of light wood framed construction using pre-manufactured wood trusses and dimensions wood framing.
- Exterior walls are wood stud framed bearing walls with brick veneer.
- Lateral loads are resisted by perimeter wood stud shear walls.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SOUTHEAST CAMPUS

Learning Commons

The Learning Commons is a 38,990-square foot three-story structure. The building construction completed in 2014. Original design relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings.
- The first floor is a reinforced concrete slab-on-grade.
- The second and third floors consist of post-tensioned concrete slabs.
- Reinforced concrete columns support the second and third floors.
- The roof consists of steel wide flange framing supporting metal deck.
- Steel columns support the roof framing.
- Lateral forces are resisted by reinforced concrete shear walls.

We noted spalling and deflection along slab edge closure elements at the underside of the floors shown in the photo below. It appears to be non-structural. We recommend further investigation of the deflecting plate.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SOUTHEAST CAMPUS

Mt. Scott Hall

Mt. Scott Hall is a 20,348-square foot two-story structure. The building was constructed in 2004. Original design relied upon the 1998 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings with a reinforced concrete slab-on-grade as the floor system.
- Steel framing (beams and columns) support the roof which consists of a reinforced concrete slab-on-metal deck.
- Steel braced frames resist lateral forces.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



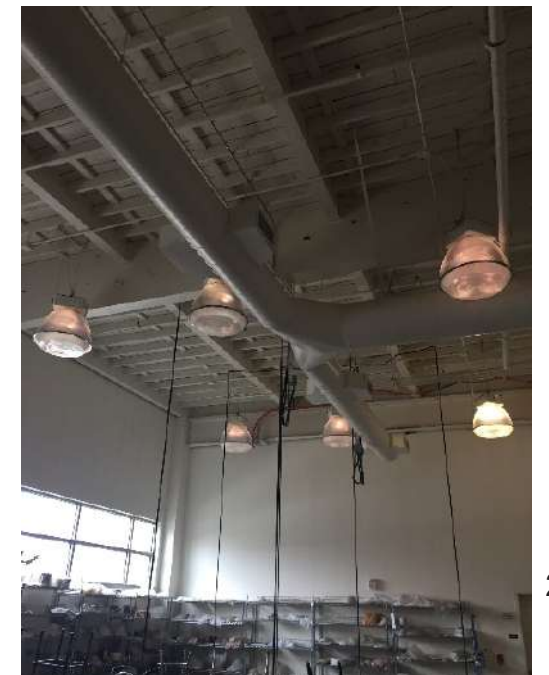
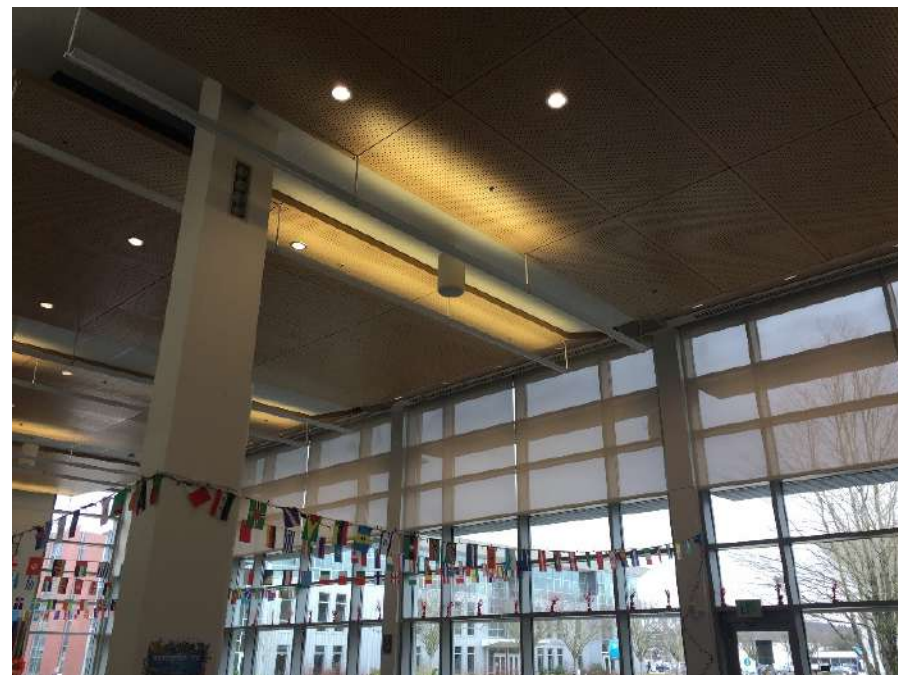
SOUTHEAST CAMPUS

Mt. Tabor Hall

Mt. Tabor Hall is a 73,733-square foot one-story structure. The building was renovated in 2004. An addition was added in 2014. The renovation design relied upon the 1998 Oregon Structural Specialty Code. The addition relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings with a reinforced concrete slab-on-grade as the floor system.
- Steel framing (beams and columns) support the roof which consists of a slab on metal deck in most of the original structure.
- A portion of the original structure consists of wood columns supporting both wood and steel joists with a wood-framed roof.
- The renovation framing consists of steel columns, metal joists and bare metal deck.
- Lateral forces in the original construction are resisted by braced frames in both directions and by metal stud shear walls in the renovated portion of the building.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SOUTHEAST CAMPUS

Student Commons

The Student Commons is a 65,960-square foot three-story structure. The building was constructed in 2014. Original design relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings.
- The first floor is a reinforced concrete slab-on-grade.
- The second and third floors consist of post-tensioned concrete slabs.
- Reinforced concrete columns support the second and third floors.
- The roof structure consists of metal deck supported by steel framing.
- Steel columns support the roof framing.
- Lateral forces are resisted by reinforced concrete shear walls.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.





SYLVANIA CAMPUS

- 32 Automotive & Metals Building
- 33 Automotive Storage Building
- 34 Bookstore
- 35 College Center
- 36 College Services Building
- 37 Communications Technology Building
- 38 Heat Plant
- 39 Health Technology Building
- 40 Library Building
- 41 Performing Arts Center
- 42 South Classroom Building
- 43 Social Science Building
- 44 Science Technology Building
- 45 Technology Classroom Building

SYLVANIA CAMPUS

Automotive and Metals Building

The Automotive and Metals Building is a 71,667-square foot two-story structure. The building was constructed in 1968. Original design appears to rely upon the 1964 Uniform Building Code (UBC). Construction consists of:

- Precast concrete channels supported by reinforced concrete beams at the floor and roof.
- Precast floor framing supports a 5" lightweight concrete topping slab.
- It is unclear if the roof has a topping slab.
- Reinforced concrete columns support the 2nd floor and roof.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. A seismic evaluation of the Automotive and Metals Building is provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report describes the Automotive and Metals Building as having "lower priority" structural and non-structural deficiencies.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

Automotive Storage Building

The Automotive Storage Building is a 1,997-square foot one-story structure. The building was constructed in 2013. The design utilized the 2010 Oregon Structural Specialty Code. Construction consists of:

- Metal roof deck supported by steel open web joists (OWJ).
- The floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by a combination of reinforced CMU walls and ordinary steel braced frames at the perimeter of the building.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SYLVANIA CAMPUS

Bookstore Building

The Bookstore Building is a 26,000-square foot two-story structure with a daylight basement. The building was constructed in 1992. The design utilized the 1988 Uniform Building Code. Construction consists of:

- Composite concrete and metal roof deck floor and roof slabs supported by steel framing.
- Steel columns and reinforced concrete walls transfer loads to the foundations.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete walls at the perimeter of the building.

The structural design relies upon a more recent building code that recognized the Pacific Northwest's high seismicity. The 1988 UBC employed limited ductile detailing practices. Design of the gravity supporting system is similar to current code. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SYLVANIA CAMPUS

College Center Building

The College Center Building is a 184,042-square foot two-story structure with a daylight basement. The building was constructed in 1970 and renovated in 2013. Original design appears to rely upon the 1964 Uniform Building Code. The renovation relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- Precast concrete channels supported by post tensioned concrete beams and girders at the roof.
- The floor consists of reinforced concrete slabs and joists supported by beams.
- Floor and roof framing support a 5" lightweight concrete topping slab.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings with as small area of deep pile foundations, pile caps, and interconnected grade beams.
- The renovation included voluntary seismic strengthening adding Buckling Restrained Braced (BRB) frames in each principal direction of the building.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. The renovation utilized current code requirements and the system employs new technology with the BRB's. The renovation appears to have been in response to a seismic evaluation of the College Center building provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report identified the College Center with the highest priority for seismic strengthening. It appears the deficiencies identified in the report have been mitigated. Given the recent renovation, building structural performance under gravity loading, wind loading, and seismic loading is expected to match that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

College Services

The College Services Building is a 27,000-square foot three-story structure. The building was constructed in 2006. Design relied upon the 1998 Oregon Structural Specialty Code. Construction consists of:

- Metal roof deck supported by steel framing
- 2nd and 3rd floors: 12" and 10" mild reinforced concrete floor slab supported by reinforced concrete beams and columns.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete moment frames in the longitudinal direction and reinforced concrete shear walls in the transverse direction.

The structural design utilized a recent building code with standards similar to current building code. Building structural performance under gravity loading, wind loading, and seismic loading is expected to match that of buildings designed under current code.

The building exhibits signs of use and required maintenance atypical of a structure of this vintage and construction type. Elevated floor slabs are visibly deflected with visible cracking. Anecdotal evidence suggests that movement continues to occur. Doors are repaired to maintain operability. Sheetrock walls, soffits, and ceilings are continuously repaired. We recommend further investigating the structural condition of the building.



SYLVANIA CAMPUS

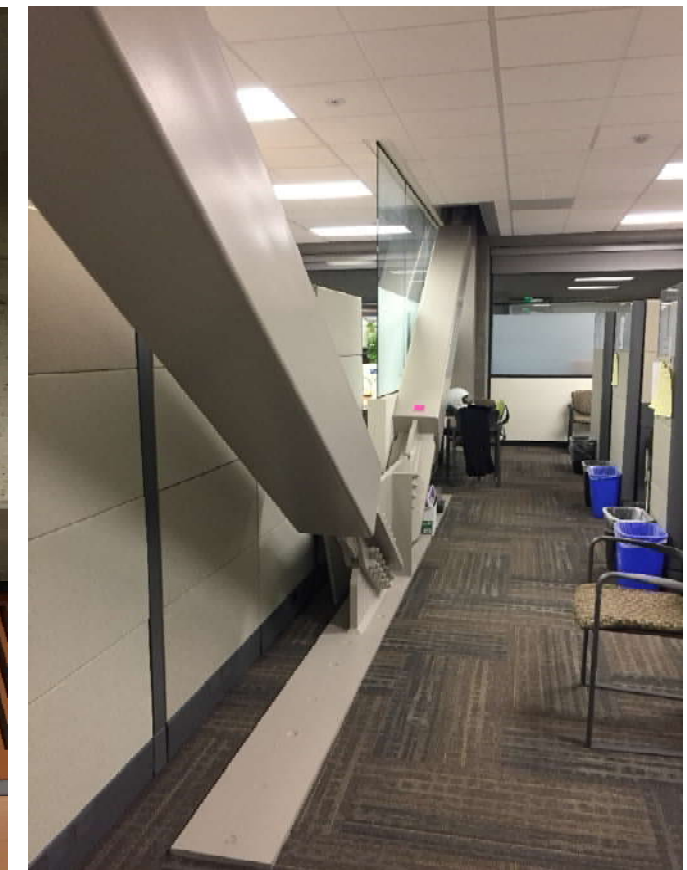
Communication Technology Building

The College Services Building is a 80,110-square foot two-story structure. The building was constructed in 1972 and renovated in 2014. Original design appears to rely upon the 1970 Uniform Building Code. The renovation relied upon the 2010 Oregon Structural Specialty Code. Construction consists of:

- Precast concrete channels supported by post tensioned concrete beams at the floor and roof.
- Precast floor framing supports a 5" lightweight concrete topping slab.
- It is unclear if the roof has a topping slab.
- Reinforced concrete columns support the 2nd floor and roof.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- The renovation added Buckling Restrained Braced (BRB) frames and reinforced concrete shear walls to resist lateral forces.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. The renovation utilized current code requirements and the system employs new technology with the BRB's. The renovation appears to have been in response to a seismic evaluation of the Communication Technology building provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report identified the Communication Technology building with the highest priority for seismic strengthening. It appears the deficiencies identified in the report have been mitigated. Given the recent renovation, building structural performance under gravity loading, wind loading, and seismic loading is expected to match that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

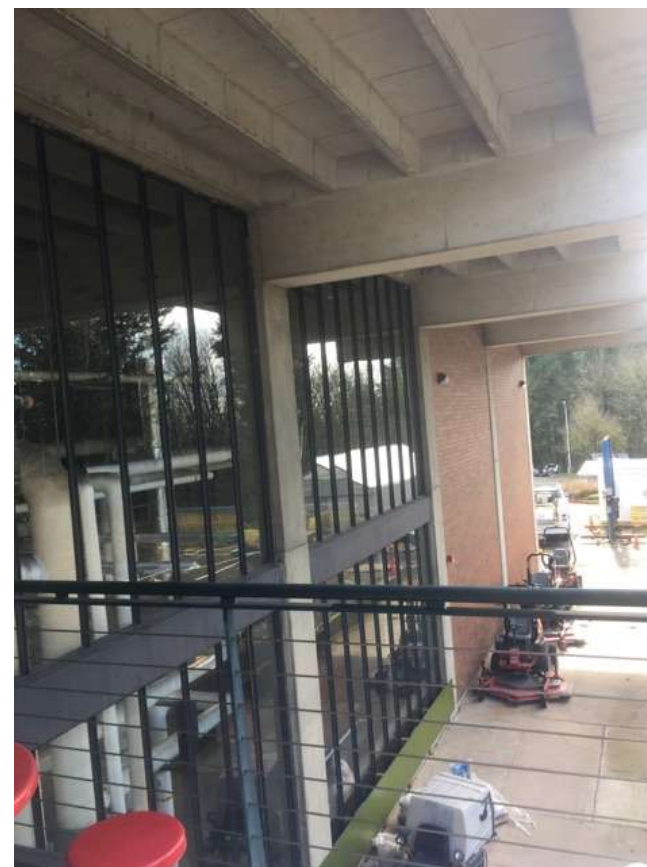
Heat Plant Building

The Heat Plant Building is a 14,000-square foot two-story structure. The ground floor is a daylight basement. The building was constructed in 1968. Original design relied upon the 1964 Uniform Building Code. Construction consists of:

- Precast concrete double Tees supported by precast concrete beams at the floor and roof.
- Reinforced concrete columns support the 2nd floor and roof.
- The first floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete walls.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. A seismic evaluation of the Heat Plant building is provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report describes the Heat Plant as being in "good condition" and having structural and non-structural deficiencies that are "relatively low risk."

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

Health Technology Building

The Health Technology Building is a 199,612-square foot four-story structure with a daylight basement. The building was constructed in 1972. Construction consists of:

- Floors are constructed using reinforced concrete waffle slabs, reinforced concrete joists and beams and areas of precast concrete construction.
- The roof consists of areas of precast concrete construction and steel framing.
- Reinforced concrete columns support the 2nd floor and roof.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of deep pile foundations, pile caps, and interconnected grade beams.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. A seismic evaluation of the Health Technology building is provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report describes the Health Technology building as being in "reasonable condition" and having structural and non-structural deficiencies that are "higher priority."

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

Library Building

The Library Building is a 65,185-square foot two-story structure. The building was constructed in 1994. The design utilized the 1988 Uniform Building Code (UBC). Construction consists of:

- Composite concrete and metal roof deck roof slabs supported by steel framing and reinforced concrete columns.
- The second floor is a reinforced concrete slab supported by reinforced concrete joists and beams.
- Reinforced concrete columns transfer loads to the foundations.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete moment frames and reinforced concrete shear walls.
- A canopy bridge interconnects the Library Building with the Performing Arts Center.

The structural design relies upon a more recent building code that recognized the Pacific Northwest's high seismicity. The 1988 UBC employed limited ductile detailing practices. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SYLVANIA CAMPUS

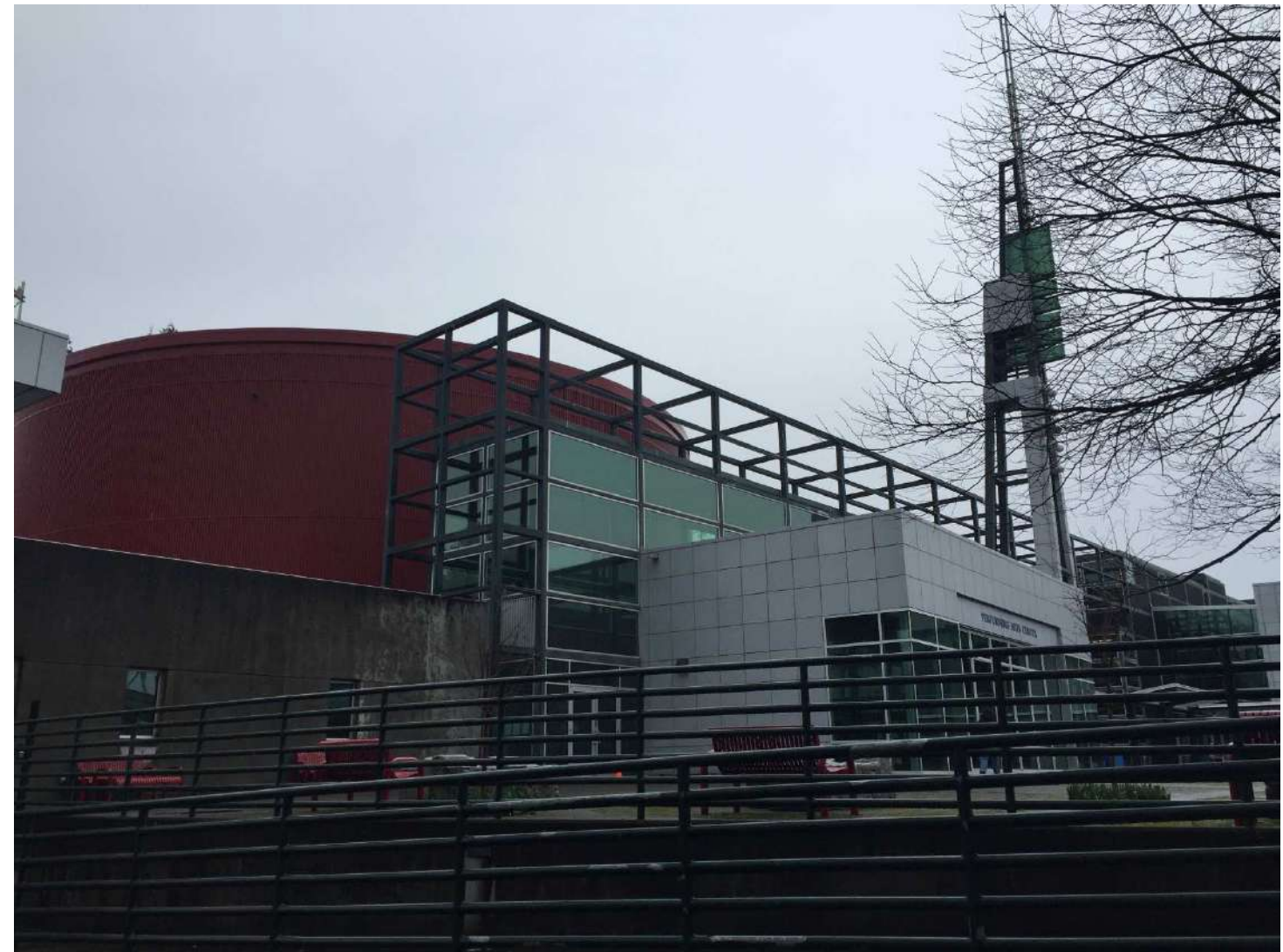
Performance Arts Center Building

The Performance Arts Center Building is a 26,160-square foot two-story structure. The building was constructed in 1994. The design utilized the 1988 Uniform Building Code (UBC). Construction consists of:

- Composite concrete and metal deck roof and floor slabs supported by steel wide flange and open web joist framing.
- Steel columns and reinforced concrete and CMU walls transfer loads to the foundations.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete and CMU walls.
- The entry includes a steel framed entry tower and canopy bridge interconnects the Performing Arts Center and the Performing Arts Center.

The structural design relies upon a more recent building code that recognized the Pacific Northwest's high seismicity. The 1988 UBC employed limited ductile detailing practices. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SYLVANIA CAMPUS

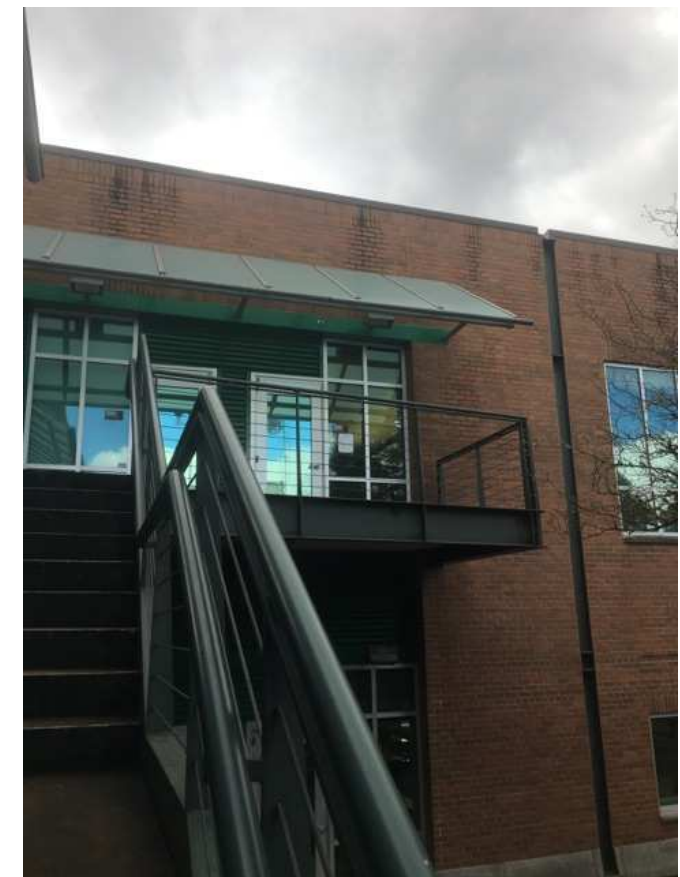
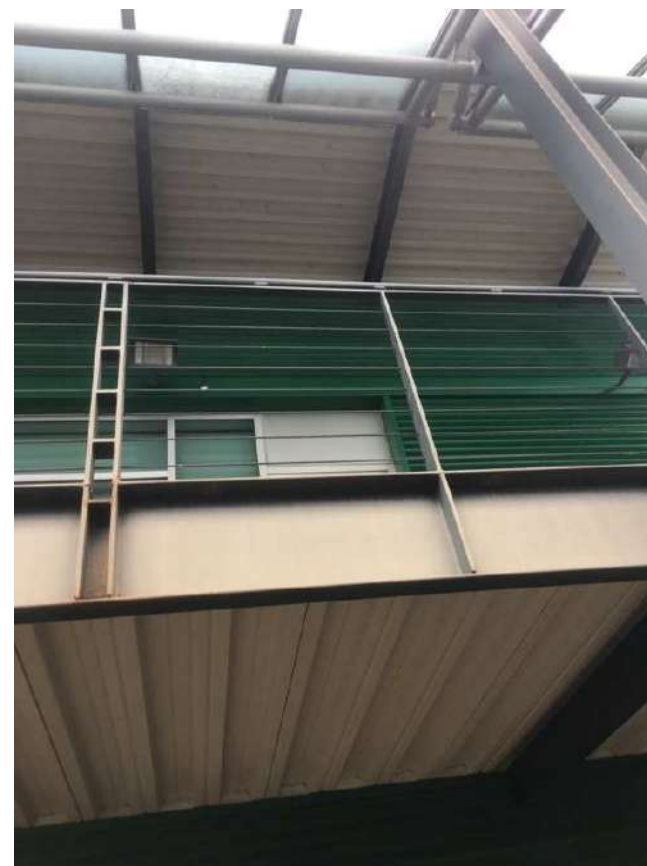
South Classroom Building

The South Classroom Building is a 10,600-square foot two-story structure. The building was constructed in 1995. The design utilized the 1991 Uniform Building Code (UBC). Construction consists of:

- Composite concrete and metal roof deck floor and roof slabs supported by steel framing.
- Steel columns and reinforced concrete walls transfer loads to the foundations.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by ordinary concentric braced frames.

The structural design relies upon a more recent building code that recognized the Pacific Northwest's high seismicity. The 1991 UBC employed better ductile detailing practices. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SYLVANIA CAMPUS

Social Science Building

The Social Science Building is a 61,899-square foot two-story structure. The building was constructed in 1968. Original design relied upon the 1964 Uniform Building Code (UBC). Construction consists of:

- Precast concrete channels supported by post tensioned concrete beams and girders at the roof.
- The floor consists of reinforced concrete slabs and joists supported by beams.
- Floor and roof framing support a 5" lightweight concrete topping slab.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by non-ductile reinforced concrete moment frames.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. A seismic evaluation of the Science Technology building is provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report describes the Science Technology building as having "high priority" structural and non-structural deficiencies.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

Science Technology Building

The Science Technology Building is a 73,321-square foot three-story structure. The building was constructed in 1968. Original design relied upon the 1964 Uniform Building Code (UBC). Construction consists of:

- Precast concrete channels supported by post tensioned concrete beams and girders at the roof.
- The floor consists of reinforced concrete slabs and joists supported by beams.
- Floor and roof framing support a 5" lightweight concrete topping slab.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by non-ductile reinforced concrete moment frames.

The original structural design relied upon a building code developed prior to our understanding of the Pacific Northwest's high seismicity and the advent of current ductile detailing practices. A seismic evaluation of the Science Technology building is provided in a report titled "Portland Community College - Sylvania Campus Seismic Evaluation Report – Final" dated January 6, 2012. The report describes the Science Technology building as having "high priority" structural and non-structural deficiencies.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type. Visible cracking was observed at some of the exterior concrete girders. Interior conditions were not visible. We recommend a maintenance and repair program to seal existing cracks to avoid water intrusion and further deterioration.



SYLVANIA CAMPUS

Technology Classroom Building

The Technology Classroom Building is a 46,394-square foot three-story structure. The building was constructed in 2003. The design utilized the 1998 Oregon Structural Specialty Code (OSSC). Construction consists of:

- Composite concrete and metal roof deck floor and roof slabs supported by steel framing.
- Steel columns and reinforced concrete walls transfer loads to the foundations.
- The ground floor is a reinforced concrete slab-on-grade.
- The foundation system consists of reinforced concrete spread and strip footings.
- Lateral forces are resisted by reinforced concrete walls and concentrically steel braced frames.

The structural design relies upon a recent building code that recognizes the Pacific Northwest's high seismicity. The 1998 OSSC employed ductile detailing practices. Building structural performance under gravity loading, wind loading, and seismic loading is expected to be similar to that of buildings designed under current code.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.





CENTERS

- 47 | **Climb Center**
- 48 | **Downtown Center**
- 49 | **Newberg Center**
- 50 | **Metro - Building 1&2**
- 52 | **Swan Island Trades Center**
- 53 | **Willow Creek Center**

CLIMB CENTER

CLIMB Building

The CLIMB Building is a 35,646-square foot three-story structure. The building was constructed in 1995 and has not been renovated. Original design relied upon the 1991 Uniform Building Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings
- The first floor is a reinforced concrete slab-on-grade.
- The second and third floors consist of reinforced concrete slabs-on-metal deck.
- Steel wide flange beams support the floor slab structure.
- Steel columns support the wide flange beams.
- The roof consists of steel wide flange framing and bare metal deck.
- Lateral forces are resisted by a combination of concrete shear walls and braced frames.

We noted signs of water damage at exterior brick veneer and foggy windows. Staff on-site indicated some deflection concerns above and below roof 201. We could not verify the deflections anecdotally described during our visit. In general, the building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



DOWNTOWN CENTER

Downtown Center

The Downtown is a 43,595-square foot four-story structure with a basement. The building was constructed in 1880 and was seismically retrofitted in 2009. It is not known upon which code the original design adhered to, or if it adhered to one at all. The retrofit relied upon the 2007 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of concrete spread and strip footings
- The basement is a concrete slab-on-grade.
- All floors consist of wood beams and T&G sheathing.
- Wood columns and unreinforced masonry bearing walls support all floors and the roof.
- The roof consists of wood trusses and tongue and groove sheathing.
- The seismic retrofit includes reinforced concrete shear walls at the basement and braced frames on all floors above.
- The seismic retrofit added supplemental gravity support using steel columns below existing beams.
- Plywood sheathing was added to the floors to strengthen the floor diaphragms.

The seismic retrofit design relied upon more recent building codes employing detailing requirements necessary for a region of high seismicity.

During our walkthrough, we noted the lack of support at the ends of some of the existing floor joists. It is unclear how the joists are currently supported. We recommend further investigation and the addition of a beam or wall to support the joists.

We understand from anecdotal evidence and discussions with staff that the basement regularly floods along the southern end of the basement. We recommend addressing the water intrusion to avoid long term maintenance issues.



NEWBERG CENTER

Newberg Center

The Newberg Center is a 12,800-square foot one-story structure. The building construction completed in 2011. Original design relied upon the 2007 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings.
- The first floor is a reinforced concrete slab-on-grade.
- Steel beams and columns support the roof.
- The roof consists of open-web-wood joists and structural insulated roof panels (SIPS).
- Lateral forces are resisted by reinforced concrete shear walls, reinforced CMU walls, and wood-framed shear walls.

The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



PORTLAND METROPOLITAN WORKFORCE TRAINING CENTER

Portland Metro Building 1

Building 1 is a 24,700-square foot two-story structure. The building was constructed in 1954 and renovated in 1990. It is not known which to code the original building was constructed. The renovation was designed in accordance with the 1988 Uniform Building Code (UBC). Original building structural drawings are unavailable. Based upon our site observation, we believe the construction consists of:

Original Building

- Concrete slab-on-grade
- The foundation system is unknown. Available architectural building sections imply spread and strip concrete footings.
- Wood framed roof. Framing is unknown.

1990 Addition

- Reinforced concrete columns, steel columns, concrete walls and lightly reinforced CMU walls support the second floor and roof.
- Lateral forces appear to be resisted by concrete and masonry shear walls around the perimeter of the building.

The building exhibited signs of settlement and differential shrinkage of framing typical of buildings of this type and vintage. The roof, shown below, is crowned at points of support which may lead to ongoing maintenance. In general, the building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



PORTLAND METROPOLITAN WORKFORCE TRAINING CENTER

Portland Metro Building 2

Building 2 is a 5,500-square structure. Original building documentation is unavailable. Based upon our site observation, we believe the construction consists of:

- Framed floor over crawl space
- Concrete stem walls
- Wood framed walls and roof. Framing is unknown.

In general, the building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



SWAN ISLAND TRADES CENTER

Swan Island Trades Center Building

The Swan Island Trades Center Building is a 22,517-square foot one-story structure. The building was constructed in 1993 and was renovated in 2013. Original design relied upon the 1990 Oregon Structural Specialty Code. The renovation was conducted in accordance with the 2010 OSSC. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings
- The first floor is a reinforced concrete slab-on-grade.
- The roof framing consists of wood purlins T&G sheathing supported by glued-laminated timber beams.
- Steel columns support the roof framing.
- Lateral forces are resisted by plywood shear walls and roof plywood sheathing added during the 2013 renovation.

The structural design relied upon more recent building codes employing detailing requirements necessary for a region of high seismicity.

Conduit support racks shown in the photograph below appear to be temporary. We recommend supporting the emergency power conduit feeds using more permanent structure. The building exhibits signs of use and required maintenance typical of a structure of this vintage and construction type.



WILLOW CREEK CENTER

Willow Creek

The Willow Creek Building is a 95,308-square foot three-story structure. The building was constructed in 2009. Original design relied upon the 2007 Oregon Structural Specialty Code. Construction consists of:

- The foundation system consists of reinforced concrete spread and strip footings.
- The first floor is a reinforced concrete slab-on-grade.
- The second and third floors consist of post-tensioned reinforced concrete slabs.
- Reinforced concrete columns support the second and third floors and roof framing.
- The roof consists of steel framing and slab-on-metal deck.
- A clerestory exists that is constructed of steel columns, beams, and bare metal deck.
- Lateral forces are resisted by reinforced concrete shear walls.

The structural design relied upon a recent building code employing detailing requirements reflecting that necessary for a region of high seismicity.

While conducting a walkthrough, we noted loose terra cotta siding shown in the adjacent photo. We alerted maintenance personnel to the issue. We also noted signs of deflection within the floor slabs at approximately the mid-point of the building plan. It is unclear what is causing the deflection shown in the adjacent photo. We recommend further study of the floor deflections.

