

What is the State of Oregon Doing to Increase Resilience?

The 2013 Oregon Resilience Plan identified major gaps between the current state of Oregon's infrastructure and those needed to recover from a major Cascadia earthquake and tsunami disaster. Two high-performance, low-energy buildings are scoped with explicit performance objectives to ensure the continuity of government after a Cascadia disaster. The proposed buildings provide the functional needs for the users of the Executive, Legislative, and Judicial Branches, to execute continuity of government duties. For example, the Oregon Resilience Building 1 includes eight large rooms that could be used for legislative hearings or other large group meetings, to assist in the recovery work with state government, business and community partners, as well as the Federal government.

What are Oregon Resilience Buildings 1 and 2?

Oregon Resilience Buildings 1 and 2 are two new buildings on the Salem Capitol Mall Yellow and Red surface parking lots designed to operate in both normal and post-disaster conditions by working in tandem "off-the-grid" after a Cascadia earthquake and tsunami disaster.

- 1) Oregon Resilience Building 1 (ORB 1)
 - a. 5 story office building with 288,000 GSF above grade and 57,000 GSF below grade, totaling 345,000 GSF
 - b. Operable after a disaster with energy support from ORB 2
 - c. In the Salem Capitol Mall on the Yellow Lot
 - d. Accommodates 1,100 and 1,600 occupants in normal and disaster conditions, respectively
 - e. Solar Array (60% of roof area)
 - f. Passive design with 60:40 perimeter to core space for daylighting
 - g. Natural ventilation stacks and rooftop turbine ventilators
 - h. Windows that open , light shelves, thermal mass (concrete floors)
- 2) Oregon Resilience Building 2 (ORB 2)
 - a. 6 story energy plant and parking garage with 1,577 stalls
 - b. Operable after disaster and supports ORB 1
 - c. Located in the Salem Capitol Mall on the Red Lot
 - d. Solar Array (60% of roof area), batteries, generators, and 96 hours of fuel
 - e. Well water supply for ORB 1 after disaster

Why are ORB 1 and 2 Urgently Needed?

ORB 1 and 2 serves two primary purposes: 1) Provides for the State of Oregon's Continuity of Government after an expected Cascadia earthquake, and 2) Builds needed capacity and accelerates execution of deferred maintenance and modernization projects by providing temporary/swing office space. Currently, no existing state-owned office buildings are designed and constructed to be operational after a Cascadia disaster, and the State of Oregon has a deficiency of State-owned office space.

What are the Operational Differences between Normal and Disaster Conditions?

In normal conditions, ORB 1 is a high performance, low energy, office building and ORB 2 is an energy plant servicing ORB 1 and a parking structure. In disaster conditions, the number of building occupants could increase to up to 1,600, replacing the current occupants. The building will operate 24/7. The occupants will use on-site emergency supplies stored below grade, experience a wider indoor temperature range, and limit energy use through the use of laptops which have lower energy demands than computer monitors, and similar strategies.

How will ORB 1 and 2 Remain Operable after a Cascadia Earthquake Disaster?

ORB 1 will be “Operable”, that is, self-sufficient and able to function immediately after a Cascadia earthquake disaster. ORB 1 is designed to exceed minimum building code requirements, and is able to function “off the grid”. It incorporates a special seismic design called “base isolation”, which act as shock absorbers to tolerate strong and prolonged earthquake shaking. It has separate water and waste water systems, and connections for emergency mobile communication units. ORB 2 supports ORB 1 by providing electricity via solar panels, generators, and batteries as well as water from an existing ground water well when these utility services are down.

Why Not Use the State’s Emergency Operation Center (EOC)?

The purpose of the State EOC differs from the proposed ORB 1 and 2 in that the EOC supports Oregon communities on response and short term recovery. In contrast, the purpose of the ORB 1 and 2 is to ensure continuity of government and the State’s long term economic recovery.

How do the Costs Compare with Conventional Government Buildings?

A feasibility study conducted for DAS compared the resilience building/s to a 2008 feasibility study for a high-quality conventional state office building with a garage on the red and yellow lots. The costs between the two proposals are almost the same (within 2 percent). The estimate of \$229 million is based on a construction start of 2019.

How will the Resilience Performance be Ensured?

The ORB 1 and 2 will be certified with a Platinum Rating using the U.S. Resiliency Council Building (USRCB) Rating System. This is similar to the Leadership for Energy and Environmental Design (LEED) ratings system, but the USRCB rates earthquake resilience. A Platinum Rating would ensure the highest level of life safety, lowest cost of building damage repair, and quickest recovery times. The system includes evaluation of the building’s structure, its mechanical, electrical and plumbing systems, and architectural elements such as cladding, windows, partitions, and ceilings.