Treasury Resiliency Building Project

Presentation to House Committee on Veterans & Emergency Management

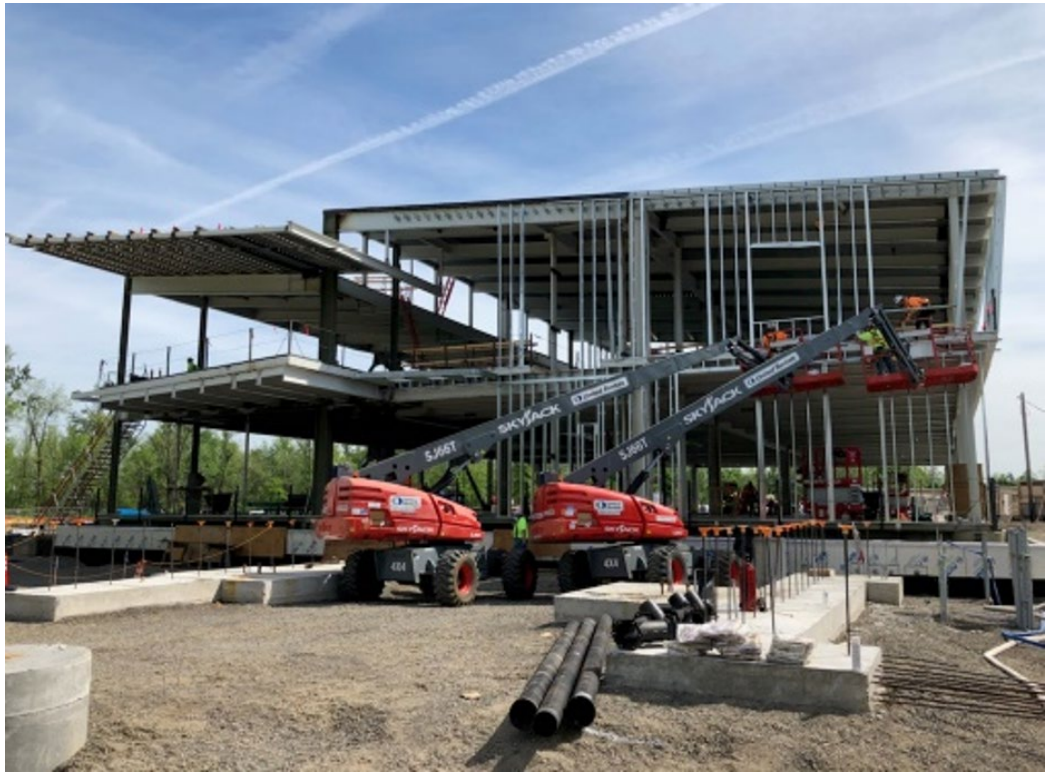
May 2021

OREGON STATE TREASURY

Goal: Ensure Treasury Can Continue Operations Post-Cascadia

How we'll get there: new, resilient building able to withstand a Cascadia Subduction Zone earthquake:

- Project kick-off April 2018
- Construction began summer 2020
- Move-in date slated for March 2022



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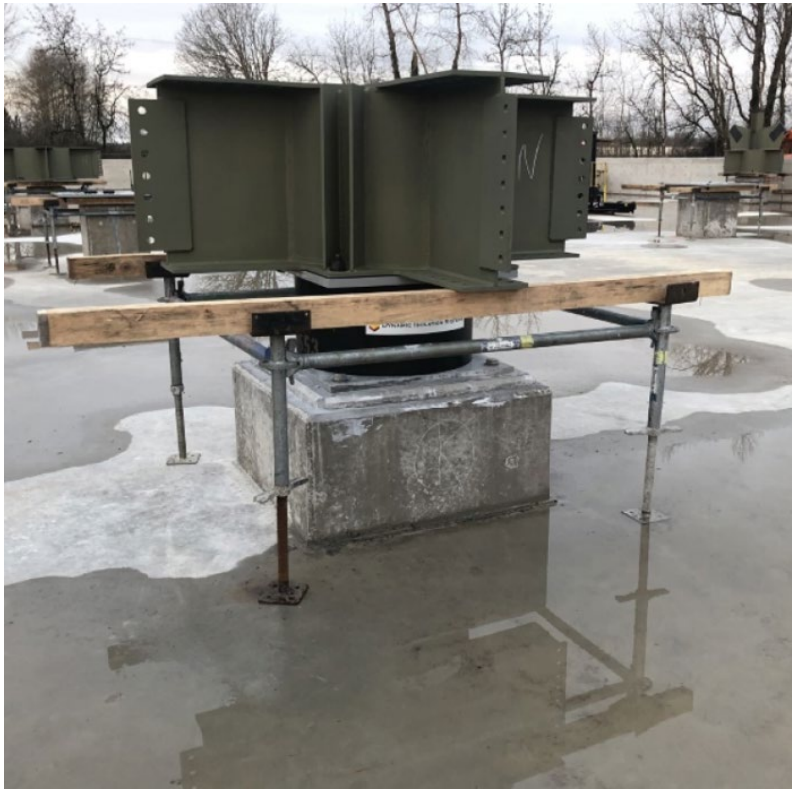
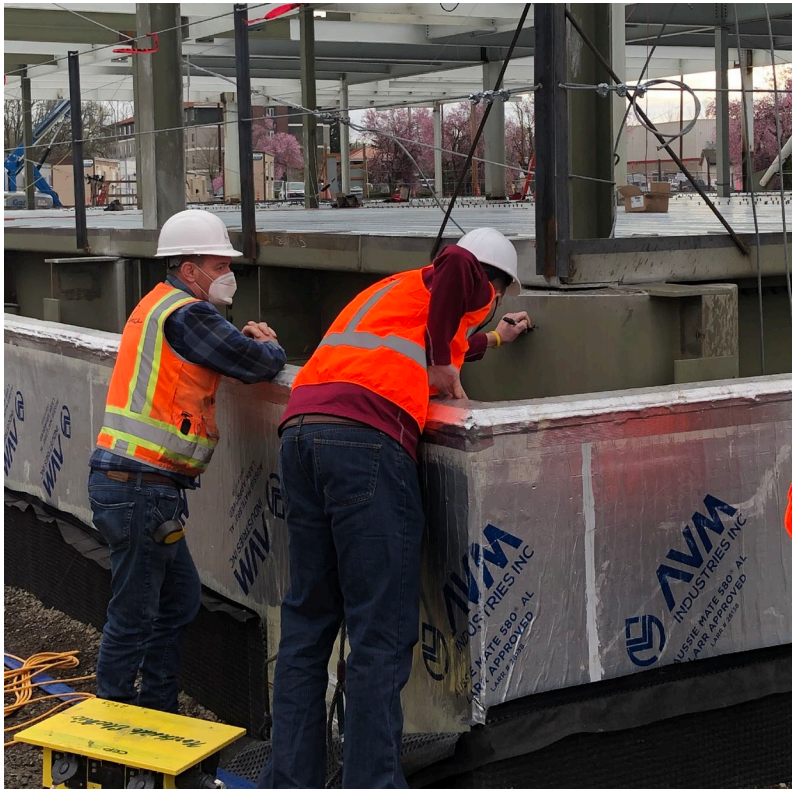
Key Resiliency Features

- Seismic base isolation and other structural features to help make the building usable immediately after a 9.0 earthquake





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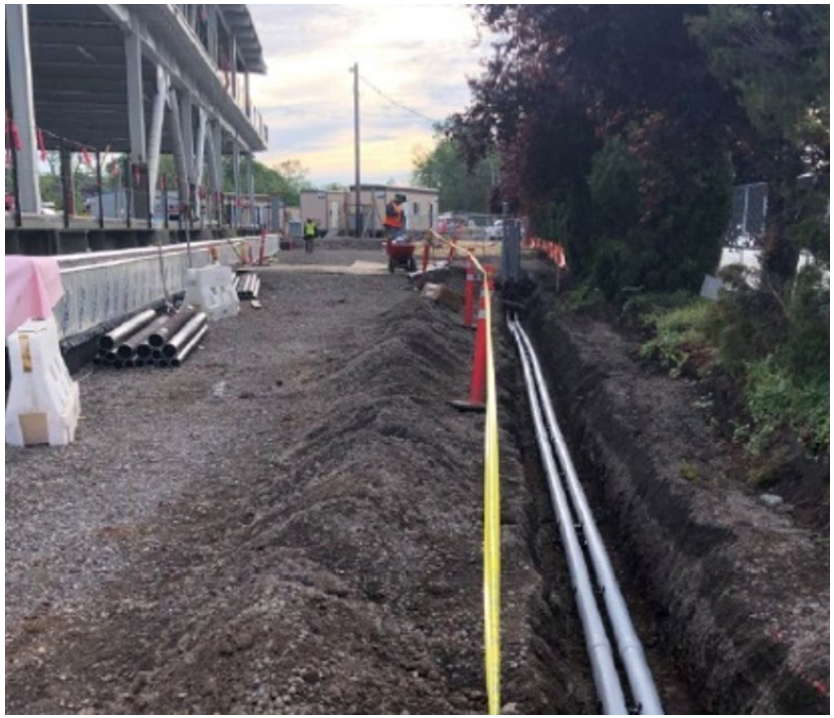
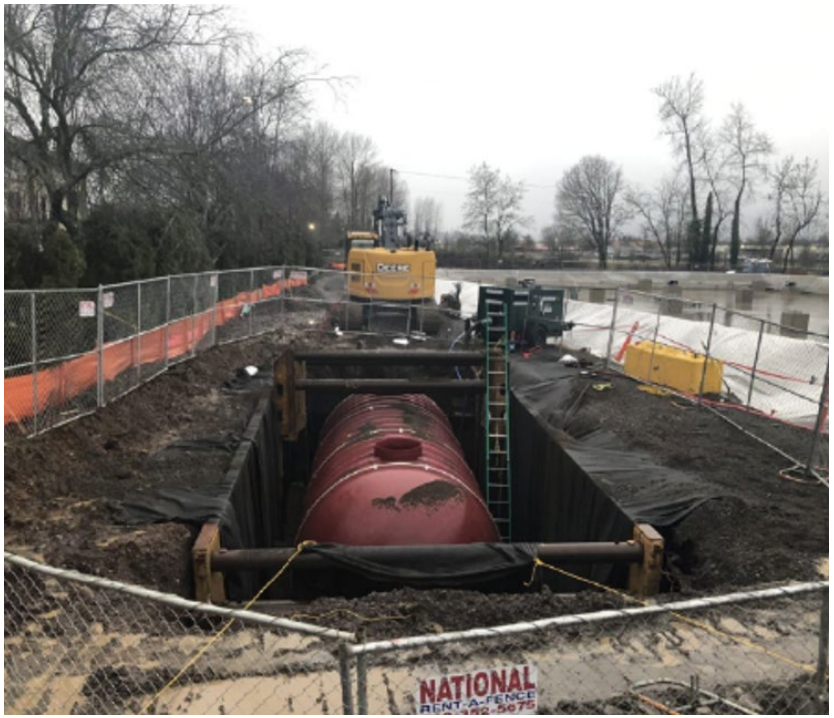
Key Resiliency Features

- On-site solar energy production with back-up emergency power
- Emergency water and septic systems and water conservation features





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Key Resiliency Features

- Energy conservation and efficiency measures to reduce overall electric load
- Advanced ventilation and air filtration features
- Data and telecommunications redundancies to support connectivity after a catastrophic event

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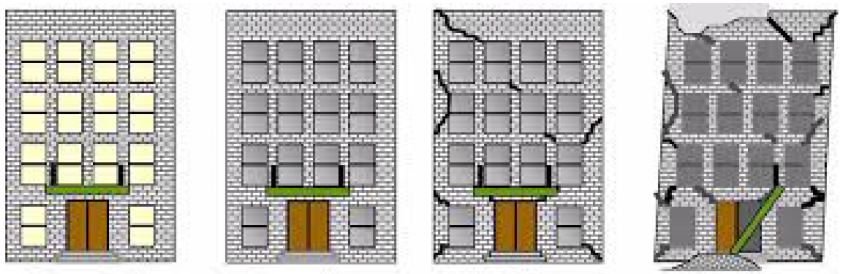
Designing for Risk and Recovery

- U.S. buildings are designed to protect life in smaller earthquakes.
- Many new buildings could be non-occupiable and unusable for extended periods after a major earthquake.
- Treasury worked with the design team to ensure that the resulting building is immediately operational and *usable*, not just safe to enter.



Performance Objective	Operational	Immediate Occupancy	Life Safety	Collapse Prevention
Recovery Time	Immediate	Days to Weeks	Weeks to Months	Months to a Year

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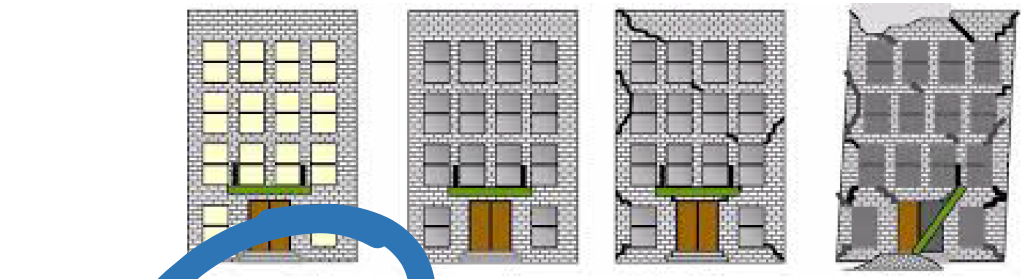
Designing for Risk and Recovery

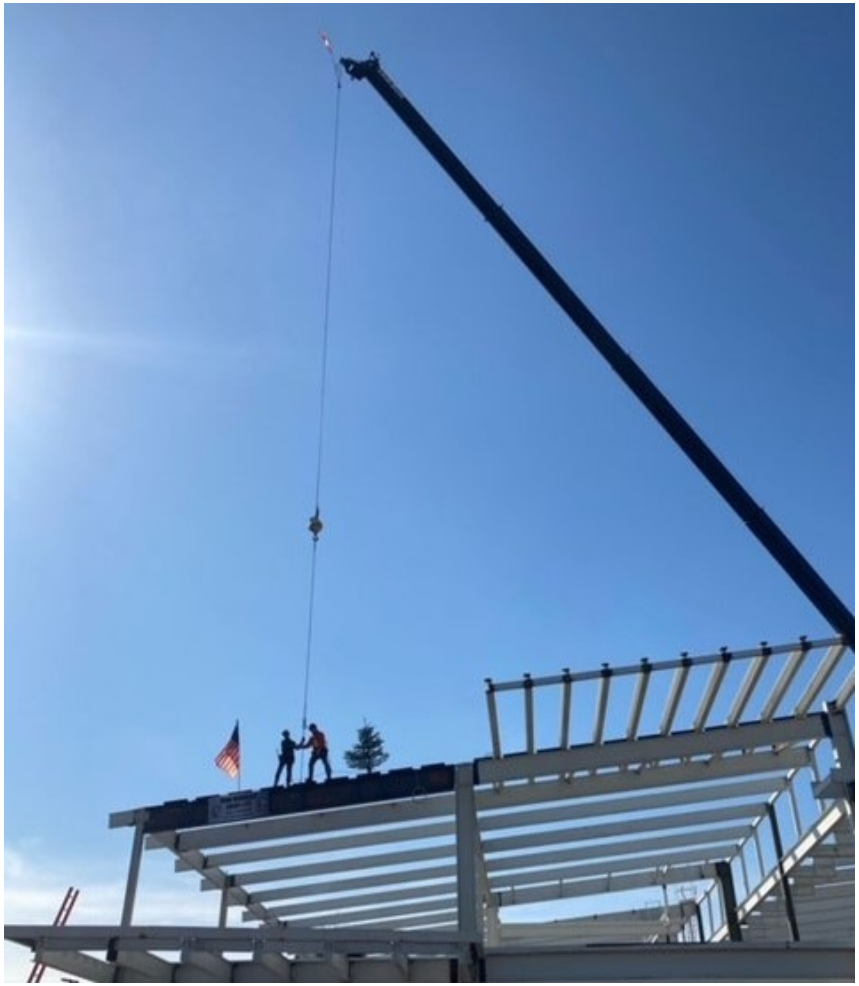
- Treasury's building received a rare platinum rating from the U.S. Resiliency Council in January – first platinum rating in Oregon.
- First base-isolated building to be certified platinum in the United States.
- Rating focuses on more than just the foundation – everything from server racks to utility connections must perform as needed before, during, and after a major seismic event.



Key Sustainability Features

Many of the resiliency features double as sustainability measures:

- Strategies that reduce electricity and water use will make the building less expensive to run day-to-day and less demanding during an emergency response.
- Building should achieve net-zero energy status while reducing carbon emissions by 40%.



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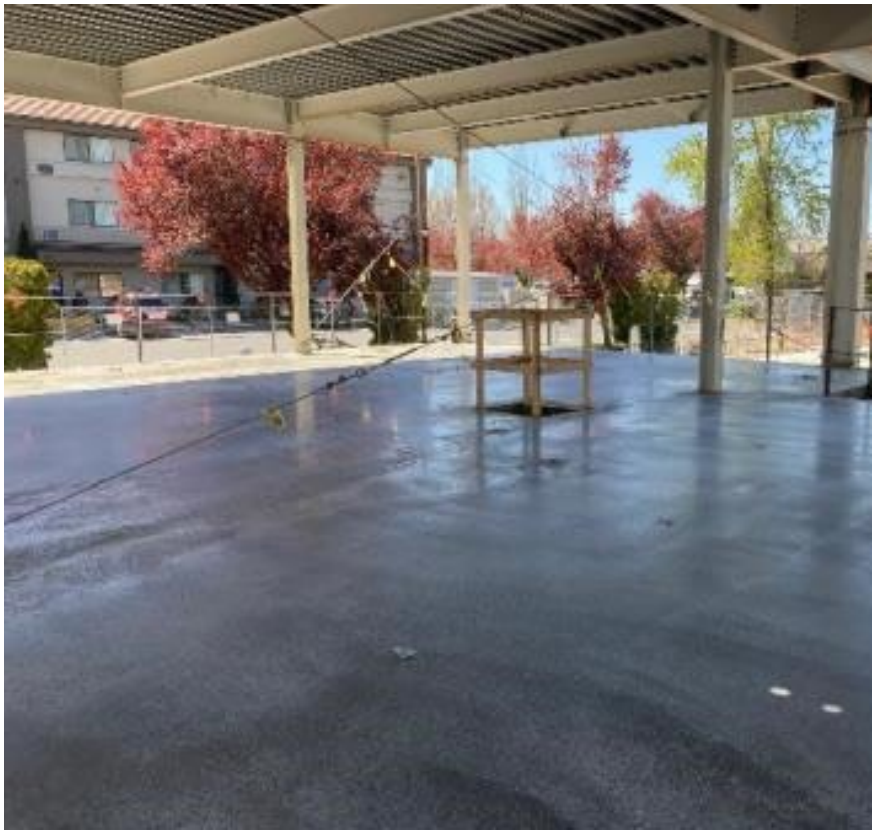
Key Sustainability Features

- Improved indoor air quality and natural light are good for employee and visitor health.
- Building is designed to last 100 years – a long time compared to most new commercial buildings.
- Forward-thinking lease negotiations support Treasury's long-term financial sustainability.



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Resiliency Through Sustainability

RESILIENCY THROUGH SUSTAINABILITY

The Oregon State Treasury Resiliency building is a 2-story, 36,000sf state of the art resilient building designed to withstand a 9.0 earthquake without damage.
The building is designed to meet sustainability benchmarks including:
Net Zero Energy (produces more energy than consumes)
International Living Future Institute (ILFI Certified)
Leadership in Energy & Environmental Design, (LEED) Gold (equivalent)
Carbon reduction of 40% (485,600 tons) equal to 100 acres of forest.
United States Resiliency Council Platinum Rating

The USRC Platinum Rating represents a the highest level of building performance. Platinum rated buildings are expected to suffer negligible damage – less than 5% of replacement cost, and allow functional recovery within a few days of a major seismic event. The USRC Platinum Rating is sought by owners who demand the highest level of asset protection and virtually uninterrupted functionality of their operations.

GBD

ARCHITECTURE
- A1 Clerestory for daylighting & natural ventilation
- A2 Roof overhangs to protect and shade below
- A3 Exterior work areas
- * A4 Super insulated roof R-30
- * A5 Super insulated wall R-50
- * A6 High performance glass & window system
- * A7 Durable cleanable finishes
- * A8 Central light shaft / stair for daylighting
- * A9 Biophilic elements for employee health
- * A10 Interior window blinds to control glare

STRUCTURAL / SEISMIC
- S1 Lightweight structure & skin
- * S2 Seismic base isolation with concrete moat allowing up to 18" of horizontal movement in any direction
- * S3 Moment frame & braced frame superstructure
- * S4 Exposed structure for visual inspection
- * S5 Acoustic metal deck (sound absorption)
- * S6 Minimized nonstructural elements such as ceilings to improve reoccupancy

LANDSCAPE
- L1 Drought tolerant landscaping
- L2 Flexible plaza for emergency situations
- L3 Wellness path / creek walk connection
- L4 Landscape bioswale

MECHANICAL
- M1 100% outside air and fully exhausted
- M2 Filtered air intake through MERV filters
- M3 Automated clerestory windows
- M4 High performance HVAC system (30% above code)
- * M5 Radiant Floor & VRF Systems
- * M6 Ceiling fans (air mixing)
- M7 Automated controls of HVAC based on manual operable window positions

ELECTRICAL
- E1 On site energy / PV array
- E2 96-hour emergency power system
- E3 Solar site lighting
- * E4 Auto dimming controls
- * E5 Wall and desk mounted lighting to resist seismic movement
- * E6 (7) EV Vehicle Charging Stations

PLUMBING
- P1 Auxiliary septic tank
- * P2 Low flow plumbing fixtures
- * P3 Touchless plumbing fixtures
- * P4 Well water for backup drinking supply

* Item not shown

TREASURY RESILIENCY BUILDING · SALEM, OREGON

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Lessons from 2019-2021

- The last few years, Treasury has navigated multiple threats to business continuity, demonstrating the co-benefits of effective risk and recovery-based planning.
- Challenges included water quality, power supply, air quality effects from wildfire, and historic pandemic.
- Treasury has been able to weather these challenges thanks in part to previous investments in emergency prep.
- When wildfire ash affected Treasury computer servers, we were able to act quickly thanks to emergency planning.
- When COVID hit, thanks to previous investments in hardware, software, IT security, and business processes, we were able to send the majority of staff home to work without any disruption or delay to services.
- Additional investments have been made to IT security, continuity of operations planning, and preparation for the new resilient building in 2022.

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