

# Portland International Airport - Terminal Core Expansion

Portland, OR, USA

Owner: Port of Portland

Architect: ZGF Architects

Structural Engineer of Record: KPFF

General Contractor: Hoffman-Skanska Joint Venture

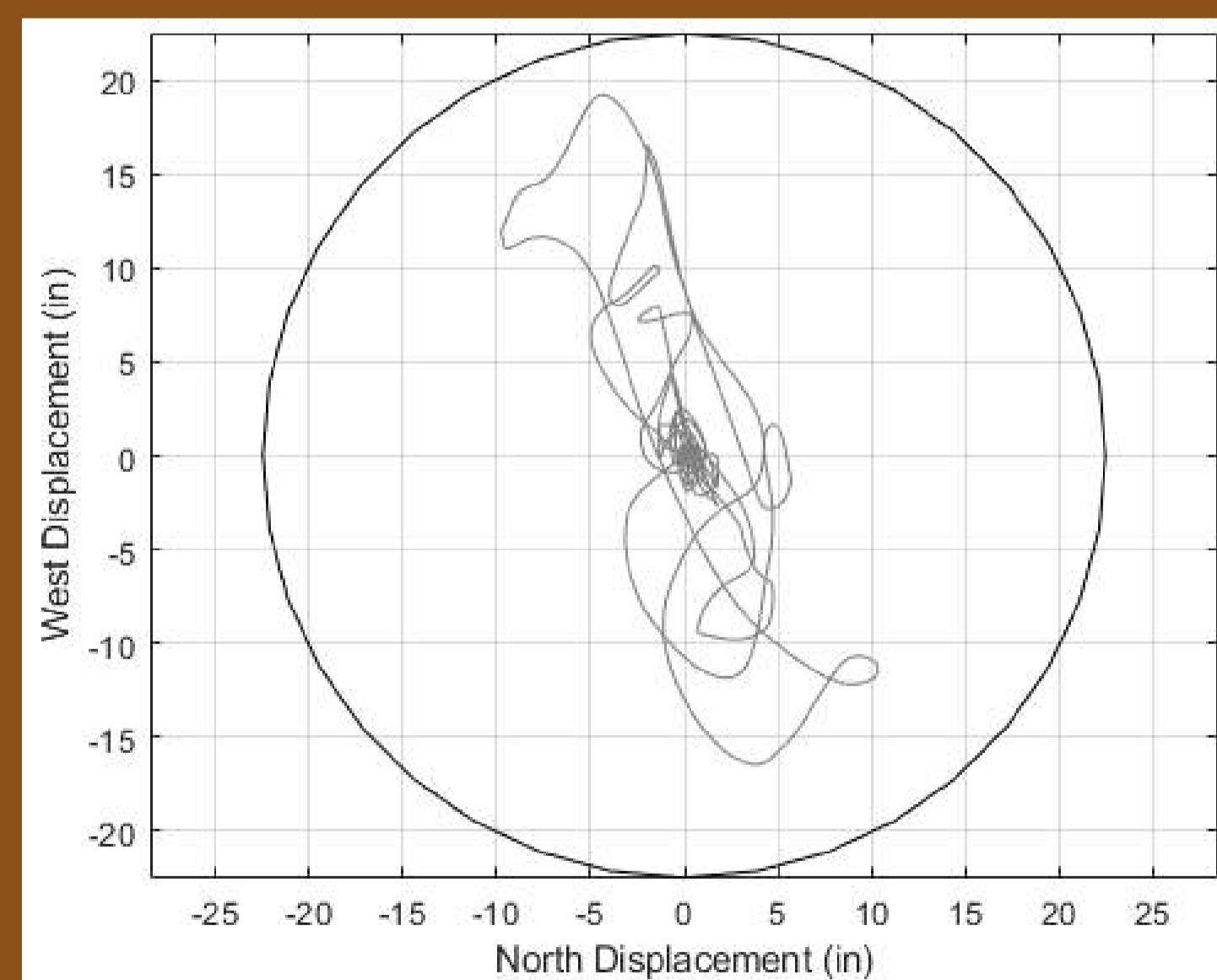
Mass Timber Contractor: Timberlab

Seismic Isolator Supplier: Maurer



## Structural Innovation Supports Architectural Vision

The undulating architectural form of the Portland International Airport roof with its patterned wood lattice combines with tall concrete-filled steel Y-Columns to inspire the look and feel of a forest canopy. The shape and scale of the Y-Columns necessary to evoke the slenderness of a living tree were only possible through the force reduction realized through placement of seismic isolators at the tops of the Y-Columns immediately below the roof structure. The project therefore demonstrates that isolation has many applications to serve as a dependable force-limiting mechanism, not simply as base isolation.



## Respecting Vernacular Construction

Mass timber is a building material native to the Pacific Northwest, an area known around the world for its incredible Douglas-Fir forests. The force reduction available through seismic isolation made possible the use of mass timber in the Portland International Airport project. The building is considered the first modern mass timber seismically isolated structure in the world.

## Community Resilience to Seismic Hazard

The Portland International Airport remaining operational is essential to the recovery of Oregon and southwestern Washington following a major seismic event. Recognizing this reality, the structure was designed for immediate occupancy following a M9.0 Cascadia Subduction Zone earthquake as a voluntary performance objective above that required by the building code. Seismic isolation protects the structure by concentrating the inelastic action into reliable, dedicated devices.