



EDUCATION

- The University of Texas at Austin
 - Bachelor of Science, Civil Engineering, 2017
 - Master of Science, Civil Engineering, 2019
 - Doctor of Philosophy, Civil Engineering, 2022

PRACTICE AREAS

- Wood Structures
- Failure/Damage Investigations
- Repair and Rehabilitation
- Earthquake Engineering
- Concrete Structures
- Steel Structures

REGISTRATIONS

- Professional Engineer (Civil) in CA and WA
- Transportation Worker Identification Credential

PROFESSIONAL AFFILIATIONS

- American Institute of Steel Construction
- Structural Engineers Association of Washington

CONTACT

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EXPERIENCE

Joseph Gilroy has experience working on structural evaluations, failure investigations, and structural repairs of existing buildings. Dr. Gilroy has a particular interest in structural analysis of a variety of structural materials and systems, including wood, concrete, and steel.

During his graduate work at The University of Texas at Austin, Dr. Gilroy designed steel moment resisting frames with fuse connections and performed 2D nonlinear response history analysis to evaluate collapse performance, following procedures outlined by FEMA and NIST. The analysis considered material nonlinearity, including component strength and stiffness deterioration.

REPRESENTATIVE PROJECTS

Wood Structures

- Business Park - Kent, WA: Structural analysis, shoring design, repair design, and condition assessment of decayed wood roof framing following a partial collapse
- Warehouse - Woodinville, WA: Assessment and repair of decayed metal-plate connected wood trusses and glulam beams
- United Church in University Place - University Place, WA: Structural condition assessment and repair of wood-framed walkway

Failure/Damage Investigations

- Saint Mary's Coptic Orthodox Church - Lynnwood, WA: Investigation of alleged wind damage to stucco siding of steel and wood framed tower
- 1370 Stewart - Seattle, WA: Collapse investigation of a derelict two-story wood-framed office building after a fire
- US Pacific Northwest: Dozens of investigations of moisture intrusion and wood decay damage to framing of condominiums and apartment buildings

Repair and Rehabilitation

- Tera Apartments - Kirkland, WA: Structural analysis, repair design, and construction observation of decayed roof framing
- Swedish Edmonds - Edmonds, WA: Structural review and development of repair drawings and construction administration for wood decay at medical facility
- Warehouse - Fife, WA: Roof diaphragm analysis, design, and construction administration for fire-damaged warehouse

Earthquake Engineering

- Worthen Bank Building - Little Rock, AR: Seismic evaluation of historic bank building with reinforced concrete framing, based on ASCE 41
- Education Building - WA: Review of steel frame design to assess alleged seismic structural design deficiencies and irregularities
- KCIA Former National Guard Facilities - Seattle, WA: ASCE 41 Tier 1 seismic evaluation of masonry and steel structures

Concrete Structures

- Bank of Hawaii Parking Garage - Kapolei, HI: Evaluation and strengthening design of reinforced concrete flat slab for punching shear
- Sound Transit E130 Track - Seattle, WA: Nondestructive evaluation, condition assessment, and testing of concrete and coatings
- Hawaii DOT - Oahu, HI: Routine inspections of reinforced and prestressed concrete bridges

Steel Structures

- Green Acre Farms - Wapato, WA: Evaluation and repair of fire-damaged pre-engineered metal building agricultural processing facility
- Ellstrom Warehouse - Seattle, WA: Evaluation repair design, and construction administration of fire damaged pre-engineered metal building
- Manufacturing Plants - WA: Structural assessment of steel framing pre-engineered metal buildings