Brian Huang, PE, SE, LEED AP

President, Structural Forensic Engineer

H2Y Consulting

Key Expertise

- Structural Engineering
- Forensic Structural Engineering
- Building Collapse Cause & Origin
- Wind & Hail Damage
- Hurricane Wind & Flood Damage
- Retaining Wall Failure
- Foundation Failure
- Building Envelope Failure
- Curtain Wall and Stucco Failure
- ICC Codes, ADA and TAS
- Design Peer-Review
- Construction Defect
- Standard of Care
- Premises Liability

Education

PhD Structural Engineering, Candidate, Rice University, 1999 – 2004

MS Structural Engineering, Tsinghua University, China, 1999

BS Offshore Engineering, Tianjin University, China, 1996

Project Geographical Experience

U.S.

Languages

English, Mandarin

Summary of Experience

Mr. Huang has over 25 years of expertise in research, design, and forensic analysis within the fields of structural engineering and the building envelope industry. His professional background includes the structural design of new buildings, evaluation and design of renovation and repair projects, post-construction forensic assessments of structural and building envelope failures, and analysis of premises liability concerning code compliance.

In the realm of structural design, Mr. Huang's experience encompasses high-rise buildings, parking garages, tilt-up concrete, and corporate office campuses. As a forensic engineering expert, he has conducted evaluations to provide professional opinions on the causes and origins of building damage and failures, including structural and retaining wall collapses, roof collapses, differential foundation movement, storm damage to various roofing materials, explosion and construction vibration damage, seismic impacts, and building envelope failures.

Mr. Huang possesses comprehensive knowledge of modern ICC codes, as well as ADA and TAS provisions, alongside best practice standards in the construction industry. He leverages his expertise in structural and building envelope design, the standard of care for design professionals, construction defects, building code evaluation, and premises liability to assist clients in the insurance sector and litigation practices.

Speaking Engagements

Mr. Huang has presented in national conferences and associations on topics including insurance claim subrogation, risk management, design, and construction defects, as well as storm damage evaluations for insurance agencies.

Expert Witness and Testifying Experience

Mr. Huang has provided testimony in various trial, arbitration, and deposition settings in Texas and Kentucky. He has been designated as an expert witness in over thirty cases, representing both defendants and plaintiffs, and has issued Certificates of Merit regarding the standard of care for design professionals.

Professional Affiliations/Memberships/Licenses/Training

LEED™ 2.0 Accredited Professional: U.S. Green Building Council

American Concrete Institute; American Institute of Steel Construction; American Society of Civil Engineers; Structural Engineers Association of Texas

Additional licenses and registrations are provided on **Page 5** of this CV.

Role at H2Y Consulting

As the founder and president of H2Y Consulting, Mr. Huang actively practices structural and forensic engineering, providing expert witness services in property damage evaluation and litigation support. He oversees the company's operations and offers training and management to a team of engineers within the organization.

Contact

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Work Experience

H2Y Consulting
President
November 2023 – Present

J.S. Held, LLC
Forensic Central Regional Lead / Senior Engineer II
January 2021 – November 2023

Rimkus Consulting Group, Inc.
Property Division Manager – Gulf Coast Region
2019 – 2021
Principal Consultant
2014 – 2019
Senior Consultant
2012 – 2014

Haynes Whaley Associates, Inc.
Associate Vice President
2010 – 2012
Associate & Senior Associate
2004 – 2010

Offshore Dynamics (Houston Offshore Engineering)
Structural Analyst (part-time, 2003 – 2004)

Rice University
PhD Student Researcher
1999 – 2004

Select Project Experience

Representative Forensic Engineering Projects:

Houston, Texas (2024). Construction delay on a renovation project of a steel building in Houston, involving disputes between the general contractor and a steel erector. Provided testimony during arbitration on the responsibility of the subcontractor.

Dallas, Texas (2024). Evaluated the structural design of architecturally exposed concrete panels installed on a campus building. Assisted litigators in determining the standard of care of the special structural engineer or record.

Dallas, Texas (2024). Evaluated the foundation design of a precast concrete garage building. Assisted attorney in determining the standard of care of the structural engineer or record.

Dallas, Texas (2023). Storm damage evaluation for Amazon distribution centers for tornado damaged roof joists and girders. Provide remediation methods for uplifted and buckled joists and joist girders.

Nacogdoches, Texas (2021). Snow-load caused roof collapses of steel-framed buildings during the 2021 Texas Winter Storm.

Prosper, Texas (2021). Septic tank collapse evaluation.

Petersburg, Kentucky (2021). Evaluation of a capsized floating conveyor system in a concrete aggregate and sand harvesting and processing facility in Petersburg, Kentucky due to alleged wave action.

Austin, Texas (2021). Swimming pool freeze damage analysis for Texas A&M campus.

Houston, Texas (2021). Analysis of a sliding iron gate failure at a commercial premises that resulted in personal injury.

Houston, Texas (2021). Construction defect evaluation involving a 15-story senior living facility in southwest Houston, Texas. Provided expert witness testimony in deposition following the issuance of an engineering expert report.

Austin, Texas (2022). Construction delay and construct defect evaluation in a car dealership facility.

Sequin, Texas (2023). Structural forensic analysis of an underground fuel tank (fiberglass reinforced plastic) that sustained fracture and water infiltration.

Houston, Texas (2023). Evaluation of a concrete manhole failure allegedly caused by hydrogen sulfide attack.

Houston, Texas (2023). Building code evaluation of a slip and fall case.

Columbus, Texas (2023). Building code evaluation of a vehicle impacted commercial facility involving personal injuries. Evaluated pavement and wheel stop requirements in parking lots nearest retail stores involving IBC, local zoning ordinance, ADA, and TAS.

Humble, Texas (2023). Building code evaluation of a curb ramp at a store entrance. Evaluated pavement and curb ramp requirements in sidewalk nearest retail stores involving IBC, ANSI local zoning ordinance, ADA, and TAS.

Houston, Texas (2023). Building code evaluation of several swimming pools involving injuries and fatalities. Evaluated safety standards at public swimming pools and compliance of the facility with IBC.

Houston, Texas (2016 - 2023). Investigation of differential foundation movement of a 7-story concrete parking structure. Evaluated the cause of the damage and provided repair methods. Provided expert witness testimony in associated litigation.

Louisville, Kentucky (2020). Investigation of the collapse of a 7-story wood-framed bourbon rick-house building that completely collapsed due to repair/construction defects. Performed structural modeling of the building and damage effects due to interior repair and renovation. Testified in the federal court.

Houston, Texas (2019 – 2020). Investigation of the partial collapse of a USPS postal facility in north Houston.

Pearland, Texas (2020). Investigation of the cause and origin of crack/separation damage in a newly constructed fire station building for the city. Evaluated potential design/construction efficiencies and site improvement.

Galveston, Texas (2019 – 2020). Investigation of a 5-story state educational facility for framing, water-proofing, and other concrete construction defects.

Texas City, Texas (2019 – 2020). Investigation of the concrete sheet-pile floodwall (USACE STA501+52.65 to STA505+00) in Galveston County for reported distress. Evaluated the load/resistance capacity of a HESCO secondary flood barrier system.

Houston, Texas (2019). Investigation of fire damage to a 3-story apartment complex.

Rotan, Texas (2019). Finite Element Analysis (FEA) of a collapsed transmission tower.

Houston, Texas (2018). Investigation of the cause of the collapse of the barricade wall during the construction of the retail center in Post Oak area.

Houston, Texas (2016 – 2020). Investigation of the cause and origin of the foundation failure of a 7-story concrete parking structure; participated in the design for the restoration of the building.

Odessa, Texas (2015). Failure investigation and FEA of powerline system during a snowstorm.

Arizona (2019). Wind damage evaluation of solar panels in a solar farm.

New Orleans, LA (2015). FEA of a masonry chimney for reported storm damage.

Webster, Texas (2015). Investigation of the cause of the roof collapse of a 100,000 sq ft furniture store.

Houston, Texas (2015). Investigation of the cause of the roof collapse of a retail store at a gas station.

Houston, Texas (2015). Investigation of the cause and extent of the concrete retaining wall failure along the north perimeter of the Galleria Shopping Mall after the tax-day flood.

Houston, Texas (2014). Investigation of the caused collapse of concrete-masonry-unit retaining wall of an apartment completed in east Houston/Beaumont.

Houston, Texas (2014). Investigation of the cause of the collapse of a residential floor in a garage apartment which caused multiple personal injuries.

Corpus Christi, Texas (2014). Participated in the investigation of the collapse of a 60 ft diameter gas storage tank which caused 2 fatalities.

Houston, Texas (2013). Investigation of the collapse of a concrete-tilt-wall warehouse due to storm damage; designed the repair and reconstruction of the collapsed building.

Pearland, Texas (2013). Investigation of the differential foundation movement of slab-on-grade system in a 125,000-sq-ft concrete-tilt-wall office facility.

Houston, Texas (2013 – 2016). Investigation of the construction deficiency and consequent excessive floor deflections in numerous guest rooms in a 4-story wood-framed hotel in the Houston Energy Corridor. Participated in the design for the repair and restoration of the deflected floor system.

Houston, Texas (2013). Participated in the condition assessment of a department store/retail building.

Houston, Texas (2013). Investigation of the failure of a retaining wall system along the perimeter of a newly developed residential complex in the Post Oak area.

WhiteWave Foods Free-stall Barn Collapse, Montana (2009 – 2010). Investigation of a single-story pre-engineered barn structure that partially collapsed under snow load. Structural analysis was performed, and truss joint buckling was discovered. Investigation results and strengthening solutions were presented to the client.

Round Rock Kelly Reeves Stadium Light Pole Vibration Investigation, Round Rock, Texas (2011). Investigation of the excessive sway of the four 130-ft-tall light baskets at the Kelly Reeves Stadium. Performed 3D dynamic structural analysis. Wind-induced vortex shedding, and critical steel fatigue was discovered during the failure analysis. Vibration mitigation methods were presented to the client in the final investigation report.

Texas (2012 – 2024). Investigation of the causes of over 500 residential/commercial roofs for storm damage (wind & hail).

Texas (2012 – 2024). Investigation of the causes of numerous tree- and/or vehicle impacts, fire damage to residential buildings.

Texas (2012 – 2024). Investigation of the causes of numerous differential foundation movements for residential structures.

Texas and Louisiana (2015 – 2024). Flood and hurricane damage evaluations for numerous commercial and residential structures during the passage of Hurricane Harvey, Hurricane Hanna, Hurricane Laura, Hurricane Delta, Hurricane Beryl, etc.

Texas (2019 – 2020). Investigation of damage to numerous commercial and residential buildings due to major explosions in Port Neches and Northwest Houston.

Representative Design Engineering Projects:

Energy Center, ExxonMobil Woodland Campus (Conference and Training Center), Houston, Texas (2009 – 2012). Lead engineer for the design of a 7,500-ton steel-framed building that consisted of four major building components. The middle portion, named the Cube, was a two-story office building that measured 185 ft x 185 ft x 50 ft tall, elevated 90 ft from the ground, spanned 180 ft north to south on two 30 ft cantilevered bar buildings, and constituted a total of 240 ft of column free ground clear span.

Hess Tower (HESS), Houston, Texas (2007 – 2009). Lead engineer for the design of a 31-story concrete office building on a full city block with parking garage on adjacent block. The office building was 850,000 sq ft with retail at ground level and steel-hung skybridges to connect the building to an existing building on an adjacent block and to a new cast-in-place parking garage with 11 levels totaling 470,000 sq ft. Included was a structural steel entry pavilion at the lobby level and a 60 ft-tall steel rooftop structure for wind turbines.

One Park Place (Finger Company), Houston, Texas (2006 – 2008). Staff engineer for the design of a 37 story post-tensioned concrete residential tower with integrated parking garage, concrete shear-wall and frame lateral system, and 50 ft tall steel rooftop screen wall structure, boasting a 30:1 height-to-core ratio design.

Life Science Plaza, Houston, Texas (2005). Staff engineer responsible for the design of a 9-story medical office tower containing two 275,000 sq ft surgical floors and a 447,000 sq ft, 6-level parking garage.

ConocoPhillips Woodcreek West Building, Houston, Texas (2005). Staff engineer responsible for the design of a corporation campus building with 11,000 sq ft of reception space; 69,000 sq ft of fitness/wellness space; parking structure for 4,500 cars, 1,500,000 sq ft; food service area; two gatehouses; landscaped structures.

Heritage Plaza Parking Garage and Tunnel, Houston, Texas (2005). Staff engineer responsible for design of 11-level, 366,000 sq ft parking garage.

Houston Pavilions, Houston, Texas (2005). Staff engineer responsible for the design of a three-city-block project containing office, residential, retail, entertainment, and parking, totaling 913,000 sq ft. Designed the steel connections for the steel trusses for the two-story street overpass.

Johnson Development Warehouse, Houston, Texas (2005). Project engineer responsible for design of 312,000 sq ft tilt-wall distribution center.

Houston Intercontinental Airport, Houston, Texas (2006 – 2010). Project manager responsible for the design and management of structural renovation/addition of new gates at Terminal A, B and C, miscellaneous steel trusses in Terminal C ticketing lobby for security gates, and flight information display supports.

Ocean Grove Condominiums, Houston, Texas (2005). Staff engineer responsible for the design of a 9-story, 90,000 sq ft condominium atop 2-level, 48,000 sq ft parking garage.

Professional Registrations & Licenses

PE 101111	State of Texas PE License
PE 38859	State of Louisiana PE (SE) License
PE 35894	State of Kentucky PE License
PE 91142	State of Ohio PE License
PE 096338	State of Pennsylvania PE License
PE 052887	State of Georgia PE License
SE 081.009147	State of Illinois SE License
NCEES 14-699-62	National Council of Examiners for Engineering and Surveying

Speaking Engagements

“Nailing Subrogation Potential on Natural Disaster Losses”, National Association of Subrogation Professionals (NASP), Marco Island Florida, November 8, 2022.

“Destruction in Construction”, presented in Houston RIMS, Texas, March 16, 2022

“Wind and Hail Damage to Residential Roof Systems.” Houston Insurance Claim Association – Houston, Texas, March 2016

“Design and Construction Deficiencies for Residential and Commercial Buildings.” Continued education seminar for Traveler’s Insurance Company, Houston, Texas, in Feb. 2015

Continuing Education

Code Update – Wind Load Calculation in ASCE 7-10 for Buildings and Envelopes

Seismic Design Methods – Comparison

Anatomy of Construction Defects

Hydraulic Design of Storm Sewers

Building Design and Construction Features for Fire Protection

Coastal Engineering: Tsunamis

3D Printing in Design and Construction

Designing Foundation Repairs

Structural Insulated Panels

Essentials of Quality Concrete

Handling, Placing and Finishing Concrete

Concrete Standards and Requirements

2015 Internarial Building Codes: Significant Changes to Structural Provisions

Pier and Beam Foundation Design

Design of Buildings Using Insulated Concrete Forms (ICF)

Hurricane Mitigation Techniques and Inspection

Testimony Experience

[Arbitration]	Texana Builders, LLC vs. Roofing Steel Construction, September 5-6, 2024
[Deposition]	Thomas Higginbotham, et al vs. Praetorian Insurance Co., March 27, 2024
[Deposition]	Sonic Automotive, Inc., vs Goree Architects, Inc., Wier Enterprises, etc., March 2023
[Deposition]	William Ericson-Nielsen vs Kirk Lastrapes Construction. Co. LLC et al - No. 2019-04118 CDC Parish of Orleans, April 2022
[Deposition]	Brazos Presbyterian Homes, Inc., vs. Lendlease (US) Construction, Inc. et al, Defendant, February 2022
[Deposition]	Westport Insurance Company, et al., Plaintiffs vs Buzick Construction, Inc., Defendant, 2020
[Depo. & Arbitration]	Amish Mahendrakumar Shah and Toral Sindha Shah vs. Mazzarino Construction & Development, Ltd, 2020
[Trial]	Mclane Company, Inc. D/B/A Mclane High Plains, Plaintiff vs. Lowery Plumbing, Heating & Air-Conditioning, Inc., Defendant, 2017
[Deposition]	South Central Cement, Ltd. vs River Consulting Group, LLC and CCC Group, Inc, 2015