Timothy E. Huff, P.E., Ph.D.
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CURRENT POSITION

- Assistant Professor of Structural Engineering, Tennessee Tech University

EDUCATION and LICENSURE

- Licensed Professional Engineer, Tennessee
- Ph.D. in Civil Engineering, August, 2013, UT-Knoxville, Dissertation: ***Isolation as a Seismic Design Strategy for Bridges in the New Madrid Seismic Zone***
- M.S. in Mathematics, Tennessee State University, December 2006
- M.S. in Civil Engineering, Tennessee Tech University, August 1985
- B.S. in Civil Engineering, ***Magna Cum Laude***, Tennessee Tech, March 1984
- 2-month practicum in Appropriate Technology for developing countries, May 1997
- Member, Earthquake Engineering Research Institute (EERI)
- Member, Seismological Society of America (SSA)
- Reviewer, ASCE Journals of Bridge Engineering and Practice Periodical

PREVIOUS POSITION DETAILS

- Lecturer in Structural Engineering, Tennessee Tech (Fall 2017-Spring 2018)
- Structural design and project management for TDOT bridge construction
- Interstate 40 over TN State Route 5 – Seismic Isolation System Design
- SR-26 over Center Hill Lake - plate girder with large, deep drilled shafts
- I-55 over Mallory Avenue in Shelby County – curved steel plate girder
- Demonbreun Street Viaduct over CSX Railroad & 11th Avenue
- Seismic pushover analysis of various structures
- Authored the TDOT Seismic Design Manual
- 2016 Tennessee Government Engineer of the Year, TSPE Nashville

TECHNICAL ACTIVITIES

- Associate, ASCE 41 ***Seismic Retrofit Of Existing Buildings*** Committee
- NCHRP 12-114, Seismic Site Response w/ Pore Water Pressure Generation
- NCHRP 12-116, Proposed AASHTO Specs for Design of Piles for Downdrag
- NCHRP 12-106, Guidelines for Performance-Based Seismic Bridge Design
- NCHRP 20-05, Topic 42-03, Site-Specific Earthquake Ground Motions
- NCHRP 20-07 (Task 396), Updating the AASHTO Seismic Hazard Maps
- NCHRP 12-59(01), Seismic Design of GRS Bridge Abutments
- NCHRP 12-105, Seismic Performance of Accelerated Construction Connections
- NCHRP 20-7 (task 262-M2), Project Working Group, Seismic Isolation Design
- Associate Editor, ASCE ***Practice Periodical on Structural Design and Construction***

PREVIOUS EXPERIENCE

June 2001 – August 2017: Tennessee Department of Transportation

Performed design and project management for both routine and complex bridge projects (see previous page for details).

May '00 – January '07: Engineering Ministries International

Structural engineering lead and mentor for project teams:

- Serampore College near Calcutta
- Aizawl Institute for Christian Studies in Mizoram
- 4 story offices in Ludhiana, Punjab
- Extension to Landour Community Hospital, Mussoorie, Uttar Pradesh
- Grace International Children's Hospital in Carrefour, Haiti
- Kid's Camp, Recife, Brazil
- Soddo Community Hospital, Ethiopia.

February '97 – August '01, Private consultant, Knoxville, Tennessee

Industrial, commercial, residential design and evaluation of structures:

- Drilled pier foundation design for Waxahachie Texas electrostatic precipitator
- Inspection and modeling of Spurlock Power Plant (KY) equipment
- Stack design for Delmar, New York precipitators - wind and earthquake loads

October '99 – February '00: Far East Broadcasting Corporation, Manila, the Philippines

Design oversight for short wave radio transmission line structures and foundations for hurricane force winds in challenging soil conditions

April '88 – February '97: Lockheed Martin Energy Systems, Oak Ridge, Tennessee

Dynamic and static structural evaluation and design for earthquake and wind forces using hand calculations and 3-dimensional finite element modeling; use of IMAGES, STAAD, GTSTRUDL; specific projects include:

- Building 9818 Seismic Analysis and Evaluation
- Building 9204-2E Seismic Analysis and Evaluation
- Building 9207 Air Bag Test Design and Analysis

PUBLICATIONS

Huff, Tim; ***The Importance of Target Spectrum Basis in Earthquake Ground Motion Scaling***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); accepted for publication on August 6, 2019.

Huff, Tim; ***Inelastic Seismic Displacement Amplification for Bridges: Dependence upon Various Intensity Measures***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 23(1), February 2018.

Kidwell, Taylor; Kerley, Rebekah; Henderson, R. Craig; Huff, Tim; ***Elastic and Inelastic Behavior of Precast Concrete Piles and Cast-in-Shell Steel Piles in Reinforced Concrete Caps***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); January 4, 2018.

Huff, Tim; Shoulders, Jonathan; ***Partial Isolation of a Bridge on Interstate 40 in the New Madrid Seismic Zone***; 34th International Bridge Conference, National Harbor, Maryland, June 4-8, 2017.

Yarnold, Matt; Alexander, Justin; Huff, Tim; ***Structural Health Monitoring of the Hernando De Soto Bridge***; 34th International Bridge Conference, National Harbor, Maryland, June 4-8, 2017.

Pezeshk, Shahram; Yarahmadi, Arash; Huff, Tim; ***Assessment of Site Conditions and Improvement of Ground-Motion Prediction Equations in the Central United States***; Tennessee Department of Transportation, Research Project ED2013_17; 2016.

Hajihashemi, Ali; Pezeshk, Shahram; and Huff, Tim, ***A Comparison of Nonlinear Static Procedures and Modeling Assumptions for Seismic Design of Ordinary Bridges***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000309, 04016022, November 2016.

PUBLICATIONS (cont.)

Huff, Tim, ***Structural Demand on Bridges Subjected to Bidirectional Ground Motions***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000299 , 04016007. August, 2016.

Huff, Tim; ***Issues in the Prediction of Inelastic Behavior in Bridges during Earthquakes***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000289 , 04016007. February, 2016.

Huff, Tim; ***Estimating Residual Seismic Displacements in Bi-Linear Oscillators***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000282 , 04016003, January, 2016.

Pezeshk, S.; Elsayed, A.; Huff, T.; and Pezeshk, S. M.; ***Site Specific Seismic Analysis at the Vicinity of A Bridge Located Within the Mississippi Embayment***, Eastern Section Seismological Society of America, Annual Meeting, 2015.

Huff, Tim; Pezeshk, Shahram; ***Inelastic Displacement Spectra for Bridges Using the Substitute-Structure Method***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000279; December 30, 2015.

Huff, Tim; ***Partial Isolation as a Seismic Design Strategy for Pile Bent Bridges in the New Madrid Seismic Zone***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000277; December 30, 2015.

PUBLICATIONS (cont.)

Huff, Tim; ***Seismic Displacement Estimates for Bridges in the New Madrid Seismic Zone***, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers (ASCE); 10.1061/(ASCE)SC.1943-5576.0000269; December 30, 2015.

Huff, Tim; ***Spanning the Wolf River Wetlands***, Aspire - The Concrete Magazine, Fall 2014, pp. 14-17.

Huff, Timothy; Wayne Seger and Ed Wasserman; ***Tennessee State Route 385 over the Wolf River Wetlands - A Precast Solution***; PCI National Bridge Conference, September 2014.

Huff, Timothy; ***Isolation of Bridges in the New Madrid Seismic Zone***; 7th National Seismic Conference on Bridges and Highways, May 2013, Oakland, California.

Huff, Timothy; ***Ground Motion Selection and Modification for Nonlinear Time History Analysis of Isolated Bridges in the NMSZ,*** Poster Session, EERI Annual meeting, April 2012, Memphis, TN.

Wasserman, E. P., Pate, W. H. and Timothy Huff; ***Evaluation of Best Practices with High Performance Steel for Bridges***, presented at the Third conference on Advanced Materials for Construction of Bridges, Buildings, and other Structures, September 7-12, 2003, Davos, Switzerland.

Jones, W. D., Fricke, K. E. and Timothy Huff; ***Out-of-Plane Testing of A Hollow Clay Tile Wall Panel in Building 9207 at the Y12 Plant***; Lockheed Martin Energy Systems, 1993.

Fricke, K. E. and T. E. Huff; ***Test Procedure of the Out-of-Plane Full Scale Air Bag Test of A Hollow Clay Tile Wall Panel at the Y-12 Plant – Building 9207***, HCTP-21; Lockheed Martin Energy Systems, September, 1991.

Consulting Activities at Tennessee Tech

Seismic Design of the Mudville Road Bridge in Shelby County, TN for Burr and Cole, 2017-1028.

Seismic Design of Walnut Grove Road over Gray's Creek in Shelby County, TN for Burr and Cole, 2018-2019.

Seismic Evaluation of the TRU Waste Facility in Oak Ridge, TN for MESA Associates, 2018.

National Committee Appointments at Tennessee Tech

2018, appointed to serve on the ASCE 41 Seismic Retrofit of Existing Buildings Standards Committee as an Associate Member, American Society of Civil Engineers.

2018, Appointed to serve on NCHRP Panel 12-116, Proposed AASHTO Specifications for the Design of Piles for Downdrag, National Academy of Sciences.