

EDUCATION

Clemson University, Clemson SC, USA

Ph.D. in Civil Engineering with emphasis in Structural Engineering, May 2019.

Dissertation title: Behavior and Design of Post-installed Anchors in Thin Concert Members.

The University of Jordan, Amman, Jordan

M.Sc. in Civil Engineering with emphasis in Structural Engineering, Jan. 2015.

Thesis title: *Seismic Performance of Retrofitted Reinforced Concrete Multistory Frames with Ground Soft-Story Due to Masonry Infill walls.*

The University of Jordan, Amman, Jordan

B.Sc. in Civil Engineering, Jan. 2013

PROFESSIONAL EXPERIENCE

- **The Hashemite University, Zarqa, Jordan – Head of Building Environment and Structural Systems Center, Oct. 2020 – Present**
- **The Hashemite University, Zarqa, Jordan – Assistant Professor, Aug. 2019 – Present**
Director of Building Environment and Structural Systems Center – Hashemite University
 - **Areas of Interest:**
 - Anchorage to Concrete
 - Earthquake Engineering
 - FRP-reinforced Concrete
 - Reliability Analysis
 - **Classes typically taught:** Reinforced Concrete Design, Prestressed Concrete, Structural Analysis
- **Clemson University, SC, USA – Position: Research and teaching assistant, Jan. 2017 – May 2019**
Research project: investigating the behavior and design of post-installed anchors in thin concrete members (sandwich wall panels). The project was sponsored by Metromont Corporation, DeWalt, Simpsons strong-tie, and ITW Redhead. Responsibilities included design and conducting experimental programs, data analysis, reliability analysis, finite element modeling, develop design models, and prepare design reports.
- **e.construct, FZ-LLC, Dubai, UAE – Position: Structural Engineer, Dec. 2014 – Jun. 2016**
Experience field: High-rise building, large-scale projects, and value engineering. Duties included selecting vertical and lateral structural systems, building finite element models, conducting nonlinear construction stage analysis, design reinforced concrete structural elements, design isolated and mat foundation, preparing design reports, including wind tunnel test results in the design models, and reviewing design drawings.
- **Accreditation for Engineering and Architecture, Jordan- Position: Site Engineer, Nov. 2013- Dec. 2014**
Experience field: site engineer for a residential multi-story building. Duties included checking the accuracy of framework dimensions, the reinforcement placement according to the structural drawings and details, determining the concrete ready-mix volume needed, and monitor the concrete casting.

PROFESSIONAL CERTIFICATES

- Licensed Professional Engineer (P.E. South Carolina)
- Member in American Concrete Institute (ACI) committee 355
- Member in Precast/Prestressed Concrete Institute (PCI)
- LEED Green Associate 2017 – Present
- Member in Jordanian Engineering association
- FE exam: Passed May 2018

ENGINEERING SOFTWARE

AutoCAD, CSI ETABS, CSI SAP2000, CSI SAFE, Midas Gen, Matlab, Mathcad, ANSYS, SPSS statistical software, Microsoft office.

PUBLICATIONS

- **Tarawneh, A.**, Majdalaweyh, S. and Dwairi, H., 2021, October. Equivalent viscous damping of steel members for direct displacement based design. In **Structures** (Vol. 33, pp. 4781-4790). Elsevier.
- **Tarawneh, A.N.**, Dwairi, H.M., Almasabha, G.S. and Majdalaweyh, S.A., 2021. Effect of Fiber-Reinforced Polymer-Compression Reinforcement in Columns Subjected to Concentric and Eccentric Loading. **ACI Structural Journal**, 118(3).
- **Tarawneh, A.**, Almasabha, G., Alawadi, R. and Tarawneh, M., 2021, August. Innovative and reliable model for shear strength of steel fibers reinforced concrete beams. In **Structures** (Vol. 32, pp. 1015-1025). Elsevier.
- Murad, Y., **Tarawneh, A.**, Arar, F., Al-Zu'bi, A., Al-Ghwairi, A., Al-Jaafreh, A. and Tarawneh, M., 2021, October. Flexural strength prediction for concrete beams reinforced with FRP bars using gene expression programming. In **Structures** (Vol. 33, pp. 3163-3172). Elsevier.
- **Tarawneh, A.** and Majdalaweyh, S., 2020, December. Design and reliability analysis of FRP-reinforced concrete columns. In **Structures** (Vol. 28, pp. 1580-1588). Elsevier.
- **Tarawneh, A.**, Momani, Y. and Alawadi, R., 2021, August. Leveraging artificial intelligence for more accurate and reliable predictions of anchors shear breakout capacity in thin concrete members. In **Structures** (Vol. 32, pp. 1005-1014). Elsevier.
- **Tarawneh, A.** and Majdalaweyh, S., 2020, December. Design and reliability analysis of FRP-reinforced concrete columns. In **Structures** (Vol. 28, pp. 1580-1588). Elsevier.
- **Tarawneh, Ahmad N.**, Brandon E. Ross, and Thomas E. Cousins. "Tensile Behavior and Design of Screw Anchors in Thin Concrete Members." **ACI Structural Journal** 117.1 (2020).
- **Tarawneh, Ahmad N.**, Brandon E. Ross, and Thomas E. Cousins. " Shear Behavior and Design of Post-Installed Anchors in Thin Concrete Members." **ACI Structural Journal**, 117(3), pp.311-322.
- **Tarawneh, A.N.**, Ross, B.E. and Cousins, T.E., 2020. Tensile behavior and design of adhesive anchors embedded in thin concrete members. **PCI Journal**, 65(5).
- **Tarawneh, A.**, Majdalaweyh, S., Mahasneh, B. "The Effect of Using Hysteresis Models (Bilinear and Modified Clough) on Seismic Demands of Single Degree of Freedom Systems" **American Journal of Applied Sciences**, Vol, 13. DOI: 10.3844/ajassp.2016.913.923.

DESIGN PROJECTS AND RESPONSIBILITIES

• **Project 1- Rafal Living, Riyadh (65 story) - Kingdom of Saudi Arabia**

Responsibilities:

- Building the finite element model for the tower
- Designing Structural element
- Including wind load obtained by wind tunnel test conducted by RWDI in the design model.

- Developing CSI-SAFE finite element model for the raft foundation
- Developing different layouts for the outrigger system to control the drift ratio of the tower
- Third-party company “Thornton Tomasetti” required a long term deflection analysis (creep and shrinkage) to evaluate the differential settlement between the perimeter columns and the core of the building (shear walls) and its effect on the outriggers. I was assigned to conduct the analysis and provide a detailed report show the differential settlements and the resulted forces in the outrigger system. Midas Gen software was used for conducting the analysis. In addition, compensated levels for the columns to account for the differential settlement was assigned.

- **Project 2- MAG Cluster Z-Tower Dubai – United Arab Emirates.**

Major architectural changes were made to the project after the piles foundation was built. I was responsible of checking the design of the piles under new loads and to determine which piles has Demand/capacity ratio > 1 . Gravity, wind, and seismic loads was calculated according to ASCE 7-10 and IBC 2012/UBC 97. SAFE finite element was used. Site visit was made to investigate possible-retrofitting solutions. Codes: ACI 318-14, ASCE 7-10, IBC 2012, UBC 97.

- **Project 3- Bright Star Tower Dubai – United Arab Emirates.**

Responsibilities: Investigating optimal structural system of the tower. Transfer post-tensioned slabs was used to eliminate the column for the ground level for architectural purposes and transfer the loads into the exterior walls. Responsibilities included building finite element model and designing the beams, columns, and walls.

Codes: ACI 318-14, ASCE 7-10.