

CURRICULUM VITAE

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1. PERSONAL INFORMATION

a. Education:

- **PhD** in Structural Engineering, Imperial College London, UK. ([university rankings](#)) 2001
- **DIC** (Diploma of Imperial College) in Earthquake Engineering, Imperial College, UK. 2002
- **MSc** in Structural Engineering, Zagazig University, Egypt. 1994
- **BSc** in Civil Engineering, Zagazig University, Egypt. 1989

b. Professional Experience:

- Associate Professor UAE University, UAE Present
- Professor of Structural Engineering (on leave) Zagazig University, Egypt Present
- Senior Research Fellow and Lecturer University of Illinois at Urbana-Champaign 2004-2007
- Associate/Assistant Professor (on leave) Zagazig University, Egypt 2001-2013
- Senior Structural Engineer (part time) Consulting firms from the UAE & Egypt 2001-2004
- PhD Research Student Imperial College London, UK 1996-2001
- Assistant Lecturer/Teaching Assistant University of Zagazig, Egypt 1990-1996
- Structural Engineer (part time) Engineering Consulting Office, Egypt 1989-1996

2. RESEARCH AND SCHOLARLY ACTIVITIES

- 500 [citations](#).
- Recipient of the “Outstanding 2002 Journal Paper Award” for journal paper published in The Structural Design of Tall and Special Buildings, Wiley, Vol. 11(5), 329-351.
- Journal papers published in Engineering Structures - Elsevier were ranked among the top papers in 2009, 2010 and 2012.

a. Refereed Journal Articles/Book Chapters:

1. **Mwafy, A.M.**, Hussain, N. and El-Sawy, K., 2014, “Seismic performance and cost-effectiveness of high-rise buildings with increasing concrete strength, The Structural Design of Tall and Special Buildings (SCI), Wiley, In press. DOI: 10.1002/tal.1165
2. **Mwafy, A.M.**, 2013, “Use of overstrength and inelastic response in seismic design”, Structures and Buildings (SCI), ICE Publishing, Vol. 166(6), 282-297. DOI: 10.1680/stbu.11.00022
3. Jeong, S-H., **Mwafy, A.M.** and Elnashai, A.S., 2012, “Probabilistic seismic performance assessment of code-compliant multi-story RC buildings”, Engineering Structures (SCI), Elsevier, Vol. 34, 527-537. DOI:10.1016/j.engstruct.2011.10.019. **Ranked 3rd among the Top 25 papers published in Engineering Structures, 2012.**
4. **Mwafy, A.M.**, 2012, “Analytically-derived fragility relationships for the modern high-rise buildings in the UAE”, The Structural Design of Tall and Special Buildings (SCI), Wiley, Vol. 21, 824-843. DOI: 10.1002/tal.642.
5. **Mwafy, A.M.**, 2012, “Effect of bidirectional excitations on seismic response of RC buildings”, Journal of Earthquake and Tsunami (SCI), World Scientific Publishing Company, Vol. 6(4). DOI: 10.1142/S1793431112500194
6. Hashash, Y.M.A., **Mwafy, A.M.**, Elnashai, A.S. and Hajjar, J.F., 2012, “Development of a multi-disciplinary graduate course on consequence-based earthquake risk management”, International Journal of Continuing Engineering Education and Life-Long Learning, Vol. 22(1/2), 127 - 147. DOI: 10.1504/IJCEELL.2012.047039.
7. **Mwafy, A.M.**, Kwon, O-S., Elnashai, A.S. and Hashash, Y.M.A., 2011, “Wave passage and ground motion incoherency effects on seismic response of an extended bridge”, Journal of Bridge Engineering (SCI), ASCE, Vol. 16(3), 364-374. DOI: 10.1061/(ASCE)BE.1943-5592.0000155.

8. **Mwafy, A.M.**, 2011, "Assessment of seismic design response factors of concrete wall buildings", Earthquake Engineering and Engineering Vibration (SCI), Springer, Vol. 10(1), 115-127. DOI: 10.1007/s11803-011-0051-7.
9. **Mwafy, A.M.**, Kwon, O-S. and Elnashai, A.S., 2010, "Seismic assessment of an existing non-seismically designed major bridge-abutment-foundation system", Engineering Structures (SCI), Elsevier, Vol. 32(8), 2192-2209. DOI: 10.1016/j.engstruct.2010.03.022.
10. Kwon, O-S., **Mwafy, A.M.** and Elnashai, A.S., 2010, "Analytical assessment of seismic performance evaluation procedures for bridges", ACI SP-271: Structural Concrete in Performance-Based Seismic Design of Bridges. **Among ACI's most ordered products, 2010.**
11. Elnashai, A.S. and **Mwafy, A.M.**, 2008, "ICE Manual of Bridge Engineering, Chapter 5: Seismic response and design", Second edition ISBN: 9780727734525, Thomas Telford Ltd., Institution of Civil Engineers, London, UK. Available at www.icevirtuallibrary.com and www.amazon.co.uk
12. **Mwafy, A.M.** and Elnashai, A.S., 2008, "Importance of shear assessment of concrete structures detailed to different capacity design requirements", Engineering Structures (SCI), Elsevier, Vol. 30(6), 1590-1604, DOI: 10.1016/j.engstruct.2007.10.015.
13. **Mwafy, A.M.**, Elnashai, A.S. and Yen, W-H., 2007, "Implications of design assumptions on capacity estimates and demand predictions of multi-span curved bridges", Journal of Bridge Engineering (SCI), ASCE, Vol. 12(6), 710-726. DOI: 10.1061/(ASCE)1084-0702(2007)12:6(710).
14. **Mwafy, A.M.**, Elnashai, A.S. Sigbjörnsson, R. and Salama, A., 2006, "Significance of severe distant and moderate close earthquakes on design and behavior of tall buildings", The Structural Design of Tall and Special Buildings (SCI), Wiley, Vol. 15(4), 391-416. DOI: 10.1002/tal.300.
15. **Mwafy, A.M.**, Elnashai, A.S. and Salama, A., 2004, "Vulnerability of high-rise buildings in medium seismicity regions", HBRC Journal, Vol. 1(1), 87-100. ISSN: 12479/2004.
16. El-Awadi, E., Mahmoud, H.A. and **Mwafy, A.M.**, 2002, "Design procedure for RC beams with web openings", Ain Shams Engineering Journal, Elsevier, Vol. 37, No. 3, 21-35. ISSN: 1110-1385.
17. **Mwafy, A.M.** and Elnashai, A.S., 2002, "Calibration of force reduction factors of RC buildings", Journal of Earthquake Engineering (SCI), Taylor & Francis, Vol. 6(2), 239-273. DOI: 10.1080/13632460209350416. **55 citations.**
18. Elnashai, A.S. and **Mwafy, A.M.**, 2002, "Overstrength and force reduction factors of multi-storey RC buildings", The Structural Design of Tall Buildings, Wiley (SCI), Vol. 11(5), 329-351. DOI: 10.1002/tal.204. **Outstanding 2002 journal paper award; 90 citations.**
19. **Mwafy, A.M.** and Elnashai, A.S., 2001, "Static pushover versus dynamic collapse analysis of RC buildings", Engineering Structures (SCI), Elsevier, Vol. 23(5), 407-424. DOI:10.1016/S0141-0296(00)00068-7. **230 citations.**

b. Papers in Conference Proceedings: (Sample since 2005)

20. **Mwafy, A.M.**, Khalifa, S. and El-Ariss, B., 2014, "Relative safety margins of code-conforming vertically irregular high-rise buildings", Proceedings of Second European Conference on Earthquake Engineering and Seismology (2ECEES), Aug. 24-29, Istanbul, Turkey.
21. Ashri, A., and **Mwafy, A.M.**, 2014, "3D vulnerability functions for contemporary buildings with varying structural systems and heights", Proceedings of Second European Conference on Earthquake Engineering and Seismology (2ECEES), Aug. 24-29, Istanbul, Turkey.
22. Issa, A., and **Mwafy, A.M.**, 2014, "Fragility assessment of pre-seismic code buildings and emergency facilities in the UAE", Proceedings of Second European Conference on Earthquake Engineering and Seismology (2ECEES), Aug. 24-29, Istanbul, Turkey.
23. Alwaeli, W., **Mwafy, A.M.**, Pilakoutas, K. and Guadagnini, M., 2013, "Framework for developing fragility relations of high-rise RC wall buildings based on verified modelling approach", Proceedings of 2ECEES, Aug. 24-29, Istanbul, Turkey.
24. **Mwafy, A.M.**, 2013, "Efficient and cost-effective seismic design using inelastic analysis procedures and overstrength", Proceedings of the Second Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures (SMAR 2013), Sep. 9-11, Istanbul, Turkey.
25. **Mwafy, A.M.**, Hussain, N. and El-Sawy, K., 2013, "Impact of high-strength material on seismic design response factors and economics of multi-story buildings", Proceedings of the Second Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures (SMAR 2013), Sep. 9-11, Istanbul, Turkey.
26. **Mwafy, A.M.**, 2013, "Seismic risk assessment of buildings in the highly populated earthquake-prone areas of the UAE", Proceedings of the Second International Conference on Engineering Geophysics, 24-27 November, Al Ain, United Arab Emirates.

27. Alwaeli, W., **Mwafy, A.M.**, Pilakoutas, K. and Guadagnini, M., 2013, "Seismic loss assessment framework for rc high-rise wall buildings: Dubai case study", Proceedings of the Second International Conference on Engineering Geophysics, 24-27 November, Al Ain, United Arab Emirates.
28. **Mwafy, A.M.**, 2012, "Classification and Idealization of the Building Stock in the UAE for Earthquake Loss Estimation", Proceedings of the 15th World Conference on Earthquake Engineering, September 24 to 28, Lisbon, Portugal.
29. **Mwafy, A.M.**, Hussain, N. and El-Sawy, K., 2012, "Seismic Assessment and Cost-Effectiveness of High-Rise Buildings with Increasing Concrete Strengths", Proceedings of the 15th World Conference on Earthquake Engineering, September 24 to 28, Lisbon, Portugal.
30. **Mwafy, A.M.** and Elkholy, S., 2012, "Comparative Vulnerability Assessment of Retrofit Techniques for Pre-Code RC Structures", Proceedings of the 15th World Conference on Earthquake Engineering, September 24 to 28, Lisbon, Portugal.
31. **Mwafy, A.M.**, 2012, "Impact of Near-Field Ground Motions on the Vulnerability of Multi-Story Buildings", Proceedings of the Australasia and South East Asia Conference in Structural Engineering and Construction, Nov. 28 to Dec. 2, Perth, Australia.
32. Elkholy, S., **Mwafy, A.M.** and, 2012, "Vulnerability and Cost Assessment of Seismically Strengthened RC Buildings", Proceedings of the Australasia and South East Asia Conference in Structural Engineering and Construction, Nov. 28 to Dec. 2, Perth, Australia.
33. **Mwafy, A.M.**, 2011, "Methodology for the verification of seismic design factors of shear wall buildings", Proceedings of the Sixth International Structural Engineering and Construction Conference (ISEC-6), June 21-26, Zürich, Switzerland.
34. **Mwafy, A.M.**, and Ebead, U., 2011, "Evaluation of the seismic design factors of RC multi-story buildings", Proceedings of the Sixth International Structural Engineering and Construction Conference (ISEC-6), June 21-26, Zürich, Switzerland.
35. **Mwafy, A.M.**, 2011, "Damage assessment of the multi-story buildings in the UAE under multiple earthquake scenarios", Proceedings of the First Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures (SMAR 2011), 8-10 February 2011, Dubai, UAE.
36. **Mwafy, A.M.**, 2010, "Fragility relationships for the modern high-rise buildings in the UAE", Proceedings of the 14th European Conference on Earthquake Engineering (14th ECEE), August 30th - September 3rd, Ohrid, Macedonia.
37. **Mwafy, A.M.**, 2008, "Rational use of inelastic response in seismic design", Proceedings of the 14th World Conference on Earthquake Engineering, October 12-17, Beijing, China.
38. **Mwafy, A.M.**, Elnashai, A.S. and Kwon, O-S., 2008, "Inelastic seismic response of a 59-span bridge with soil-structure interaction", Proceedings of the 14th World Conference on Earthquake Engineering, October 12-17, Beijing, China.
39. Elnashai, A.S., **Mwafy, A.M.** and Kwon, O-S., 2006, "Analytical assessment of a major bridge in the New Madrid seismic zone", Proceedings of the 5th National Seismic Conference on Bridges & Highways, September 18-20, San Francisco, USA.
40. **Mwafy, A.M.** and Elnashai, A.S., 2006, "Significance of shear modeling in seismic assessment of RC structures", Proceedings of the European Conference on Earthquake Engineering and Seismology (1st ECEES), September 3-8, Geneva, Switzerland.
41. **Mwafy, A.M.** and Elnashai, A.S., 2006, "Vulnerability of code-compliant RC buildings under multi-axial earthquake loading", Proceedings of the 4th International Conference on Earthquake Engineering (4ICEE), October 12-13, Taipei, Taiwan.
42. **Mwafy, A.M.**, Elnashai, A.S. and Yen, W-H., 2005, "Effect of bearing behavior on the dynamic characteristics and seismic response of multi-span complex bridges", Proceedings of the 21st US-Japan Bridge Engineering Workshop, October 3-5, PWRI, Tsukuba, Japan.

c. Contracts and Grants: (Sample)

Project, Responsibility & Budget	Funding Organization	Period
• Seismic vulnerability assessment of the building stock in highly populated areas in the UAE, PI .	UAEU/National Research Foundation, UAE	Mar. 2013 -Mar. 2015
• Seismic vulnerability assessment of the building stock in highly populated areas in the UAE, PI .	UAEU/National Research Foundation, UAE	Feb. 2011 -Feb. 2013
• Virtual experimentation-driven design tools for strengthened RC structural elements in the UAE, Co-PI .	Emirates Foundation, UAE	Sep. 2010 -Sep. 2012

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| • Six different individual/seed research projects, PI. | UAE University, UAE | Mar. 2008
-Mar. 2014 |
| • Evaluation of the inelastic seismic response of the I-155 route bridge at Caruthersville considering SSI and retrofit, Project Manager. | Missouri Department of Transportation and Jacobs Engineering Inc., USA | Jul. 2005
-Jun. 2007 |

e. Fellowships, Prizes, and Awards Given for Research or Teaching Achievements:

- ScienceDirect Top 25 List, 2012, paper ranked 3rd on the Top 25 for Engineering Structures.
- ScienceDirect Top 25 List, 2009/2010, paper ranked 6th on the Top 25 for Engineering Structures.
- Marquis Who's Who in the World, 27th & 28th editions, 2010-2011.
- Marquis Who's Who Among American Teachers and Educators, 11th edition, 2007.
- University of Illinois at Urbana-Champaign Fellowship, USA, 2004, 2005 & 2006.
- Outstanding Journal Paper award, Los Angeles Tall Buildings Structural Design Council, USA, 2003.
- Postgraduate Scholarship, Ministry of Higher Education, Egypt, 1996-2001.
- Travel Award, the 6th SECED International Conference, University of Oxford, UK, 1998.
- Graduated with distinction and awarded a TA position at University of Zagazig, Egypt, 1990.

f. Reviewing Activities for Journals: (Sample)

Reviewer of several international journals, including *Journal of Earthquake Engineering*, Taylor & Francis; *Journal of Structural Engineering*, ASCE; *Journal of Bridge Engineering*, ASCE; *Engineering Structures*, Elsevier; *Earthquake Engineering and Structural Dynamics*, Wiley; *The Structural Design of Tall and Special Buildings*, Wiley; *Structure and Infrastructure Engineering*, Taylor & Francis; *Structures and Buildings*, ICE Publishing; *Structural Engineering and Mechanics*, Techno Press; *Earthquake Engineering and Engineering Vibrations*, Springer; *The Bulletin of Earthquake Engineering*, Springer; *Advances in Structural Engineering*, Multi-Science Publishing.

3. ADVISING AND TEACHING

a. Advising:

Currently supervising six PhD and MSc Students on their research theses.

b. Courses Taught (Sample):

Courses taught at the UAE University (UAEU) and University of Illinois at Urbana-Champaign (UIUC):

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| • Prestressed Concrete - CIVL 612 (Graduate) | UAEU |
| • Special Topics in Structural Engineering - CIVL 510 | UAEU |
| • Reinforced Concrete Design - CIVL 365 | UAEU |
| • Reinforced Concrete Design for ARCH - CIVL 457 | UAEU |
| • Structural Analysis - CIVL 310 | UAEU |
| • Mechanics of Materials - GENG 305 | UAEU |
| • Earthquake Risk Management - CEE 598 | UIUC |
| • Earthquake Structural Engineering - CEE 572 | UIUC |

4. SERVICES

a. Professional Memberships:

- Certified Consulting Engineer, Engineers Syndicate, Egypt.
- Member of the American Society of Civil Engineers (ASCE), USA.
- Member of the Structural Engineering Institute (SEI), USA.
- Member of the Institution of Civil Engineers (ICE), UK, (1997 - 2001).
- Member of the Engineers Syndicate, Egypt.

b. Consulting Experience:

Hands-on experience in design and assessment of structures in the UAE, USA, UK and Egypt since 1989.