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Area of Interest: Shake-Table Testing; Quasi-Static Cyclic Testing; Seismic Vulnerability Assessment of Structures & Retrofitting; Seismic Design Codes, Methods and Standards (FB, DDBD, PBSB); Seismic Hazard & Microzonation; Seismic Risk and Loss Estimation.

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Publication:

International Journal Papers

1. Qaisar Ali and **Ahmad, N.** et al. [2017] "Shake Table Tests on Single Storey Dhajji Dewari Traditional Buildings", International Journal of Architectural Heritage. DOI: <http://dx.doi.org/10.1080/15583058.2017.1338789>
2. **Ahmad, N.** et al. [2017] "Seismic performance assessment of non-compliant SMRF reinforced concrete frame: shake-table test study", Journal of Earthquake Engineering. DOI: <http://dx.doi.org/10.1080/13632469.2017.1326426>
3. Rashid, M. and **Ahmad, N.** [2017] "Economic losses due to earthquake-induced structural damages in RC SMRF Structures", Cogent Engineering – Taylor & Francis Online.
4. Alsuwwi, A.H., Hassan, M., Awwad, J. and **Ahmad, N.** [2015] "Comparative analysis of cement-sand & cement-sand-khaka (stone dust) mortar shear wall brick masonry materials", Masonry International, Vol. 28(01), pp. 1-10.
5. **Ahmad, N.**, Ali, Q., Crowley, H. Pinho, R. [2014] "Earthquake loss estimation of residential buildings in Pakistan", Natural Hazards, Vol. 73(3), pp. 1889-1955.
6. Ali, Q., Naeem, A., Ashraf, M., Ahmed, A., Alam, B., **Ahmad, N.**, Fahim, M., Rahman, S., Umar, M. [2013] "Seismic performance of stone masonry buildings used in the Himalayan Belt". Earthquake Spectra, Vol. 29(04), pp.1159-1181.
7. **Ahmad, N.**, Ali, Q., Umar, M. [2013] "Seismic vulnerability assessment of multistorey timber braced frame traditional masonry structures", Advanced Material Research, Vol. 601, pp. 168-172.

8. **Ahmad, N.**, Ali, Q., Umar, M. [2012] "Simplified engineering tools for seismic analysis and design of traditional Dhajji-Dewari structures", Bulletin of Earthquake Engineering, Vol. 10(05), pp. 1503-1534.
9. **Ahmad, N.**, Ali, Q., Ashraf, M., Alam, B. and Naeem, A. [2012] "Seismic Vulnerability of The Himalayan Half-Dressed Rubble Stone Masonry Structures, Experimental and Analytical Studies". Natural Hazards and Earth System Sciences, Vol. 12(11), pp. 3441 to 3454.
10. Ali, Q., Schacher, T., Ashraf, M., Alam, B., Naeem, A., **Ahmad, N.** and Umar, M., [2012] "In-plane behavior of Dhajji-Dewari structural system (wooden braced frame with masonry infill)", Earthquake Spectra, Vol. 28(03), pp. 835-858.
11. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., [2010] "Displacement-based earthquake loss assessment of masonry buildings in Mansehra city, Pakistan", Journal of Earthquake Engineering, Vol. 14 (S1), pp. 1-37.
12. Ali, Q., Naeem, A., **Ahmad, N.** and Alam, B. [2012] "In-Situ dynamic testing of masonry structure by means of underground explosions simulating earthquake motions, a unique case study", International Journal of Earth Sciences and Engineering, Vol. 5(05), pp. 1196-1207.
13. Ali, Q., Badrashi, Y.I., **Ahmad, N.**, Alam, B., Rehman, S. and Banori, F.A.S. [2012] "Experimental investigation on the characterization of solid clay brick masonry for lateral shear strength evaluation", International Journal of Earth Sciences and Engineering, Vol. 05(04), pp. 782-791.
14. **Ahmad, N.**, Ali, Q., Ashraf, M., Naeem, A. and Alam, B. [2012] "Performance assessment of low-rise confined masonry structures for earthquake induced ground motions ", International Journal of Civil and Structural Engineering, Vol. 02 (03), pp. 842-859.
15. Javed, M., Alam, B., Ali, S.M., Shahzada, K. and **Ahmad, N.** [2012] "Experimental investigation on the seismic disaster mitigation of unreinforced brick masonry buildings in Northern Pakistan". Recent Trends in Civil Engineering & Technology, Vol. 02(03), pp. 11-23.
16. **Ahmad, N.**, Ali, Q., Ashraf, M., Naeem, A. and Alam, B. [2012] "Seismic performance evaluation of reinforced plaster retrofitting technique for low-rise block masonry structures ", International Journal of Earth Sciences and Engineering, Vol. 05 (02), pp. 193-205.
17. Alam, B., Haque, M.I., Javed, M., Ali, S.M. and **Ahmad, N.** [2012] "A hybrid complex method for optimization of rigidly jointed plane frames". International Journal of Advancements in Research & Technology, Vol. 01(06), pp. 1-16.
18. Shah, A., Ali, Q., Alam, B., Shahzada, K., Khan, R. and **Ahmad, N.** [2012] "Study on performance evaluation of adhesive anchors in concrete". International Journal of Advanced Structures and Geotechnical Engineering, Vol. 01(02), pp. 74-78.
19. Alam, B., Javed, M., Ali, Q., **Ahmad, N.** and Ibrahim, M. [2012] "Mechanical properties of no-fines bloated slate aggregate concrete for construction application, experimental study", International Journal of Civil and Structural Engineering, Vol. 3(02), pp. 302-312.
20. **Ahmad, N.**, Ali, Q., Ashraf, M., Naeem, A. and Alam, B. [2011] "Seismic structural design codes evolution in Pakistan and critical Investigation of masonry structures for seismic design recommendations", International Journal of Civil, Structural, Environmental and Infrastructure Engineering Research and Development, Vol. 1(1), pp. 42-85.

Book Contribution

1. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., [2011] "Frame-elements constitutive law for nonlinear static and dynamic analyses of masonry buildings", Contribution to Book

Chapter "Masonry and Concrete Structures" In Cheung, S. O., Yazdani, S., Ghafoori, N. and Singh, A. (eds.) Modern Methods and Advances in Structural Engineering and Construction, Research Publishing Service, Singapore.

2. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., [2011] "Displacement-based earthquake loss assessment of adobe buildings in Pakistan.", Contribution to Book Chapter "Seismic Performance and Response" In Cheung, S. O., Yazdani, S., Ghafoori, N. and Singh, A. (eds.) Modern Methods and Advances in Structural Engineering and Construction, Research Publishing Service, Singapore.

Professional Magazine Contribution

1. **Ahmad, N.**, Ali, Q., Crowley, H., Pinho, R., [2011] "Simplified method for nonlinear static and dynamic seismic analysis of stone masonry buildings", Civil Computing: Computer Applications in Civil Engineering, Vol. M38-0316-0311 (Special Edition on Earthquake Engineering), pp. 26-31.

International Conference Proceedings

1. Shahzad, A. and **Ahmad, N.** [2016] "Shake table test on reinforced concrete structure", Proceedings of the 2nd International Conference on Emerging Trends in Engineering, Management and Sciences, Peshawar, Khyber Pakhtunkhwa, Pakistan.
2. **Ahmad, N.**, Ali, Q., Crowley, H., Pinho, R., [2012] "Earthquake loss estimation of structures in Pakistan", Proceedings of the 9CUEE & 4ACEE, Tokyo, Japan. (Travel Grants awarded by the Tokyo Institute of Technology, Tokyo, Japan).
3. **Ahmad, N.**, Badrashi, Y.I., Ali, Q., Crowley, H., Pinho, R., [2011] "Development of displacement-based method for seismic risk assessment of RC building stock of Pakistan.", Proceedings of the International Conference on Earthquake Engineering and Seismology, Islamabad, Pakistan, Paper No. 11.
4. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., Aziz, S., [2011] "Development of fast building seismic screening (FBSS) method", Proceedings of the International Conference on Earthquake Engineering and Seismology, Islamabad, Pakistan, Paper No. 13.
5. **Ahmad, N.**, Ali, Q., Crowley, H., Pinho, R., [2011] "Displacement-based seismic performance evaluation of Dhajji structural systems", 11NAMC, Proceedings of the Masonry Society, Minnesota, USA, Paper No. 089.
6. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., [2010] "Simplified formulae for the displacement capacity, energy dissipation, and characteristic vibration period of brick masonry buildings", 8IMC-Dresden Germany, Proceedings of the International Masonry Society 11(2-H), pp. 1385-1394.
7. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., [2010] "Derivation of displacement-based fragility functions for masonry buildings", 14ECEC, Proceedings of the European Conference on Earthquake Engineering, Ohrid, Macedonia. Paper no. 327 CD-ROM (SGAC awarded by Swiss Society for Earthquake Engineering and Structural Dynamics).
8. **Ahmad, N.**, Ali, Q., Crowley, H., Pinho, R., [2010] "Displacement-based seismic risk assessment of stone masonry buildings of Pakistan", ACEE-2010, Proceedings of the Asia Conference on Earthquake Engineering, Bangkok, Thailand, Paper id. ACEE-P-101.

Trainings, Workshops and Seminars

1. **Ahmad, N.** [2017] "Vulnerability assessment of structures", Continuing Professional Development (CPD) Programme - Pakistan Engineering Council, organized by the Civil Engineering Department, UET Peshawar, KP Pakistan.
2. **Ahmad, N.** [2015] "Feasibility assessment of existing structures", Continuing Professional Development (CPD) Programme - Pakistan Engineering Council, organized by the Communication & Works Department, Peshawar, KP Pakistan.
3. **Ahmad, N.** [2009] "Development of a seismic loss model for Mansehra city, Pakistan: Application to unreinforced masonry building stock", Ninth ROSE School Seminar, ROSE School-IUSS Pavia, Pavia, Italy.
4. Ali, Q., **Ahmad, N.** [2009] "Structural vulnerability assessment", Proceedings of the Regional Workshop on Structural and Non-Structural Solutions for Earthquake Risk Reduction – Current Practices, Lessons and Recommendations in Context of South Asia (under the Pilot Project ERRP of the ONE UN DRM Programme), Islamabad, Pakistan.
5. **Ahmad, N.**, Ali, Q., [2008] "Technical aspects of seismic risk assessment of physical infrastructures", Workshop Proceedings of the Earthquake Vulnerability Reduction and Preparedness Programme (under the Pilot Project ERRP of the ONE UN DRM Programme), Muzaffarabad, Pakistan.

Technical Reports

1. **Ahmad, N.**, et al. [2017] "Earthquake Hazard Assessment" under ADB supported FERRP Project, PDMA Punjab, Lahore, Punjab.
2. **Ahmad, N.**, et al. [2016] "Seismic microzonation of AJK" under World Bank supported Nallah Project, DCRIP, Muzaffarabad, AJK.
3. **Ahmad, N.**, et al. [2016] "Seismic microzonation of Punjab", National Disaster Management Authority (NDMA), Islamabad.
4. **Ahmad, N.**, et al. [2016] "Exposure and vulnerability of Punjab", National Disaster Management Authority (NDMA), Islamabad.
5. **Ahmad, N.**, [2011] "Seismic risk assessment and loss estimation of building stock of Pakistan", PhD Thesis, ROSE School-IUSS Pavia, Pavia, Italy.
6. **Ahmad, N.**, Crowley, H., Pinho, R., [2011] "Analytical fragility functions for reinforced concrete and masonry buildings and building aggregates of Euro-Mediterranean regions", Technical Report, Department of Structural Mechanics, University of Pavia, Pavia, Italy. (WP3-Task3.1 of SYNER-G under European Commission FP7 Project).
7. **Ahmad, N.**, Crowley, H., Pinho, R., Ali, Q., [2010] "Capacity curves for unreinforced fired brick masonry buildings of Pakistan-UFB5", WHE Pager Project: Development of Analytical Seismic Vulnerability Functions, Analytical Data Part III, EERI, Oakland USA.
8. **Ahmad, N.**, [2008] "Development of a seismic risk/loss model for Mansehra city, Pakistan", Master Thesis, ROSE School-IUSS Pavia, Pavia, Italy.
9. **Ahmad, N.**, Ali, Q., [2009] "Site-specific probabilistic seismic hazard analysis of Mansehra urban area", Technical Report, National Disaster Management Authority (NDMA), Islamabad, Pakistan.