MOHAMMAD AL-SAMARA

Personal details

Nationality	Syrian
Profession	Civil Engineer
Specialisation	Structural Dynamics
Year of birth	1958

Key experience

Accumulated 43 years of experience in the field of structural engineering, main key experience covered:

- Structural steel design, design of tall buildings, seismic design of buildings and structures, design of tunnel structures, shelters and protective structures. In addition to experience in the supervision of many types of construction projects.
- Teaching the following courses: Structural Analysis, The Finite Element Methods, Structural Dynamics, Earthquake Engineering, Design of Steel Structures, Design of Concrete Structures.
- Scientific Research in the following fields: Structural Dynamics, Earthquake Engineering, and Soil Structure interaction.

Education and professional status

Doctor of Philosophy (PhD) in structural dynamics from the university of London, 1986.

Diploma of Membership of the Imperial College (DIC) in civil engineering, 1983.

Master of Science (MSc) in Structural Steel Design from the University of London, Imperial College of Science and Technology, 1983.

BSc. in Civil Engineering from the University of Damascus, 1981

Language ability

Arabic	Mother tongue
English	Fluent

Experience Record

2010-2012 **Halcrow Group Limited**
Head of Structural Design Department, Damascus Branch
Supervising the design of the following projects:

- Kafarkouk Development (Mixed use development project with a total floor area of 204000 m^2)
- Eighth Gate project (M1 – M4) (Four blocks of flats with a total floor area of 80000 m^2)
- Damascus Centro Hotel (Nine stories and five basements with a total floor area of 10000 m^2)
- Latakia Novotel Hotel (A compound consists of main building, a set of villas and bungalows, and services. Total floor area of 16000 m^2)

2004- present **Syrian Engineering Consultancy** (private owned)
General Director

- Carrying out the Seismic upgrading of building No. 4069 , Malki district, Damascus with an area of 12000 m^2
- Reviewing the the structural design of building S-161 of Marouta district, Damascus with an area of 24200 m^2
- Carrying out the structural design of buildings No.2 and No.3 of district 26, Dumer Project, Damascus with an area of 24500 m^2
- Carrying out the structural design of parking of the Alerakiat Project in Damascus with an area of 30000 m^2.
- Carrying out the structural design of steel cladding support of Al Telal Hotel in Dubai, United Arab Emirates with an area of 40000 m^2.
- Carrying out the structural design of the faculty of Literature, Dara branch, Damascus University with an area of 25000 m^2 .
- Carrying out the structural design of Al-Obekan Resort in Jazan, Saudi Arabia, with an area of 18000 m^2.
- Reviewing the structural design of Al-Obekan Commercial Centre tower (40 stories) in Riyadh, Saudi Arabia, with an area of 60000 m^2.
- Reviewing the structural steel design of the buildings of the Syrian Metal Industry (SMI) with an area of 120000 m^2.
- Carrying out the structural design of the Arab Commercial Centre tower in Damascus with an area of 65000 m^2.
- Reviewing the structural design of Ibn Hani Resort in Lattakia of Syria owned by Qatari Diar investment company.
- Carrying out the structural design of buildings and structures of the Eastern Park project of Damascus (zoo and entertainment facilities).
- Reviewing the structural design of the administration building of the Syrian Computer Society in Damascus with an area of 4500m^2.
- Reviewing the seismic rehabilitation of the student residence in Damascus University (Unit No. 1) with an area of 15000m^2 .
- Carrying out the structural design of the second and third phases of the Arab-European University with an area of 50000m^2.

- Reviewing the structural design of the commercial tower No.12 in Al-Thaora Street in Damascus with an area of 15000m^2.
- Carrying out the engineering design of the Syrian Yarmouk privet university in Syria with an area of 25000m^2.
- Supervising the structural design of the Sham Concord commercial centre in Damascus with an area of 160000m^2.

2020- Present
2014- 2015
2004- 2013

Damascus University

- Professor of structural dynamics at the Faculty of Civil Engineering
- Teaching Experience*:* Teaching the courses of:
  Structural steel design, structural analysis, structural dynamics and earthquake engineering, and the finite element methods in the Faculty of Civil Engineering since 2000.
- Structural dynamics, earthquake engineering, the finite element methods, and design of steel and concrete structures to resist earthquakes for the postgraduate students at the Higher Institute of Earthquake Studies and Research HIESR since 2004.
- Dean of The Higher Institute of Earthquake Studies and Research (HIESR) for the period of 2004-2010.

2015-2020

Yarmouk Private University, Syria

- Vice president for the academic affairs.
- Teaching the courses of structural analysis, structural steel design, and reinforced concrete design.

2021- present

University Consultant for the academic affairs

2013- 2014

Philadelphia University, Jordan

- Head of Civil Engineering Department
- Teaching the courses of structural analysis and reinforced concrete design.

2006-2013
2014- 2023
(part time)

International University of Science and Technology, Syria

Teaching the courses of structural steel design, structural analysis, structural dynamics and earthquake engineering, and the finite element methods in the Faculty of Civil Engineering.

1986-2004

Scientific Studies and Research Centre (SSRC), Syria

Director of the Department of Engineering Affairs at SSEC from 2000 till 2004
Head of Engineering Department at SSEC from 1987 till 2000
Researcher 1987; Senior Researcher 1991; Research Director since 1996
Participated in the design and Execution of projects over 400000 m2. These projects covered a wide variety of buildings and structures such as: residential arias, high rise block of flats, administration buildings, research laboratories and teaching premises, factories, industrial compounds, shelters and protective structures, tunnels.

1982-1986 **Imperial College of Science and Technology, London**

Research assistant in the field of structural dynamics sponsored by the Scientific Studies and Research Centre (SSRC) of Syria. The objective of the research project was to establish a unified approach and algorithm for the analysis of elastoplastic skeletal structures under dynamic loadings via mathematical programming techniques. As a result, many technical reports and research papers were published in refereed journals and International conferences. In the end of the project, I was awarded PhD from the University of London.

Book publications:

Writing four books in the field of structural steel design and structural dynamics and part of a dictionary and translating a book:

1. Design of Steel Structures according to Euro code EC3
2. Design of Steel Structures according to BS code 5950
3. Design of Steel Structures: Plastic Analysis & Design
4. Design of Steel Structures: Worked Typical Examples
5. Fundamentals of Structural Dynamics and Earthquake Engineering
6. The structural engineering part of The Unified Dictionary of Civil Engineering Terms, Arab League Educational Cultural and Scientific Organization, 400 Pages, 2012.
7. Arabic translation of "Materials for Architects and Builders", 4th edition 2010, by Arther Lyons, pub. Elsevier.

Research work publications:

1. Effect of Large Displacement theory on the performance of Medium-rise RC Frame Structures during the Progressive Collapse, accepted for publication in the Journal. of Damascus Univ., Eng. Science Series, 2020.
2. A Study on the Effect of Shear Walls Contribution in Resisting Base Shear on the R-Factor for RC Dual Systems, accepted for publication in the Journal. of Damascus Univ., Eng. Science Series, 2016.
3. The Effect of Using “The Buckling Restraint Braces” on The Behaviour of Concentric Braced Steel Frames, accepted for publication in the Journal. of King Saud University, Engineering Sciences, 2016.
4. An evaluation of the seismic response modification factor R for RC special moment-resisting frame system, by Rania Al-Ahmar; Mohammad Al-Samara
   International Journal of Structural Engineering (IJSTRUCTE), Vol. 6, No. 4, 2015
5. Influence of Friction Pendulum Isolator Characteristics on the Response of Seismic Isolated Structures, ABHATH AL-YARMOUK: "Basic Sci.& Eng.", Vol.22, No.1, 2013, Yarmouk University, Irbid, Jordan.
6. LG Phase Efficiency Propagation and The Intensity of Ground Shaking in The North Western Part of Syria, *Journal of Engineering Sciences, Assiut University, Vol. 40, No 2, pp.367-382, March 2012.*
7. Seismic Tomography and its Implication Structures Using Regional Seismic Phase Recorded in Syrian National Seismic Network and Surrounding Networks, *Journal of Engineering Sciences, Assiut University, Vol. 40, No 1, pp.45-65, January 2012.*
8. An Algorithm For The Analysis of Seismic Base Isolated Shear Frame Structures, J. of Eng. Science Series, Vol 38- No. 6, September 2010, Faculty of Eng., Un. of Assiut, Egypt.
9. Small Displacement Dynamics of Elastoplastic Structures by Mathematical Programming, ABHATH AL-YARMOUK: "Basic Sci.& Eng.", Vol.14, No.2, 2005, Yarmouk University, Irbid, Jordan.

10. Non-linear Dynamic Analysis of Underground Structures, J. of Eng. Science Series, Vol 33- No. 5, September 2005, Faculty of Eng., Un. Of Assiut, Egypt.
11. Elastoplastic Structural Dynamics by Mathematical Programming and Mode Superposition. Bassel Al-Assad Journal of Engineering Science. Vol.21, 2005.
12. Non-linear Soil-Structure Interaction Dynamic Analysis, Research J. of Aleppo Univ., Eng. Science Series, No. 40, 2004.
13. Elastic Dynamic Analysis of Wave Propagation in Layered Half-Space Media in Time Domain, Research J. of Aleppo Univ., Eng. Science Series, No. 38, 2004.
14. Dynamic Analysis of Masonry Building Isolated by Using the Frictional Pendulum System, Research J. of Aleppo Univ., Eng. Science Series, No. 37, 2004.
15. Non-linear Dynamic Properties of Masonry Wall Subjected to Dynamic Shear Force, Research J. of Aleppo Univ., Eng. Science Series, No.36, 2003.
16. Non-linear Dynamic Properties of Masonry Wall Subjected to Cyclic Compressive Force, Research J. of Aleppo Univ., Eng. Science Series, No. 35, 2003.
17. Non-linear Soil-Structure Interaction Analysis Based on Coupling of FE-BE Method in Time Domain, Research J. of Aleppo Univ., Eng. Science Series, No. 35, 2003.
18. Non-linear Dynamic Analysis of Masonry Building with Bearing Walls, Research J. of Aleppo Univ., Eng. Science Series, No. 34, 2003.
19. Impulsively Loaded Rigid Plastic Structures by Mathematical Programming. J. Struct., Eng., SERC, India, Vol. 26, No.2,1999.
20. Mathematical Programming Approach for Rigid Plastic Dynamics by the Force Method. Proc. of seventh Arab Struct. Eng. Con., Kuwait, 1997.
21. Mathematical Programming Approach for the Analysis of Structures on Elastoplastic Supports. Proc. of seventh Arab Struct. Eng. Con., Kuwait, 1997.
22. Soil-Structure Interaction by Mathematical Programming. Proc. of sixth Arab Struct. Eng. Con., Damascus, 1995 sixth Arab Struct. Eng. Con., Damascus, 1995.

Post-Graduate Research Supervision:

MSc and PhD dissertations at the Faculty of Civil Engineering:

1. Estimating the Seismic Performance of RC Structures via Incremental Dynamic Analysis, MSc dissertation, 2022 by Yahiya Adham Shkair.
2. Seismic Performance Evaluation of Tall Diagrid Steel Buildings, MSc dissertation, 2022 by Khaled Zain El-Abidin.
3. Nonlinear Static Analysis Vs. Nonlinear Dynamic Analysis for Assessing the Progressive Collapse Potential of Medium-Rise RC Frame Structures, MSc dissertation, 2021 by Anas Bassam Obaid.
4. Comparison of the Seismic Performance of EBF Steel Structures with Others Equipped BRB, MSc dissertation, 2017 by Mohammad kheer Alewe.
5. Study of Performance of Slopped Bottom Tuned Sloshing Water Dampers on Seismic Behaviour of Medium Rise RC Buildings, MSc dissertation, 2016, MSc dissertation, 2016 by Ahmad M. AL-Khatib.
6. Seismic Evaluation and Retrofit Strategies and Its Applications on Existing Reinforced Concrete Buildings, MSc dissertation, 2013, by Weam Mansour.
7. Response of skeleton structures under blast loading, MSc dissertation, 2009, by Ahmad Kazouini.
8. Three Dimensional Dynamic Analysis of Structures Under Far Field Explosion, PhD Thesis, 2005, by Turki Tabac.
9. Elastoplastic Dynamics of Skeletal Structures by Mathematical Programming, MSc dissertation, 1998, by Walid Al Batha.

MSc and PhD dissertations at the Higher Institute of Earthquake Studies and Research (HIESR):

1. Optimization of Steel Frames with Semi rigid Connections under Seismic Loads. MSc dissertation, 2013, by Mohammad Adeeb Akaash.
2. Evaluation of Seismic Response Reduction Factor of reinforced concrete buildings, MSc dissertation, 2013, by Rania Al Ahmar.
3. Regional and Local Seismic Phase Attenuation in Syria and Surrounding Regions, PhD Thesis, 2012, by Randa Mohammad.
4. Effects of Higher Modes of Vibrations on Performance Evaluation of Frame Structures, MSc dissertation, 2012, by Faizh Al Khabaz.
5. Nonlinear Soil Skeleton Structures Interaction Under Seismic Loading via Mathematical Programming, MSc dissertation, 2012, by Bashar AL-Farah.
6. Behavior and Design Of Concentrically Braced Frames Under Seismic Loading, MSc dissertation, 2011, by Yasar Al-Moukdad.
7. Behavior and Design of R.C.Bridges Isolated with Friction Pendulum System under Earthquake Loading, MSc dissertation, 2011, by Ola Al-Jabban.
8. Seismic Response of Buildings Base-Isolated by Friction devices with Restoring Properties, MSc dissertation, 2011, by Abeer Mahfouz.
9. Behavior of Seismic isolated Buildings with Elastomeric Bearings, MSc dissertation, 2011, by Thaer Traisi.
10. Behavior and Design of R.C. Chimneys under Earthquake Loading, MSc dissertation, 2010, by Manar Ali.
11. Seismic behavior of steel frames equipped with post-tensioned energy dissipating connections, MSc dissertation, 2010, by Hisham Al-Hanoon.
12. Behavior and Design of Eccentrically Braced Frames Under Seismic Loading, MSc dissertation, 2009, by Mosab Al-Sayyad.
13. Performance Base Design of skeleton Structures Using Nonlinear Static Analysis. MSc dissertation, 2009, Maysaa Al-Arab.
14. Nonlinear Analysis of Framed Structures under Seismic loading via Mathematical Programming. MSc dissertation, 2008, by Samah Al-Hafian.

Professional Committees

- Head of Earthquake Engineering Committee at the Syndicate of Syrian Engineers 2005-2008.
- Member of the Syrian Engineering Code of Practice Committee at the Syndicate of Syrian Engineers since 2000.
- Head of Engineering Section at the Arab Encyclopaedia since 2006.
- Editor in Chief of Damascus University Journal of Engineering 2013-2014.

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