MAHMOUD RAFIENEZHAD
SENIOR STRUCTURAL ENGINEER
CURRICULUM VITAE

MAHMOUD RAFIENEZHAD CV

PROFILE

Mahmoud has over ten years' experience in consultancies, working as Building Structural and Bridge engineer within large multi-disciplinary consultancies in Iran and New Zealand.

Mahmoud has been involved in a wide variety of building and infrastructure projects, including tunnels, underground structures, bridges, sports stadiums, high rise, residential and commercial buildings, industrial buildings and warehouses. Also, he has been working on a variety of Detailed Seismic Assessment and strengthening of building and infrastructure projects, including highway and pedestrian bridges, reinforced concrete, heritage URM buildings in New Zealand and Iran.

QUALIFICATIONS

BEng – Bachelor of Civil Engineering, Iran University of Science and Technology 2008

MEng – Master of Structural Engineering, University of Tehran 2011

Chartered Professional Engineer (CPEng) 2018

Chartered Member of Engineering New Zealand (CMEngNZ)

International Professional Engineers (IntPE)

CAREER HISTORY

2019 – Present, Senior Structural Engineer – Structus Consulting Limited

2017 – 2019, Structural Engineer – BGT Structures, Auckland

2016 – 2017, Structural Engineer – EQStruc Group Ltd, Auckland

2014 – 2016, Structural Engineer – Calibre Consulting Ltd, Auckland

2012 – 2014, Structural/Bridge Engineer – Sazian Consulting Ltd, Tehran, Iran

2008 – 2012, Graduate Structural Engineer, Tahkimkav Consulting Ltd, Tehran, Iran

MANAGEMENT SKILLS

- Leading the project to the technical excellence, cost efficiency and time schedule

- Out of box thinking to understand clients' needs and project drivers ensuring important deliverables are met on time
- Ability and commitment to relate well to project teams, stakeholders and client through an efficient organisational, communication and written skills

TECHNICAL SKILLS

- Strong academic background along with detailed knowledge of the modelling and analysis using advanced linear, nonlinear, soil-structure interaction and dynamic methods
- Broad knowledge of New Zealand Standards, European and American codes and guidelines
- Ability to apply knowledge to complex structural engineering problems and provide practical solutions
- Investigation process, assessment techniques, detailed design, construction supervision and providing alternative solutions to complex problems faced during construction

PROJECT EXPERIENCE

RESIDENTIAL PROJECTS

Life Apartment, 42 Liverpool Street, Auckland, 2017-2019, $30m

Engaged by Manson Ltd, Mahmoud was responsible for detailed design and construction monitoring of 18-storey residential apartments. The building comprises of steel frame for gravity structure along with precast concrete panels as lateral resisting system. Given that the building is located in one of the steepest streets of Auckland and complicated façade system, the construction phase required close teamwork between architect, contractor, façade engineer and structural engineer.

50 Cook Street, Auckland, 2017-2019, $35m

Structural engineer for Cook Fiore development, 50 Cook Street, Auckland. Mahmoud was the structural engineer from concept design through the detailed design of two 16-storey in-situ concrete apartments.

Ormiston Road, Auckland, 2015-2016

Developed and detailed design of 5 apartment buildings, each 5 to 6 storeys, on a two-storey common basement. Analysis and detailed design of apartments have been completed and peer reviewed, however, these were halted due to client funding issues.

COMMERICAL AND RETAIL PROJECTS

Pacifica, 50 Commerce Street, Auckland, 2017-2019, $100m

Mahmoud was part of the design team working on Pacifica Apartments complex, one of Auckland's most high-profile building projects. The Pacifica Tower is a 178m high, 56-level apartment and hotel and complex. Mahmoud was responsible for the design of concrete columns package and transition structure at level 6.

57 Walls Road, Auckland, 2016-2017

The industrial building complex located at 57 Walls Road, consisting of 4 buildings. The project included detailed seismic assessment, redevelopment and strengthening of building 2 and 4 of the complex. The 3-storey Reinforced Concrete frame building was assessed based on the NZSEE guideline and redeveloped to be used as a new office.

66 Lorne Street, Auckland, 2016-2017

Detailed Seismic Assessment and strengthening of this category 2 heritage building was the scope of the project. Mahmoud has managed all invasive and non-invasive investigations in the 4-storey reinforce concrete frame while it was being used as senior college facility by ACG college. Following the completion of investigation, he was responsible for detailed seismic assessment of the building.

Alamarai Silo Deck, Saudi Arabia, 2015-2016

Engaged by Gea Nu-Con Ltd, Mahmoud was responsible for designing a support deck for 6 silos, each weighing 16 tons in Saudi Arabia. The structures compromised of steel frame with lateral bracing based on the Saudi Building Code and AISC. The design required a high level of detailing and performance consideration due to the limitations governed by the equipment performance and installation.

Pallet Racking Design – multiple projects, 2015-2016

Design of pallet racking based on the latest BRANZ guideline. Due to the nature of the pallet racking, the analysis and design procedure of this type, the structure is not covered by NZS1170.5. Mahmoud developed design processes and spreadsheets for the design of these racks. This included laboratory testing of structural components in order to develop ductile seismic systems, 3D dynamic analysis of the racks allowing consideration of the complicated behaviour of different rack types and cold-form steel design spreadsheets to design the rack elements. Multiple racking design projects nationwide.

INFRASTUCTURE PROJECTS

Detailed Seismic Assessment of multiple overbridges, Wellington

Engaged by Greater Wellington Railway Ltd (GWRL), Mahmoud has completed detailed seismic assessment of three overbridges including Tawa, Heretaunga and Ava South. The assessment of the importance level 3 structures over the main railway route of Greater Wellington District based on the Bridge Manual and concept design for strengthening of the bridges was the scope of the project.

Vavan Bridge, Tehran, Iran, 2013-2014

Vavan bridge, as part of the extension of Tehran' metro to International Airport crosses over the Tehran-Qom highway. The bridge compromises of two 30-meter span steel box girders. Mahmoud was the bridge engineer designing the structure of the bridges.

Aprin Bridge, Tehran, Iran, 2013-2014

Aprin bridge as part of the extension of Tehran' metro to International Airport, is at the intersection of the metro railway and the main existing national railway from Tehran to Tabriz in the Northwest of Iran. Mahmoud was responsible for concept design, detailed design, dealing with other disciplines, peers, client and contractor.

Line 2, Metro Tunnel, Tabriz, Iran, 2010-2012

Structural design of the concrete lining of the TBM tunnel. Mahmoud was the structural engineer and worked closely with mechanic rock engineers designing concrete lining for the metro tunnel. The structural design considers various loading including demoulding, transportation, ultimate limit state of seismic design and fire design.

Navab-Qazvin Bridge, Tehran, Iran, 2012-2014

Seismic assessment and retrofit design of the Navvab-Qazvin bridge in cooperation with JICA (Japan International Cooperation Agency). Mahmoud was responsible for detailed seismic assessment, conducting required investigations and retrofit design of one of Navvab-Qazvin bridge in this project. This bridge crosses over the Navvab highway, one of the major North-West highways in the central business district (CBD) of Tehran. The bridge was built in 1996 and it was assessed against new seismic requirement and expected level of performance. The bridge structure compromises of 10 spans of the precast concrete beam and in situ slab as superstructure.

SPORTS COMPLEX

Sir John Guise Stadium, Papua New Guinea, 2014-2015

The Sir John Guise Stadium the host for the 2015 Pacific Games. Mahmoud worked in the design team delivering the design of the spectator stands and foundation.

Eden Park Temporary Stadium Grandstand, Christchurch, 2015

With flexible seating and a capacity of 17,000 for standard events and additional seating configurations to accommodate 24,000 spectators, the stadium was the first and largest facility rebuilt following the 2011 earthquake. Mahmoud worked in the design team delivering the design of the temporary stands and foundation.

Takhti Sport Complex, Tehran, Iran,

Detailed seismic assessment of the football stadium and Gymnasium of the Takhti Sport Complex, the second largest sport complex in Iran. Mahmoud was responsible for analysis and strengthening design of the reinforced concrete stadium built in 1973.

INDUSTRIAL PROJECTS

Totalspan industrial buildings, multiple projects, 2014-2016

Multiple large span, industrial projects nationwide using cold formed steel. A range of warehouses, workshops, factories and agricultural facilities around the country ranging from 6 m up to 22 m wide span using light gauge cold form steel design.