



Armenian Engineers and Scientists of America
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117 S. Louise Street, Suite 306, Glendale, CA 91205

Structural design of the Wilshire Grand Project

by

Peter Maranian

Wednesday, June 22, 2016, 7:00 pm

Armenian Society of Los Angeles
117 South Louise Street, Glendale, CA 91205

Abstract

The presentation pertains to the structural design of the Wilshire Grand project located at the site of the old Wilshire Grand Hotel in downtown Los Angeles. The building will provide spaces for hotel, office, and retail when completed in the spring of 2017. This building will be the tallest building west of the Mississippi River. The structural design of the Tower was carried out jointly by the structural engineering firms Thornton Tomasetti (TT) and Brandow and Johnston, Inc (B&J). TT carried out the rigorous analysis and development of the design of the Tower including the concrete core and development of the critical elements. B&J, as engineer of record, finalized the structural design and extensive detailing of the Tower along with the remaining building known as the Podium Superstructure and also carried out the construction administration of the project. The structural design challenges of the Tower included the high demands for significant seismic and wind forces, complex geometry to suit architectural requirements, sloping site, fatigue considerations, and its interaction with the remaining structure. The structural design that evolved comprises a concrete core with floor slabs, around the core, supported by steel framing and concrete filled steel box columns at the perimeter of the structure. The Tower is supported on a large deep mat foundation, 17 feet 5 inches in depth, extending the full area of the Tower. In the less stiff transverse direction (north to south), outriggers at three regions of the building (lower, middle, and upper) are provided utilizing buckling restrained braces. "Belt" trusses, around the perimeter of the building at the lower and upper regions, provide for additional stiffness and force distribution. At the top of the concrete core, a braced steel structure occurs, approximately 97 feet above the roof of the Tower, known as the Sail. Attached on the east side of the Sail is a Spire extending 275 feet above the roof of the Tower.

Speaker

Peter Maranian, a licensed structural engineer of the State of California, graduated with a BS in Civil Engineering at the Polytechnic of Central London, England. He gained experience in England working on the design of highway bridge, buildings, and aircraft hangars located in several countries (Africa, Hong Kong, Middle East, Europe). After immigrating to Los Angeles in 1981 he joined Brandow and Johnston Inc. where he has been ever since. He has been responsible for supervising all phases of project development, structural design and system selection, seismic design and rehabilitation of major projects, and construction administration. He is the author of a publication by the American Society of Civil Engineers entitled "Reducing Brittle and Fatigue Failures in Steel Structures". In 2012, he was asked to be the Principal in Charge for Brandow and Johnston for the structural design of the Wilshire Grand project.

Please RSVP by e-mail to - Areg.gharabegian@parsons.com

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