Hedges Place
Los Angeles, CA, USA 2017

PROJECT DESCRIPTION
Located prominently above the Sunset Strip with striking views spanning from downtown Los Angeles to the Pacific Ocean, the property at Hedges Place features aggressive cantilevers, large open spans, and an intricately detailed lateral force resisting system allowing for maximized panoramas throughout the two story residence with a basement. Due to the high seismicity at the site and the complexity of the geometry, a mixed vertical lateral force resisting system with flexible diaphragms was chosen to allow for a direct response to the architectural program and massing.

Irregular Structure
In addition to a number of seismic irregularities that were addressed in the structural design, the master suite cantilevers 23 feet over the property offering panoramic views of the city. Because the cantilever supported living space and transferred a portion of the roof weight, the thin floor system was checked to maintain human comfort levels for vibration. AISC Design Guide 11 peak acceleration formulas were applied to study the effect of potential floor dynamics. Mass and stiffness properties were calibrated to limit accelerations caused by footfall. Additional stiffness was achieved by tapering the steel beams and adding reinforcing plates so as to maintain a thin visual profile.

Vibration Analysis
The design team collaborated closely with the owner and the architect to accommodate a fast-tracked design and construction schedule. The irregular structure transfers a combination of wood shear walls and special moment frames into concrete shear walls below to achieve a wide open modern floor plan. Discontinuous special steel moment frames transfer to reduce column impact. Natural lighting efficiencies were achieved with multiple clear story windows and light wells. Close coordination with lighting, architectural and structural trades resulted in a cost-effective lateral force resisting system entirely integrated into the building form.

PROJECT TEAM
Client | Private
Architect | Belzberg Architects
Contractor | Dobkin Construction
Structural Engineer | Nous Engineering

SEAOSC/SEAOC 2017 Excellence in Structural Engineering Awards