

BASE Line

The quarterly newsletter of BASE

Fall 2020



Shoring Up the Construction Industry

In addition to our work as structural engineer of record, BASE routinely provides owners and contractors with engineering support during construction. From shoring, reshoring and formwork to design of fixes and repairs to building stabilization and construction sequence analysis, BASE understands that engineering challenges do not stop when construction starts. In this quarter's BASELine we explore projects where BASE has provided contractor assistance or other construction engineering to help owners and contractors solve unique challenges.



Espacio the Jewel of Waikiki Honolulu, Hawaii

Espacio is the \$50 million transformation of an existing hotel into an all-suite extra luxury hotel fitted with nine suites, each measuring 2,250 SF and ocean-view balconies equipped with Jacuzzis. The hotel also features a rooftop infinity pool and full-service bar.

The original 12-story concrete structure was constructed in 1966. BASE provided numerous services to support this complex renovation, including design for the foundations and tiebacks for the tower crane, analysis of an existing slab to support the manhoist, design of manhoist tiebacks, structural design for temporary shoring and formwork, and structural analysis for building stabilization during demolition and reconfiguration of the existing elevator and stair cores.

Contractor: Hawaiian Dredging Construction Company

Owner: Kowa Waikiki, LLC

This year Espacio was recognized by the General Contractors Association of Hawaii with an Award of Excellence in the category of Renovation/Remodeling More than \$25 Million and in 2019 by ASCE Hawaii with an award for Best Building and Structural Systems Project.

BASE by the numbers



46

Tower crane foundations

73

Shoring projects



Transfer beam for shoring at ground floor to allow access for foundation installation.



Shoring stabilizing remaining slab during reconfiguration of elevator and stairs cores.

Avenir Chicago, Illinois



Contractor & Owner: Tandem Inc.

Avenir is a new 24-story mixed-use building of approximately 201,350 GSF that includes two retail spaces and resident services on the ground level, parking on levels 2-3, and residential units on levels 3-23. The building consists of two large setbacks resulting in an eccentric core that was further compounded by a 42-degree kink in the plan which allowed the building to be placed in an oddly shaped site.

BASE was the structural engineer of record and also assisted with construction support including shoring and reshoring design. In addition to the traditional shoring design for much of the building footprint, BASE also designed shoring through the existing four-story building on the south portion of the site to support portions of the tower cantilevering out over the existing building.

Chicago Public Schools

Over the last few years, BASE has provided structural calculations and shoring plans and details for temporary support of concrete joist roofs during renovations and repairs for Clinton, Prussing, Franklin, and Lovett Elementary schools. The unique shoring consisted of using a combination of existing and new steel beams to support the roofs from above, leaving the interior of the schools largely free of traditional shoring and allowing classes to continue relatively undisturbed during renovations.



Contractors: The George Sollitt Construction Co. (Clinton Elementary)
IW&G (Prussing & Lovett Elementary)
Restore Masonry LLC (Franklin Elementary)
Owner: Chicago Public Schools

Marco Polo Honolulu, Hawaii

Marco Polo is a 36-story condominium building constructed

in 1971. On July 14, 2017 a large, 7-alarm fire broke out on the 26th floor and spread to the 27th and 28th floors. By the time the fire was extinguished, more than 200 of the 586 units were damaged.

BASE provided numerous services to support this restoration, including design of a support slab and foundations for the manhoist, analysis of the existing roof to support swing stage and supporting materials, and structural engineering design and analysis for the cutting and infill of a temporary door opening in the central stair core to provide improved access for repairs of the extensive fire damage.

Marco Polo's restoration work was recognized this year by the General Contractors Association of Hawaii with an Award of Excellence in the category of Environmental Construction.



Contractors: Hawaiian Dredging Construction Company
Interstate Restoration
Owner: A.O.A.O. Marco Polo