



TORRES DEL VALLE

SAN PEDRO SULA, HONDURAS

Torres del Valle, a bold and out of the ordinary design for San Pedro Sula, is a new housing complex of two modern condominium towers connected with a panoramic skywalk bridge. The skywalk bridge, the only one of its kind in the country, connects the two tower's gym and lounge areas.

San Pedro Sula's skyline is changing through an architectural renaissance. Once dominated by residential homes the city is transitioning to multi-story apartment buildings and condominiums. As the economic capital of Honduras, the city's growing young professional population have the purchasing power to demand more contemporary architecture. Developers have recognized the exiting strong growth potential in San Pedro and are taking the opportunity to modernize the city's traditionally conservative architecture.

Even during recent political crisis and violence the city has maintained its economic stability. Along with being the Honduran industrial powerhouse, the city has the advantage of a favorable terrain and climate. These forces combine to focus investment growth throughout the city, as evidenced by an increase of development.

The housing complex towers are 16 stories tall with each of the two containing 64 residences. To enhance the livability a unique cross-shaped design is used to increase natural light, ventilation and provide broad views with a greater degree of separation between neighbors.

PROJECT INFORMATION

- Owner: Grupo Kattan
- Client: Rodio Swissboring
- Architects: Studio Domas
- Completion date: December 2017
- Project Cost: \$14 billion
- Maximum Load: 3.25 MN

SERVICES PROVIDED

- Single Level O-Cell® Load Testing. Loadtest assisted in the load test program design and helped design the test shaft to maximize benefit to project stakeholders.

Design optimization was approached by performing one 800-mm diameter test pile installed into the site's sub-strata of alternating layers of silty sand and gravel. The pile was constructed by oscillating an 800-mm O.D. segmented casing to the pile tip elevation, excavating, placing the reinforcement and removing the temporary casing as the pile concrete placement progressed. For the test pile a 3.9-MN O-Cell®, located 7 meters above the pile tip, was configured on a carrying frame along with strain gauges and other instrumentation. The carrying frame is used in lieu of a traditional reinforcing cage to provide more clearance for concreting past the O-Cell assembly and to facilitated instrumentation installation and hoisting.

Following ASTM D1143 – Standard Test Method for Piles Under Static Axial Load using Procedure A, Quick Load Test Method for Individual Piles load increments were applied to the test pile by the O-Cell. It was loaded in 17 nominally equal increments to a maximum sustained bi-directional load of 3.25 MN. The pile displacements above and below the O-Cell were 16 mm and 96 mm respectively.

O-Cell technology accurately determined the side-shear and end bearing resistances which is invaluable information for optimizing the foundation design. An optimized foundation design is more efficient, using less construction effort and materials which saves time making them less expensive to construct. This smart design formula is not a new concept in San Pedro Sula with O-Cell tested foundation design optimization also being implemented for the tall condominium Torre Panorama.



Aerial view of the site



O-Cell with attached instrumentation



Carrying frame for the O-Cell