

Project Brief

Getty Villa Museum Renovation Slab Strengthening



Malibu, CA, USA
July 2001



The Getty Villa Museum, located on Pacific Coast Highway in Malibu, CA, was originally built in the 1970's by J. Paul Getty, and was based on the plans of the ancient Roman Villa dei Papi country house. The building served as the museum's sole location until it closed in 1997 in preparation for the opening of the new museum at Getty Center. Upon its renovation, the Getty Villa will house the Antiquities Collection, contain numerous galleries for temporary exhibits and collections from the Getty Research Institute, and offer a wide variety of educational programs.

As part of complete museum renovation, numerous holes were drilled through the top portion of the slab to accommodate art support stands. By drilling these holes throughout the building, there was concern that the flexural capacity of the slab would be reduced by cutting existing steel and causing stress concentrations in many areas.

The Tyfo® Fibrwrap® System was designed to enhance the load carrying capacity of the existing slab. Strips of the SCH Carbon composite system, 1 – 2 ft in width, were placed on top of the slab at varying intervals to avoid future art support placement. The composite strips were continued across the entire length of each room and anchored at each end by steel angles. The composite system was designed at a low strain to help reduce slab deflections from future live and dead loads. After the composite system was installed, terrazzo flooring was poured on top.

The Tyfo® Fibrwrap® System provided a cost-effective strengthening solution to the owner. The composite allowed for an increase in slab capacity while keeping concrete stresses low on top of the slab. Another added benefit was the small thickness of the installed composite system, less than 1/8", which allowed the terrazzo floor to be placed as designed by the architect. The carbon composite strips were placed around the known locations of the future art support holes; therefore, no drilling through the composite was required after installation.

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