

Project Brief

La Jolla Galleria Slab Strengthening



La Jolla, CA, USA
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The La Jolla Galleria building is a 4-story reinforced concrete structure with an underground parking garage in the city of La Jolla. It was originally built in the 1980's. Hart-Weidinger engineers were asked to perform a voluntary upgrade to remediate existing slab deflections on the 2nd and 3rd floors for serviceability.

Analysis of the building confirmed that the strength of the existing floor slab was adequate to resist imposed live and dead loads. However, to alleviate the problem of the slab deflections, an additional lightweight topping material would need to be applied, which would cause over-stressing of the slab in these areas. A strengthening method was needed for these localized regions of floor leveling.

The Tyfo® Fibrwrap® System was designed to enhance the load carrying capacity of the existing slab. One-foot wide strips of carbon composite were placed at one-foot wide intervals on the underside of the slab. This retrofit increased the flexural capacity of the slab in the regions where the lightweight topping material would be applied. The composite was designed at a low strain to help reduce further slab deflections that might occur.

The Tyfo® Fibrwrap® System provided a cost-effective strengthening solution to the owner. The composite allowed for an increase in capacity with almost no added depth or weight to the slab. (The completed system was less than ¼" thick.) Installation of the composite system was performed around existing obstacles such as pipes and conduits, and was also scheduled on off-hours and weekends so not to disrupt tenant activities.

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