

Davenport House

Oak Park, Illinois

Client

Harding Partners

Completion Date

2005

Services Provided

Structural Investigation
Repair Recommendations and Design
Construction Administration

Construction Cost

\$1 million



Built in 1901 and designed by renowned architect Frank Lloyd Wright, the two-story Davenport House is considered the Chicago area's first example of Prairie Style architecture. To restore this historical house to its original condition, Thornton Tomasetti completed a structural evaluation and provided repair recommendations and design.

To repair the sagging floor joists at the second floor, we designed and implemented a jacking procedure to gradually raise the floor in small, ¼-inch increments every five days over several weeks. The procedure required the removal and replacement of the first floor plaster ceiling and faux beams and the diagonal bracing between the existing joists.

In addition to the joist jacking, we designed the installation of new joists to reinforce the existing ones. Installing the new joists proved a challenge as the jacking system did not allow enough space for their addition. Therefore, the new joists were installed and temporarily secured prior to the jacking procedure and permanently installed after the floor was leveled.

We also restored the lower cantilevered roof eaves to their original configuration, reinforced the roof framing to support a new hanging furnace and analyzed the second-story framing to ensure support for a new cast-iron bathtub.