

Coles County Courthouse Expansion

Charleston, Illinois

Client/Architect: Olsen & Associates, Champaign, IL

Range of Services

- Structural planning
- Structural design from schematic phase through construction documents
- Construction administration and observation

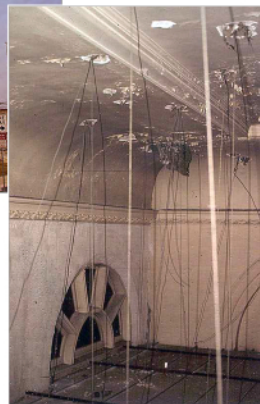
Project Overview

The Coles County Courthouse, located in Charleston, IL, is situated in the center of the downtown square with no possible means of horizontal expansion (image 1). Office space expansion was imperative and the question was how to accomplish that goal. A possible solution was investigated initially by the architect with a site visit attended by the structural engineer. Together they proposed to utilize the central courtrooms on each side of the center atrium. Open space above the 8 foot suspended ceilings of the second floor hid a decorative plaster ceiling above that and provided an ample floor to old ceiling height, creating a new third floor level (image 2).

The concept evolved into a floor design of 40 foot long open-web steel joists that were brought into the space through a window (image 3). Preparation for the support of the joists at the interior brick wall took advantage of the pilasters. Notches were cut into the pilasters to receive steel beams, which the joists could bear on (image 4&5). The exterior wall had the windows with piers between, where new steel lintels were installed that set on notches cut into those brick piers (image 6). Metal form deck and pumped lightweight concrete created the floor plane (image 7). The plywood over the semi-circular windows was removed and the windows became a design feature of the new floor level (image 8). Conduits were run throughout the slab to facilitate communication lines to the desks. A new stair was created at two locations to reach this new level.



1



2



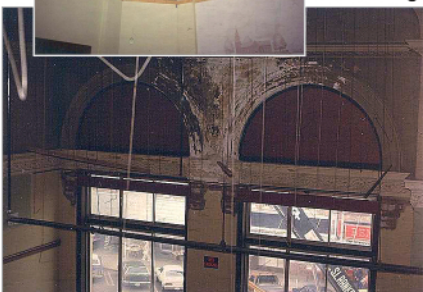
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8



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integrating
STRUCTURAL
design
focused on
quality