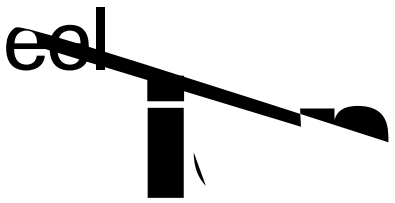
This question was answered when I was having dinner recently with an old college friend. A practicing architect in Chicago, he was talking about his current project—a large condominium building on Lake Michigan. When I asked if his project team had looked into stee O ᵡ in n n k ^ ! c n p c l ᴰ ac



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How can the schedule for a wood-framed multi-story residential project be reduced to meet an owner's aggressive occupancy goals? The answer: redesign it in steel.

The design team for the Alexan at Lenox multi-story residential project in Atlanta was facing roadblocks in reducing the wood-framed building's fast-track construction schedule. AISC member fabricator Universal Steel, Inc. learned about the project and initiated a partnership between the Alexan's design team and AISC's Steel Solutions Center (SSC) to convert the design to structural steel.

A steel in-wall beam redesign with a hollowcore slab, conceived by the SSC, not only shaved months from the schedule by simplifying the erection process, but also provided added flexibility and decreased floor depth for the 300-unit building.

The final design for the Alexan at Lenox uses a steel-framed in-wall beam gravity system, with girders located along the exterior walls and corridor walls. Designers placed the interior girders—typically W18 to W24 that span 25' to 35'—along a double loaded corridor.

Eight-inch hollow core plank spans 32'-0" between the corridor and perimeter. Short planks were also produced to span the 6'-0" corridor. A leveling compound was used for the planks instead of structural topping to provide a smooth surface.

This system improved flexibility for condominium layouts by eliminating soffitted beams between units. It also maximized floor-to-ceiling heights while keeping a tight floor-to-floor height—with the girders enclosed in the units' corridor and exterior walls, the structural floor depth is only 8". In living rooms and bedrooms, the design team was able to provide a 9'-4" finished ceiling height within a 10'-4" floor-to-floor height.

The lateral system proved to be a difficult issue because of the building's unusual configuration. The structural engineer selected braced frames and worked closely with the architect to determine the best locations, which resulted in the least amount of interference with the plan. Both concentric and eccentric bracing were used to account for door openings along the corridors

The Condominium Residence at Seven Bridges—Woodridge, Ill.

BY A.J. BAYSEK, P.E., S.E., MATT AQUINO, P.E., S.E. AND TABITHA STINE, P.E.

Post-tensioned and conventional cast-in-place concrete and structural steel were all evaluated as possible framing systems for the condominium residence at Seven Bridges in suburban Woodridge, Ill., but structural steel was selected for cost and floor-to-floor height considerations.

A steel frame proved to be most economical when all factors affecting cost of construction were taken into account. Structural steel, with precast plank floors, provided the ability to work through the winter months without significant heating and housing costs and with minimum impact to the construction schedule.

The complex