



Project Summary

Project:

Baylor Medical Pavilion

Organization:

HDR Architecture, Inc.
www.hdrarchitecture.com

Location:

Dallas

Project Objectives:

Structural system selection, structural analysis and design of concrete-framed medical office building, post-construction tenant modifications

Software Used:

RAM™ Structural System, RAM Frame® V8i, RAM™ Foundation, RAM Steel® V8i, RAM™ Concrete

Fast Facts

- Both steel and concrete framing options were evaluated for the structure using RAM Structural System, with concrete ultimately selected
- HDR saved a significant amount of design time by utilizing RAM Structural System special pan-joint features to model and design the floors
- RAM Structural System was used to evaluate tenant-required modifications to the floor slab after construction

Baylor Medical Pavilion

Use of RAM Helps HDR Streamline Design Process and Meet Tight Schedule

Software Speeds Evaluation of Multiple Structural Framing Options

Employee-owned architectural, engineering, and consulting firm HDR Architecture was selected to design and engineer the structural, mechanical, and electrical aspects of the seven-story, 185,000-square-foot Baylor Medical Pavilion. Challenges faced with this office building and parking structure project included the need to evaluate and price multiple structural framing options, work under a compressed design schedule of five months, and repeatedly evaluate post-construction structural modifications as required by tenants. HDR's selection of RAM Structural System for the project reflected the firm's many years of experience with RAM as well as the software's proven reputation for efficiency in these types of scenarios.

RAM Structural System offered HDR the ability to make floor framing changes quickly and accurately.

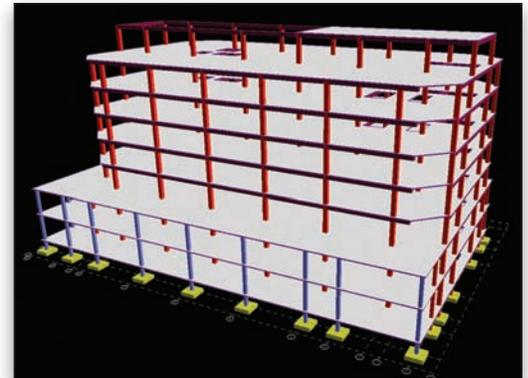
RAM Model Serves Dual Role

HDR initially proposed a steel structure for the project. Proceeding on this scheme, it designed the gravity floor framing using RAM Steel Beam and sized the gravity columns using RAM Steel Column. Next, HDR designed the steel moment frames using RAM Frame's steel design provisions module, and designed the column footings in RAM Foundation for both the gravity loads tabulated in RAM Steel and the lateral forces generated from the RAM Frame analysis.

The owner and general contractor then asked HDR to reevaluate the system as a pure concrete structure, and ultimately the decision was made to go with this option. Realizing that the RAM Structural System offers the same level of efficiency and productivity for concrete structures as it does for steel, HDR worked off the RAM model it had

already built, changing material settings and member sizes as required for the concrete scenario. After updating the analysis, the design was moved into RAM Concrete.

The framing scheme for the concrete scenario consisted of conventionally reinforced concrete pan joists, 20 ¾-inch deep, with 7-inch ribs and 53-inch-wide pans. HDR took advantage of RAM specialized pan-joint modeling and design tools to quickly build the floors. The reinforcing design for all joists, beams, and columns was completed within RAM Concrete.



RAM Structural System 3D model view of concrete-framed option, which was the option selected



Completed Baylor Medical Pavilion Structure

“RAM Concrete made the redesign process much easier. Even after construction was completed, tenant modifications were easily evaluated using RAM Concrete.”

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The limited time available to produce construction drawings was a critical project constraint. RAM pan-joint generation feature enabled the HDR structural engineers to evaluate several different pan-lay-outs and determine the optimal scheme for an efficient design. As a result, the design phase was completed in a five months.

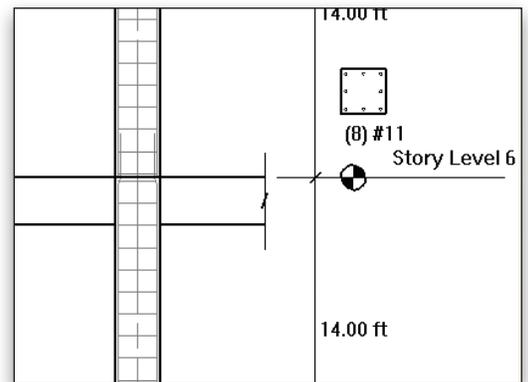
RAM Concrete Makes Redesign Easier, Quicker

RAM Structural System also offered HDR the ability to make floor framing changes quickly and accurately. This allowed HDR to add openings in floors and increase design loads to meet specific needs as new tenants for the project came onboard. Senior design engineer Russell Williams said, “RAM Concrete made the redesign process much easier and much quicker. Even after construction was completed, tenant modifications were easily evaluated using this software.”

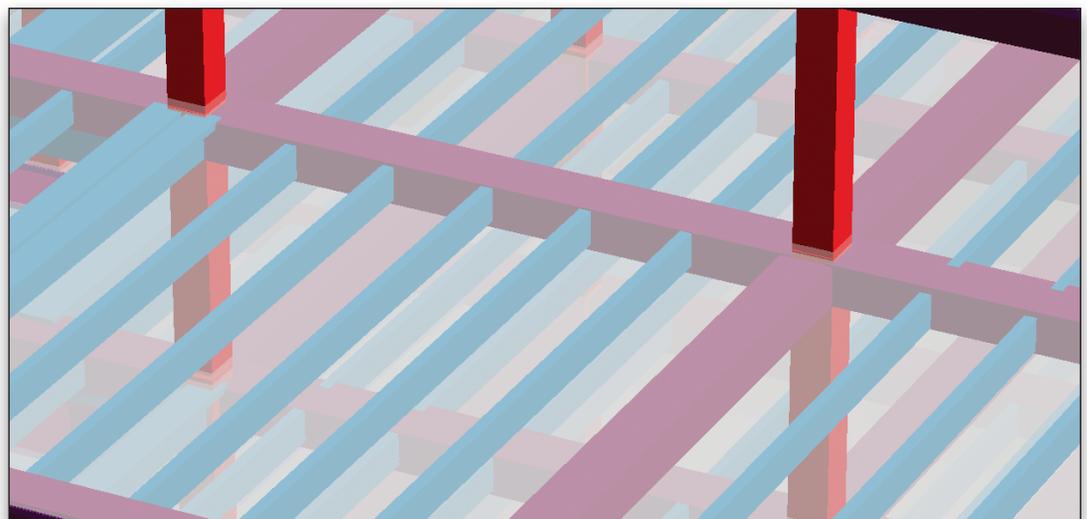
Baylor Medical Pavilion is an example of a project for which HDR harnessed the full power of the RAM Structural System, enabling it to bring the job to completion in less time.



Interior view of the Baylor Medical Pavilion



Sample column reinforcing elevation from RAM Concrete column design



RAM Concrete's beam and joist auto-design capabilities, which enable engineers to get design results quickly