



DPR Construction dissolves communication barriers with Google SketchUp

Justin Schmidt, BIM Engineer, Virtual Building Team, DPR Construction, Inc.

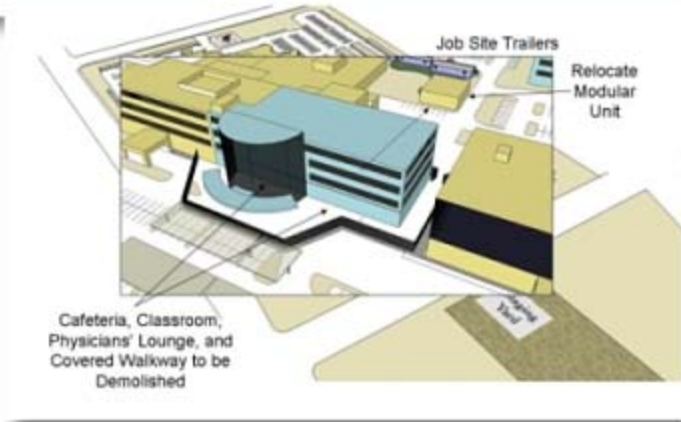
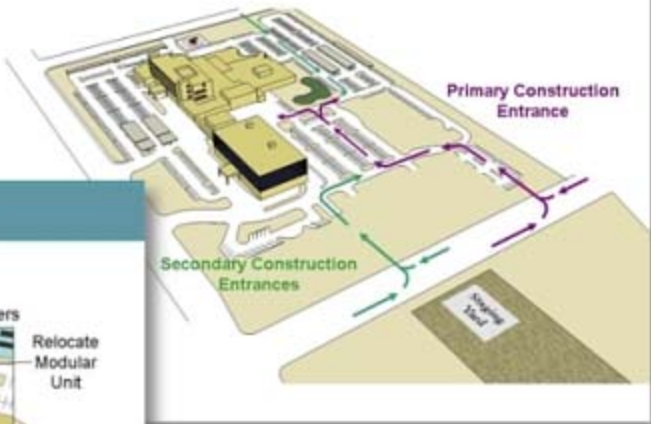
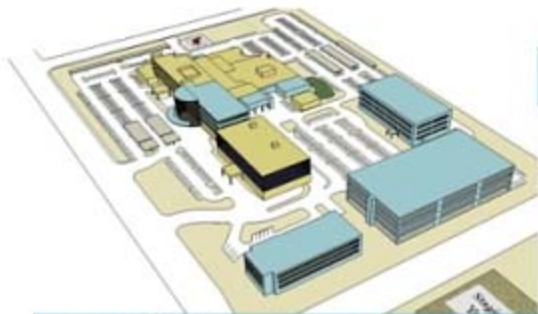
Company

DPR Construction, Inc. is a builder that focuses on technical projects such as data centers, biopharmaceutical facilities, corporate offices and hospitals. Ranked in the top 50 general contractors in the U.S. over the last 10 years and as one of the country's premier green builders, the company is a national commercial general contractor and construction manager that exists to build great things, including a great reputation for delivering more value to customers. "DPR is relentless about accountability, honing its technical expertise, and collaborating with our customers," explains Building Information Modeling (BIM) Engineer Justin Schmidt. "These principles guide us in providing high-quality service on projects of all sizes and complexities, whether it's a multi-million-dollar technical facility or the renovation of a single office."

Approach

Due to the technical nature of its projects, DPR must communicate as clearly as possible with everyone up and down the chain, from customers first considering DPR as a general contractor on a project, to architects designing structures and engineers and subcontractors in the field. "A few years ago, we realized there was something very vital missing from our design documents," says Schmidt. "Customers were having trouble visualizing how their buildings would look in context, site logistics were sometimes confusing, it was difficult communicating to architects why design changes were needed, and creating physical mock-ups of things like patient rooms for building owners was costly." Schmidt and his team realized that 3D sketches were becoming an absolute necessity to sell projects and complete them successfully.

DPR began the search for an intuitive, easy-to-use 3D drawing tool. The company's search ended with Google SketchUp, a powerful, easy-to-learn 3D software tool that simplifies 3D design. The company now wields SketchUp to create 3D models for use across its workflow, from proposals that clearly show owners how buildings will look when they are complete to 3D models for site logistics, Requests for Information (RFIs), and communicating design changes.

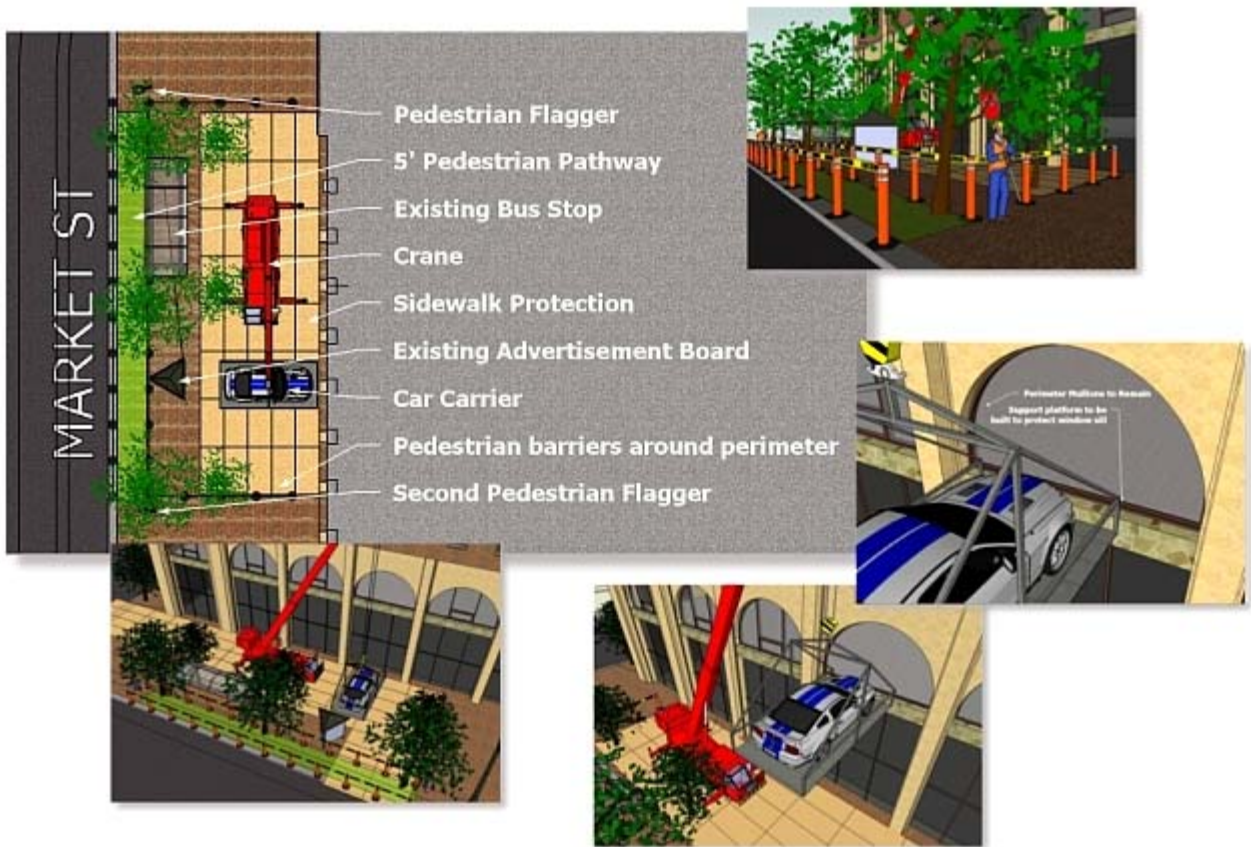


SketchUp was used to communicate site logistics, planning and construction phases.

Results

Since using SketchUp, DPR can communicate more clearly than ever, conveying complex design concepts in visual ways that minimize confusion and ambiguity between individuals involved in projects. Owners, who see 3D visual models of their proposed campus or building, can visualize the structures in the context of the environment. This was key during a recent proposal presentation to the American Institute of Architects (AIA) for its 180,000-sq.-ft. national headquarters project in Washington, D.C. DPR wanted to present some unique concepts and created a 3D model that brought together photos to illustrate DPR's previous project experience, the AIA project's proposed sustainable elements and other construction ideas into a Sketchup animation that truly differentiated DPR from the competition and secured this high-profile sale.

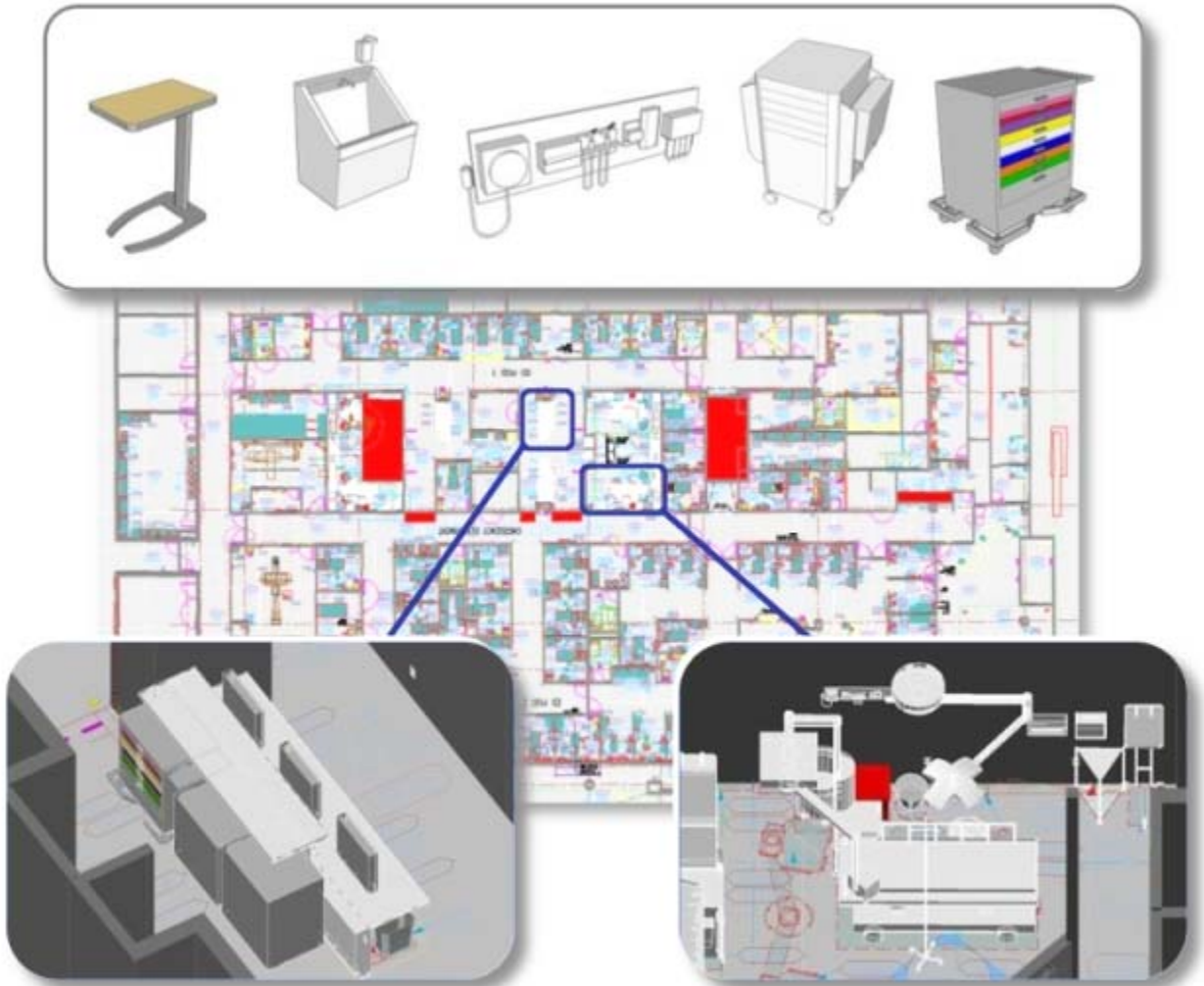
Sketchup also allows owners to see evolving construction phases. There might be a construction trailer located in a specific spot. Or, streets and parking areas might be closed down for certain periods of time. With 3D drawings created in SketchUp, it's easy to see at a glance how to relocate employee access or parking to help ensure that the business operates smoothly during construction. "Before SketchUp, we used 2D plans that didn't precisely convey our intentions," explains Schmidt. "As a result, owners were sometimes surprised when we shut down parts of a campus during construction. But now, with SketchUp, our construction plans and site logistics come through loud and clear—and that's important during the proposal stage and throughout the life of a project."



SketchUp is ideal for visualizing the staging of project sites and communicating the key elements within the project.

SketchUp is also a mainstay tool for clear communications related to RFIs. DPR often works with architectural designs that might not be achievable from a construction standpoint. Imagine adding third and fourth stories to an existing two-story hospital, for instance, but ironworkers determine that, based on the current design, a steel beam won't interface to a column in the existing structure. Explains Schmidt. "We previously tried to explain these types of issues in words and more often than not our efforts fell short. With SketchUp drawings, architects can visually grasp in an instant what's going on and revise their designs."

SketchUp is crucial for building 3D mock-ups of hospital rooms and other structures. BIM engineers at DPR can quickly mock up components like medical equipment that are part of patient rooms. The previous process involved building out patient rooms physically, using the actual gear. This took six to eight months and tens of thousands of dollars to accomplish. But now, with SketchUp, virtual mock-ups created in about an hour at virtually no cost are replacing physical models. And owners get as accurate a picture as they did in the past.



Custom SketchUp models are layered along with CAD documentation to create virtual mock-ups of project areas, saving DPR Construction time and money.

Schmidt says SketchUp is so easy to learn that nearly anyone in the company can start creating 3D models after an afternoon of training. "Our goal is to have a large contingency of people across marketing, design, engineering and other disciplines able to use SketchUp, and that's started to happen already," he says. For DPR Construction, SketchUp has dramatically changed the way business is done, positively affecting both sides of the balance sheet. Sales are up, because customers not only are impressed with the way DPR presents the project during the proposal stage, but also are provided a more accurate picture of how their projects will look when completed. Because the company is including 3D drawings in its communications, DPR is saving tens of thousands of dollars each year by minimizing, or in some cases eliminating, change orders and errors. "SketchUp puts 3D drawing within everyone's reach—3D sketches can be done

in literally five minutes versus hours or days," Schmidt says. "SketchUp helps take the inefficiencies out of the traditional construction process and really breaks down the walls that used to obstruct communications."