

HerreroBoldt

Customer Success Story

Client: California Pacific Medical Center, an affiliate of Sutter Health

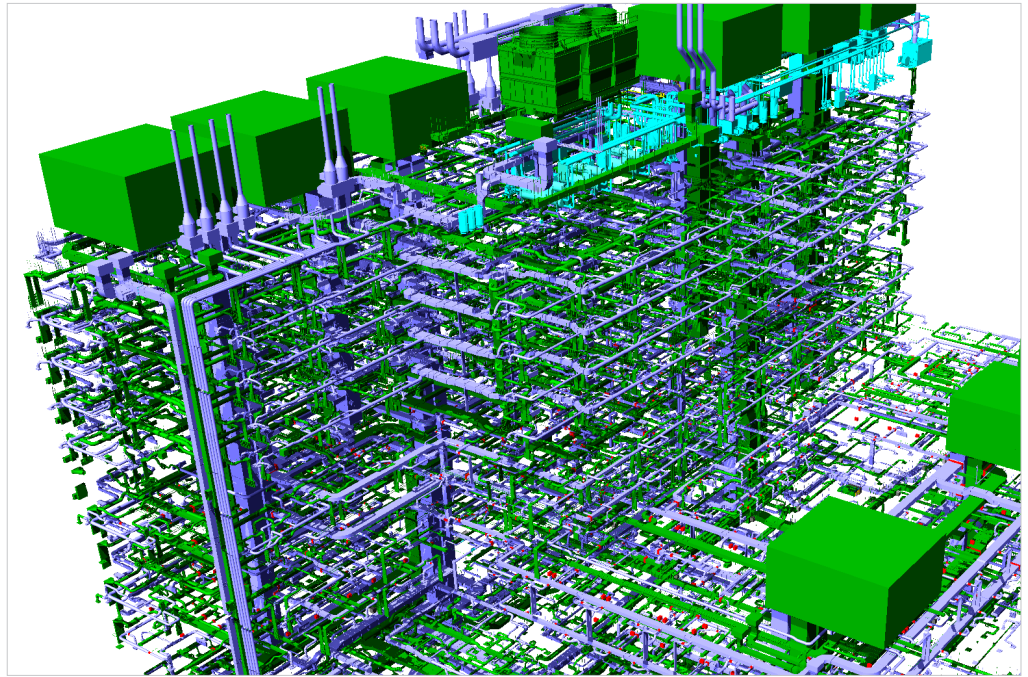
Autodesk® Buzzsaw®
Autodesk® Navisworks® Manage
Autodesk® Navisworks® Freedom

By using Navisworks to view up-to-date project models and Buzzsaw to help manage information distribution and revisions, the team has a much better understanding how the building elements all fit together. I've no doubt that this will result in less rework and greater time savings during construction.

—John Mack
BIM Manager
HerreroBoldt

Many Models, One Building.

HerreroBoldt uses Autodesk BIM solutions for the virtual construction of a new hospital.



Mechanical building systems combined in Autodesk Navisworks. Image courtesy of HerreroBoldt.

Project Summary

Sutter Health, one of Northern California's largest health-care providers, is a forerunner in the use of innovative construction concepts on its capital projects. The firm encourages—and often requires—the use of building information modeling (BIM) and integrated project delivery (IPD) to facilitate lean construction. One of its current projects is California Pacific Medical Center's (CPMC) new Cathedral Hill Hospital in San Francisco. When it's complete, this 914 thousand square foot 15-story hospital will fill a whole city block. The project is designed to meet a LEED® rating and the target construction cost of the 555-bed facility is close to a billion dollars.

In keeping with its lean construction philosophy, Sutter Health has assembled an integrated project delivery team that is relying on Autodesk BIM, collaboration and data management solutions to help virtually design and construct the hospital. The core of the project team includes Sutter Health and CPMC projects managers, architect SmithGroup, and construction manager and general contractor

HerreroBoldt, a partnership of Herrero Contractors and The Boldt Company. Project risks and rewards are contractually shared amongst these team members, as well as their trade partners, being bound by Sutter's relational contract—an integrated form of agreement (IFOA). To foster collaboration, the major participants were co-located at the onset of the project and are required to use BIM.

The Challenge

Like many hospital projects, the interstitial ceiling space of Cathedral Hill Hospital (CHH) is very limited and there are many systems that need to be squeezed above its ceilings. Space will be very tight on the construction site as well, set in an urban neighborhood with a building footprint that fills the entire site. In addition, the extended project team—including all the trade partners, the fabricators, the exterior and interior teams—represents over 40 companies and most of them use different design and/or fabrication software. To meet these coordination challenges, maintaining a complete, accurate digital view of the project with universal access to information and effective collaboration is essential.

Dramatically reduce time spent on model management.

The Solution

HerreroBoldt uses Autodesk® Navisworks® Manage software to aggregate the CHH design and fabrication models, creating an integrated project model that the team relies on to facilitate communication and collaboration. “The team uses over 30 different versions of software,” says Mack. “But we combine all their trade models to produce a more accurate integrated computer representation of the hospital.” This Navisworks model is used for spatial coordination, clash detection, project communication and review, and construction simulation and planning.

Increase Coordination

HerreroBoldt uses Autodesk® Buzzsaw® software as a service (SaaS) to help centrally manage the numerous design and fabrication models and distribute them to the project team. The distributed team members regularly upload their BIM submittals and updates to Buzzsaw for integration with the Navisworks model. The team can also download pertinent models for their own coordination efforts or view the entire integrated model using Autodesk® Navisworks® Freedom software. “I used to spend at least eight hours a week on model management,” says Mack. “With help from Buzzsaw and the Buzzsaw Sync feature, it’s virtually zero. More importantly, we can all use the latest model information for proactive clash avoidance.”

For example, early on the team used this coordination workflow to support the design of the interstitial spaces, reaching a balance between the pleasing aesthetics of high ceilings and sufficient space above the ceiling to accommodate the complex building systems of a hospital. HerreroBoldt still uses Navisworks for formal clash detection, but relies on the combination of Navisworks and Buzzsaw

to help provide a more natural coordination of the overall design as it emerges. “By using Navisworks to view up-to-date project models and Buzzsaw to help manage information distribution and revisions, the team has a much better understanding how the building elements all fit together,” says Mack. “I’ve no doubt that this will result in less rework and substantial time savings during construction.”

Simulate Construction

The team is also using Navisworks for construction planning. “The site will be very tight, so we’re simulating the movement of manpower and materials, particularly in highly congested areas, for construction sequencing of the major trades.” For example, the team used Navisworks to test four methods for installing viscous wall dampers, a seismic load resisting technology at the heart of the project’s structural design. By linking the Navisworks model to four different installation schedules, the team created 4D simulations to help determine the best installation procedure.

The Result

“BIM and IPD assist us because they bring a level of predictability to projects,” says Mervin Dixon, senior project manager at Sutter Health/CPMC. “We know the schedule. We know the cost. We have also been able to drive costs down with BIM because we get input from the various trades regarding the optimal way of doing things.”

“The use of BIM with collaboration and data management tools on this project allows us to integrate and optimize an otherwise fragmented flow of design and fabrication information,” says Mack. “IPD can only

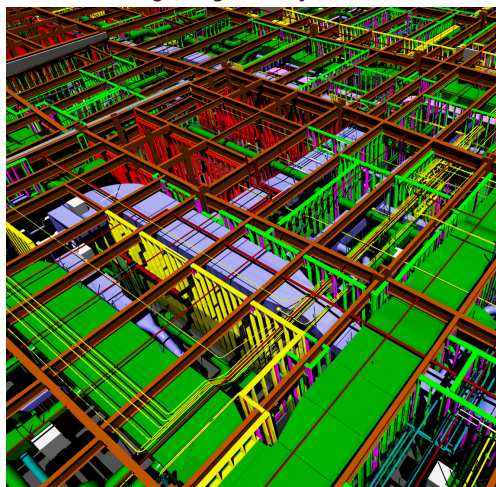


Evening rendering of the Cathedral Hill Hospital. Image courtesy of SmithGroup.

work when the customer, the designers, and the contractors are truly working together and leveraging the same information. BIM is essential for that teamwork, and will continue to serve us well as we enter the construction phase of this project.”

For more information, visit www.autodesk.com/bim.

Design and fabrication models aggregated in Autodesk Navisworks Manage. Image courtesy of HerreroBoldt.



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