

COMPANY

Dekker/Perich/Sabatini

LOCATION

Albuquerque, New Mexico

PRODUCTS

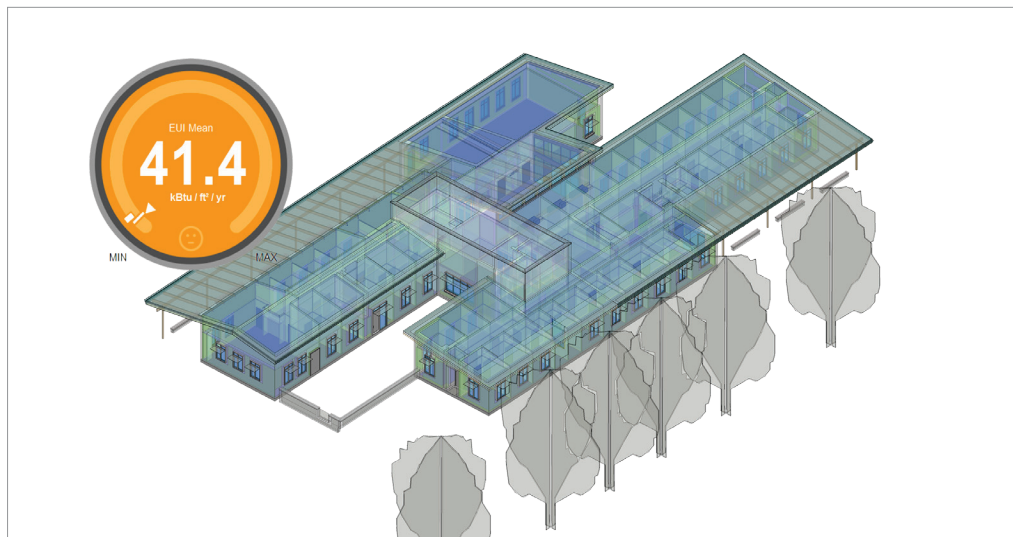
**Autodesk Revit
Autodesk Insight**

Sustainable design as a business differentiator

Dekker/Perich/Sabatini uses Revit to improve energy performance and meet AIA 2030 Commitment

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— **Brandon Garrett**
Architect/Associate
Dekker/Perich/Sabatini



Site-wide pEUI analysis using Autodesk Insight 360 helps identify outliers that could impact the site's energy consumption.

Project summary

Dekker/Perich/Sabatini (D/P/S) is making strides in building performance and sustainability. As part of its emphasis on quality and client service, the firm is focused on sustainability and meeting its American Institute of Architects (AIA) 2030 Commitment. Using Autodesk® Revit® building design software and Autodesk Insight® building performance analysis software, D/P/S can provide clients with fast, accurate energy analysis, while also designing sustainable projects. “Using Insight’s iterative process, we’re able to explore several options and identify an optimal approach early on,” explains Brandon Garrett, AIA, an associate/architect and design technology leader at D/P/S. “This lets our team better communicate how sustainable strategies can fit within the client’s goals and budget, or be added based on predicted return on investment.”

Shifting energy analysis to early project stages

As the first steps toward meeting its AIA 2030 Commitment, the firm needed to document its sustainable design capabilities. “Our goal was to submit projects to AIA as early in the design process as possible,” says Garrett. Insight software enables early energy modeling and provides widgets that help educate project stakeholders about the benefits of various sustainable design approaches. This helps D/P/S advocate for more-sustainable design by showing stakeholders how it can reduce operating costs over the project’s lifecycle.

With accurate design tools and support for teams, projects are designed faster

Encouraging submissions for AIA 2030

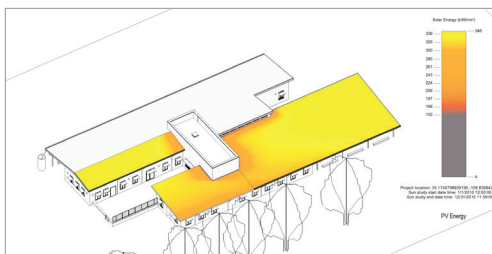
The firm's design technology group decided that architects and staff needed training on sustainability modeling technology—including Revit and Insight software. In addition, an in-house energy analysis team improves data access and enables early design option evaluation. Once an approach has been determined based on energy analysis results, D/P/S can reach out to engineers and analysts for final verification.

D/P/S also created a Building Performance Analysis Team (BPAT) that works with project teams to upload Revit models to Insight. As architects test lighting, heating, and design options, Insight offers real-time feedback on cause and effect, which can help designers create better outcomes.

One project had a predicted energy use intensity (EUI) of 130, and D/P/S used Insight to confirm the calculation—but Insight's analysis gave a much different result: 41.4 EUI. "This discrepancy prompted the engineers to rerun their analysis, and after identifying a few model errors, they produced a revised EUI that was just 0.1 off from Insight's number," explains Aaron Ketner, intern architect and energy specialist at D/P/S. "This process verified that Insight results are highly accurate—and that we can trust the guidance of Insight's analysis."

Gauging impact with Insight widgets

EUI is a key metric for building energy usage, and a benchmark for AIA 2030. Dashboard widgets in Insight show EUI for the building.



pEUI analysis using Autodesk Insight 360 potentially attains 2030 Challenge after installation of carport photovoltaic array.

The ability to quickly gauge the impact of multiple energy-saving options in one step—instead of creating several separate energy analyses—saves the firm time and money, and improves the energy data accuracy.

When D/P/S commissioned energy reports from outside analysts, results could take as long as 3 weeks. "The long turnaround time made it difficult to explore options within the project deadlines," Garrett says. With Revit and Insight, creating complex models and running energy analyses take just a few hours. "Having a user interface that's intuitive, simple, and powerful is what we've really appreciated about Insight," Garrett says.

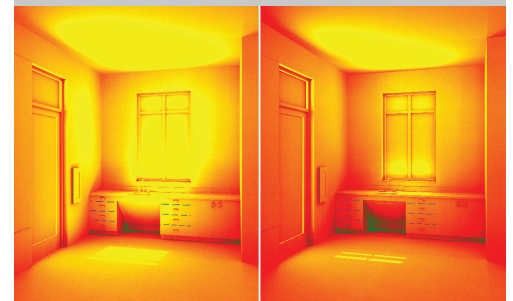
Building Performance Analysis Team offers in-depth guidance

Only a year or so after joining the AIA 2030 Commitment, D/P/S has already analyzed and reported the energy use for nearly 1 million square feet in new construction projects. Since using Insight software, D/P/S projects have a predicted EUI that averages 47.7% less than the national baselines. "This shows that our existing sustainable design approaches have been effective, and now with Insight, we can continue to work towards even greater sustainability goals," Garrett says.

To maintain D/P/S's sustainable design momentum, BPAT offers more in-depth guidance on EUI reduction, as well as impact analysis of features like solar insolation, illuminance rendering, and interior lighting. The firm recently designed a renovation of the New Mexico Department of Game and Fish Albuquerque offices. Using Revit, Insight, and the expertise of BPAT, D/P/S designers used solar energy systems and highly efficient LED lighting to revise the building's energy model. "Our analysis showed the client that they were actually in a lower utility-rate class than they initially thought," Ketner says. The department used the savings to increase its solar power system's size.

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Interior solar insolation analysis using Autodesk Revit add-in Insight Solar finds potential "hot spots" of increased solar energy and conveys benefits of tree shade during summer.

Sustainable design is proving to be a strong differentiator for D/P/S's business, and Insight is key to the firm's success. "A lot of firms have to rely on external consultants to do the type of analysis we can do with Insight," Garrett says. "This in-house capability lets us take an in-depth look at our clients' projects."

Most importantly, sustainable design is good for the environment and buildings' occupants. "If we can help clients optimize and improve how their buildings perform, it's a better investment for them in terms of cost, health, and operations over the life of the building," Garrett says.

Learn more

If you'd like to learn more about how to do high-performance building design using Autodesk software on your next projects, visit the **Insight product center** on the Autodesk website.

Images courtesy of Dekker/Perich/Sabatini

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