

COMPANY

Jill Neubauer Architects Inc.

LOCATION

Falmouth, Massachusetts

PRODUCTS

Autodesk Revit®

Shift from 2D to BIM deepens client engagement

JNA chooses Autodesk software to transform the design process for sustainable building

Revit is the single most powerful tool you can purchase that supports every aspect of being an architect.

— **Jill Neubauer**
 Founder and Principal Architect
 JNA



Using Revit, JNA ensures that architects and contractors are on the same page, and that final designs are delivered without surprises.

Project summary

Jill Neubauer Architects (JNA) serves a community with a high interest in creating healthy homes that are also good for the environment. As the 12-person firm grows its residential practice, it needs tools that help communicate the benefits of design and materials choices to clients—while reducing potential conflicts and delays. JNA uses Autodesk Revit building design software to increase client engagement in 3D designs, and to gain deep knowledge and understanding of building systems before construction begins.

Focusing on healthy buildings

“Clients come to us for our designs,” says Jill Neubauer, founder and principal architect of JNA. “But they also come to us knowing that we’re committed to their health, the environment, and energy conservation. It’s all of these things together that encourage clients to work with us.”

The firm usually works on 12 to 14 projects at a time; nearly all are residential projects, typically second homes in Massachusetts’s Cape Cod area. To create healthy buildings that are also environmentally friendly, JNA requires contractors to use wood certified by the Forest Stewardship Council (FSC), and avoid products with formaldehyde. In addition, JNA architects seek ways to minimize waste at building sites.

By eliminating conflicts early in the design stage, architects avoid surprises later

Moving to BIM and 3D design

About 8 years ago, a JNA architect suggested that the firm adopt Building Information Modeling (BIM) software, specifically, Revit. “He pointed out that BIM was used by larger firms for commercial work—and that he believed this was the future of architecture,” Neubauer says. “I agreed that this was what we needed if our work was to become fully integrated with other solutions and systems.”

By adopting Revit, Neubauer saw an opportunity for the firm to focus more clearly on the impact of iterative changes, and to move beyond 2D design solutions. “Architecture is a 3-dimensional profession,” Neubauer says. “We need to know exactly what’s going on in a building, whether it’s major HVAC systems, or something as simple as determining how a change in a window affects all the other windows.”

Adopting BIM and 3D design required time for architects to get familiar with the approach. “It took a while for us to become productive,” Neubauer recalls. “We had to bring in a trainer and make a big commitment in terms of money and time for a small firm. But it was absolutely worth it—we wouldn’t go back to a 2D program. Revit helps us know our buildings better from an aesthetic standpoint, since we’re developing designs in 3D—from the schematics all the way through to construction.”



Skylights and other natural light sources are important features in JNA’s sustainable home designs.

BIM solves issues before construction starts

Using Revit, JNA can show clients the impact of design and system changes so they can choose options that save energy or add to a home’s comfort. “Being able to visualize the space helps us and helps the client,” says Norman Courchesne, JNA designer. “Revit doesn’t let you cheat. If something is incorrect in the design, it’s going to reveal itself.”

Revit also allows JNA to work more closely with engineers to understand how structural issues and large systems affect designs. “We insist that the structural engineers model in Revit because coordination between the structural engineer and us is extremely important,” Courchesne says. “To have beams modeled 3 dimensionally and be able to insert them into our models is very valuable.”

This coordination, says Neubauer, removes uncertainty associated with building projects. When JNA architects view designs with clients or engineers, they can zoom in on any feature, rotate to different views, and see every connection.

“Revit is now the tool that helps us understand what’s going to happen before we build,” Neubauer says. “We just completed the first house we’ve done entirely in Revit, and there were no surprises or unforeseen change orders. We’ve never had that level of understanding when building before. A project like this alone would convince any architect that it’s worth making the leap to BIM—you’ll invest deeply in it, but you’ll get so much out of it.”

Clearer communication with clients

With her architects, Neubauer is exploring ways to use Revit to offer clients specific metrics on the benefits of green buildings, such as sun studies to pinpoint savings on heating and cooling costs. “Instead of talking emotionally or subjectively about the benefits of green building,” says Neubauer, “we can say, ‘here’s exactly how we can reduce your carbon footprint.’” For future projects, JNA will be diving into Insight, an integrated energy analysis tool that’s part of the Autodesk Architecture, Engineering & Construction Collection.

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Founder and Principal Architect
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Revit helps JNA create sustainable designs using FSC-certified wood, skylights, and solar design features.

With a deeper understanding of their buildings, JNA avoids missteps that can slow projects or affect budgets. “We live and die in architecture by a small margin, and it doesn’t take much in the way of errors to be very challenging for a small architecture firm—I guess any architecture firm,” Neubauer says. “Revit protects us by helping us know our buildings much more deeply, and that’s tremendous.”

In addition to helping avoid errors, Revit also empowers JNA architects to give their creativity full flight—which will help the business continue to build its reputation in the Cape Cod area. “Revit is the single most powerful tool you can purchase that supports every aspect of being an architect,” Neubauer says. “If you’re working in 2D and you make the change to BIM, your life is going to change in ways you can’t even imagine.”

Learn more

If you’d like to learn more about Revit and how it works with other solutions from Autodesk for building design, visit the [Architecture, Engineering & Construction Collection page](#).