

# Improving Architectural Economics and Ergonomics with Revit and the SpacePilot Pro 3D Mouse

3D Mouse: SpacePilot® Pro

Application: Autodesk Revit™, Navisworks



Even in the best of times, architectural practice is a very competitive business with razor thin margins. Consider today's economy and the pressure to survive and thrive becomes even more difficult. Architectural firms, such as HOK, are looking for ways to streamline and supercharge their businesses now more than ever with the help of new software, such as Autodesk Revit, and hardware that includes 3Dconnexion's SpacePilot® Pro.

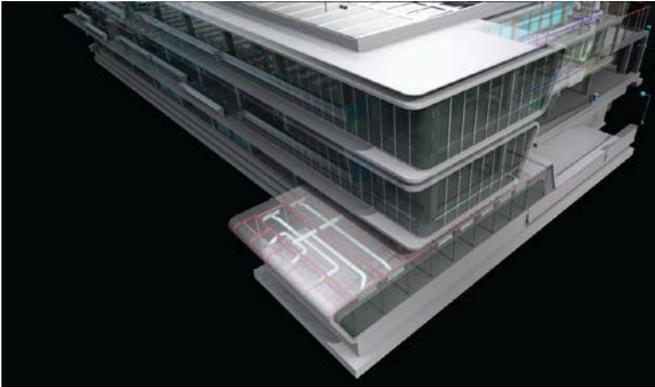
HOK is a global provider of planning, design and delivery solutions for the built environment. Since the firm's founding in 1955, HOK has developed into one of the world's largest, most diverse and respected design practices. It employs more than 1,800 professionals across a global network of 25 offices, and creates environments that meet the world's most complex planning and design challenges. The ability to connect across markets and disciplines in every part of the world allows HOK to see the "big picture" and, because it approaches design from so many different perspectives, gives it an unparalleled ability to innovate.

Autodesk Revit is specifically developed for Building Information Modeling (BIM), and helps capture, analyze,

and maintain focus through design, documentation, and construction. It allows users to design with both parametric 3D modeling and 2D drafting elements. Building Information Modeling is a CAD paradigm that employs "intelligent" 3D objects to represent real physical building components, such as walls and doors. Revit's project database also can contain information about a project at various stages in a building's lifecycle – from concept to construction to decommissioning.

A major proponent of 3Dconnexion's SpacePilot Pro for architectural practice using Revit is San Franciscobased Lee Miller, HOK's Vice President and Director of BIM. He leads HOK's BIM initiatives, as well as guides workflows, standards, and best practices to ensure efficiency, because the various HOK offices collaborate extensively.

HOK began using Revit with V5 and used it on a "real project" with V6 around the 2003 time frame. HOK uses Revit as one of its core design tools for conceptual design, energy studies/evaluations, and just about everything in between, as well as for virtually all of its projects, including hospitals, airports, and interiors.



Previous to introducing the SpacePilot Pro for a six-month evaluation at HOK, Miller had purchased and used the SpaceNavigator at home with other tools, such as SketchUp. He was excited about the prospect of using the SpacePilot Pro in Revit, but couldn't until the release of Revit Architecture 2012 when 3Dconnexion support was introduced for the first time.

Miller builds a lot of Revit templates that require many mouse clicks and felt he risked injury with the repetitive navigation movements using only a regular mouse. With the SpacePilot Pro, he has been able to offload a lot of work to his other hand. He has found that with the SpacePilot Pro, he can navigate better than using the mouse alone, because he can maintain the mouse cursor position while in a specific Revit command. He is also able to orbit much easier around a Revit design element when in a command without losing his place in the design. The SpacePilot Pro helps him to stay focused on the activity he is trying to accomplish.

Does he continue to personally use the SpacePilot Pro with Revit? Miller responded, "Absolutely! I have three 3Dconnexion devices, including the SpaceNavigator and SpacePilot Pro, and use them at them at the office and at home. I never leave home on business without a 3Dconnexion device and even carry it on so there is no chance of it being lost in my checked baggage in transit."

When discussing how usability, efficiency, and productivity with Revit improved after integrating the SpacePilot Pro into HOK's design process workflow, Miller said, "Using the SpacePilot Pro is much easier on wrists and arms, so I can work longer on the computer and be more productive. I don't have to leave a Revit command to navigate and perform extra clicks. I can keep a command engaged so I can retain the design thought." In addition to enjoying the SpacePilot Pro for navigation, he takes advantage of SpacePilot Pro's various buttons which provide easy access to application functions and standard views.

Miller estimates that today HOK has approximately 10 SpacePilot Pro's installed and being used worldwide. However, he expects the number to increase dramatically since nearly all of HOK's current projects use 3D applications such as Revit, Navisworks, Rhino, Sketchup and 3ds Max.

For future considerations with the SpacePilot Pro, Miller said he plans to test 3Dconnexion's 3DxWare 10 driver which enables the 3D mouse to be used in more applications, such as browsers, spreadsheets and graphics programs.

Miller has been pleased with the benefits he and HOK have realized since integrating the SpacePilot Pro into the Revit workflow. He summed things up by saying, "The SpacePilot Pro has helped HOK realize more value from 3D investigation and benefits from front-end design through visualization."

