

BIM Rolls Out in South Africa

This paper profiles the remarkable adoption of Revit building information modeling in South Africa – a country known for its ability to effect change. It explores the reasons why building information modeling has been so easily adopted by architectural firms in that country and what lessons can be learned from their success.

Situation on the Ground

South Africa's economy is climbing back from the worldwide slowdown and it is strengthening in the post-apartheid era. Inflation is down, property values are soaring and the country's architectural and building industry is enjoying healthy growth.

Culturally, the South African building industry is an early adopter of technology, propelled by independent thinkers and doers who can make IT solutions work to suit their needs. Their open regulatory process encourages the investigation of new approaches for building design. The country's dynamic political and social environment creates a "can do" atmosphere that energizes the business sector, freeing them from the constraints of established (and perhaps outdated) ways of doing things.

Straight to Production

Many firms in South Africa already use AutoCAD® software, so "trying out" Revit® Architecture software (which integrates seamlessly with AutoCAD) on a working project was viewed as low risk. As a result, they elected to use Revit Architecture on sizeable projects right out of the gate - foregoing the traditional approach of proving the technology on a small trial project.

A3 Architects firm (www.a3-inc.co.za) in Johannesburg is a good example of this. The company's first experience with Revit Architecture was on a \$5.45 million hospital expansion project. A new wing was being added to a four-story structure and the existing ground floor emergency room and lobby were being enlarged. The project was completed in three weeks and included the delivery of 3D images, plans, sections, and multiple elevations. According to A3 partner William Ackerman, "We've put Revit through its paces on a very large project and it's come through with flying colors."



Figure 1:

A3 Architects, Johannesburg, South Africa, used Revit Architecture for this \$5.45 million hospital expansion project.

Smaller firms have also embraced building information modeling, implementing Revit Architecture directly into production to increase their residential project capacity without increased staffing. Johannesburg firm Sheer Architectural & Interior Design used Revit Architecture to design eleven residential projects in just two months. Sheer architect Sean Couzyn reports, "Often people are concerned about the drop in productivity after introducing a new program. Revit is very easy to use. I was producing acceptable working drawings a few days after my first training day."

The Promise of BIM Delivered

Another Johannesburg firm, Bentel Associates International (www.bap.co.za/home.html), first used Revit Architecture on a new building design project - the one-million square-foot Thalia Galleria retail complex in Saudi Arabia. According to Edmund Batley, Bentel's director for Middle East projects, the vast Galleria demanded spatial exploration and 3D manipulation much more than other retail projects, which are usually planning and layout oriented. "Revit provided a digital environment that enabled us to view all spaces from any point, and for the very first time allowed us to explore the scale and nature of the design as a true 3D entity," reports Batley.

Firms using Revit Architecture for residential projects also echoed this theme. Jurie van Dyk from Archilution, a practice in St. Francis Bay, is using Revit Architecture to design luxury vacation homes for his clients. "Financial and time constraints prevent architects specializing in residential projects from creating physical models," says Jurie. "With Revit I can quickly create an electronic model, which allows me to fully explore the design options."

Lessons Learned

What can architectural firms and resellers around the world learn from the experiences of their South African peers?

For many of these early adopters, Cadplan - a registered Autodesk dealer and developer since 1988, based in Johannesburg (www.cadplan.co.za) - was a crucial element in their implementation. Cadplan's CEO Marek Brandstatter credits the enthusiasm and implementation expertise of his staff, and the software itself, for the success of their Revit Architecture customers in South Africa. "Revit has handled everything we've thrown at it," states Brandstatter. "It's immensely rewarding to work with software that consistently exceeds your expectations."

Firms that have been frustrated in the past by architectural design software (particularly model-based software) will be pleasantly surprised by the Revit platform for building information modeling. Because it's so intuitive to use, staff training is minimal and implementation costs are significantly decreased. For firms already using AutoCAD software, the move to Revit Architecture is a natural progression.

And don't wait for a small side project to pilot the Revit Architecture solution. Cadplan's Brandstatter offers this analogy -- using conventional CAD and geometry-based modelers for architectural design is like using a spreadsheet but with the formulas disabled. Turn the formulas on and everything just works. That's Revit Architecture.



Figure 2:

Revit building information modeling is being used on a variety of South African residential and commercial projects, such as this 250-unit Johannesburg apartment building, designed by Site Architects.

About Revit

The Revit platform is Autodesk's purpose-built solution for building information modeling. Applications such as Revit Architecture, Revit® Structure, and Revit® MEP built on the Revit platform are complete, discipline-specific building design and documentation systems supporting all phases of design and construction documentation. From conceptual studies through the most detailed construction drawings and schedules, applications built on Revit help provide immediate competitive advantage, better coordination and quality, and can contribute to higher profitability for architects and the rest of the building team.

At the heart of the Revit platform is the Revit parametric change engine, which automatically coordinates changes made anywhere — in model views or drawing sheets, schedules, sections, plans... you name it.

For more information about building information modeling please visit us at <http://www.autodesk.com/bim>. For more information about Revit and the discipline-specific applications built on Revit please visit us at <http://www.autodesk.com/revit>.

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