

BIM in Brazil

This white paper examines how building information modeling (BIM) is being received in the largest country and economy in Latin America: Brazil. The paper explores the reasons why BIM is attractive to Brazilian firms, highlighting the experiences of two firms at opposite ends of their transition to Revit® Architecture software.

Brazilian Building Industry

After the country's shaky financial start to the millennium, Brazil's fiscal reform measures have led to the return of economic growth. Brazil's stable diverse economy is once again healthy and growing - as is its building industry. All sectors are on the rise, particularly hospitality (on the relatively underdeveloped Atlantic coast) and commercial in the large urban areas such as São Paulo and Brasília.

Architectural firms in Brazil are experiencing competition from all fronts: foreign firms competing for very large commercial projects; national firms competing for public projects and large private-sector projects; and emerging firms using intense price pressure to "buy" business and establish a foothold in their market.

BIM in the Brazilian Market

In this competitive crucible, Brazilian design firms look to innovation - both architectural and technological - as a means to distinguish themselves over their competition. Architectural firms must respond and react quickly to win business and they're turning to BIM for timesavings and competitive advantage.

AutoCAD® software is the predominant design tool in Brazil, but it's used primarily for 2D drawing production. As a result, architects have less experience with design tools for 3D modeling. For BIM adoption, this is both a disadvantage (from a training point of view) but also an advantage; there's no intermediate technology investments or legacy data issues complicating the move to BIM. In fact, 2D AutoCAD data integrates seamlessly with Revit Architecture, so firms with an investment in AutoCAD drawings can easily migrate to BIM.

Below are two examples of Brazilian architectural firms, at opposite ends of their transition to BIM: Contier Arquitetura, early adopters of BIM; and Aflalo & Gasperini, just embarking on their implementation of BIM.

Contier Arquitetura

Contier Arquitetura (www.contier.com.br) is an architecture and urban planning firm, headquartered in São Paulo and comprised of six architects - including the two principals: Luiz Augusto Contier and Miriam Castanho. The firm, established in 1981, undertakes a wide range of design projects. Principal Luiz Contier explains, "Large architectural firms are particularly vulnerable in a competitive market like ours. In response, we purposely transformed our company many years ago; *minimizing* our size and *maximizing* our technological capabilities." Constantly at the forefront of technology innovation, the firm was an early adopter of BIM - implementing Revit Architecture in 2004. They have come to appreciate the benefits of a purpose-built BIM solution, particularly the unified environment for design and documentation, where all information is coordinated by the parametric building modeler.

The firm most recently used Revit to design the Estação Terminal Sacomã do Paulistão - a 130,100 sq. ft. transportation terminal slated for construction in 2006 in the heart of São Paulo. Contier states, "We felt comfortable making changes at any point during the design process, knowing that Revit would coordinate all our construction documents." Design changes ripple through the Revit building information model. And since all drawings, schedules, views, material take-offs, and so forth are live views of the underlying building model, they all update accordingly.



Figure 1:

Contier Arquitetura looks to BIM and Revit Architecture for a competitive technology advantage on projects such as this transportation terminal.

Principal Miriam Castanho describes the advantages of using BIM on another recent Revit project: the preliminary design for a 124,200 sq. ft. conference center complex in Yenagoa, Nigeria. "In just two weeks, two architects were able to deliver preliminary designs with accurate schedules and quantities, *and* high-quality renderings as well - work we usually have to outsource to a specialist."

"Using Revit Architecture, we're increasing the accuracy of our design *and* saving time. Our quality is higher, our response time is quicker, and our costs are lower," reports Contier. The firm finds that the benefits of Revit Architecture provide a competitive advantage in any market.



Figure 2:

In less than two weeks, two architects from Contier Arquitetura completed the preliminary design of this conference center complex.



Aflalo & Gasperini

Established in 1962, Aflalo & Gasperini (www.aflaloegasperini.com.br) was one of the first architectural and urban design firms in Brazil. With a staff of more than 25 architects, their work is focused on commercial and institutional buildings, as well as large residential complexes. The company is constantly investing in technology to reduce the gap between design and construction.

The firm just recently moved to BIM and is using Revit Architecture for several preliminary design studies. With Revit Architecture they can quickly create a series of design options and produce realistic renderings for client presentations - even at a very early conceptual stage. Users are impressed by the intuitiveness of the software and the accuracy of the Revit building information model. Principal Roberto Aflalo reports that they are already 'seeing' results: "With Revit we can immediately visualize, in 3D, the parts of the project that need adjustments - allowing us to make the right decisions as early in the design process as possible."



Figure 3:

Recent adopters of BIM, Aflalo & Gasperini are already experiencing the competitive advantages of Revit Architecture.

Global Lessons

How does the implementation of BIM by Brazilian architects compare with the adoption of BIM in other parts of the world? A global theme that echoes across all continents is the competitive edge that BIM and supporting technology can bring to firms in highly competitive markets.

Like the design firms in Asia struggling just to keep up with demand, BIM gives Brazilian firms the quick delivery they need to compete in a building boom. Like the Australian architects embracing BIM for the technological advantage they need to set them apart in a tight market, Brazilian firms moving to BIM are experiencing the same competitive boost.

And like many of their peers around the globe, Brazilian architects that have been frustrated by, and therefore shunned, model-based architectural design software have been pleasantly surprised by both the maturity and simplicity of the Revit building information modeling software.

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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