

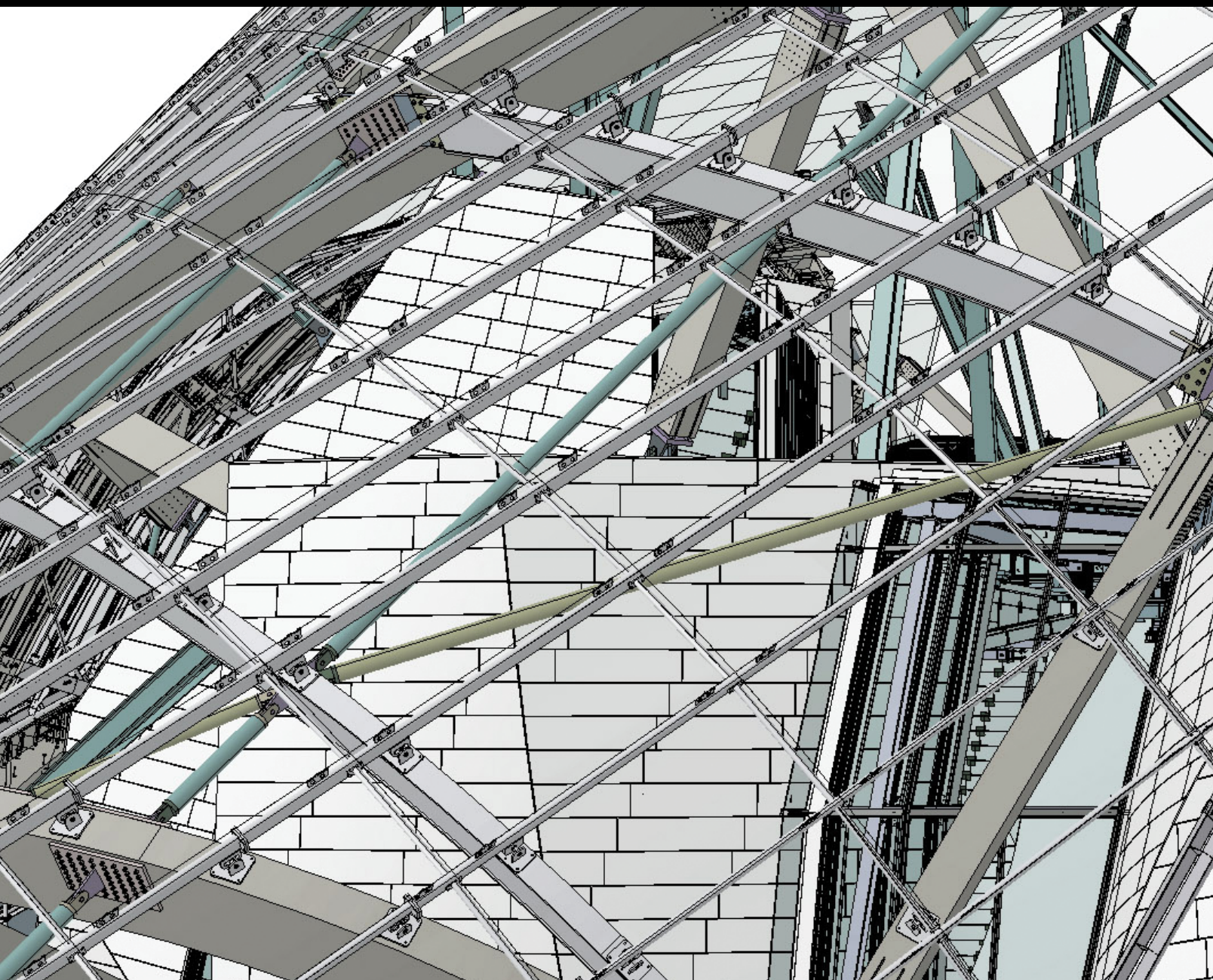
JBIM

Journal of Building Information Modeling

An official publication of the National Institute of Building Sciences
buildingSMART alliance™

National Institute of Building Sciences: An Authoritative Source of Innovative Solutions for the Built Environment

Fall 2012



BIM Really Can Be a Team Sport

JBIM

Published For:

The National Institute of Building Sciences
buildingSMART alliance™
1090 Vermont Avenue, NW, Suite 700
Washington, D.C. 20005-4905
Phone: (202) 289-7800
Fax: (202) 289-1092
nibs@nibs.org
www.nibs.org

PRESIDENT

Henry L. Green, Hon. AIA

CHIEF OPERATING OFFICER

Earle W. Kennett

EXECUTIVE DIRECTOR

Dana K. Smith, FAIA
buildingSMART alliance™

Published By:

MATRIX GROUP PUBLISHING INC.

Please return all undeliverable addresses to:
5190 Neil Road, Suite 430
Reno, NV 89502
Phone: (866) 999-1299
Fax: (866) 244-2544

PRESIDENT & CEO

Jack Andress

CHIEF OPERATING OFFICER

Jessica Potter
jpotter@matrixgroupinc.net

PUBLISHER

Peter Schulz

EDITOR-IN-CHIEF

Shannon Savory
ssavory@matrixgroupinc.net

EDITOR

Alexandra Walld

FINANCE/ACCOUNTING & ADMINISTRATION

Shoshana Weinberg, Pat Andress,
Nathan Redekop
accounting@matrixgroupinc.net

DIRECTOR OF MARKETING & CIRCULATION

Shoshana Weinberg

SALES MANAGER - WINNIPEG

Neil Gottfred

SALES MANAGER - HAMILTON

Brian Davey

SALES TEAM LEADER

Rick Kuzie

MATRIX GROUP PUBLISHING INC.

ACCOUNT EXECUTIVES

Rick Kuzie, Brian MacIntyre, Brodie Armes, Christopher Smith, David Roddie, Declan O'Donovan, Jeff Cash, Jim Hamilton, Ken Percival, Monique Simons, Rick Kuzie, Robert Allan, Robert Choi, Ronald Guerra, Wilma Gray-Rose, John Price

ADVERTISING DESIGN

James Robinson

LAYOUT & DESIGN

Travis Bevan

©2012 Matrix Group Publishing Inc. All rights reserved. Contents may not be reproduced by any means, in whole or in part, without the prior written permission of the publisher. The opinions expressed in *JBIM* are not necessarily those of Matrix Group Publishing Inc.

Cover Story:

- 13** Paris Museum Proves that BIM Really Can Be a Team Sport

Expanding Thought:

- 16** Using Real-Time CMMS Asset Data Capture During Construction to Improve Facility Management

- 18** Augmented Reality: Bringing BIM To Life



20

Messages:

- 7** Message from the National Institute of Building Sciences
- 9** Message from the buildingSMART alliance™
- 10** Message from the U.S. National CAD Standard® Project Committee
- 11** Message from the National BIM Standard® Executive Committee

News and Updates:

- 27** The New BIM Player - China
- 29** BIM in the United Kingdom
- 30** Buyer's Guide



18

Case Studies / Best Practices:

- 20** BIM for Construction Safety: A Case Study
- 22** Integrating Technology and Process in the Cathedral Hill Hospital Project

Life Cycle / Technology Spotlight:

- 23** IFC4: Evolving BIM
- 25** Aligning LOD, LoD and OEM into a Project Collaboration Framework



On the cover: The Fondation Louis Vuitton, a new art museum in Paris, is pushing the limits of BIM technology and demonstrates how BIM, enabled by a cloud-based file management and project collaboration platform, can help large distributed teams work together. The 3D cover image, produced by Digital Project™, shows the façade of the Fondation Louis Vuitton.

The New BIM Player – China

By Xin Wang

EVEN THOUGH CHINA IS ONE OF the largest construction markets in the world, building information modeling (BIM) wasn't high on the radar...until now. China is catching up fast and in this article, I will share my experience with the country's growing BIM development.

BIM, FIVE YEARS AGO

In 2007, BIM was almost unheard of in the architecture, engineering and construction (AEC) industry. At my architectural class reunion, I shared some of my BIM experiences with classmates, most of whom were holding key roles at their design firms, and many didn't know what BIM was. In fact, only one out of 20 knew the term "BIM software" and Ms. Song, who was principal of an architectural firm in Beijing, told me that BIM software was not good for schematic design so they wouldn't be using it.

The only person who knew the term was Mr. Wei, the CEO of a large scale AE firm in Beijing—one of the few companies you could find in China that had put BIM implementation in their vision. He was planning to get training on BIM software, so I strongly encouraged him to pay more attention to BIM and to try it out on real projects.

WARMING UP WITH DISCUSSIONS, CONFERENCES

One day in 2010, I ran across a bunch of discussions about BIM on a couple of Chinese websites. This was unheard of before—it was impossible to find BIM information on Chinese websites. It was like the light turned green overnight.

I was excited to explore the discussions and sometimes I joined in. However, the more I read, the more worries I had. There were some misleading concepts on the discussion boards and some translations were not correct.

I don't think anyone knows why BIM became popular in 2010 but I am sure those websites were a key factor in spreading the information. Some large institutes also hosted BIM conferences, which

brought the term and concept to more people.

BIM FOR AE FIRMS

The first few projects done with 3D tools were for the 2008 Beijing Olympic Games. Without 3D software, it would have been almost impossible for architects and engineers to accomplish their designs, many of which were complex forms, shapes and textures. The 3D tools helped people solve the issues they were having.

Architects (including engineers) in China face a much tougher environment than their United States counterparts. The schedules are tighter and frequent design changes (by the owner and/or government agencies) have scared AE firms away from learning about and practicing BIM. Even so, there are many design firms that have set up BIM studios and groups, and some have tested BIM on portions of their projects.

CONTRACTORS' BIM

While 3D/BIM tools were used by designers and contractors on those previously-mentioned Olympic projects, the widespread use of BIM in construction has not been seen. However, some pioneers have started to practice on large scale projects.

The first well-known project is the Shanghai Tower, designed by Gensler. They worked with a local design institute in Shanghai. I don't know why the owner of the Shanghai Tower only asked the general contractor to include BIM practices during the construction phase. Neither the owner of the project, nor the general contractor, was clear about what should be included in the BIM but Dr. Bian, the general contractor's BIM director on the project, has stated that after a couple of years of experience, he is now very confident about using BIM on future projects.

Even though they started their BIM journey with, what I call, an inappropriate start for the size and complexity of the project, it still pushed the start button

for using BIM. I have now seen more and more owners adding BIM as a must-have.

OWNERS' ATTITUDE

There are some owners of large-scale and complex buildings who are asking designers and general contractors to utilize BIM technologies. Like the owner of the Shanghai Tower, a developer, SOHO China, has built a few iconic projects using BIM. It is possible that the shapes of the designs made it impossible to build without BIM.

Some owners are asking for BIM to be used, even though they are not completely clear on what to ask for. Some top developers are seriously considering launching their own BIM projects soon. China's private developers are showing a strong interest in using BIM in both the design and construction phases. And some commercial developers have paid attention to what BIM is accomplishing through the life cycle of the buildings.

GOVERNMENT'S ROLE

In 2012, China's government released the 12th Five-Year Plan, which included BIM-related issues and topics. The industry has shown a strong passion on all related areas, including the study of China's BIM standards. In early 2012, the Ministry of Housing and Rural Urban Development, China launched several BIM-related national standards programs. Dozens of research institutes, design firms, contractors, software vendors and universities have joined these projects. They are looking to achieve some results by the middle of 2013.

I have also heard that some local governments have started to think about some kind of incentives for BIM projects and compensations for BIM training programs. Some others are thinking of requiring some level of BIM use on a project's design and construction phases.

BIM IN ACADEMIC

The first school that offered BIM software courses was a small architectural

ArchiDATA:

The Only BIM Solution for Existing Buildings



CONVERTS your CAD or scanned paper plans into the IFC standard and BIM

PROVIDES a standardized IFC file to professionals to start projects in Revit, NavisWorks, D-Profiler, etc.

INTEGRATES your REVIT projects into FM BIM models

LOCATES your equipment and space using proprietary GIS solution

For more information, please visit our website or contact us :

 **archidata**
www.archidata.com
1.855.870.1770

school in Beijing. They started teaching BIM in 2007 and the first-year students have already graduated. Since then, many other schools have started to offer some kind of BIM software course. In 2012, at least one school started a masters for BIM.

INTERNATIONAL EXCHANGE

Many design firms (most design firms are AE firms in China) are hesitant to implement BIM in their work processes. One main reason is that the current BIM tools are not compatible with Chinese regulations or standards. The other reason is that the Chinese version of the BIM software's terms, menus and help files are poorly translated, so it's very hard for people to learn the tools.

Three years ago, BIM wasn't heard of in China. Now there have been achievements using it.

CHALLENGES

A major challenge is that most design firms are hesitant to practice on real projects so they often set up a BIM studio/group and let BIM guys work in parallel with the project's teams. As a result, the project will have a BIM model but the project's team will have had very limited exposure to BIM. Worse yet, this practice will often bring more costs to the project, since the BIM teams' efforts will add extra cost and may not contribute much savings.

Another challenge is that almost all of the BIM modeling tools for design professionals are imported. Users compare the inefficient BIM software with the "turbo-charged" Chinese CAD software and BIM doesn't come out on top.

CONCLUSION

Three years ago, BIM wasn't heard of in China. Now there have been achievements using it. The most challenging issue that Chinese users are facing is not technology but the recognition of the benefits that BIM would bring to us. I believe China is headed in this direction. ■

Xin Wang is with AXTWO International LLC, a company which provides comprehensive BIM solutions for building designers, engineers, contractors and owners, as well as facility managers.