

Wednesday, October 31, 9:00 a.m. – noon

***BENEFITS AND RISKS OF
BUILDING INFORMATION MODELING***



Gregg Bundschuh
Partner
Ames & Gough

Project owners are increasingly requiring designers and contractors to use building information modeling (BIM) in the design and construction of their projects. While BIM's potential and benefits are real, it can also introduce challenges in risk allocation and insurance coverage. This workshop demonstrates BIM technology, uses, benefits, and legal and risk management issues for owners, design professionals, contractors, and teams.

- Provides a demonstration of the functionality and uses of BIM technology.
- Suggests potential transformations in team collaboration and work flow.
- Offers best practice examples of BIM benefits for owners, contractors, and designers.
- Examines risk management issues that must be addressed, including contract language, legal uncertainties, and insurance coverage.

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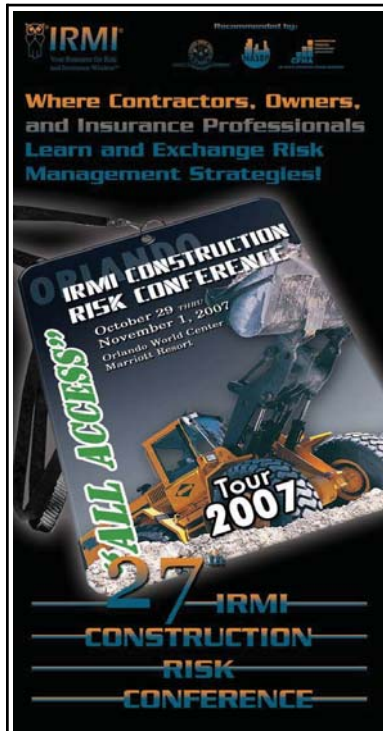
Mr. Bundschuh is one of the presenters for Workshop W2, "Benefits and Risks of Building Information Modeling," on Wednesday morning. He is a Partner in Ames & Gough, a leading insurance broker specializing in design and construction risk. He counsels and serves clients involved in the construction industry and provides special expertise in large, complex construction projects. Prior to joining Ames & Gough, he was a Managing Director, Global Construction Leader, and Environmental Practice Leader at Marsh, Inc. He was General Counsel to a national architecture and engineering firm and practiced construction law with an Atlanta firm.

Mr. Bundschuh has 22 years of construction insurance, risk management, and dispute resolution experience during which he has written and spoken extensively about issues affecting owners, developers, design professionals, and contractors. His experience includes: development of insurance and risk management programs for stadiums and arenas, airports, justice facilities, infrastructure, health care, brownfield redevelopment, mixed use/residential and petrochemical facilities; placement of manuscripted policies for liquidated damages, delayed completion, force majeure, "acceleration," and cost overrun; and participation in the development and modification of industry standard form contracts including AIA, EJCDC, AGC, and AOD.

Mr. Bundschuh is a Fellow of the American College of Construction Lawyers, an elective organization formed for the purpose of enhancing the skill, expertise, and the standard of the practice of construction law. He is also the former Chairman of the Corporate Counsel Division of the American Bar Association, Forum on the Construction Industry. Additionally, he has served as an arbitrator for the American Arbitration Association. He received his Bachelor of Arts from Wake Forest University and his Juris Doctorate from the University of Georgia.

Notes

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Benefits and Risks of Building Information Modeling (BIM)

Presented By:
Gregg Bundschuh, J.D.
Partner
Ames & Gough
Atlanta, Georgia

October 31, 2007

BIM: Pandora's Box?

- ▲ Collaborative Design
- ▲ Who Owns Data/Drawings
- ▲ Risk Allocation
- ▲ Standard of Care
- ▲ Insurance

BIM Expectations

- ▲ From a 2006 presentation by a popular software company
 - BIM software **eliminates** defects caused by un-coordinated or poorly detailed drawings
 - Coordination is **assured** by the system
 - Document sets are more complete and understandable
 - Document sets are higher quality reducing construction costs

BIM Expectations

- ▲ Predictions include fewer claims:
 - Professional Liability claims maybe on the decline in the next five years because of the use of BIM.
 - Why? The ability to discover design errors and omissions prior to the start of construction.
 - Value of damage awards may decline with the use of BIM during design and construction.

“BIM Risk” Implementation Strategy

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius -- and a lot of courage -- to move in the opposite direction."

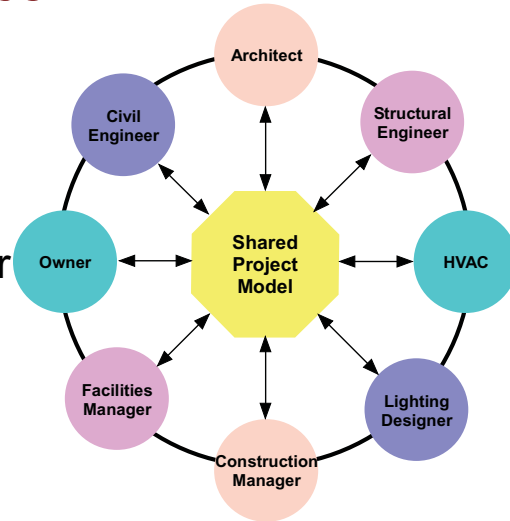
Albert Einstein

1. Assemble Internal Team

- ▲ Board Level Champion
- ▲ Technology/Software
- ▲ Project Manager
- ▲ Discipline Manager
- ▲ Market/Sector Manager
- ▲ Legal
- ▲ Insurance/Risk Management

2. Assemble Project Team & Clarify Roles

- ▲ Project Collaboration Administrator
- ▲ Model Manager
- ▲ “Technology Integrator”



3. Avoid Over-Reliance on Technology

- ▲ “I believe that our profession (structural engineers) may be nearing a crisis and that most of us don’t realize it or, if we do, we don’t know what to do about it. I believe the crisis will be brought about by an over-reliance on computers, coupled with an inability to sense when an answer isn’t correct. In fact, I will go so far as to say that I believe this crisis will manifest itself in the **collapse of structures**”
 - Edwin T. Huston, P.E., S.E., Vice President of NCSEA (National Council of Structural Engineers Associations)

Source: STRUCUTRE magazine, “Are We Relying Too Much on Computers” and “Structural Engineers or Computer Technicians,” February and August 2007 Issues

3. Avoid Over-Reliance on Technology

▲ Past

- Due to time-consuming calculations the penalty for bad initial assumptions was high resulting in intuition and “back of the envelope” calculations to test assumptions

▲ Today

- No penalty for a bad starting assumption
- No intuition or “back of the envelope” calculations by young engineers

Source: STRUCUTRE magazine, “Are We Relying Too Much on Computers” and “Structural Engineers or Computer Technicians,” February and August 2007 Issues

4. Address Legal Issues Inherent in the Technology & Project Delivery Method

- ▲ Interoperability
 - Translation
 - Misuse
- ▲ Project Delivery Method Risk Allocation
 - Integrated Project Delivery (IPD)
 - Public-Private Partnership (PPP)
 - Design-Build
- ▲ Delegating Design to Software
 - Responsible Charge
 - Software Warranties
- ▲ Legal Status of Model
 - Ownership
 - Reliance
 - Control

4. Address Legal Issues Inherent in the Technology and Project Delivery Method

- ▲ Collaboration versus Responsibility
- ▲ Privity & Third Party Reliance
- ▲ Economic Loss Rule
- ▲ Professional Responsibility
- ▲ Intellectual Property
- ▲ Archiving and “Archaeology”

5. Professional Liability Issues

- ▲ Standard of Care – “reasonable” not “perfection”
 - BIM will not result in “perfect” drawings and change orders will still be a part of the construction world.
 - Owner will still need a contingency for construction coordination issues during construction.
 - What will change is the way professionals judge each other. The “reasonable” architect will be one that is using BIM.

5. Professional Liability Issues- Emerging Standards

- ▲ National Building Information Modeling Standard (Ver. 1.0)
 - National Institute of Building Science
<http://www.facilityinformationcouncil.org/bim/publications.php>
- ▲ General Services Administration
 - 3D/4D BIM Standards
 - <http://www.gsa.gov/Portal/gsa/ep/channelView.do?pageTypeId=8195&channelPage=%2Fep%2Fchannel%2FgsaOverview.jsp&channelId=-18161>

5. Professional Liability Issues

- ▲ Risk Allocation Clause

“The Owner and Design-Builder acknowledge the Project will be designed using building information modeling (BIM). BIM is being utilized to assist the Owner’s understanding of the design, costs and construction. The Owner acknowledges the use of BIM by the design and construction teams will not result in zero (0) change orders and Owner agrees to provide a contingency for change orders. It is anticipated the use of BIM will assist with an early understanding of the design, assist with coordination of documents by the design team, early understanding of costs and potential construction conflicts prior to the start of construction.”

5. Professional Liability Issues

▲ Third Party Beneficiaries Clause

“Nothing contained in this agreement, express or implied, shall confer any rights or remedies upon, or create any contractual relationship with or cause of action in favor of, any third party. The Owner and the Design-Builder agree to require a similar provision in all contracts with contractors, subcontractors, subconsultants, vendors, and other entities involved in this Project to carry out the intent of this provision.”

5. Professional Liability Issues

▲ Waiver of Consequential Damage Clause

"The Design Professional and the Owner waive consequential damages, including but not limited to damages for loss of profits, damages due to errors in the BIM information, loss of revenues, loss of business and of business opportunities, for claims, disputes or other matters in question arising out of or relating to this Agreement. The Owner and the Design Professional agree to require a similar provision in all contracts with contractors, subcontractors, subconsultants, vendors, and other entities involved in this Project to carry out the intent of this provision."

Professional Liability Issues

– Project wide electronic data transfer and use agreement

- Define how others (contractors, manufacturers, vendors) may use or not use BIM model.
- For example will data be used by contractor for quantities, sequencing and scheduling? If yes, the contractors should independently verify BIM information, before using or relying on it.
- Will data be used by subcontractors, for eventual use in fabrication? If yes, again the subcontractor should independently verify BIM information, before using or relying on it.

6. “BIM Insurance”

- ▲ Holistic Insurance Program Audit
- ▲ Professional Liability Practice Policy
- ▲ Technology Coverage
- ▲ Information Theft
- ▲ Project-Specific BIM Insurance

6. “BIM Insurance”

- ▲ Holistic Insurance Program Audit
 - GL/PL coordination (professional services vs. means & methods)
 - Property/Builders Risk (valuable papers, soft costs)
 - Umbrella (wrap up exclusions; follow form)

6. “BIM Insurance”

- ▲ Professional Liability Practice Policy Expansion
 - Definition of “Professional Services” for Technology, Software Services
 - Claim Trigger: “Rectification”
 - Electronic Data Transmission

BIM: Another Justification for Contractors Professional Liability Insurance

- ▲ Design-build
- ▲ Agency construction management (CM)
- ▲ CM at-risk
- ▲ Value engineering
- ▲ Design delegation
- ▲ Design assist
- ▲ Constructability reviews
- ▲ Pre-construction services
- ▲ Program management
- ▲ Integrated Project Delivery (IPD)
- ▲ The terms are familiar, but not the definitions or how they affect contracts, insurance, and risk

Do Design & Construction Firms Need a Technology Policy Form?

Technology Coverages

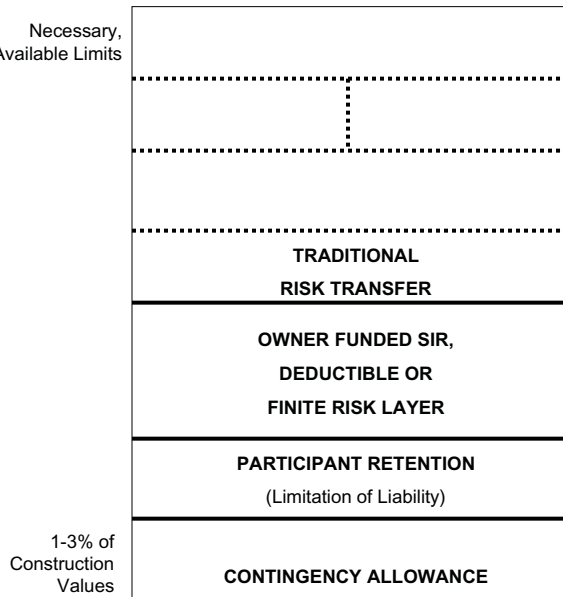
- ▲ **Technology Based Services** – computer and electronic services including data processing, internet services, tech consulting, customer software programming and network management..
 - Electronic transfer of data – processing documents back and forth
- ▲ **Technology Products** – failure of Tech Products to perform the function or serve the purpose intended
 - Production of software products for client
- ▲ **Computer Network Security** – Cyber Liability, hacking, denial of service, transmission of virus to third party
 - Website hosting & document control systems
- ▲ **Multimedia and Advertising** – advertising injury, personal injury + IP cover including copyright, trademark, trade dress, misappropriation of trade secrets
 - Affirmative copyright infringement coverage

6. “BIM Insurance”

- ▲ **Information Theft**
 - What if... a PC disappears from your office with the plans and specs for a completed data center containing millions of consumer records?
 - What if your contract has a confidentiality provision requiring notice of breach?
 - What if the client demands reconstruction of security features and MEP systems?
 - What insurance pays? PL? GL? Property? Internet policy?

6. Project- Specific BIM Insurance

Necessary,
Available Limits



Balances
Available
for Incentive
Payments

1-3% of
Construction
Values

Questions?

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