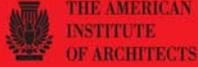


# AIA 2012

## NATIONAL CONVENTION AND DESIGN EXPOSITION

MAY 17-19  
WALTER E. WASHINGTON  
CONVENTION CENTER  
WASHINGTON, D.C.



THE AMERICAN  
INSTITUTE  
OF ARCHITECTS

# DESIGN CONNECTS

**SA204**

**BIM FOR RESIDENTIAL ARCHITECTURE: TAKING IT TO THE NEXT LEVEL IN REAL-WORLD PRACTICE**

**5/19/2012, 8:30:00 AM—10:00:00 AM**

**1.50 LU**

### **Program Description**

This session has been designed to focus on the application and use of building information modeling (BIM) for the residential practitioner who has made the commitment to adopt BIM for his or her practice and is seeking a real-world, practice-oriented session to get to the next level in using BIM for their firm. The speakers, having adopted BIM into their own practices, will share their unique insight with attendees giving a realistic portrayal from the front line of how they have integrated BIM into their prospective business models. Clear examples of opportunities, pitfalls, and lessons learned will serve as case studies to present the session material.

### **Learning Objectives:**

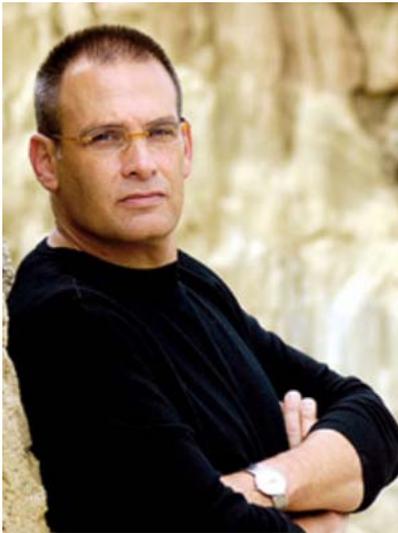
- RECOGNIZE HOW CRITICAL THE ADOPTION OF AN INTEGRATED PROJECT DELIVERY METHODOLOGY IS TO FULL BIM REALIZATION
- DISCUSS HOW TO SET UP BIM TO DERIVE THE BEST RESULTS AND DEFINE WHAT STAFFING AND IMPLEMENTATION REQUIREMENTS FOR THE NEW BIM OFFICE MAY BE REQUIRED
- DEFINE HOW BIM WILL AFFECT A FIRM'S CURRENT PROFESSIONAL SERVICES AGREEMENTS AND HOW REQUIREMENTS FOR PROFESSIONAL INSURANCE RELATING TO THE NEW BIM OFFICE MAY BE UNDERSTOOD
- DEVELOP A PROJECT SPECIFIC OUTLINE FOR COORDINATING WITH SUBCONTRACTORS AND VENDORS WHILE IMPLEMENTING BIM AND REALIZE HOW BEST TO INTEGRATE THEIR RESPECTIVE PROJECT COMPONENTS INTO THE BIM MODEL

**PROVIDER:** AIA CUSTOM RESIDENTIAL ARCHITECTS NETWORK

**SPEAKERS:** STUART NAROFSKY, AIA, LEED AP, AND JAMES WALBRIDGE, AIA

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**Role: Speaker**

**Stuart Narofsky, AIA, LEED AP**

Principal

Narofsky Architecture, New York, NY

Stuart Narofsky, AIA, LEED AP is the principal of Narofsky Architecture, founded in 1983 that also offers design build and interior design services. His partner Jennifer Rusch oversees ways2design, the interior division. Many of their projects are custom homes located in the suburban NYC area. The firm has also designed: multi- family structures; corporate and medical offices; and retail establishments. His awareness and concern about the environment influenced his designs towards more energy efficient buildings and sustainable architecture, in 2006 he became a member of the US Green Building Council. The firm's current emphasis on "design - build" as a more sustainable project delivery process, in conjunction with green building ,is devoted to not only improving the performance of home design, but also diversifying and expanding upon the conventional residential practice. In the last few years Stuart has lectured in many cities in U.S. and South America presenting his practice of "Sustainability in Residential Architecture". His recent lectures in Austin and New York have discussed BIM (building information modeling) and its impact on the residential practitioner as well as project delivery of Green Residential buildings. Stuart is former President of the American Institute of Architects-Long Island Chapter. For ten years he was an Associate Professor of Architecture at New York Institute of Technology, overseeing a design studio and teaching furniture design. More recently as a visiting Professor of Architecture at Pratt Institute, he taught an upper class Design Studio, specializing in modular construction. Stuart has over the past two years given various lectures and participated in workshops at the faculties of Architectures at Universities in Argentina (La Plata) and Bolivia (Santa Cruz, Cochabamba, Sucre and La Paz), on the subjects of Sustainable Architecture and Practicing architecture in New York. His



**Role: Speaker**

**James A. Walbridge, AIA**

President

Tekton Architecture, Inc., San Francisco , CA

James won his first position as a draftsman in 1981 upon completing a two-year vocational technical degree in mechanical drafting while simultaneously earning his high-school diploma. He worked in both architectural and engineering firms until his first exposure to Architect-led Design-Build came in 1984. He studied architecture and graduated from the University of Florida in 1988 with a Bachelor of Design while working both in-the-field and on-the-boards throughout his education. Arriving to California in 1990, he continued his mentorship in a Bay Area Architect-led Design-build firm while earning his California General Contractor's License in 1991. James formed Tekton Architecture in 1995 after becoming a Registered California Architect and subsequently formed Artisan Builders Corporation with Andrew Sinor in 1996 to formalize a true Architect-Led Design-build Practice. Over the past seventeen years, Tekton Architecture has completed a variety residential, commercial and hospitality projects for private clients and was most recently recognized at the 2010 San Francisco AIA Design Awards for their "Ebisu" sushi restaurant project. James currently divides his time between Lincoln, Nebraska where he calls home, and San Francisco where the Firm is based. His diverse design + construction experience has led to leadership positions in the American Institute of Architects on a local, state and national level. He has lectured extensively on the Architect as Master Builder, Architect-led Design-build and Building Information Modeling on a local, state and national level including the AIA National Conferences in San Antonio & New Orleans.

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# BIM for Residential Architecture: Taking it to the next level in Real-World Practice

SESSION ID: SA204  
Saturday May 19, 2012



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Acknowledgements/Credits



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## Learning Objectives

1. Understand how critical the adoption of an "integrated Project delivery" methodology is to exemplify how BIM can be fully realized.
2. Learn how to set up BIM to derive the best results for its utilization and define what staffing & implementation requirements for the new BIM office may be for their firm.
3. Define how BIM will affect a firm's current Professional Services Agreements and how requirements for professional insurance relating to the new BIM office may be understood.
4. Develop a project specific outline for coordinating with subcontractors and vendors while implementing BIM and realize how best to integrate their respective project components into the BIM model.

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- Stuart Narofsky AIA, LEED AP
- James Walbridge, AIA

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# BIM

Building Information Modeling



**BIM** is the process of generating and managing building data during its life cycle. Typically it uses three dimensional, real-time, dynamic building modeling software to increase productivity in building design and construction. The process produces the Building Information Model , which encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components.

[www.wikipedia.com](http://www.wikipedia.com)

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# BIM

## Building information management?

Towards an integrated design practice

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### PROGRAM:

*introduction*

"the new normal" James

"History and Process to BIM"

Stuart

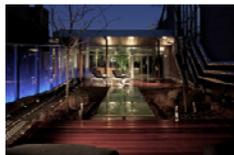
case study : west coast

James

case study : east coast

Stuart

Q + A



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Live from New Orleans 2011

see the video take the test

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ARCHITECT Dec. 2011

**"The New Normal"**

**Differentiation and diversification are part of the architect's DNA.**

*Camille LeFevre for AIArchitect*



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East Coast



West Coast

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## Introduction – Tekton Architecture

### Architect-Led Design-Build / Integrated Project Delivery

"We do not build everything we design and do not build anything we don't design  
– at least not yet"

### Project Types & Acquisition

80% Single Family Residential  
10% Commercial & TI  
10% Hospitality

### Firm Production & CAD / BIM History

2-D Drafting: 1995 – Present *Hand Drawings* & Vectorworks  
3-D Modeling & Parametric: 2001 – Present Sketch-Up & ArchiCad

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## "Diving off the Cliff" – Our foray into BIM

### 2001: Opportunity Knocks!

Repeat Client

Over my Head

Differentiate or Die

"Fast & Light" adoption of BIM.

BIM + ALDB gets the job.



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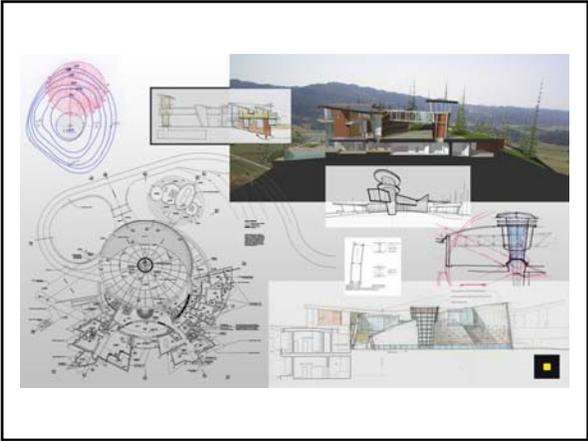
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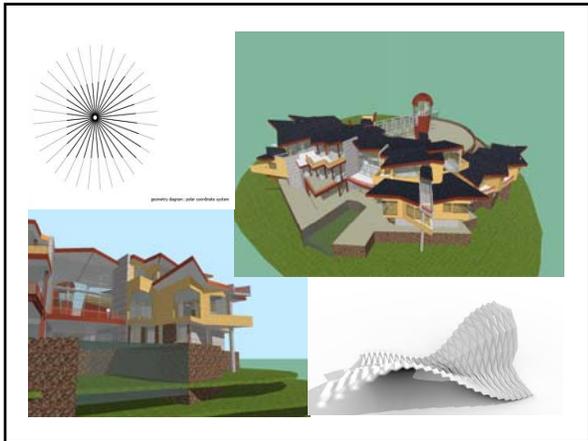
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**BIM** Building Information Management

“You Are A House Guy”

REPAIR MAN  
Accountant  
Designer  
Negotiator  
Architect  
Consultant  
Marriage Counselor  
Babysitter

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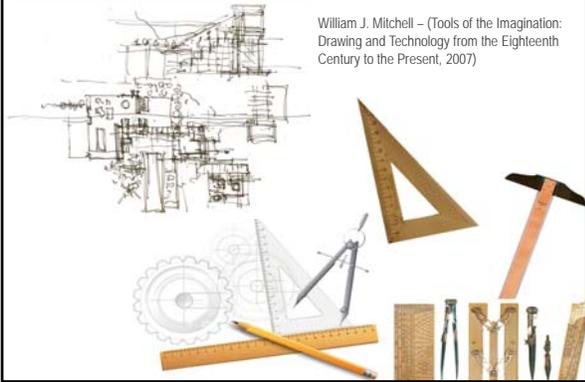
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At each point, they register the momentary direction, speed, pressure and angle of a market engaging a surface; their numerous, subtle variations carrying meaning...



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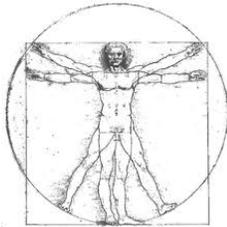
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*"the work our hands do at the command of our eyes is infinite"*  
Leonardo da Vinci (c.1490)

architect  
inventor  
Artist  
Philosopher



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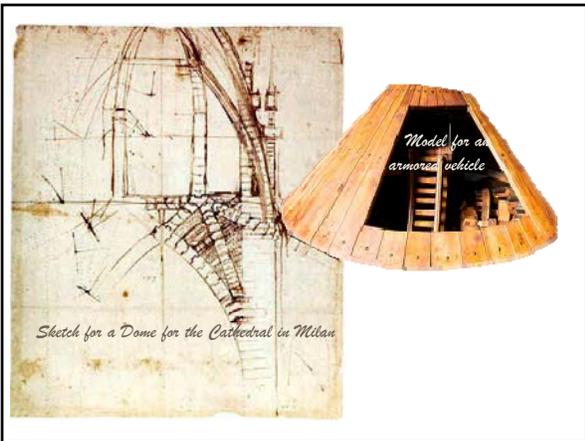
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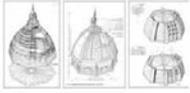
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Filippo Brunelleschi  
(1377-1446)



Today  
master builder team

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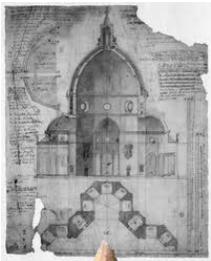
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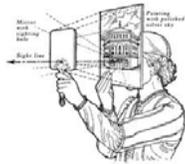
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"marked an event which ultimately was to change the modes, if not the course of Western history" "they are probably the first pictures to correctly embody linear perspective."



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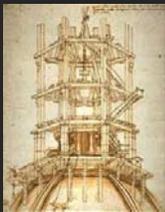
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Means & methods



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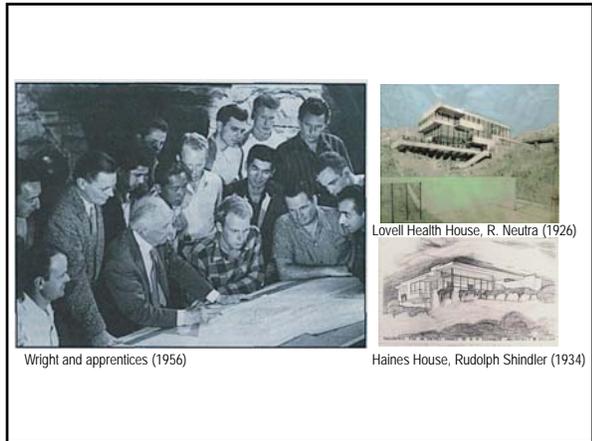
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Wright and apprentices (1956)

Lovell Health House, R. Neutra (1926)

Haines House, Rudolph Schindler (1934)

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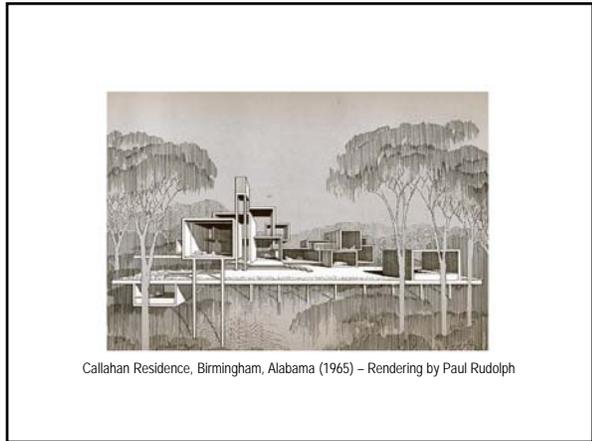
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Callahan Residence, Birmingham, Alabama (1965) – Rendering by Paul Rudolph

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Patel Residence 1994-1997

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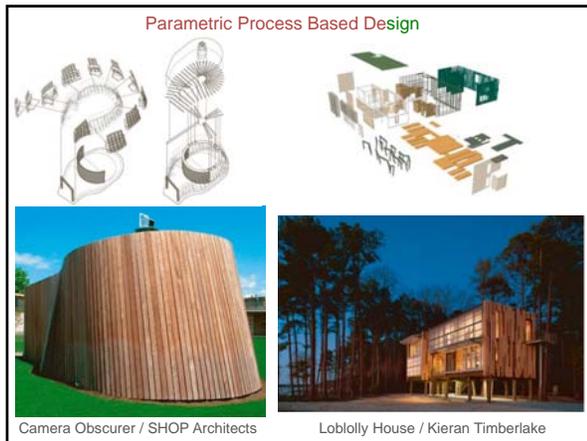
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Doshi Residence 2005

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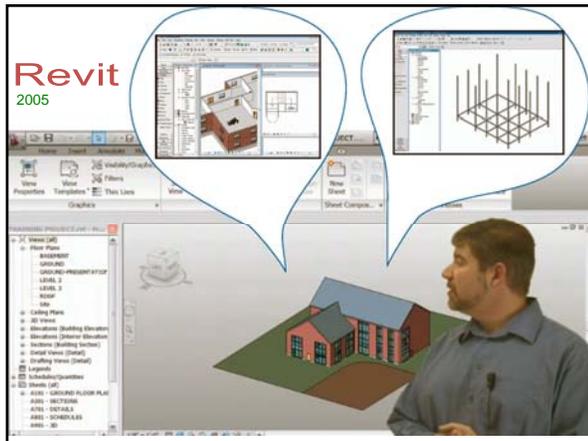
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Revit  
2005

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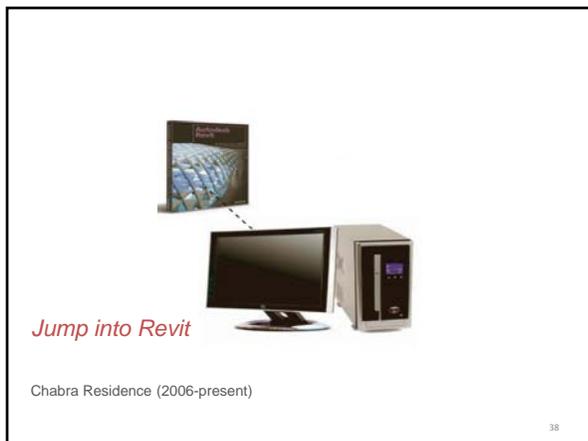
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Jump into Revit

Chabra Residence (2006-present)

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Integrated project team



sociological fact or fiction

on the job site  
virtual or real  
What do these guys want to deal with

What does the Revit guy know?

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- Pencils
- Sketch Paper
- Scale
- Scale Model
- Revit Rendering
- Revit Modeling
- Revit Drawing
- 3D Rendering
- Cad Drawing
- Photoshop

Client

↕

IPD Architect  
CM

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Sub contractors

- Fax
- Email
- Smart Phone
- Digital Camera
- Laptop

Chabra Residence (2006-present)

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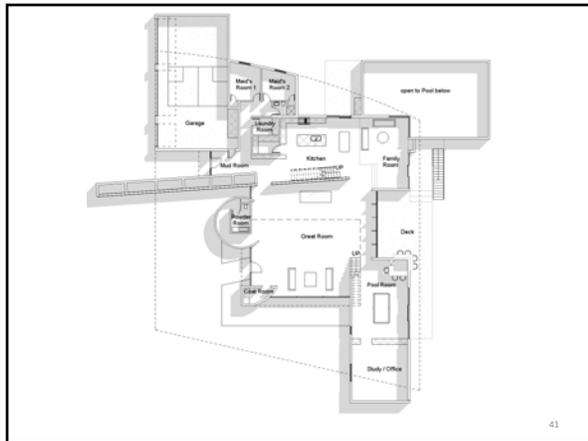
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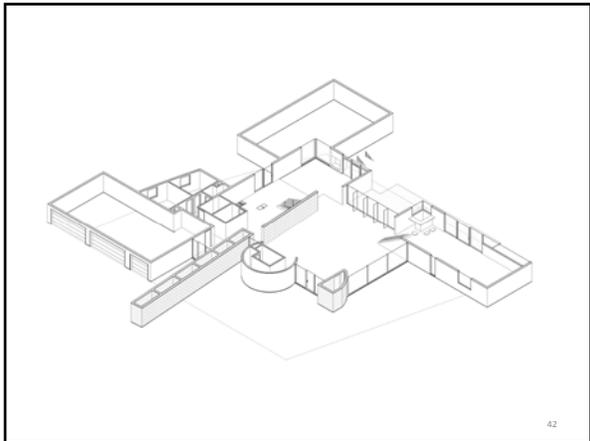
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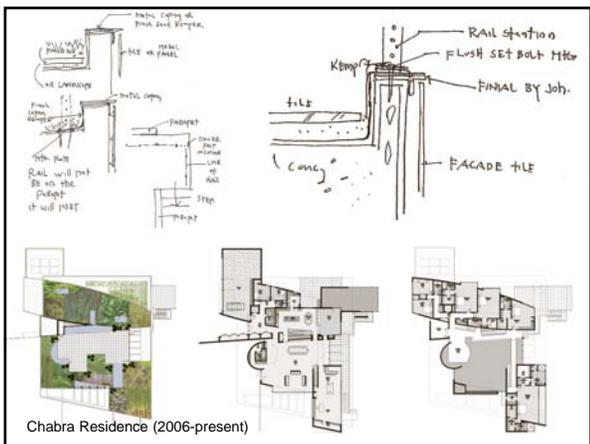
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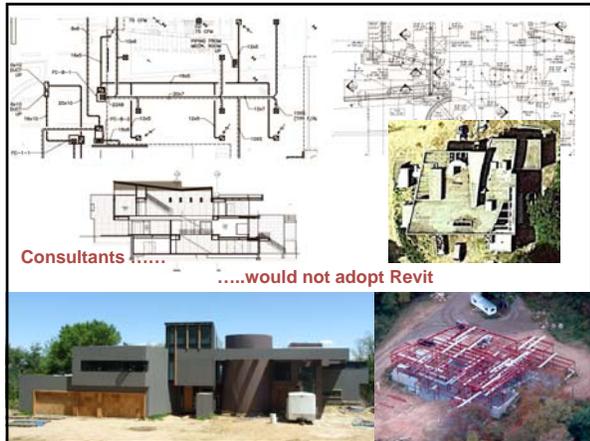
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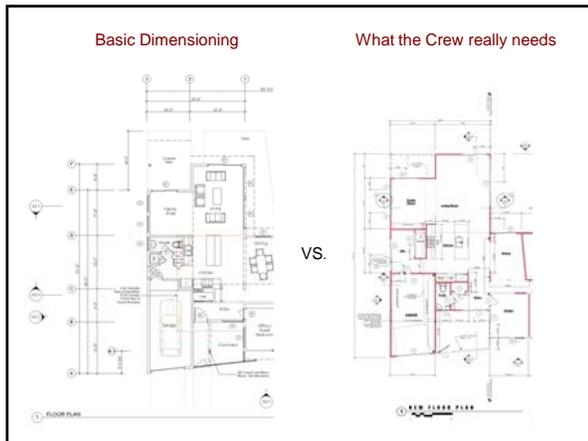
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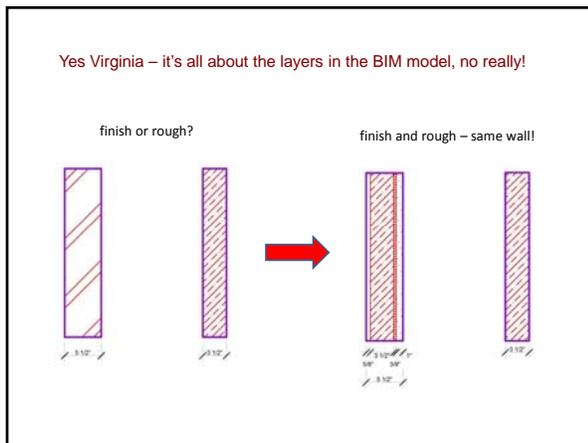
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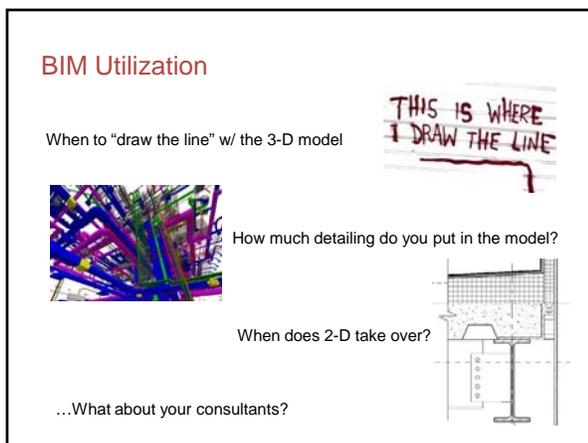
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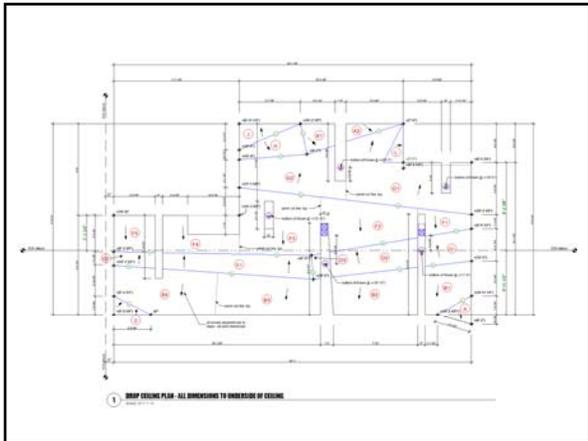
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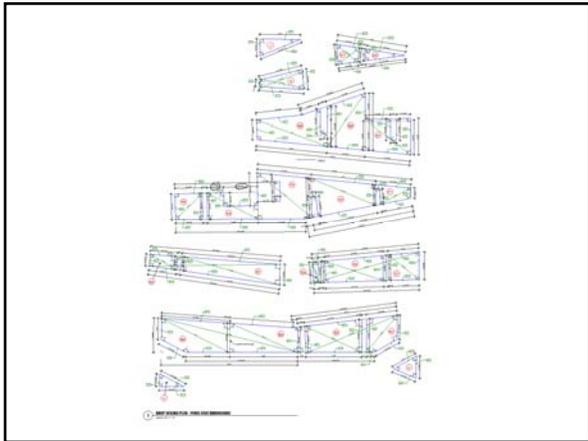
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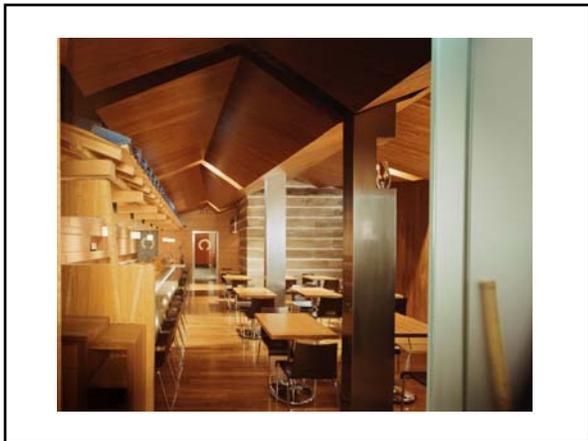
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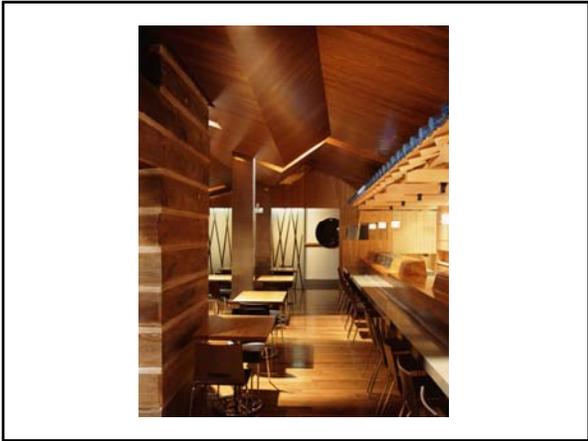
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**The New BIM Office**

This is a Practice focusing on Residential first

Studio Environment – encourages collaboration inherent to BIM

Ability to “look over your shoulder” – eliminate the formalities



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### Base Lines for the BIM Office

BIM requirements for integration:

- Excellent ability with the chosen BIM Program
- Intimate Construction Knowledge (*means & methods*)

Staffing Set-up, Capitol Outlay, Mentoring & Training:

- BIM Program Operator w/ Construction Knowledge Skill-set or; Team of (2); Program Operator w/ Experienced Technical Staff
- Mentoring for younger staff emphasizing technology w/ M&M & training for experienced staff on BIM Program up to a point TBD
- How often do you upgrade? What will the upgrade get you that you didn't have before? How long do you wait prior to upgrading?

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### Critical Issues for the BIM Office

The new BIM Architectural Services production curve:

- Front loading the Agreement's Fee Schedule – is the Owner ready?
- This is complete paradigm shift for the design professional

Architecture Agreements or *Project Agreements*

- Smaller Individual Phases vs. One Large Long.
- Pre-selection for team members prior to bidding based on RFQ's.
- The ability to identify and resolve design conflicts regarding integration with infrastructure early on in the BIM production curve should promote a different compensation structure.

Professional Liability Insurance - Errors & Omissions

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**Case Study: BIM running at 100%**  
*"The D-9 Dream"*

**Process** was critical for the Owner.

Degree of Design Resolution would be very high, construction means & methods will be pushed on all levels.

Project Scope required a cohesive Team.

Building Information Modeling was intrinsic to the **Process**.

Using Computer on-site w/ Subcontractors would be required for integration.

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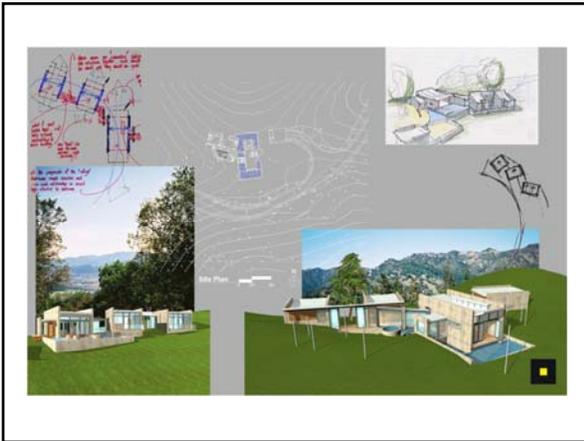
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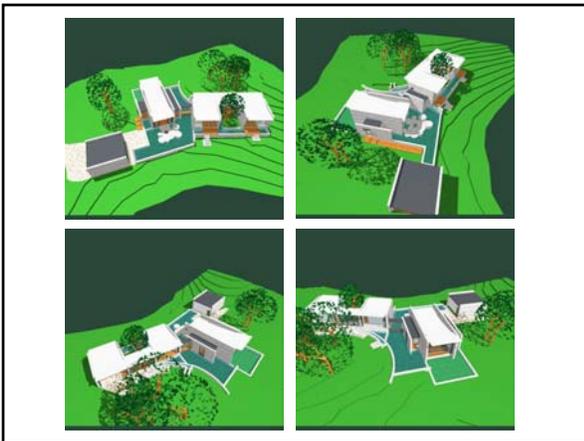
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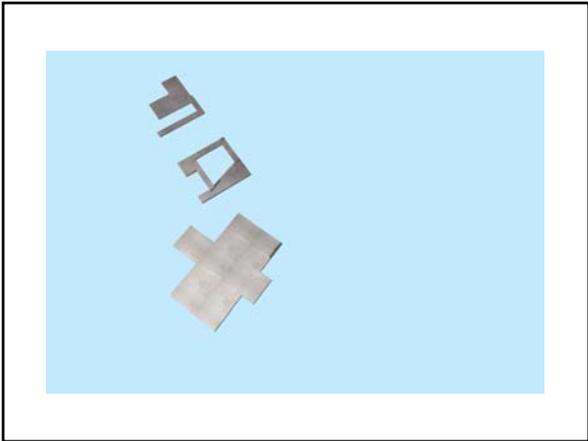
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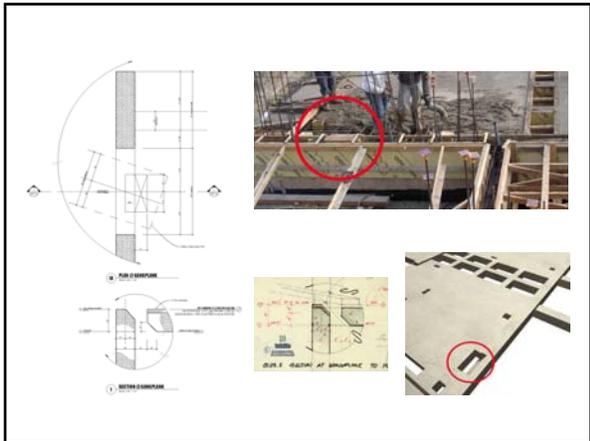
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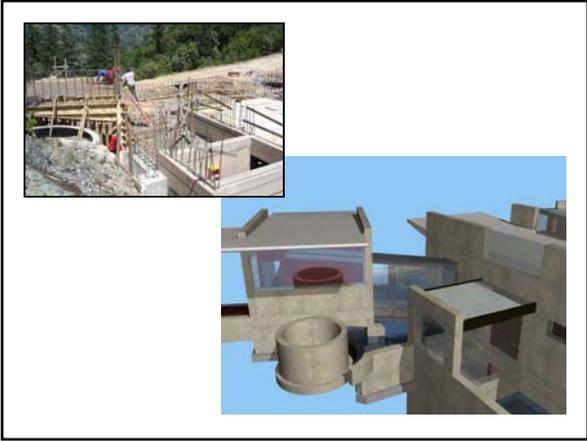
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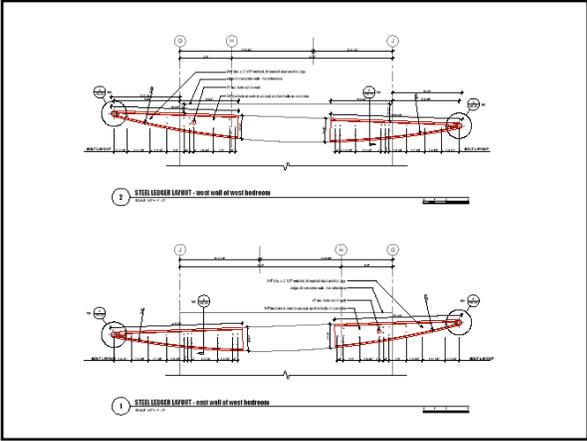
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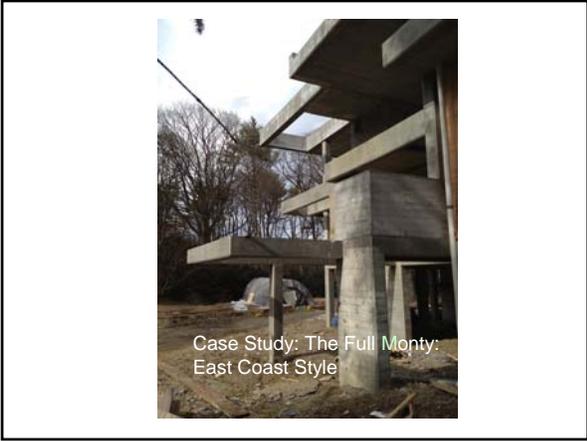
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Greenfield Residence (2008-present)

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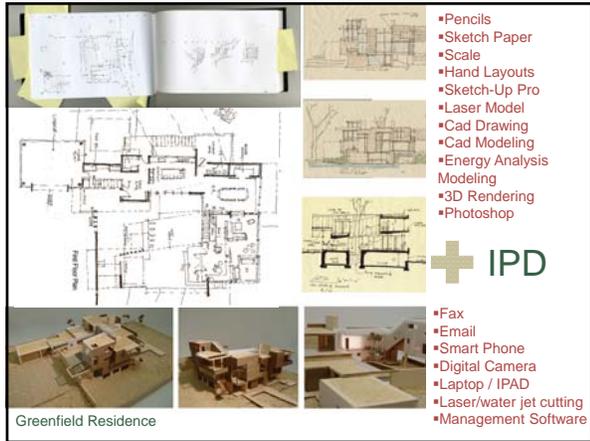
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Greenfield Residence

- Pencils
- Sketch Paper
- Scale
- Hand Layouts
- Sketch-Up Pro
- Laser Model
- Cad Drawing
- Cad Modeling
- Energy Analysis Modeling
- 3D Rendering
- Photoshop

+ IPD

- Fax
- Email
- Smart Phone
- Digital Camera
- Laptop / IPAD
- Laser/water jet cutting
- Management Software

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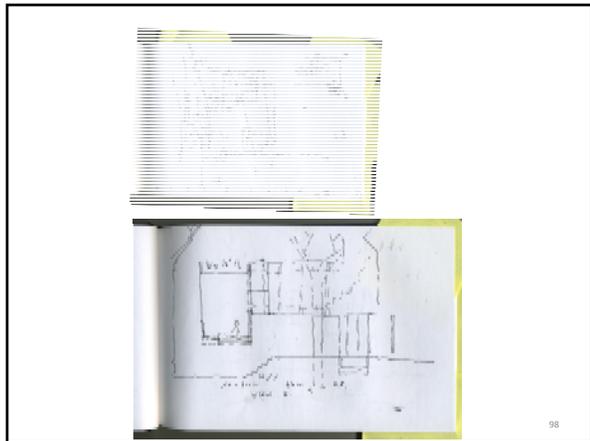
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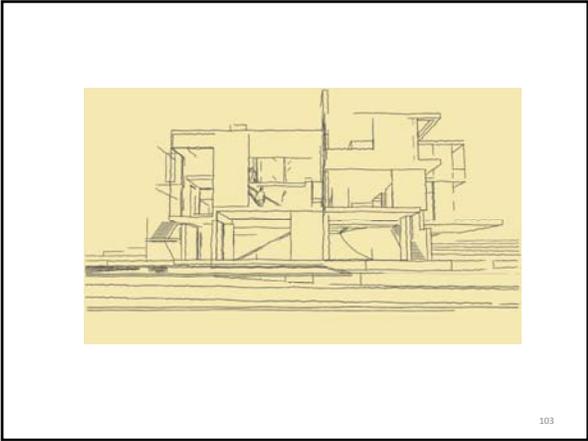
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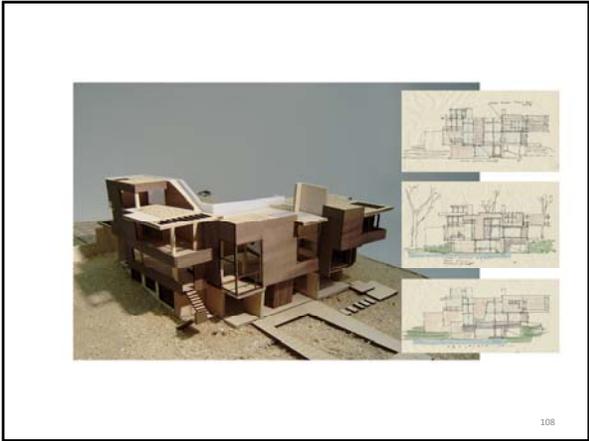
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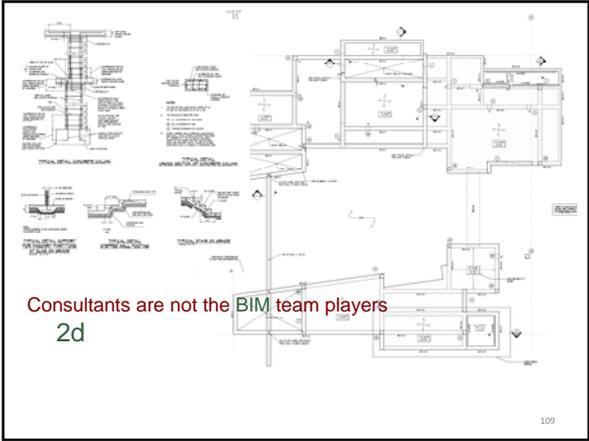
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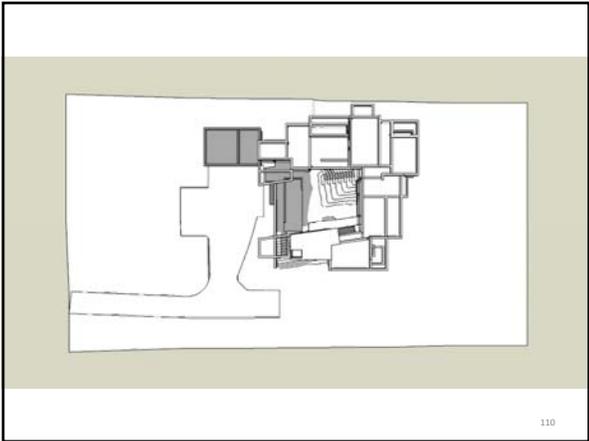
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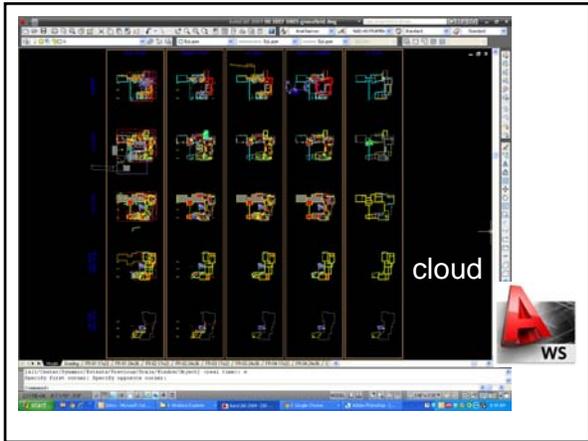
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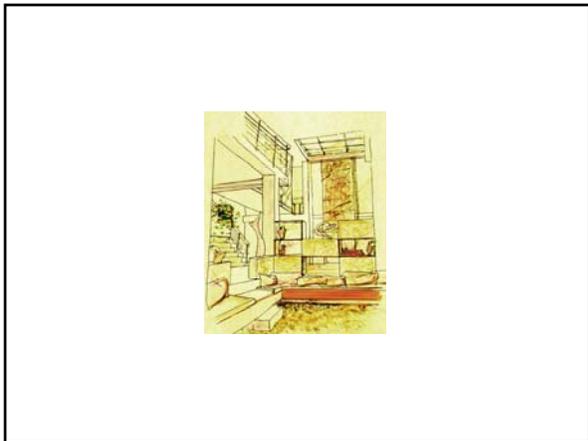
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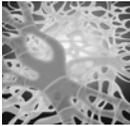
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What happened here?



west coast      synchronicity      east coast

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Q & A



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AIA 2012  
NATIONAL CONVENTION  
AND DESIGN EXPOSITION

DESIGN  
CONNECTS

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