Transformation of the Building industry – From Traditional to Digital

Patrick MacLeamy, FAIA
Chief Executive Officer, HOK
Chairman, buildingSMART International
Traditional Training
Practice at HOK
Awakening – Something has to Change!
Principles for Change
buildingSMART
Traditional Tools
Traditional Process

Front
Roof
Back
Side
Traditional Training

Practice at HOK

Awakening – Something has to Change!

Principles for Change

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Apple Headquarters, Cupertino CA
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Practice at HOK

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Principles for Change

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Building Industry Issues:

• Construction Industry same size as manufacturing
• Slow to adopt IT
• 40% of Energy Consumption
• 40% of Solid Waste
• Lack of Efficiency Gains
Building Industry Issues:

- Building Industry same size as manufacturing
- Slow to adopt IT
- 40% of Energy Consumption
- 40% of Solid Waste
- Lack of Efficiency Gains
Productivity Comparison

Manufacturing

Construction

1980  1990  2000  2010

100%
Traditional Training

Practice at HOK

Awakening – Something has to Change!

**Principles for Change**

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Assembly Plant
Assembly Plant
Building Assembly Plant
Traditional Organization

Owner

Architect

Contractor

Information Exchange
Traditional Organization

Architect <-> Owner <-> Contractor

Risk Gap

buildingSMART International home of openBIM
Traditional Organization

Owner

Architect

Lawyers
CM
Insurance

Contractor
Traditional Organization

Owner

Architect

Lawyers
CM Insurance

Contractor
buildingSMART Organization

Owner

Shared Contract Information Risk / Reward

Architect

Contractor
Traditional Design

- Prog
- Design
- Design Dev
- Construction Documentation
- Bid
- Construction
Traditional Design

- Effort
- Ability to control cost
- Cost of Design Changes
- Prog
- Design
- Design Dev
- Construction Documentation
- Bid
- Construction
- Litigation Phase
buildingSMART Design

Time

Effort

Litigation Phase

Ability to control cost

Cost of Design Changes

Prog Design Dev Construction Documentation Bid Construction

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Traditional Training

Practice at HOK

Awakening – Something has to Change!

Principles for Change

buildingSMART
buildingSMART Processes
buildingSMART Processes
buildingSMART Processes
buildingSMART Processes
buildingSMART Logo
buildingSMART Vision

Attain societal, environmental and economic benefits by creating openBIM standards for Design, Procurement, Assembly and Operation for the Building and Infrastructure Industry.
buildingSMART Values

Open      Neutral and International
Relevant  Agile and Responsive
Non-Profit
buildingSMART Goals

Develop openBIM Standards for buildings & infrastructure
Develop openBIM Compliance Standards
Adopt openBIM Standards as ISO Standards
Support openBIM Adoption for buildings & infrastructure
buildingSMART Organization

International Council

ExCom

Strategic Advisory Council

Executive

Three Core Programs

Standards

Compliance

Chapters
buildingSMART Standards Organization
buildingSMART Standards Process
ISO Standards Originated by bSI

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Questions?