BIM Planning

Photo: BIM Studio team in the Immersive Environments Lab at Penn State

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Five Years
BIM Project Execution Planning Procedure

BIM Goals and Uses

Process

Information Exchanges

Infrastructure
From Project to Organization
INTEGRATING BIM INTO AN ORGANIZATION

BIM OWNER’S GUIDE

PROJECT EXECUTION PLANNING GUIDE

STRATEGIC PLAN

IMPLEMENTATION PLAN

PROCUREMENT PLAN
## Organizational BIM Assessment Profile

### Strategy

<table>
<thead>
<tr>
<th>Level of Maturity</th>
<th>Current</th>
<th>Target</th>
<th>Possible</th>
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#### Mission and Goals
- No Organizational Mission or Goals
- Basic Organizational Mission Established
- Established Basic Organizational Goals
- Organization Mission address purpose, services, values at minimum
- Goals are specific, measurable, attainable, relevant, and timely
- BIM Objectives are specific, measurable, attainable, relevant, and timely

#### Vision and Objectives
- No BIM Vision or Objectives Defined
- Basic BIM Vision is Established
- Established Basic BIM Objectives
- BIM Vision address mission, strategy, and culture
- BIM Objectives are specific, measurable, attainable, relevant, and timely

#### Management Support
- No Management Support
- Limited Support for feasibility study
- Full Support for BIM Implementatio n with Some Resource Commitment
- Limited support for continuing efforts with a limited budget

#### BIM Champion
- No BIM Champion
- BIM Champion identified but limited time committed to BIM initiative
- BIM Champion with Adequate Time Commitment
- Executive Level BIM Support Champion with time commitment

#### Planning Team
- No Planning Team
- Small Ad-hoc Committee with only those interested in BIM
- BIM Committee is formalized but not inclusive of all operating units
- Multi-disciplinary BIM Planning Committee established with members from all operating units

### Uses

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#### Project Uses
- No BIM Uses for Projects identified
- Record (As-Built) BIM model received by operations
- Record BIM data imported or referenced for operational uses
- BIM data manually maintained for operational uses
- BIM data is directly integrated with operational systems
- BIM data maintained with operational systems in real-time

#### Operational Uses
- No BIM Uses for Operations identified
- No BIM Uses for Projects identified
- Minimal Owner Requirements for BIM
- Extensive use of BIM with limited sharing between parties
- Extensive use of BIM with sharing between parties within project phases
- Open sharing of BIM Data across all parties and project phases

### Process

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#### Project Process
- No external project BIM Processes Documented
- High-level BIM Process Documented for Each Party
- Integrated High Level BIM Process Documented
- Detailed BIM Process Documented for all BIM Uses
- Detailed BIM Process Documented and Regularly Maintained and Updated

#### Operation Processes
- No internal organizational BIM Processes Documented
- High-level BIM Process Documented for each operating unit
- Integrated High level organizational Process documented
- Detailed BIM Process Documented for primary organizational Uses
- Detailed BIM Process Documented for all BIM Uses
- Detailed BIM Process Documented and Regularly Maintained and Updated
<table>
<thead>
<tr>
<th>Model Element Breakdown</th>
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BIM PLANNING ELEMENTS

Strategy
- The Purpose of BIM Implementation
  - Mission – Vision – Goals - Objectives

Uses
- The Specific Method of Implementing BIM
  - Gathering - Generating – Analyzing – Communicating – Realizing

Process
- The Means of BIM Implementation
  - Current – Target – Transition

Information
- The Information Needed About the Facility
  - Model Element Breakdown – Level of Development – Facility Data

Infrastructure
- The Infrastructure Needs to Implement BIM
  - Software – Hardware – Workspace

Personnel
- The Affects of BIM on Personnel
  - Roles & Responsibilities – Hierarchy – Education – Training – Change Readiness
The Next Step
<table>
<thead>
<tr>
<th>BIM Planning Elements</th>
<th>Strategy</th>
<th>Uses</th>
<th>Process</th>
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**Primary BIM Uses**

**Secondary BIM Uses**

- Programming
- Site Analysis
- Phase Planning
- Cost Estimation
- Existing Conditions Modeling
Coordination

a process in which Clash Detection software is used during the coordination process to determine field conflicts by comparing 3D models of building systems

(computer integrated construction research program)

Clash Detection
Collision Avoidance
Clash prevention
Collision Detection
Design Coordination
Interference Detection
Interference Management
Spatial Coordination
MEP Coordination
The Uses of BIM

BIM Use

Purposes
- Gather
- Generate
- Analyze
  - Communicate
  - Realize

Characteristics
- Facility Element
- Facility Phase
- Discipline
- Level of Development

Gather
- Quality
- Capture

Generate
- Monitor
- Prescribe
- Size
- Arrange

Analyze
- Coordinate
- Forecast
- Validate

Communicate
- Visualize
- Draw
- Transform
- Document

Realize
- Fabricate
- Assemble
- Control
- Regulate
Provides a common language for communicating why BIM is implemented

- Better understand workflows
- Better understand information exchanges
- Standardize development of contract language
- Provides a framework for industry to develop upon