

TN OSA PM BIM Checklist-Designers

Pre-Planning

- Designate design disciplines required to produce BIM
 - All building systems will be modeled
- Designate construction trades required to produce BIM
 - All building systems will be modeled

Design Project Startup

Prior to completion of program verification phase:

- Review Resume of BIM Manager
 - Professional qualifications
 - BIM knowledge
 - Previous experience in BIM management role
- Review Proposed Web-Based Collaboration System
 - Ability of Owner to access all content
 - Automated versioning of BIM and other files
 - Ability to access previous versions of BIM files
- Review BIM Execution Plan
 - All disciplines required to produce BIMs are included
 - All topics are covered
 - All disciplines are required to upload BIM revisions to the collaboration site promptly
 - Modeling standards cover all indicated sub-topics
 - Modeling standards, especially naming conventions, are consistent across all disciplines
 - Model naming indicates that models will be segmented by discipline and floor
 - Model naming makes it easy to identify contents of each model file
 - Model naming indicates that collaboration system versioning rather than dates will be used to manage model revisions
 - Description of generating drawings is clear that drawings will be derived from the models and that they will not be edited subsequent to extraction
 - Verify with team that all software products used for model authoring are IFC and COBie compliant
 - Model analysis plan indicates that model will be used for:
 - Space area calculations
 - Energy analysis (if required for project)
 - Building system coordination
 - Space and equipment inventories in COBie format
 - Project deliverables include all BIM requirements
 - Project deliverable section describes how each deliverable will be extracted from the coordinated models
 - Project team describes acceptable level of quality control
 - All organizations providing BIM deliverables have signed

Schematic Design

- Review BIM Deliverable
 - Massing BIM in IFC format

- Geo-reference mark and annotation
- Review/Validate COBie Deliverable using automated tools
 - Contact, Facility, Floor, & Space worksheets are provided and valid

Design Development

- Review BIM Deliverables
 - BIM Partitioned by Discipline and Floor in IFC Format
 - Site Model in IFC or 3D DWG Format
 - Polyline of FEMA building footprint
 - Geo-reference mark and annotation
- Spot check to see that drawings are being exported from the models
 - The information shown in the drawings is seen in the model
- Spot check to see that areas are being calculated from the models
 - Area calculations in the model match those on the drawings
- Review/Validate COBie Deliverable using automated tools
 - Contact, Facility, Floor, Space, Zone, Type, System, & Attribute worksheets are provided and valid
- Review Interference Report
 - All interferences are resolved or adequately annotated
- Review Energy Analysis Report
 - Verify that energy Analysis input came from the Design BIMs

Construction Documents

- Review BIM Deliverables
 - BIM Partitioned by Discipline and Floor in IFC Format
 - Site Model in IFC or 3D DWG Format
 - Polyline of FEMA building footprint
 - Geo-reference mark and annotation
- Spot check to see that drawings are being exported from the models
 - The information shown in the drawings is seen in the model
- Spot check to see that areas are being calculated from the models
 - The area calculations in the model match those on the drawings
- Review/Validate COBie Deliverable using automated tools
 - Contact, Facility, Floor, Space, Zone, Type, Component, System, & Attribute worksheets are provided and valid
- Review Interference Report
 - All interferences have been resolved
- Review Energy Analysis Report
 - Verify that the energy Analysis input came from the Design BIMs

Bidding Phase

- Review Conformed Bid BIMs

- Must reflect addenda and accepted alternates
 - Must be delivered in IFC and native format partitioned by floor and discipline
 - Site Model in native or 3D DWG Format
- Review Conformed COBie File
 - Reflects changes in conformed bid BIMs
 - Run automated check to ensure conformance with Tennessee's BIM standards

Construction Closeout

- Deliver As-Built BIMs to Designer for Review for Conformance to Design Intent

TN OSA PM BIM Checklist-Contractors

Pre-Construction

- Provide Conformed Bid BIMs in IFC and native format, as well as COBie spreadsheet to Contractor
 - All Conformed Bid BIMs and COBie spreadsheet have been delivered to the Contractor

Within 30 days:

- Review Resume of BIM Manager
 - Professional qualifications
 - BIM knowledge
 - Previous experience in BIM management role
- Review Proposed Web-Based Collaboration System
 - Ability of Owner to access all content
 - Automated versioning of BIM and other files
 - Ability to access previous versions of BIM files
 - The collaboration site is configured to provide all trades with access to all models
 - The collaboration site prevents changes to one trade's model(s) by another trade
- Review BIM Execution Plan
 - Construction team is modeling the complete building
 - All trades required to produce BIMs are included
 - Each trade has designated a BIM Coordinator
 - All topics are covered
 - All trades are required to share BIM models via the collaboration site
 - A computer with software capable of viewing merged models is provided onsite
 - Modeling standards cover all indicated sub-topics
 - Modeling standards, especially naming conventions, are consistent across all trades
 - Modeling standards require geo-referencing of all BIMs
 - Model naming indicates that models will be segmented by discipline and floor
 - Model naming makes it easy to identify contents of each model file
 - Model naming indicates that collaboration system versioning rather than dates will be used to manage model revisions
 - Kickoff meeting attendees, location, date, and agenda are provided
 - Kickoff meeting agenda includes topics in outline
 - Description of the processes for using BIMs during construction coordination include:
 - Reference model(s) to be used by all trades
 - Technique to be used for modeling clearances
 - Partitioning of model for purposes of coordination
 - Sequence of coordination
 - Responsibility of trades to upload models to collaboration system
 - Schedule for uploads

- List of interference checks to be performed, typically each system against each other system (structural vs. plumbing, structural vs. duct, structural vs. electrical, duct vs. plumbing, etc.)
 - Responsibility for performing interference checks
 - Process and schedule for reviewing interferences and assigning responsibility for resolution
 - Process for tracking interference resolution
 - Process for signing off on a Coordination BIM
 - Requirement to build to signed off Coordination BIM
 - Requirement to generate all shop and coordination drawings from signed off Coordination BIM
 - Verify with team that all software products used for model authoring are IFC and COBie compliant
 - Identifies other construction-phase analyses including:
 - Software to be used
 - BIMs to be analyzed
 - Responsible team members
 - Process and responsibility for insuring that all building configuration changes resulting from RFI responses, change orders, etc. are incorporated in the Construction BIM
 - Project deliverables include As-Built BIMs partitioned by floor in IFC format, site and landscape model in IFC or 3D DWG format, As-Built drawings extracted from As-Built BIMs, COBie spreadsheet, all documents listed in COBie spreadsheet
 - Project deliverable section describes how each deliverable will be produced and delivered from the coordinated Construction models
 - Project team describes acceptable level of quality control
 - All organizations providing BIM deliverables have signed
- Attend BIM Kickoff Meeting

Coordination Phase

- Verify that Shop Drawings are being extracted from Coordinated BIMs
 - The information shown in the Shop drawings is seen in the model(s)
- Verify that Coordination Drawings are being extracted from Coordinated BIMs
 - The information shown in the drawings is seen in the model(s)

Construction Phase

- Verify that Construction BIMs are being maintained to reflect any field changes or change orders
 - Approved building configuration changes have been modeled in the Construction BIMs
- Spot check that equipment inventory and documents are maintained in the COBie format
 - Don't wait until closeout to find out whether the contractor is capable of producing a COBie spreadsheet

Project Closeout Phase

- Receive As-Built BIMs in IFC format (site may be in 3D DWG)
 - All As-Built BIMs have been delivered
- Verify separate BIMs for each floor and discipline
 - As-Built BIMs have been partitioned by floor and discipline in IFC format. The site model may be in IFC or 3D DWG format
- Verify As-Built drawings are extracted from the As-Built BIMs
 - The information shown in the As-Built drawings is seen in the As-built BIMs
- Verify that As-Built BIMs have been reviewed by Designer for conformance to design intent
- Receive and Validate COBie Deliverable using automated tools
 - Contact, Facility, Floor, Space, Zone, Type, Component, System, Document, & Attribute worksheets are provided and valid
 - All documents listed are provided