



Contractors need models they can understand, use and trust

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Contractor Aspirations for BIM

BETTER RISK MANAGEMENT OF BUDGET, PROGRAMME & OHS

- “ Design Validation
- “ Value Management
- “ Design Co-ordination
- “ Reduction of document errors and omissions
- “ Construction Logistics
- “ Design for manufacture, prefabrication and assembly
- “ Reduction of rework, programme duration claims and litigation
- “ Safety in Design and Safety in Construction

Current Impediments to Contractor BIM

CONTRACTORS DON'T MODEL - THEY RELY ON YOUR MODELS

- “ Typical current BIM plans at tender are defensive and restrictive
 - not collaborative
 - only address the consultant requirements and don't anticipate use by Contractor
 - only mention minimum deliverables – as-built models and 4D
- “ Certain fundamental info/intelligence are missing from the models for contractors to effectively and collaboratively use the models
- “ Drawings and schedules don't originate from models
- “ General lack of QA in model preparation and export
- “ Confusion over requirements for native files, navis files and ifcs

Essential Modelling Requirements

ACCURATE AND CORRECTLY ASSEMBLED MODELS

- “ Element names – logical and consistent
- “ Material types
- “ Levels
- “ Sizes (length, width, height, area, volume, etc)
- “ Fire ratings, acoustic ratings, concrete strength, reo rates, etc
- “ Uniform Construction Element Classification, e.g. Omniclass, Uniclass, etc
- “ Model break-up to match general construction process (build before we build)
- “ Appropriate use and specification of IFCs
- “ Model mapping to IFC codes
- “ **Work Breakdown Structure (WBS)**
- “ **Work Package**
- “ **Construction ID**

Services Systems

TYPICALLY 40% CAPITAL COST AND MAJOR RISK

- “ Separate models for separate disciplines
- “ Duct, pipe and conduit system naming and associated Identification.
 - Model progression requires systematic isolation of all duct, pipe and conduit systems.
- “ Naming conventions should address the following criteria
 - Equipment Identification (where the Duct or Pipe Systems originated from)
 - Space / Room or Zone served.
 - Type of System – Supply, Return Air etc
 - Services Type – e.g Cable Tray Identification should incorporate Switch Board and Switch Room Location.

Services Systems Data

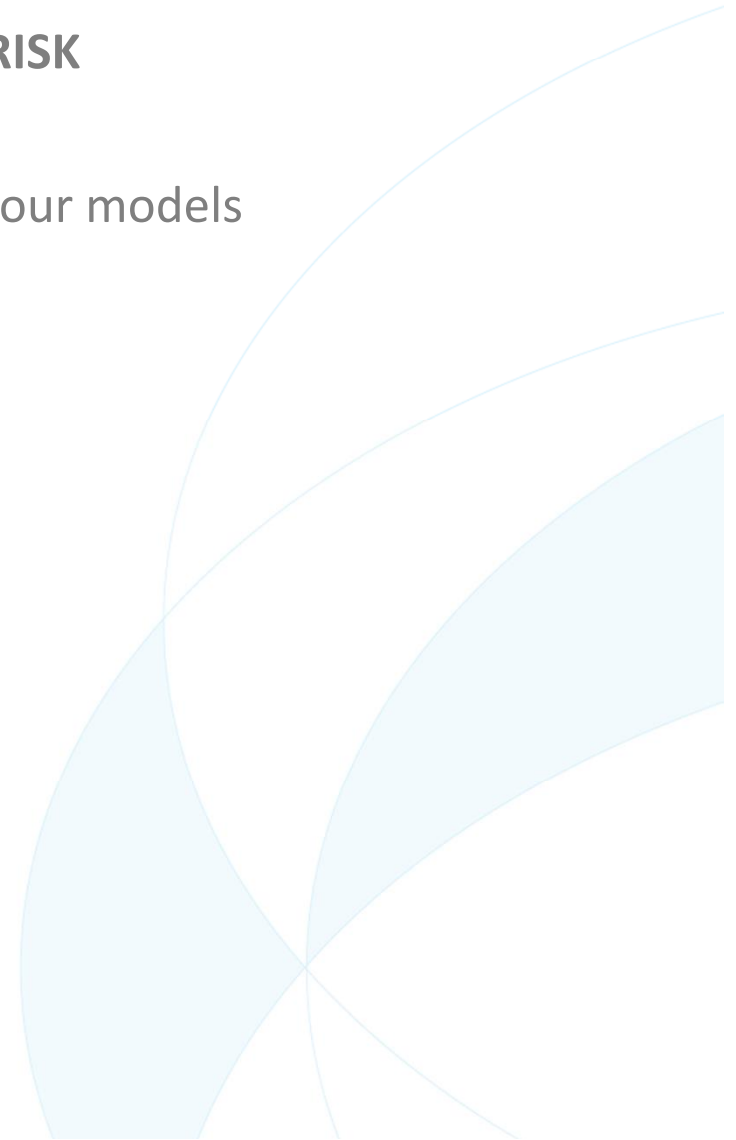
CLOSED SYSTEMS AND ASSOCIATED DATA

- “ Ensure all duct and pipe systems are closed to allow for system information flow to exist within the models.
- “ Allows Services Managers and Sub-contractors to assess equipment selections based on real data within the models as opposed to utilising antiquated calculation processes and take-off.
- “ Performance data is the basis for the effective review of design compliance, design alternatives and budget and hence should be embedded within the design model.
- “ BIM is about a Single Point of Truth for data and therefore performance data should exist in the model and schedules extracted from the Model Equipment.

Drawings & Schedules

CONTRACTUAL DELIVERABLES & OTHER MAJOR RISK

- “ Should all originate from the models
- “ If not, why should the contractor trust or use your models



What Contractor Needs from You

TO UNDERSTAND AND COMMIT TO A WELL MANAGED BIM PROCESS

- “ Needs you to want to collaborate
- “ Needs you to know how to use your 3d modelling software
- “ Wants you to understand how they might use BIM
- “ Requires you to audit and correct your models regularly and definitely prior to each required deliverable.
- “ Needs you to understand and systemise your model export process so you provide consistent models and data.
- “ Requires that the drawings and schedules submitted as required deliverables including tender and construction documents be a direct output from the model (views/sheets/extractions).
- “ Wants to work with your experienced design documentation and co-ordination staff - **not your BIM Manager**

What the Contractor Needs to Do

CONTRACTOR NEEDS TO INVEST TIME TO UNDERSTAND BIM PROCESSES

- “ Needs to understand how long it takes you to model and how that differs from a traditional 2D process
- “ Needs to explain to you how they might use BIM on the project
- “ Needs to train their staff in how to use BIM collaboration and co-ordination software such as Navisworks and Solibri
- “ Needs to understand that are still the builders and they shouldn't allocate senior design management responsibilities to modelling technicians
- “ Needs to commit to BIM and drive it and make it a standard process the same as any other process.

Thank You

Questions?





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