BIM Survey Specification

Peter Folwell & Andy McKay
Why the need for the BIM Survey Specification?

Final cost implications

What the customer really needed

Specification provided

Model expectations

Various changes

When it was delivered
Why the need for the BIM Survey Specification?
3D Measured Surveys in BIM
Level of Detail...

Survey Level 1: Mass model
Survey Level 2: Shell & Core Model
Survey Level 3: Standard Survey Model
Survey Level 4: Detailed Survey Model
Survey Level 5: Detailed Survey Model with client supplied meta-data
Level of Detail....

Survey Level 1 – Mass Model

- Overall mass model
- No window or door openings
Level of Detail....

Survey Level 2 – Shell & Core Model

- Major structural components
- Floor slabs, columns, beams
- Major structural openings
- No services or families
Level of Detail....

Survey Level 3 – Standard Survey Model

- Primary architectural features
- Basic families
- Major services in outline form
Level of Detail....

Survey Level 4 – Detailed Survey Model

- Typical 1:50 architectural features
- Detailed families
- Major F.F.E.
- Major and minor MEP services
- Surface patterns/materials
Level of Detail....

Survey Level 5 – Detailed Survey Model with client supplied meta-data

- As SG 4 with:
- Identification of services
- Construction materials / build-up of walls
- May involve penetrative surveys or historic records
Accuracy & Modelling Tolerances....

Survey Accuracy
- Underlying Control Network
- Registration of scans
- Type of scanner
- Survey Methodology

Modelling Tolerances
- Nature of the building
- Verticality of walls
- Purpose of project
- Usability of final model
Project Considerations....

Inaccessible Areas

Deliverables

Quality Checking Procedures

Point Cloud Density

Liability
Detail Check List....

Of course every project is different!

<table>
<thead>
<tr>
<th>Building</th>
<th>Level of Detail</th>
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<tbody>
<tr>
<td></td>
<td>L1</td>
</tr>
<tr>
<td>Floor / Slab</td>
<td>✗</td>
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<tr>
<td>Floor modelled showing overall thickness</td>
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<tr>
<td>Floor finishes also shown where applicable</td>
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<tr>
<td>Floor finishes and construction also shown where applicable</td>
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<tr>
<td>Walls</td>
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<tr>
<td>External profile modelled as massing object</td>
<td>✗</td>
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<tr>
<td>Wall modelled indicating overall thickness</td>
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<tr>
<td>Wall type also identified as internal or external where possible</td>
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<tr>
<td>Wall type identified as internal, external, structural, core where possible.</td>
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<tr>
<td>Wall type identified and construction</td>
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</tbody>
</table>
Detailed modelling considerations

- Worksets
- Warnings
- Constraints
- Phasing
- Shared Parameters
Further Development

Industry Specific i.e. Retail, Rail

New capabilities within evolving versions of Revit

Other BIM applications outside of Revit i.e. Archicad, Bentley, Tekla, etc

Greater alignment with protocols, standards & data transfer
Plowman Craven Measurement

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