Measured Building Survey (LOD300 Equivalent) - Revit Model - Specification

This document should be completed by either the tenderer or the client to ensure that the level of detail produced in a SolidPoint Revit model is consistent with client expectations. This is to replace the standard LOD requirements for tender purposes as the standard LOD scale does not lend itself to existing BIM surveys.

The following tables refer to the banding tables indicated on page 12-13 (Section 2.3) in The RICS Measured surveys of land, buildings and utilities 3rd edition. The tolerance values shown are for Sigma 1 X,Y and Z. Please specify a level of detail required for each component by indicating the band required. The tolerance allows us to simplify the model where appropriate to allow for Vertical and lateral deviation, while closely matching the raw data when possible. For Sites with varying levels of detail required, please provide a Site/Location Plan with particular areas highlighted. Please fill out a set of tables to show the level of detail relevant to each area.

If you are unsure on how to fill in this document, please call us for advice on 01332 898350

✓ = LOD 300 Buildings ✓ = Immediate Site

EXTERNAL WALLS			
Level of Detail (Only 1 tick required to choose level of detail and accuracy tolerance required)	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Structural envelopes modelled as massing objects. (300mm Assumed Wall)			
Wall/Curtain Wall type modelled and identified as an overall thickness		✓	
Wall construction will be fully identified within wall type if required, (information to be provided by third party)			

Please tick any items for additional detail or list in other box below:

✓	Wall Finish Materials		Window/Door Lintels
	Cornice		Window/Door Sills
	Plinths	✓	Window/Door Surrounds
✓	Reveals		Quoins
✓	Large Vents >300mm	✓	Wall Capping
	Major External MEP > 150mm profile		Boot Scrapers
	External Electrical Fixtures		Fruit Swag

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

INTERNAL WALLS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Wall type modelled and identified as an overall thickness Curtain Walls will be used where appropriate.		✓	
Wall construction will be fully identified within wall type, (information to be provided by third party)			

Please tick For additional detail or list in other box below:

	Finish Materials		Reveals
	Skirting		Wainscoting/Paneling
	Coving		Ornate Moulding/Decoration
	Dado rail		

Other:

INTERNAL FLOORS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Floor type modelled and identified as an overall thickness where measurable. Otherwise will be shown as a generic "50mm thick (assumed)" floor to allow for potential voids.		✓	
Floor/Slab construction will be fully identified within floor type, (information to be provided by third party)			

Please tick For additional detail or list in other box below:

	Finish Materials		Modified Floor (to represent uneven floors)
	Service Hatches		Beams
	Floor Joists		Ramps
	Internal Drainage / Inspection		Railings around voids

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

ROOF			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Structural envelopes modelled as massing objects (300mm Assumed Roof)			
Roof type modelled and identified as an overall thickness where measurable. Otherwise it will be shown as a generic "50mm thick (assumed)".			✓
Roof construction will be fully identified within Roof type, (information to be provided by third party)			

Please tick For additional detail or list in other box below:

✓	Finish Materials	✓	Soffit
✓	Chimneys	✓	Facias
✓	Roof Lights		Furrings
	Roof Anchors		Diagonal Bracing
	Large Vents		Brackets
	Cowl		Noggins
	Truss System (if visible)		Gutter
	Purlins (if visible)		RWP's & SVP's
	Gable Ladders		External MEP
	Joists		Minor External Pipework (>50mm ø)

Other: Survey only carried out below ceilings, Visible truss systems will be modeled if visible.

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

COLUMNS, BEAMS, BRACING AND GRIDS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Columns modelled as rectangular geometry using overall sizes and attached to structural grid where appropriate.		✓	
Columns, Beams and Major Bracing modelled using correct profiles and attached to structural grid where appropriate. Revit Structural framing/columns used where appropriate.			
As above but with more detail for example modelling steel junctions, brackets, plates etc.			
As above with 3rd party information to identify columns, beams and bracing that may be hidden.			

Please tick For additional detail or list in other box below:

	Finish Materials		Diagonal Bracing
✓	Haunches		Structural Connections
	Brackets		Nuts and Bolts
	Plates		

Other:

CEILINGS AND BULKHEADS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Modelled as plain with a generic 50mm thickness to identify potential ceiling void. With 50mm (assumed wall for vertical bulkheads)			✓
As above with structure within ceiling void modelled as required. Access to ceiling void must be arranged or visible from floor level. Material finishes and surface patterns to be applied to represent accurate ceiling grid.			
As above with ceiling type to show construction where visible, using 3rd party information if available			

Please tick For additional detail or list in other box below:

	Finish Materials		Mechanical Fixtures
	Ornate Moulding		Electrical Fixtures
	Ceiling Joists		Ceiling Grids

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

EXTERNAL DOORS AND WINDOWS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Structural openings only			
Modelled with basic generic families to show frames and glazing only, curtain walls will be used where appropriate.		✓	
As above with sills, heads, mullions, glazing bars and opening sections.			
As above with ironmongery and construction details from 3rd party information.			

Please tick For additional detail or list in other box below:

	Finish Materials		Shutters
	Plaster Internal Reveal		Internal Sills
✓	Internal Chamfers		

Other:

INTERNAL DOORS AND WINDOWS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Basic families to show swing direction and door leaf in a structural opening		✓	
Modelled with basic generic families to show frames and door leafs for doors, frames and glazing for windows, curtain walls will be used where appropriate.			
As above with sills, mullions, glazing bars, opening sections, Architrave and moulding detail			
As above with ironmongery and construction details.			

Please tick For additional detail or list in other box below:

	Finish Materials		Shutters
	Internal Chamfers		

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

STAIRS STEPS AND ESCALATORS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Stair Modelled using standard monolithic system family			
Stairs modelled as surveyed, monolithic/non-monolithic			✓
As above with handrails, posts, and balusters to represent existing style.			

Please tick For additional detail or list in other box below:

	Finished Materails		Precise Stringer Profiles
	Precise Handrail Profiles		Precise Posts
	Precise Balusters		Precise Nosing Profile
	Precise Tread profiles		Precise Riser profiles
	Panelling		Supports

Other:

LIFTS			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Modelled using generic lift family showing core (possibly assumed if inaccessible) and lift opening		✓	
Modelled as above with generic lift carriage and door			
As above with accurate carriage internal dimensions, door type and finish.			

Please tick For additional detail or list in other box below:

	Finish Materials		Lift Motor
	Lift electrical Fixtures		Lift Pit
	Capacity Information		

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

IMMEDIATE SITE			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
2D Topographic survey as per our standard spec			
3D Topography modelled using Revit "topo surface" created from 3rd party topo points/triangles if available.			✓
As above with major surfaces (Roads, paving, grass etc.) shown as sub regions, Trees modelled as massing with overall height and canopy.			

Please tick For additional detail or list in other box below:

☐	Finish Materials	☐	Tree Species info
☐	Retaining Walls	☐	Site Furniture
☐	Kerb edges	☐	Service Covers
☐	Steps	☐	Railings/fences

Other:

UNDERGROUND SERVICES			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
2D CAD information linked to Model if provided by Utility surveyors			
Major services modelled using families with diameters and flows identified.			
Major and Minor services modelled with intelligent Revit Families			
As above with meta data based on 3rd party information.			

Please tick For additional detail or list in other box below:

☐	Finish Materials	☐	Chambers

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

SERVICES			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
RWPs, SVPs, manholes, meters etc. Annotated at appropriate level in 2D only, linked from topographical survey if available.			
RWPs, SVPs, manholes, meters etc. Modelled using generic families where visible.			
RWPs, SVPs, manholes, meters etc. Modelled more accurately.			

Please tick For additional detail or list in other box below:

☐	Finish Materials	☐	Invert Levels shown
☐	Chambers Modelled	☐	Gullies

Other:

FIXTURES, FURNISHINGS AND SANITARY EQUIPMENT			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Sanitary & Fire Places modelled as generic families, Fixed Base Units Represented with overall geometry.			✓
Fixed furnishings and sanitary modelled using generic families.			
Unfixed and fixed furnishings and sanitary modelled as generic families.			

Please tick For additional detail or list in other box below:

☐	Finish Materials	☐	Flexible Parameters
☐	Finer Details		

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

Pipes			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Mass of area and Height where Pipes are located			
Pipes 100mm diameter or larger to be modelled			
Pipes 50mm diameter or larger to be modelled			
All pipes Modeled			

Please tick For additional detail or list in other box below:

☐	System Info (from 3rd Party info)	☐	Pipe Type
☐	Valves	☐	Brackets
☐	Expansion Brackets / Bellows	☐	Above Ceiling
☐	Below Ceiling		

Other:

ELECTRICAL			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Generic Families			
Generic families with 2D annotation			
Detailed Families with 2D annotation			

Please tick For additional detail or list in other box below:

☐	System Info (from 3rd Party info)	☐	Containment Type
☐	Electrical Equipment	☐	Electrical Fixtures
☐	Above Ceiling Containment	☐	Below Ceiling Containment
☐	Light Fittings	☐	Small Power

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

Ductwork			
Level of Detail	**RICS band for Sigma 1 (x) Tolerance (Horizontal/Vertical deviation from raw data)**		
	(C) +/-5mm	(D) +/-10mm	(E) +/-25mm
Mass of area and Height where Ductwork are located			
Ductwork 100mm profile or larger to be modelled			
Ductwork 50mm profile or larger to be modelled			
All Ductwork Modeled			

Please tick For additional detail or list in other box below:

	System Info (from 3rd Party info)		Duct Type
	Duct Sizes		Duct Accessories e.g VCD's, FD's
	Duct Equipment e.g AHU's, VAV's		Brackets

Other:

Tags			
Please tick For additional detail to be shown on floor plans or list in "other" box below:			
✓	Room Tags		Sill Height
✓	Floor Levels	✓	Window Height
✓	Ceiling Height	✓	Beam Height
✓	Door Height		Beams marked on floor plan
	Roof Height		Room Dimensions

Other:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

Information about our Models

Sheets

All our projects will have sheets set up within the Revit model using our own borders, as a minimum they will consist of views of floor plans, the overall external elevations and overall sections through the building if appropriate.

Project Parameters

In all our models, we set up project parameters for Survey notes to allow us to communicate model intent with the end user. For example, if we have assumed or approximated the position of an element, it will be noted here and can easily be found through scheduling elements as required. We also include parameters for lateral and vertical deviation for elements that deviate slightly more than the required tolerance. This allows for a much "cleaner" model by doing so. These can and should initially be scheduled to better understand our model. If you require any specific project parameters please let us know in the comments section below.

Family Parameters

Where efficient, bespoke families will be built to best represent the existing conditions. The physical parameters of the families will allow for easy resizing of the element including instance parameters for overall geometry size where regular size deviation occurs such as on door/window height/widths . Due to the method that we use to create the families, they can easily be reused for proposals if like for like element styles are required. When time permits we try to use algebraic formulas to control the parameters so that the elements do not break when flexed. Please indicate in the comments below if you require any specific parametric controls for families within each building element.

Model in Place

We believe that model in place should be a last resort on how to model building elements. Therefore, we only have two situations where we deem it acceptable: arched ceilings and irregular voids in walls. If you want these to be modeled in a certain way, please comment below. Reducing the amount of "model in place elements, keeps file sizes down, increases model intelligence and allows for much more efficient editing and scheduling workflows.

Comments:

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk

Information about our Scanning

Scan Density

Depending on the scanner used and the complexity of the site we can achieve various point densities, Our typical scanner can capture 40,960 pixels both vertically and horizontally over 360 degrees, over a 20m distance this can provide approximately 1 point every 3mm across the visible range. If a more dense point spacing is required please indicate this before survey commences as this may increase the cost of collecting the data. As a minimum standard, we set our scanners to achieve a minimum of 1 point every 5mm internally and 1 point every 10mm externally. If you require maximum point coverage across the model please specify:

Please tick for required point coverage in the box below:

Point Coverage External	Required
5mm/point	
10mm/point	✓
20mm/point	

Point Coverage Internal	Required
5mm/point	✓
10mm/point	
20mm/point	

Comments:

Form Completion – We are happy to complete these forms for you if you already have a standard brief provided for tendering this project. We will issue these forms alongside our quotation with the information specified as we think best suits your own brief. Please feel free to amend our specification and ask for an amended price for the works based on the level of detail provided.

Specification Signed and Agreed:

Project Title: …….. **Project Reference:** ……

Name: ……

Position held within company: ……

Signature: …….. **Date:** ……

For and on Behalf of: ……

Tel: (01332) 898350 Email: info@solidpoint.co.uk www.solidpoint.co.uk