Marble Hall Revit Survey Specification

Project Reference: MH-1038

Project Address: 80 Nightingale Road
Derby
DE24 8BF

Name: James Pegg

Job Title: Managing Director

Contact Number: 01332 898350

Signature:

Date: 08/02/2017

For and on Behalf of: SolidPoint

Quotation Deadline: 07/18/2018

Marble Hall - Revit Survey 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.

Please specify a level of detail for each component and accuracy tolerance 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 and issue a form for each building.

Level of Detail		
Element	**Element Description**	**Tolerance**
External walls	Wall types will include embedded profiles where useful for cornice, tapering, reveals etc. Significant architectural features will be modelled as generic families. Curtain Walls will be used where appropriate. Please ensure the large "Rolls Royce" sign on the building is included as this is a listed element.	+/-15mm (Suitable for 1:50 scale drawings)
Internal walls	Wall type modelled and identified as an overall thickness curtain walls will be used where appropriate. Curtain walls will be used where appropriate.	+/-15mm (Suitable for 1:50 scale drawings)
Roof	Major external features modelled including chimneys, roof lights. Material finishes applied to represent existing, curtain walls/sloped glazing will be used where appropriate.	+/-30mm (Suitable for 1:100 scale drawings)
Floors and slabs	Floor type modelled and identified as an overall thickness with material finishes applied to the structure of the floor to represent existing for visualisation purposes.	+/-15mm (Suitable for 1:50 scale drawings)
Columns, beams, bracing and grids	Columns modelled as basic geometry using overall sizes and attached to structural grid where appropriate.	+/-15mm (Suitable for 1:50 scale drawings)
Ceilings and bulkheads	Modelled as plain with a generic 50mm thickness to identify potential ceiling void. With 50mm assumed wall for vertical bulkheads.	+/-30mm (Suitable for 1:100 scale drawings)
External doors and windows	Modelled to a great detail with sills, heads, mullions, glazing bars and opening sections.	+/-15mm (Suitable for 1:50 scale drawings)
Internal doors and windows	Basic families to show swing direction and door leaf in a structural opening.	+/-15mm (Suitable for 1:50 scale drawings)
Stair steps and escalators	Stair Modelled using standard monolithic system family.	+/-30mm (Suitable for 1:100 scale drawings)
Lifts	Modelled using generic lift family showing core (possibly assumed if inaccessible) and lift opening.	+/-15mm (Suitable for 1:50 scale drawings)
Immediate site	3D Topography modelled with major & minor surfaces Parking and soft landscaping defined as sub regions and generic families, retaining walls and steps modelled.	+/-30mm (Suitable for 1:100 scale drawings)
Underground services	Not modelled	

Services	RWPs, SVPs, manholes, meters etc. annotated at appropriate level in 2D only, linked from 2D CAD file supplied by 3rd party.	+/-30mm (Suitable for 1:100 scale drawings)
Fixtures, furnishings and sanitary equipment	Sanitary equipment modelled as generic families.	+/-30mm (Suitable for 1:100 scale drawings)
Additional external detail	Details such as statues, ornate carvings, artwork, etc. will be represented with with more detailed geometry to represent existing modelled as bespoke Revit families.	+/-30mm (Suitable for 1:100 scale drawings)
Electrical	Not modelled	
Mechanical	Not modelled	

Sheets – Various views can be set up on sheets within the Revit project; **Site Plan, Roof Plan, Floor Plans, Reflected Ceiling Plans, Sections, External Elevations, 3D Visualisation Views** will appear on appropriate sheets as a minimum requirement.

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 3mm internally and 1 point every 10mm externally.

External	20mm
Internal	10mm

Project Parameters – In all of 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, but allowed for a much "cleaner" model by doing so. These can and should initially be scheduled to better understand our model. **Notes:** Please include a "Survey Notes" Parameter to describe modelling intent where necessary.

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 re-sizing 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 formula to control the parameters so that the elements do not break when flexed. **Notes:** .

Tags – To communicate our model we can attach tags to various elements, such as floors to give the level, windows to give sill heights in a plan view and Rooms to identify the name and area. You've specified the following tags to be included in your model; **Room Labels, Finished Floor Level.**

Deliverable	**Required**
All of our models can be delivered in the most up to date version of Revit available in the UK, if you require us to work in an older version please specify. Please note that point clouds aren't as efficient in pre Revit 2014 and aren't available to use in Revit 2011 and below. This may significantly affect the workflow and time to complete the project.	**2018**
External Point Cloud Raw Data – Please specify file format if required.	**rcp/rcs**
Internal Point Cloud Raw Data – If this is not required some areas may be measured using traditional methods for efficiency, such as small rooms, toilets, stores etc. Large open planned internal areas will be scanned with the external data as standard.	**rcp/rcs**
Full colour Real View from scan positions.	
Full Colour 360 degree Panoramic with adjustable exposure.	

3D ACIS Solids export. (dwg. format)	
Hard copies of sheets set up within model. (specify quantity required)	
3D physical model derived from digital model using 3D Printer, at each floor level, please specify scale required.	