Driscoll House - 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.

Please specify a level of detail required for each component by indicating the tolerance required in the following tables. 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.

Please select N/A (Not Applicable) for elements that do not need to be modelled. Please feel free to tick N/A for elements rather than a tolerance if you are happy for them to be modelled using our best judgement.

EXTERNAL WALLS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Structural envelopes modelled as massing objects.				
Wall type modelled and identified as an overall thickness				
Wall type depicting overall thickness and material, material finishes will be applied to the structure of the wall to represent existing for visualisation purposes. Curtain Walls will be used where appropriate.				
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				
As above, with minor architectural details also modelled as simple geometry within Revit Families. Wall construction will be fully identified within wall type if required, (information to be provided by third party)				

INTERNAL WALLS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
Wall type modelled and identified as an overall thickness Curtain Walls will be used where appropriate.				
Wall type depicting overall thickness and material, material finishes will be applied to the structure of the wall to represent existing for visualisation purposes.				
Wall types will include embedded profiles where useful for skirting, coving, reveals etc. Significant architectural features will be modelled as in place families. Curtain Walls will be used where appropriate				
Wall construction will be fully identified within wall type, (information to be provided by third party)				

ROOF				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Structural envelopes modelled as massing objects				
Overall thickness modelled where visible				
Major external features modelled including Chimneys, roof lights. Material finishes applied to represent existing, Curtain walls/sloped glazing will be used where appropriate.				
As above with fascia, soffits, gutters, downpipes, vents modelled. Major Trusses, Joists and Purlins modelled where visible. all as bespoke Revit Families where required				
As above, with roof space surveyed, to include modelling of minor roof members such as diagonal bracing, noggins, brackets etc.				

FLOORS AND SLABS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
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.				
As above with material finishes applied to the structure of the floor to represent existing for visualisation purposes.				
Floor type will be built up of finishes and construction where visible, otherwise will be shown as overall thickness with top and bottom finish.				
Floor/Slab construction will be fully identified within floor type, (information to be provided by third party)				

COLUMNS, BEAMS, BRACING AND GRIDS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not Modelled				
Columns modelled as basic 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.				

CEILINGS AND BULKHEADS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
Modelled as plain with a generic 50mm thickness to identify potential ceiling void. With 50mm (assumed wall for vertical bulkheads)				
Ornate mouldings will be modelled where appropriate using bespoke families, material finishes will be applied to represent existing.				
As above with ceiling type to show construction where visible, material finishes and surface patterns to be applied to represent accurate ceiling grid.				
As above with structure within ceiling void modelled as required. Access to ceiling void must be arranged. Material finishes and surface patterns to be applied to represent accurate ceiling grid.				

EXTERNAL DOORS AND WINDOWS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
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.				

INTERNAL DOORS AND WINDOWS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
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 and 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.				

STAIRS STEPS AND ESCALATORS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
Stair Modelled using standard monolithic system family				
Stairs modelled as surveyed, monolithic/non-monolithic with material finishes to represent existing				
As above with handrails, posts, and balusters to represent existing style.				
Stairs modelled as surveyed, with accurate nosing profiles, strings, treads, risers, with Balustrades and handrails closely matching the style and geometry of the existing elements. Materials and finishes will be applied to all elements.				

LIFTS				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
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,				
As above with informative parameters for capacities.				

IMMEDIATE SITE				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data at point location)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not Modelled, or 2D Topographic survey as per our standard spec				
3D Topography modelled using Revit "topo surface" (Possibly created from 3rd party topo points/triangles)				
As above with major surfaces (Roads, paving, grass etc.) shown as sub regions, Trees modelled with overall height and canopy and species if known				
As above, with parking and major landscaping shown as generic families, Retaining Walls and Steps modelled.				
As above with street furnishings modelled.				

UNDERGROUND SERVICES				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
2D CAD information linked to Model				
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.				

SERVICES				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
RWPs, SVPs, manholes, meters etc. annotated at appropriate level in 2D only, linked from 2D CAD file supplied by 3rd party.				
RWPs, SVPs, manholes, meters etc. modelled using generic families where visible.				
RWPs, SVPs, manholes, Meters etc. modelled to show accurate basic geometry				
RWPs, SVPs, manholes, Meters etc. Modelled more accurately, with representative materials applied.				

FIXTURES, FURNISHINGS AND SANITARY EQUIPMENT				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
Sanitary modelled as generic families				
Fixed furnishings and sanitary modelled in more detail. Materials will be applied to represent existing				
Fixed and unfixed furnishings modelled as in place families				
Fixed and unfixed furnishings modelled as families. Finer detail added with materials applied to represent existing				

ADDITIONAL EXTERNAL DETAIL				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
Details such as Statues, Ornate Carvings, Artwork, etc. will be represented with basic geometry in Bespoke Revit Families.				
As above with more detailed geometry to represent existing modelled as Revit families				
Finer detailing picking out more detailed features modelled as families with materials applied.				
Point clouds for details exported to Geomagic or Remake to apply accurate mesh to points, mesh will then be imported into Revit and positioned in the model. Note that this mesh will be non-parametric, but extremely accurate.				

ELECTRICAL				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
All ceiling based electrical items to be identified on Reflected Ceiling plans using generic families.				
As Above with other lighting, Fire Protection, switches, telecoms, etc. to be annotated on appropriate views.				
All electrical items will be modelled as families to represent existing.				
Meta data added to families based on 3rd party information.				

MECHANICAL				
Level of Detail	**Tolerance (Horizontal/Vertical Deviation from Raw data)**			
	N/A	+/-15mm	+/-30mm	+/-60mm
Not modelled				
Visible Ducts and Pipework with minimum 200mm diameter to be modelled along with large plant visible from surveyed area using generic families and simplified geometry. (Not including Ceiling Voids)				
As above with all HVAC units modelled with basic geometry as families.				
HVAC units, ducts and pipes modelled larger than 50mm Diameter modelled to more detail.				
HVAC units, ducts and pipes modelled to more detail with meta data based on 3rd party information				

Sheets – All of 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. Our border can easily be replaced with your own loaded family without having to recreate the sheets if necessary.

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. If you require maximum point coverage across the model please specify:

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

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. If you require any specific project parameters please specify in additional documents.

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. Please indicate in a separate document if you require any specific parametric controls for families within each building element.

Tags – to communicate our model we 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. If you require any specific annotation please specify in additional documents.

Optional Deliverables – Please indicate as required:

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 Tour	
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.	

Additional Information – If you are providing additional information alongside this specification please list here, giving a brief description of the document and the reference if applicable:

Document Name	Description	Reference

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: ……