BIM CHECKLIST

Name of Project:	
Client:	
Form Completed by:	
Date:	**Revision:**

Consult. Trust. Innovate.

BIM Checklist

This comprehensive BIM Checklist serves as the foundational document for outlining the specific requirements and level of detail for each element included in a Plowman Craven survey model. Within the 'Site Data' and 'Modelling' sections, an array of options is categorised, featuring both optional and required sections.

Our commitment to delivering accurate and tailored BIM solutions begins with understanding and documenting your project's unique needs. This checklist will serve as a vital tool in aligning expectations and ensuring that the resulting survey and model precisely meet your requirements.

At Plowman Craven, we emphasise the importance of proactive communication and collaboration throughout the project lifecycle. To this end, we strongly advocate for a BIM kick-off meeting at the project's outset. This initial meeting will ensure that the model is correctly interpreted and relevant details such as the model version, coordinates, delivery formats, worksets and all other coordination information is agreed.

By adhering to this specification checklist and engaging in open dialogue throughout the process, we aim to deliver survey models that not only meet but exceed your expectations, providing valuable insights and driving efficiencies in your project's lifecycle.

SURVEY DATA

Point Cloud Density

Please specify the required average point spacing, bearing in mind current and future potential uses for the scan data:

AVERAGE POINT SPACING			
REQUIRED	Point spacing 20mm	Typically used for mass modelling or LOD1 & LOD2 models	☐
	Point spacing 10mm	Typical used for standard building modelling or LOD3 models	☐
	Point spacing 5mm	Typically used for heritage building modelling or LOD4 models	☐
	Custom point spacing	*Please specify in comments box below*	☐
Comments:			

![PlowmanCraven]

Restricted Access Areas

To help define the extents of modelling for partially obscured elements, with particular emphasis on ceilings and roof voids, please confirm whether the following areas are to be surveyed and modelled:

VOIDS AND SPACES		
OPTIONAL	Ceiling Voids	☐
	Floor Voids	☐
	Roof Voids / Loft Spaces	☐
	Risers	☐
	Lift Shafts	☐
	Confined Spaces	☐
	Other *(please specify in comments box below)*	☐
Comments:		

Point Cloud Deliverables

As standard, all model deliverables will be issued with accompanying survey data. We recommend that all survey models are read in conjunction with point cloud information. Please specify the point cloud colour and photography requirements:

COLOUR		
REQUIRED	Scan data to be Intensity (Black and White)	☐
	Scan data to be RGB (Coloured)	☐
PHOTOGRAPHY AND TRUVIEW		
REQUIRED	Greyscale 360 Photography	☐
	Colour 360 Photography	☐
	Greyscale TruView	☐
	Colour TruView	☐
Comments:		

When authoring within the model, the standard point cloud format is RCS. Please specify if other data formats are required:

ADDITIONAL FORMATS		
OPTIONAL	Scan data to be delivered as PTS	☐
	Scan data to be delivered as LAZ	☐
	Scan data to be delivered as E57	☐
	Scan data to be delivered as POD	☐
	Scan data to be delivered as IMP	☐
Comments:		

Coordinate System

Please specify the planimetric coordinate system and height datum to be used for the project:

HEIGHT CONTROL		
REQUIRED	Ordnance Datum Newlyn	☐
	Local Datum	☐
PLAN CONTROL		
REQUIRED	OS National Grid	☐
	Local Project Grid	☐
	Other *(Please specify in comments box below)*	☐
Comments:		

MODELLING

Software

Plowman Craven's survey models are authored primarily within Autodesk Revit, although the models can also be authored in other software where requested. Please specify if the model is to be authored in Autodesk Revit or another software:

MODELLING SOFTWARE		
REQUIRED	Autodesk Revit *All versions are available and will be confirmed during the BIM kick-off meeting*	☐
	Other *(Please specify in comments box below)*	☐
Comments:		

Tolerance

Plowman Craven will attempt to model all objects as accurately as possible however, due to the limitations of the software, certain elements will need to deviate from the point cloud data to avoid functional errors and warnings. Please specify the maximum level of deviation the modelled objects can be from the point cloud data before having to identify the deviation through parameters on the modelled object:

MODELLING TOLERANCE		
REQUIRED	Low-level tolerance	Objects modelled to a tolerance of 50mm of the point cloud	☐
	Mid-level tolerance	Objects modelled to a tolerance of 25mm of the point cloud	☐
	High-level tolerance	Objects modelled to a tolerance of 10mm of the point cloud	☐
	Other *(Please specify in comments box below)*		☐
Comments:			

Rooms and Space Identification

Please specify if you would like the inclusion of rooms and space scheduling within the BIM model:

ROOMS AND SPACE SCHEDULING		
OPTIONAL	Room definition (boundary)	☐
	Space identification (name and title) *This will require client supplied space schedules*	☐
Comments:		

Materials

Materials can be identified by either family name, applying a default white material to the object with the correct material name or adding a textured material to the object. Please specify if you would like to include material attribution to the modelled elements:

MATERIAL ATTRIBUTION				
BY CATEGORY				
	Elements & Areas	**In Revit Family Name Only**	**Untextured Material (with name)**	**Textured Material (with name)**
OPTIONAL	Floors	☐	☐	☐
	Walls	☐	☐	☐
	Other *(Please specify in comments box below)*	☐	☐	☐
Comments:				
BY SPACE / FUNCTION				
OPTIONAL	Building Internals	☐	☐	☐
	Building Externals	☐	☐	☐
	Topography	☐	☐	☐
	Other *(Please specify in comments box below)*	☐	☐	☐
Comments:				

Asset Tagging

Please specify if you would like the inclusion of asset information within the BIM model:

ASSET INFORMATION INTEGRATION		
OPTIONAL	Integrate asset information into the model *This will require client supplied asset information as well as the correct LOD for the surveyed assets to be modelled*	☐
Comments:		

2D Views and Sheets

Plowman Craven's survey models will not contain any 2D drawing information by default. Please specify whether 2D Views and Sheets are required within the model:

Note: 2D drawing data generated from the model will adhere to the chosen LOD rather than scale. If objects are omitted from the model due to the LOD, they will not appear in the 2D representation.

DRAWING ANNOTATION	
OPTIONAL — Unannotated *Please select the drawing origin below*	☐
Annotated *Please select the drawing origin below*	☐
DRAWING ORIGIN	
OPTIONAL — 2D Sheets within the model (not exported to DWG) *Please select the required drawing types below*	☐
2D Sheets exported from the model to DWG *Please select the required drawing types below*	☐
RICS MBS compliant 2D Drawings *Please select the required drawing types below*	☐
REQUIRED DRAWING TYPES	
Site Plans (Topography)	☐
Reflected Ceiling Plans	☐
Floor Plans	☐
Sections	☐
External Elevations	☐
Sectional Elevations	☐
Internal Elevations	☐
Comments:	

PlowmanCraven

LEVEL OF DETAIL MATRIX

All Plowman Craven models are BIM Stage 2 compliant, with files and model objects named in accordance with a combination of BS EN ISO 19650-2:2018 and BS 8541-1:2012. Models are inclusive of embedded Uniclass 2015 classification information and built in a way that maximises functionality for the benefit of model manipulation once ownership of the model is transferred to you.

Plowman Craven models are not only an accurate representation of the built asset, but a sound foundation on which to build your design with the future in mind. Some inherent inefficiencies exist in the manipulation of survey models (e.g. warnings and model in-place elements), however based on our extensive experience Plowman Craven has developed a modelling approach which minimises these. The plethora of knowledge held within our multi-disciplinary BIM Centre of Excellence allows us to meet and exceed expectations on future projects.

The following tables give summaries of how each construction element is visually represented within the model at different Levels of Detail.

Please select your model requirements from the following tables:

WALLS			Internal	External
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD2	Structural walls equal to or greater than 140mm only, modelled indicating overall thickness	☐	☐
	LOD3	All walls modelled indicating overall thickness with simplified detail elements	☐	☐
	LOD4	As LOD3, along with additional features - *please select from the list below*	☐	☐
ADDITIONAL FEATURES (REQUIRES LOD4)				
Quoins			☐	☐
Dado Rails			☐	☐
Picture Rails			☐	☐
Skirting			☐	☐
Cornices			☐	☐
Mouldings			☐	☐
Panelling			☐	☐
Cage Enclosures			☐	☐
Dentils			☐	☐
Temporary Hoarding			☐	☐
Vents			☐	☐
Penetrations => 50mm			☐	☐
Stone/Brickwork Identification			☐	☐
Comments:				

EXTERNAL ROOF

LEVEL OF DETAIL			
	Not Required		☐
	LOD2	Modelled as system roof showing overall thickness roof shape	☐
	LOD3	Eave soffits, fascias and guttering, gullies, coping, flues, outlets and chimney pots also modelled	☐
	LOD4	As LOD3, showing additional detail such as flashing and standing seams	☐

Comments:

DOORS AND WINDOWS

			Internal	External
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD2	Structural openings only	☐	☐
	LOD3	Modelled using generic families with basic detail, vision panels and swing	☐	☐
	LOD4	Modelled using bespoke families showing detail such as sills and architraves	☐	☐

Comments:

FLOORS, SLABS AND CEILINGS

LEVEL OF DETAIL	**Not Required**		☐
	LOD2	Floors and ceilings modelled as a single element from FFL to U/S of finish below (ceiling void not identified)	☐
	LOD3	Floors and ceilings modelled showing overall thickness of floor structure (distinction between FFL, voids and ceilings is made)	☐
	LOD4	As LOD3, along with additional features - *please select from the list below*	☐

ADDITIONAL FEATURES (REQUIRES LOD4)

Joists	☐
Access Panels	☐
Inspection Covers	☐
Penetrations => 50mm	☐
Plinths	☐
Raised Floor Grids	☐
Ceiling Grids	☐

Comments:

STAIRS, ESCALATORS, LADDERS AND RAILINGS			**Internal**	**External**
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD2	Stairs, escalators and ladders modelled to show individual treads. Railings not shown	☐	☐
	LOD3	As LOD 2 showing additional stringers and railings modelled in simple form (fixed vertical posts and top rail)	☐	☐
	LOD4	As LOD3, showing additional detail such as spindles, balustrades and stair nosing	☐	☐

Comments:

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STRUCTURE: COLUMNS, FRAMING AND TRUSSES

LEVEL OF DETAIL			
	Not Required		☐
	LOD2	Primary elements only - beams, trusses and columns modelled in simple form indicating overall extents	☐
	LOD3	Primary elements only - beams, trusses and columns modelled with a defined profile	☐
	LOD4	Primary and secondary elements modelled with a defined profile	☐

ADDITIONAL FEATURES (REQUIRES LOD3 OR LOD4)

Penetrations => 50mm	☐
Stiffeners	☐
Haunches	☐
Plates	☐
Nuts and Bolts	☐
Rivets	☐

Comments:

LIFTS

LEVEL OF DETAIL			
	Not Required		☐
	LOD2	Internal core walls undefined with basic lift cart family	☐
	LOD3	Internal lift shaft walls defined with basic lift cart family	☐
	LOD4	As LOD3 showing lift systems and associated lift support structure	☐

Comments:

SERVICES: MEP, HVAC AND PLANT			Internal	External
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD1	Services equal to or above 1000mm in W/L/H or diameter showing **major plant only** in overall shape and size and position	☐	☐
	LOD2	Services equal to or above 500mm in W/L/H or diameter showing plant and service routes in overall shape, size and position *Please select additional features below*	☐	☐
	LOD3	Services equal to or above 100mm in W/L/H or diameter showing plant and service routes in profile shape, size and position *Please select additional features below*	☐	☐
	LOD4	Services equal to or above 50mm in W/L/H or diameter showing plant and service routes in profile shape, size and position *Please select additional features below*	☐	☐

ADDITIONAL FEATURES (REQUIRES LOD2, LOD3 OR LOD4)		
MECHANICAL		
Air Handling Units, Terminals and Exhaust Flu	☐	☐
Ducts and Fittings	☐	☐
ELECTRICAL		
Satellites and Aerials	☐	☐
Sockets and Switches	☐	☐
Fire Alarms and Detectors	☐	☐
Cable Trays	☐	☐
Conduits	☐	☐
CCTV	☐	☐
Electrical Equipment: Servers, Junction Boxes and Switchboards	☐	☐
Lights	☐	☐
A/C Units and Heaters	☐	☐

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ADDITIONAL FEATURES (REQUIRES LOD2, LOD3 OR LOD4) *continued from previous page*

HEALTH AND PLUMBING

Sprinkler Systems (Pipe and Head)	☐	☐
Sanitaryware	☐	☐
Radiators	☐	☐
Rainwater Pipes and Hoppers	☐	☐
Soil Vent Pipes	☐	☐
Other Pipes and Fittings	☐	☐
Gas, Water and Waste Tanks and Boilers	☐	☐

MEP SUPPORT

Brackets, Clips and Hangers	☐	☐

Comments:

CONTEXTUAL MASSING

LEVEL OF DETAIL			
	Not Required		☐
	Standard	Buildings modelled as massing showing overall shape and size	☐
	Enhanced	Buildings modelled as a 'vacuum-formed' style, showing massing indents for all major reveals such as doors and windows and key roof features	☐

Comments:

FFE: FIXTURES, FURNISHINGS AND EQUIPMENT			Internal	External
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD1	FFE equal to or above 500mm in W/L/H or diameter modelled as massed elements showing overall size and position *Please select additional features below*	☐	☐
	LOD2	FFE equal to or above 100mm in W/L/H or diameter modelled as massed elements showing overall size and position *Please select additional features below*	☐	☐
	LOD3	As per LOD2, with key features modelled in basic detail *Please select additional features below*	☐	☐
	LOD4	As per LOD3, with key features modelled in fine detail *Please select additional features below*	☐	☐
ADDITIONAL FEATURES (REQUIRES LOD2, LOD3 OR LOD4)				
Toilet Cubicles			☐	☐
Free-standing Storage Units/Cupboards			☐	☐
Retail Gondolas			☐	☐
Soft Furnishings			☐	☐
Signage			☐	☐
Comments:				

MAINTENANCE AND TEMPORARY WORKS (BMUS, CRANES AND SCAFFOLDING)			Internal	External
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD2	Overall shape shown in simplified mass model to indicate size and position	☐	☐
	LOD3	Major elements identified and modelled in basic profile shape, size and position	☐	☐
	LOD4	As LOD3, with detailed profiling	☐	☐
Comments:				

![logo](Plowman Craven)

SITE TOPOGRAPHY: SURFACES

LEVEL OF DETAIL			
	Not Required		☐
	LOD1	Topography shown as simplified topo surface	☐
	LOD2	As LOD1 with sub regions distinguishing hard and soft landscaping	☐
	LOD3	Soft landscaping and roads modelled with topo surface. Hard landscaping modelled with floors	☐
	LOD4	As LOD3 with surface types and kerbs distinguished	☐

SITE TOPOGRAPHY: TREES AND PLANTING

LEVEL OF DETAIL			
	Not required		☐
	LOD1	Vegetation larger than 10m modelled with four-point cardinal trees, demonstrating directional canopy extents relative to trunk. Major trunk dimensions recognised, inclusive of root protection area if provided. (Further Arboricultural data can be defined if requested)	☐
	LOD2	Vegetation larger than 5m modelled with four-point cardinal trees, demonstrating directional canopy extents relative to trunk. Major trunk dimensions recognised, inclusive of root protection area if provided. (Further Arboricultural data can be defined if requested)	☐
	LOD3	All vegetation modelled with four-point cardinal trees, demonstrating directional canopy extents relative to trunk. Major trunk dimensions recognised, inclusive of root protection area if provided. (Further Arboricultural data can be defined if requested)	☐
	LOD4	Modelling of major limbs/branches and trunk (>75mm in diameter) with overall canopy extents modelled	☐

SITE TOPOGRAPHY: STREET FURNITURE

LEVEL OF DETAIL			
	Not required		☐
	LOD3	Modelled showing overall size and position *Please select additional features below*	☐
	LOD4	As LOD3 showing defined profile and position *Please select additional features below*	☐

ADDITIONAL FEATURES (REQUIRES STREET FURNITURE - LOD3 OR LOD4)

Boundaries (Site Walls, Barriers, Fences, Railings, Gates, Handrails, Hoardings and Parapets)	☐
Public Utilisation (Seating, Bollards, Bins, Post Boxes and Shelters)	☐
Highways (Traffic Signage and Signals, CCTV and Cams, Street Lighting and Bollards)	☐
Communication (Telephone Boxes, Service/Electric Boxes and Telegraph Poles)	☐
Utilities (Inspection Covers, Gullies, Hydrants and Drainage Channels)	☐
Road and Carpark Markings	☐

Comments:

ARTWORKS (STATUES, PAINTINGS AND SCULPTURES)			Internal	External
LEVEL OF DETAIL	**Not Required**		☐	☐
	LOD2	Simplified boxed mass showing overall size and position	☐	☐
	LOD3	Element Identified and modelled to show basic profile shape and position	☐	☐
	LOD4	Element modelled outside of the model as a meshed object and inserted into the model	☐	☐
Comments:				

| UNDERGROUND SERVICES (UGS)			
LEVEL OF DETAIL	**Not Required**		☐
	LOD2	3D CAD UGS Survey as linked DWG	☐
	LOD3	UGS is modelled in the model, with simplified massed identification of service chambers	☐
	LOD4	As LOD3 with service chambers accurately modelled showing internal chamber profiles	☐
ADDITIONAL FEATURES (REQUIRES LOD3 OR LOD4)			
CCTV Links Embedded into Model			☐
Comments:			

EXTERNAL STRUCTURES: BRIDGES AND GANTRIES

LEVEL OF DETAIL	**Not required**		☐
	LOD1	Overall structural form shown in simplified mass model to indicate general size and position	☐
	LOD2	Major structural elements (abutments, bridge deck, piers, pylons and wing walls) identified and modelled in a simplified form to show basic profile shape, size and position	☐
	LOD3	As LOD2, with accurate profiling of major and minor structural elements. Inclusion of parapets, handrails, and structural cable clusters	☐
	LOD4	As LOD3, with inclusion of structural connections and expansion/movement joints identified where visible	☐

EXTERNAL STRUCTURES: MISCELLANEOUS (E.G. MONUMENTS, PYLONS AND GAS HOLDERS)

LEVEL OF DETAIL	**Not required**		☐
	LOD2	Overall shape shown in simplified mass model to indicate size and position	☐
	LOD3	Major elements modelled in basic profile shape, size and position	☐
	LOD4	Major and minor elements modelled in basic profile shape, size and position	☐

Comments:

Thank you for completing this BIM Checklist for your forthcoming project. We look forward to working with you. If you have any queries or questions in completing this, please get in touch.

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Plowman Craven

Education

Government & Public Bodies

Health

Heritage, Arts & Leisure

Industrial & Logistics

Office

Rail & Transport

Residential

Retail

Urban Regeneration

Utilities
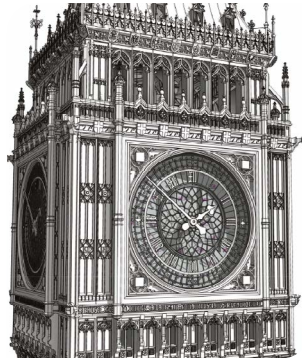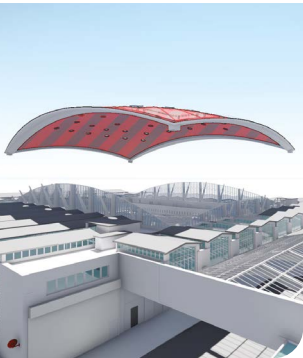
Aerial Surveys & Inspection
Area Referencing Surveys
Building Information Modelling & Consultancy
Building Surveying Services & Technical Due Diligence
Condition Surveys
Construction Verification
Correlation Surveys
Environmental Planning Services
Estate Data Management Services
Heritage Recording
Infrastructure Surveys
Lease & Title Plans
Line & Level Sewer Surveys
Measured Building Surveys
Rail Surveys
Structural & Environmental Monitoring
Surveys for Planning, AVR & Rights of Light
Topographical Surveys
Underground Utilities Mapping
Visualisation
3D Modelling

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