

Option 1 | Basic 2D Model

Time Cost Ratio **1:1**

Software Product
Adobe PDF | AutoCAD | Microstation

File Formats
Adobe PDF | AutoCAD DWG | Microstation DGN

When budgets and timescales are paramount, our **Basic 2D model** provides a quick and cost effective solution for you to better understand what buried assets are affecting your site.

Drainage:

- utility type;
- pipe positions and orientation;
- nature of system;
- pipe depth/inverts of out going pipe;
- pipe diameters;
- direction of flow;
- manhole connectivity;

Gas/water:

- depth of shallowest level of multiway ducts;
- depth range of multiple ducts/cables (shallowest and deepest)

Gas/water:

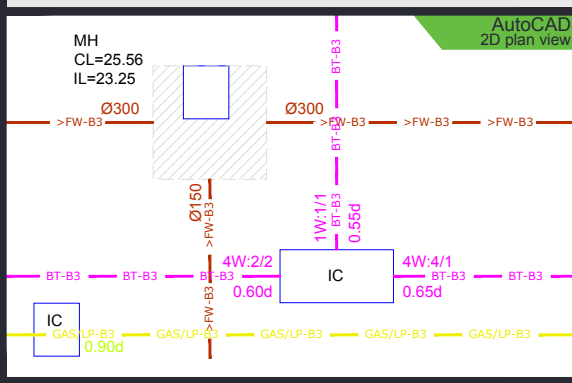
- utility type;
- depth to top of the pipe;

Telecoms/electrical:

- utility type;
- duct/cable position and orientation (banks shown as a single line);
- configuration of ducts;

Manhole/inspection chambers:

- cover level (drainage only);
- chamber extent (plan only).



Option 2 | Advanced 2D Model

Time Cost Ratio **1:2**

Software Product
Adobe PDF | AutoCAD | Microstation

File Formats
Adobe PDF | AutoCAD DWG | Microstation DGN

Our **Advanced 2D Model** offers more detail with extended attribution and is fully **PAS128 compliant**. It's an ideal option for reducing risk when excavating or breaking ground and when the depth of cover of the buried utilities is an important factor.

Drainage:

- utility type;
- utility owner;
- pipe positions and orientation;
- pipe connectivity;
- manhole connectivity;
- nature of system;
- pipe depths/inverts;
- pipe diameters;
- direction of flow;
- PAS 128 quality level

Gas/water:

- configuration of ducts;
- GPR & EML detected depths;
- PAS 128 quality level;

Gas/water:

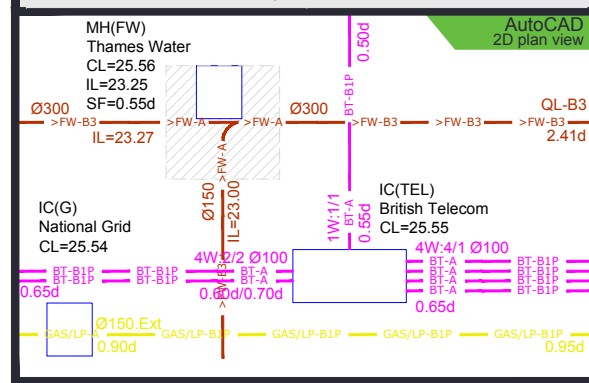
- utility type;
- utility owner;
- depth to top of the pipe and external diameter;
- GPR & EML detected depths;
- PAS 128 quality level;

Telecoms/electrical:

- utility type;
- utility owner;
- individual duct/cable position, orientation and depth;
- external diameter of duct/cable;

Manhole/inspection chambers:

- utility type;
- chamber extent, depth, soffit and landings (plan only).



Option 3 | Basic 3D Model

Time Cost Ratio **1:3**

Software Product
Adobe PDF | AutoCAD | Microstation

File Formats
Adobe PDF | AutoCAD DWG | Microstation DGN

The **Basic 3D Model** is essentially a 3D Polyline wireframe drawing where buried utilities are displayed in their absolute coordinates (easting, northing and height) in a specified reference coordinate system.

Drainage:

- utility type;
- utility owner;
- pipe positions and orientation;
- pipe connectivity;
- manhole connectivity;
- nature of system;
- pipe depths/inverts;
- pipe diameters;
- direction of flow;
- PAS 128 quality level

Gas/water:

- configuration of ducts;
- GPR & EML detected depths;
- PAS 128 quality level;

Gas/water:

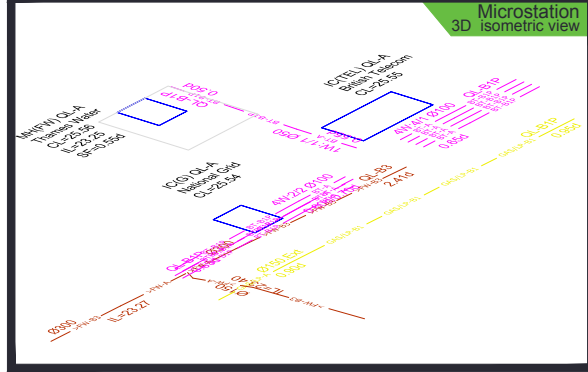
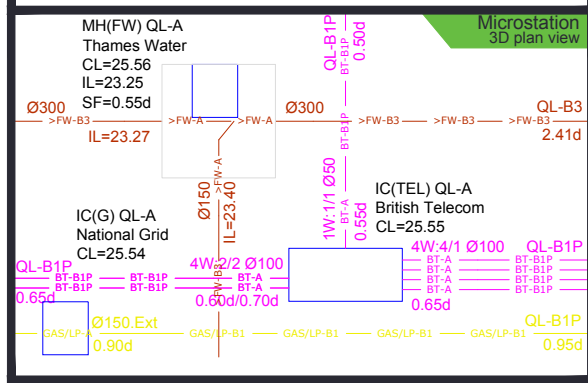
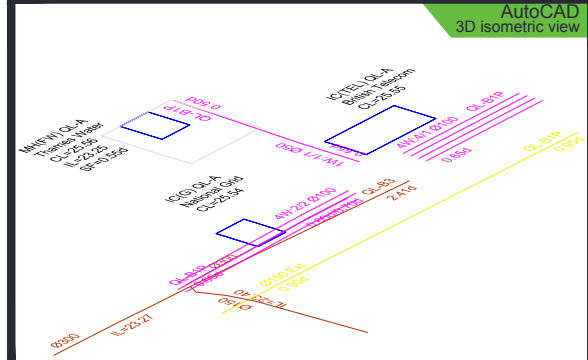
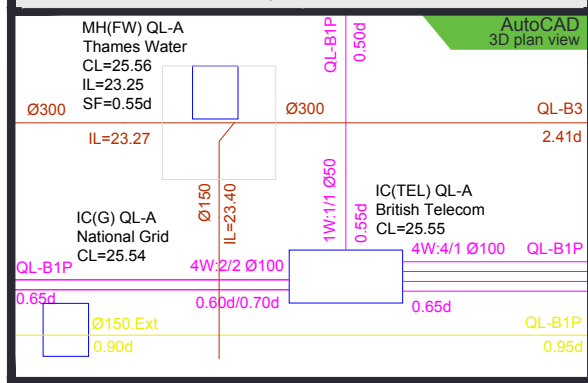
- utility type;
- utility owner;
- depth to top of the pipe and external diameter;
- GPR & EML detected depths;
- PAS 128 quality level;

Telecoms/electrical:

- utility type;
- utility owner;
- individual duct/cable position, orientation and depth;
- external diameter of duct/cable;

Manhole/inspection chambers:

- utility type;
- chamber extent, depth, soffit and landings (plan only).



Option 4 | Advanced 3D Model

Time Cost Ratio **1:4**

Software Product
Adobe PDF | AutoCAD | Civil 3D
Navisworks | Microstation | Revit

File Formats
Adobe PDF | AutoCAD DWG | Navisworks NWD
Microstation DGN | Revit RVT

Our **Advanced 3D solid model** builds upon the Basic 3D Model with realistic pipe, duct and cable diameters, solid modelling of manhole/inspection chambers and an extended attributes list. An ideal model to aid with clash detection of any proposed new works. LoD 200/300.

Drainage:

- utility type;
- utility owner;
- pipe positions and orientation;
- pipe connectivity;
- manhole connectivity;
- nature of system;
- pipe depths/inverts;
- pipe diameters;
- direction of flow;
- PAS 128 quality level

Gas/water:

- configuration of ducts;
- GPR & EML detected depths;
- PAS 128 quality level;

Gas/water:

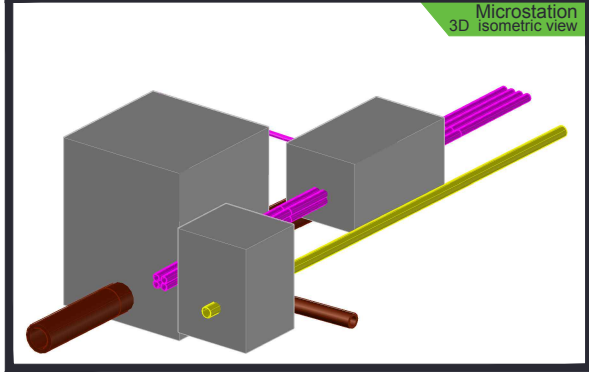
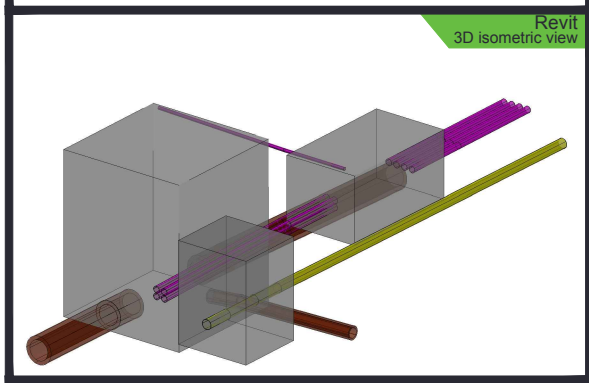
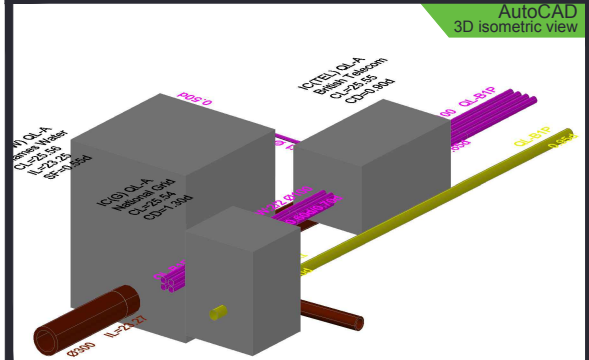
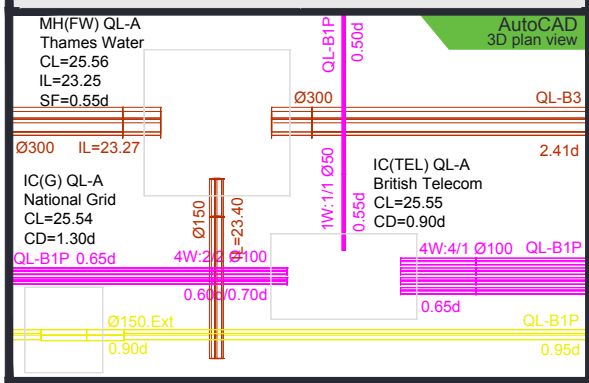
- utility type;
- utility owner;
- depth to top of the pipe and external diameter;
- GPR & EML detected depths;
- PAS 128 quality level;

Telecoms/electrical:

- utility type;
- utility owner;
- individual duct/cable position, orientation and depth;
- external & internal diameter of duct/cable;

Manhole/inspection chambers:

- utility type;
- chamber extent, depth, soffit and landings (basic 3D measurements)



Option 5 | BIM 3D Model

Time Cost Ratio **1:6**

Software Product
Adobe PDF | AutoCAD | Civil 3D
Navisworks | Microstation | Revit

File Formats
Adobe PDF | AutoCAD DWG | Navisworks NWD
Microstation DGN | Revit RVT

Our premium **BIM 3D Model** is intelligent and utilises the products databases to embed a full and comprehensive attribute list to each individual utility. All utilities and related infrastructure are realistically modelled to their absolute coordinates and materials are mapped to aid with visualisations. An excellent deliverable for those who are utilising BIM. LoD 300.

Drainage:

- utility type;
- utility owner;
- pipe positions and orientation;
- pipe connectivity;
- manhole connectivity;
- nature of system;
- pipe depths/inverts;
- pipe diameters;
- direction of flow;
- PAS 128 quality level

Gas/water:

- configuration of ducts;
- GPR & EML detected depths;
- PAS 128 quality level;

Gas/water:

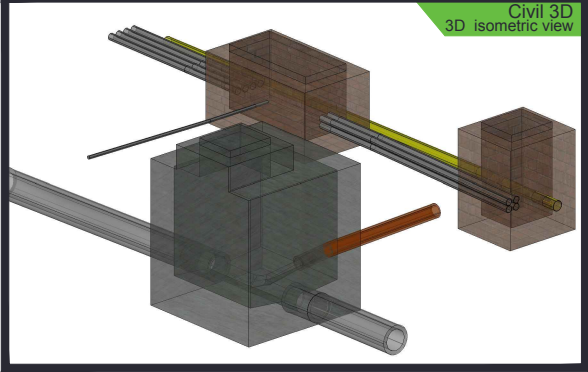
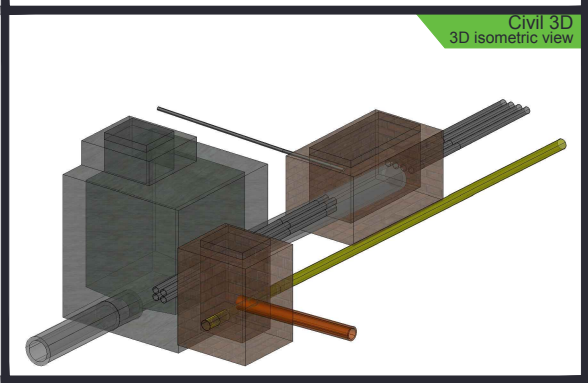
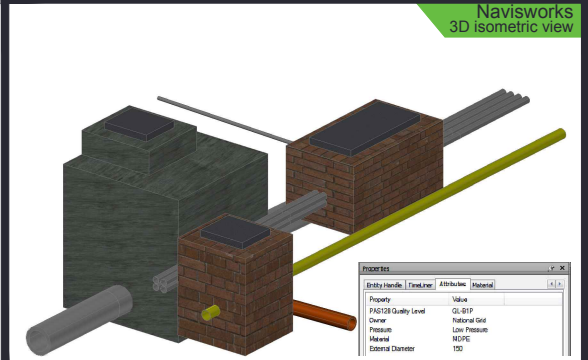
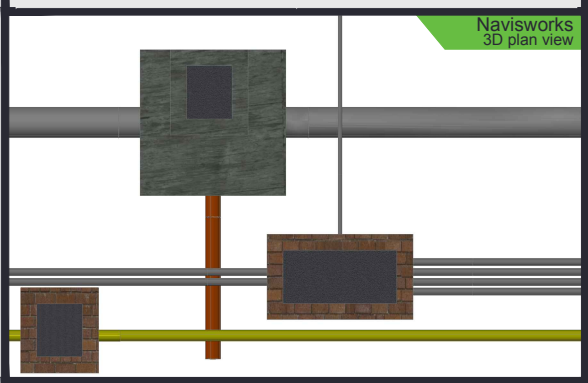
- utility type;
- utility owner;
- depth to top of the pipe and external diameter;
- pipe/duct material;
- GPR & EML detected depths;
- PAS 128 quality level;

Telecoms/electrical:

- utility type;
- utility owner;
- individual duct/cable position, orientation and depth;
- external & internal diameter of duct/cable;

Manhole/inspection chambers:

- utility type;
- chamber extent, depth, soffit and landings (realistic 3D measurements);
- wall construction type.



Model Deliverable Options

This document outlines our five main utility survey deliverable options. Each can be further tailored to meet your requirements by adding or removing vital/unnecessary attributes or data.



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