

Subtera Subsurface Locating

Bakers Hill Subsurface Utility Survey

CLIENT: Main Roads Western Australia (WA)]

12d DIMENSIONS:

Surveying and Construction
Three Waters
Oil and Gas
Environmental
GIS
BIM

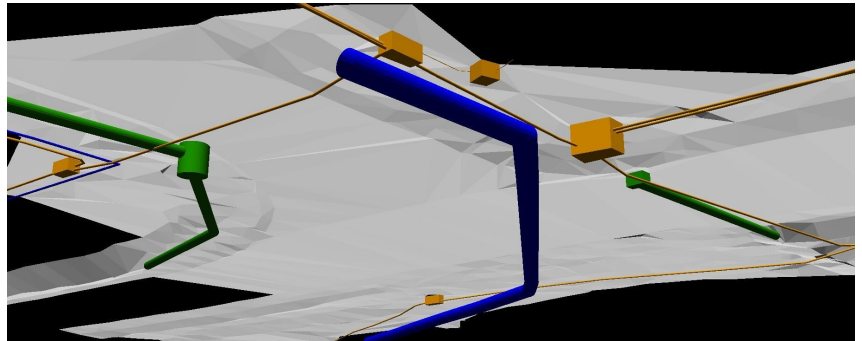
About Subtera

Subtera has been providing subsurface utility locating services in Western Australia for 20 years. A dependable reputation means they work with Australia's largest Environmental, Construction and Civil Engineering companies as well as Federal, State and Local Government clients, in the metro area and remote locations.

Project Summary

The mapping of all subsurface utilities in Bakers Hill, Western Australia.

Bakers Hill Subsurface Utility Survey



The Challenge

The task was to map all the subsurface utilities in Bakers Hill, WA – not a small undertaking! Main Roads WA needed this accurate information on the subsurface utilities in Bakers Hill WA to complete their design of a new road, in various formats, including from 12d Model.

Civil designers need their designs to work in the real world, and existing underground infrastructure can cause major issues. The existing records for the asset owners can be accessed through Dial Before You Dig (DBYD), but the spatial accuracy of these records is often not precise enough – in general there is a lot more underground than these records indicate, and the designers need data they can trust... enter subsurface utility locaters.

The Solution

Dale Shearsmith's team proceeded to locate all known Quality D utilities via Ground Penetrating Radar (GPR) and electromagnetic locaters. They then potholed for Quality Level A data. By delivering data to the AS5488 standard, they were able to qualify the data with attributes, which flow through the design process, allowing Main Roads to accurately budget for asset relocations as well as trust the clash detections listed and integrate some of the utilities that were already there, allowing for more saving of money.

SUI AS5488 (Classification of Subsurface Utility Information)

This Standard was prepared by Standards Australia Committee IT-036. The objective of this Standard is to provide utility owners, operators and locaters with a framework for the

consistent classification of information concerning subsurface utilities.

This Standard is intended to be used by those agencies and organisations that own, operate or regulate subsurface utility infrastructure and those that collect, depict and map such infrastructure. This Standard is also intended to be used by developers and consent authorities involved in the planning, approval and installation of subsurface utility infrastructure.

Subtera Methodology

To provide consistent data across projects, Subtera uses the following methodology:

- Take Quality Level C & D data and validate it to Quality Level A & B
- Collate "As Constructed" drawings of the subsurface infrastructure
- Ensure these utilities are located and surveyed
- Search for "Unknown" subsurface utilities at the final stage
- Every "Known" and "Unknown" utility will be accounted for in our field report providing an audit trail
- We adhere to all asset owners regulations when accessing manholes and infrastructure and hold accreditations for ATCO High Pressure Gas, Telstra Fibre and the Watercorp
- All works are carried out with a focus on Zero Harm to our employees and the public as outlined in our HSSE documentation

For more information

To find out more about how you can create better designs faster with the 12d Model solution for civil engineering design, visit www.12d.com.



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Roads and Highways

12d Model's design option is the smarter solution for the design, modification and maintenance of Road and Highway projects.

Enjoy advanced 3D tools to design local and major roads, intersections, roundabouts, highways, interchanges and much more.



Ports and Dredging

12d Model is the solution for port infrastructure and dredging, easily managing the very large datasets and complex volume calculations often required by these projects.

A complete range of flexible and customisable volume calculation tools allow teams to extract and present the information quickly and easily.



Land Development

12d Model is the most versatile solution for the creation of sustainable land development projects, including residential, commercial and industrial developments, recreational areas, landfills, and agriculture projects.

Easily manage all aspects of your land development project from earthwork quantities, road design utilities and drainage design.



Airport Infrastructure

12d Model provides a solution for the design, construction and analysis of new airports, as well as the upgrade and maintenance of existing runways and airport infrastructure.

Easily manage large airport infrastructure projects and share data across multi-disciplinary teams.



Rail

12d Track has been specifically designed for the survey, design and construction of light, heavy and high speed rail projects.

Extensive railway tools in 12d Track allow the rail designer to quickly and easily design their projects. These options are built on the existing 3D modelling and design tools available in 12d Model.



Mining Infrastructure

12d Model's powerful set of exploration, site investigation, survey and analysis tools are crucial for the initial design, construction and ongoing operation of mining projects.

Comprehensive tools for the survey, design and construction of access roads, railways, earthworks and services allow for the coordinated design and management of mining infrastructure from within 12d Model.



Drainage, Sewer and Utilities

12d Model provides comprehensive tools for the design, analysis and optimisation of stormwater and sewer projects using rational, dynamic (hydrograph) and 2d drainage methods.

Powerful clash detection management allows for efficient 3D modelling of service networks such as gas, electricity, telecommunications and water prior to construction.



Surveying

12d Model is a complete surveying package providing the tools to manage all facets of surveyed data including LIDAR, topographical, as-built, conformance, traversing, geodetics, data mapping, labelling and much more.

The 12d Field option runs on a ruggedized tablet and gives the user access to full 12d Model functionality, allowing you to take the entire project into the field with the most comprehensive pick-up and set-out tools.



Oil and Gas

12d Model assists with the design, construction and mapping of oil and gas pipelines, original site exploration and the wide range of infrastructure required for oil and gas projects.

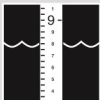
Accurate 3D modelling and the ability to share data between users allow teams to quickly and easily coordinate designs.



Construction

12d Model is the ultimate software for construction with powerful set-out options, direct interfaces to machine control and detailed conformance reporting and auditing.

Manage 3D data and control volumes, quantities and progress claims with 12d Model. Set-out your project and undertake conformance and as-built surveys live on-site using 12d Field.



Rivers, Dams and Hydrology

12d Model handles very large datasets and interfaces with a wide range of analysis packages, making it perfect for flood studies and the management of rivers and dams.

12d has partnered with industry leading analysis software, allowing users to apply 2D drainage analysis from within 12d Model.



Environmental

12d Model's ability to handle very large datasets combined with flexible and comprehensive 3D analysis and modeling tools make it perfect for a wide variety of environmental projects.

Existing workflows can adopt 12d Model easily as it allows users to directly interface with GIS systems and most software packages and file formats.

Why Choose 12d?

- Powerful data processing & intelligent functionality.
- Modular, easy to update & completely customisable.
- Seamless integration with major industry software and hardware.
- Used in over 55 countries worldwide.
- Friendly support & training from industry experts.

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