



**British  
Geological Survey**

Expert | Impartial | Innovative

**LQM**  
**LQM** Sound science:  
Defensible decisions



# Groundhog

Geological Software

Site Investigation, Conceptual Site Modelling and 3D Modelling

v2.0 Beta

Desktop

A photograph of a geological map on a wooden surface. On top of the map are several tools: a compass rose, a hammer, a pencil, and a set of calipers. The map shows various geological features and place names.

# Looking for simplicity and freedom?

## Groundhog Desktop.

An integrated tool for  
geological interpretation  
and modelling work.

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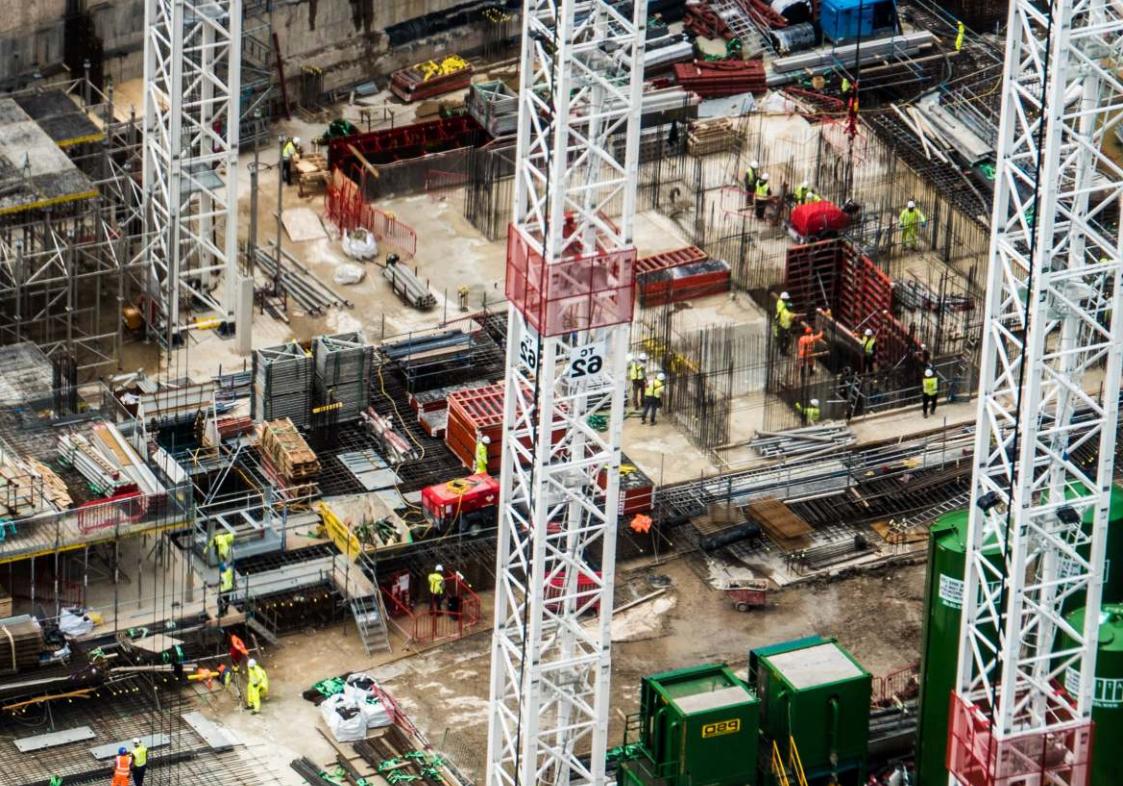
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# Introduction

## Groundhog Desktop v2.0

We believe that a safe, sustainable and well-understood environment that makes best use of new and existing resources is a cornerstone of progress.

From the management and use of natural resources to the safe creation, regeneration and maintenance of the built environment, we understand that high-quality site investigation coupled with conceptual geological understanding is key. Software that enables you to interpret your data, create models and communicate risks and insights can take things to the next level, but such digital tools are often complex, highly specialised and costly.



**That's why we've developed Groundhog Desktop.**

We believe that you should have access to powerful geological software, without it being complicated or expensive. With Groundhog, our mission is to provide you with a simple, effective way of visualising and interpreting site data as well as developing conceptual and 3D digital geological models. Our software is available in both no-cost "Community" and low-cost "Professional" editions.



# Groundhog Community

Totally free-to-use, forever.

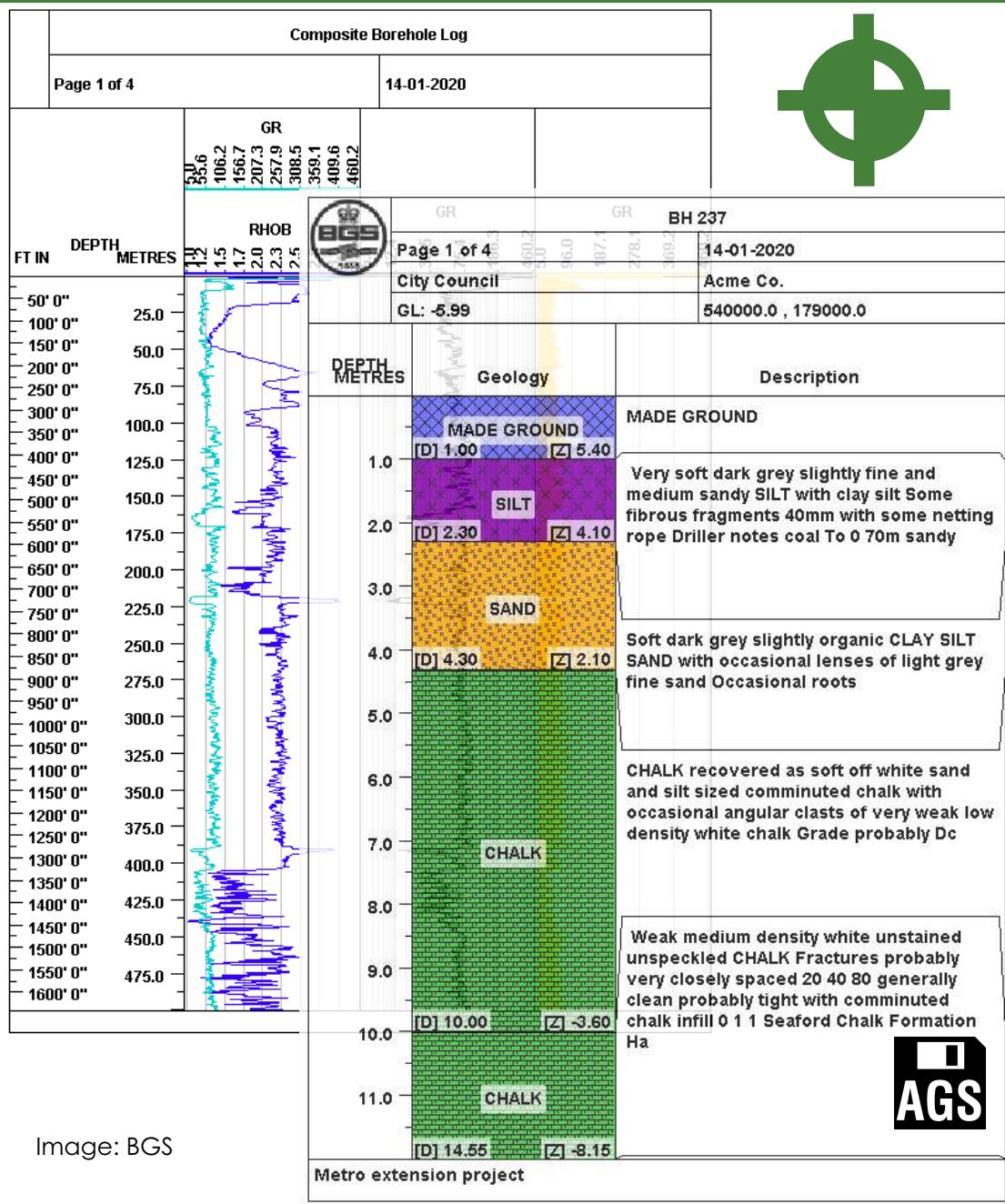
Download Groundhog  
Community and get started  
right away, at no cost, using the  
Open Government License.

Use the rich features of  
Groundhog Community on  
all of your projects, including  
commercial work.



# Groundhog Community

# Boreholes



If you've been looking for a simple way to explore and present your borehole data then Groundhog is for you!

Import site borehole data from a range of formats (TXT, CSV, AGS) or enter it directly in Groundhog.

Display in a map, as a borehole log report and include in geological cross-sections.

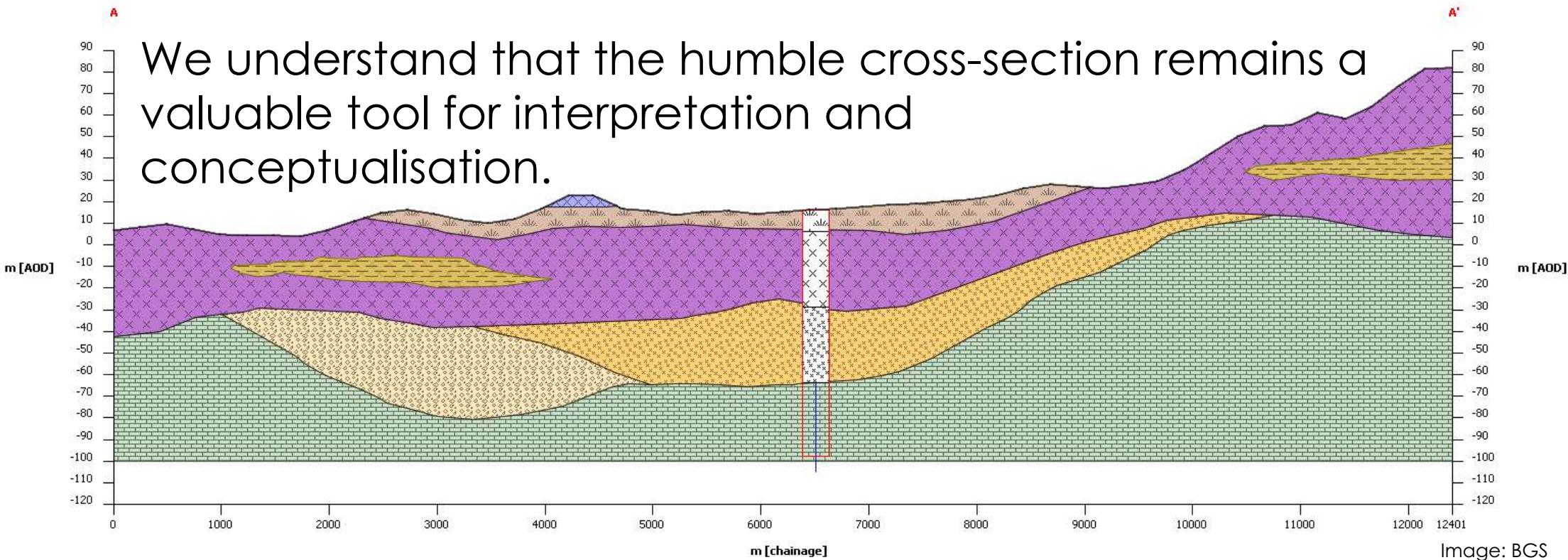
Easily create customised borehole log report templates and share them with other Groundhog users.

Explore your in-situ and lab test data with the built-in support for AGS 3.1 and 4.

Visualise composite geophysical logs using the LAS importer.

# Groundhog Community Cross-Sections

We understand that the humble cross-section remains a valuable tool for interpretation and conceptualisation.



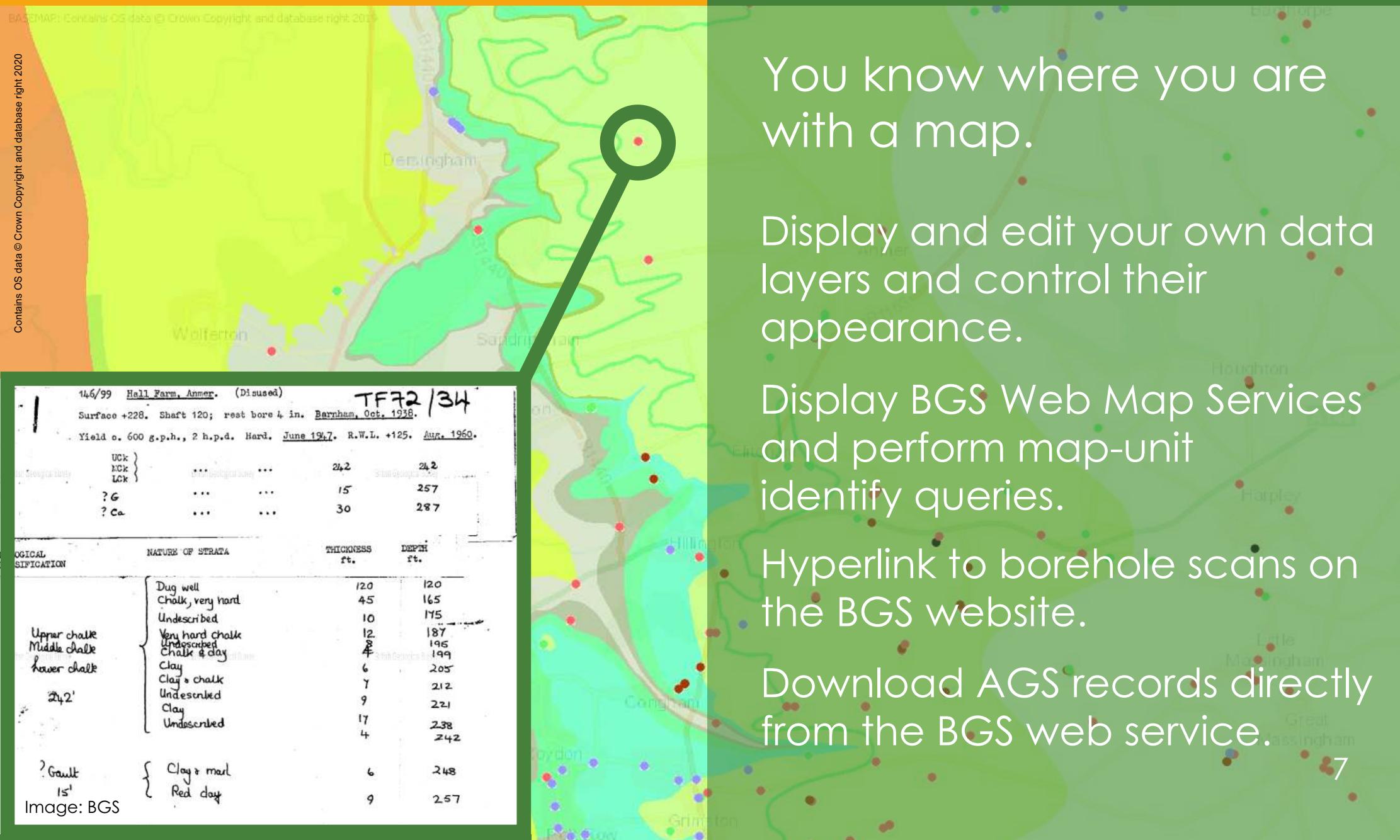
Construct detailed geological cross-sections, to scale, using the simple drawing tools. Import site elevation grids, or use the built-in 250m UK OS Open DTM, to automatically generate topographic elevation profiles.

Include or buffer boreholes into the cross-section and display using any log template.

Import and display images such as geophysical profiles or conceptual sketches.

# Groundhog Community Maps

Contains OS data © Crown Copyright and database right 2010



BASEMAP: Contains OS data © Crown Copyright and database right 2010

LOGICAL SPECIFICATION		NATURE OF STRATA	THICKNESS ft.	DEPTH ft.
Upper chalk	242'	Dug well	120	120
Middle chalk		Chalk, very hard	45	165
Lower chalk		Undescribed	10	175
	242'	Very hard chalk	12	187
		Undescribed	4	195
		Chalk & clay	6	199
		Clay	7	205
		Clay & chalk	9	212
		Undescribed	17	221
		Clay	4	238
		Undescribed		242
? Gault		{ Clay & marl	6	248
15'		{ Red clay	9	257

Image: BGS

You know where you are with a map.

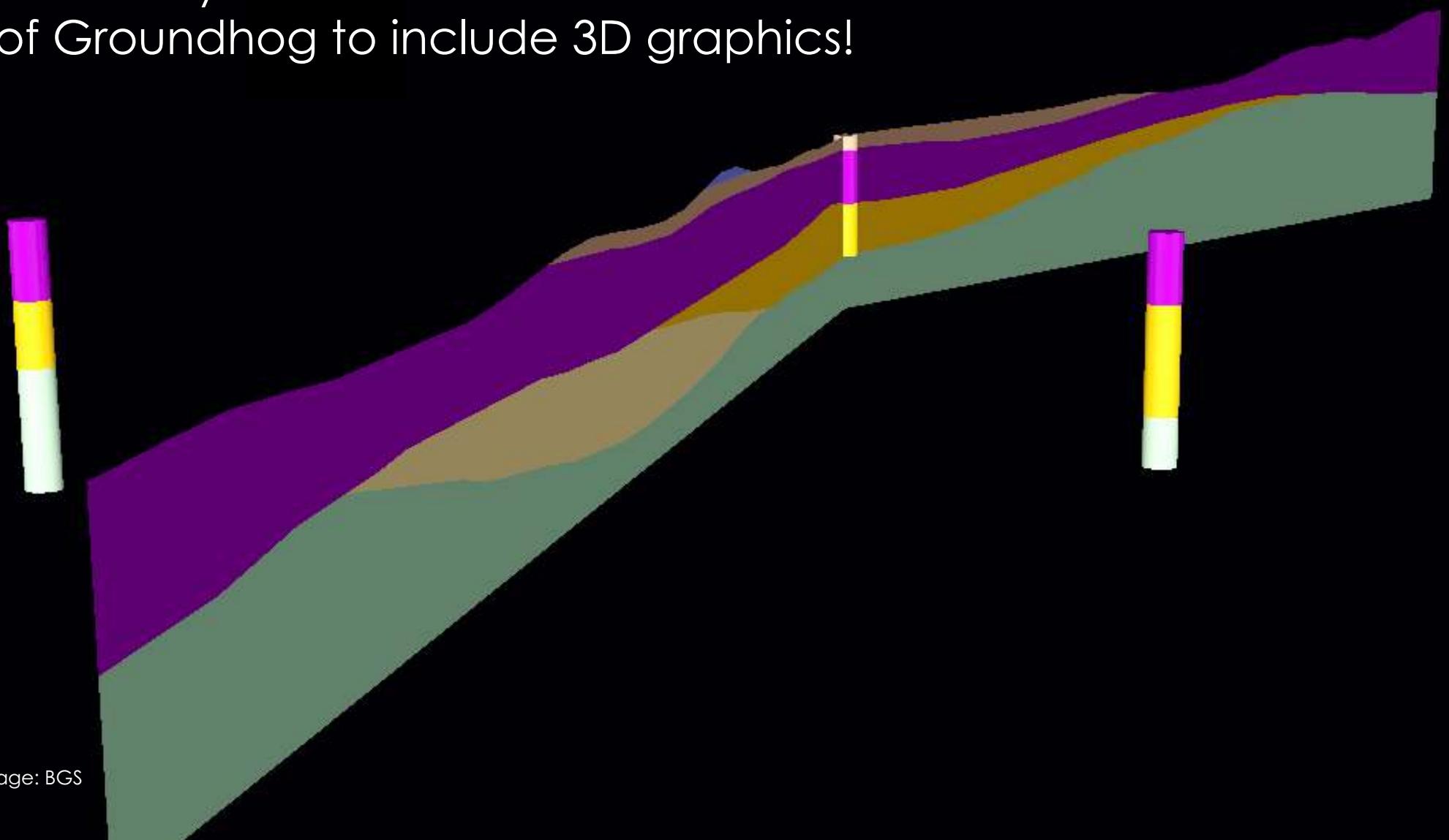
Display and edit your own data layers and control their appearance.

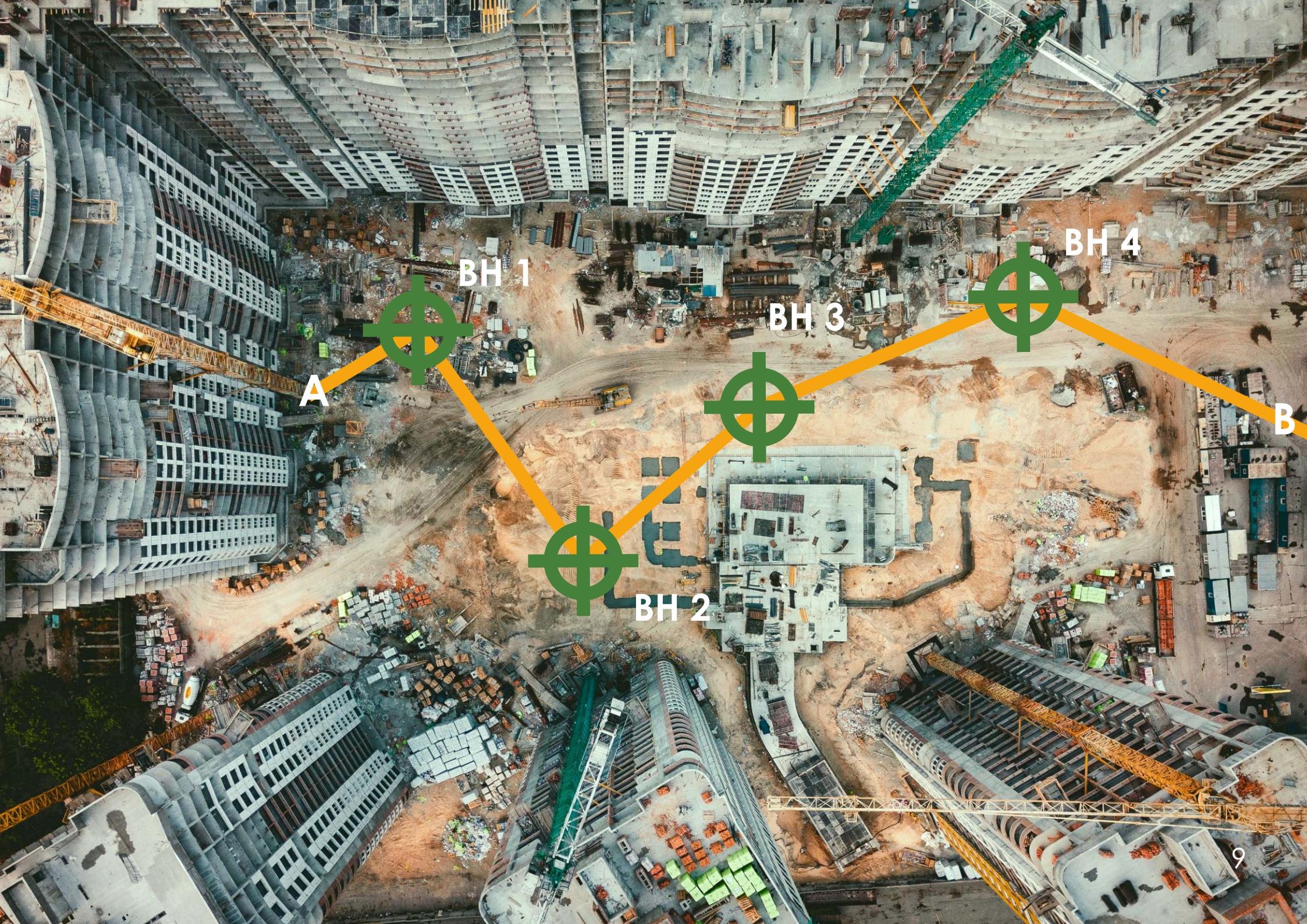
Display BGS Web Map Services and perform map-unit identify queries.

Hyperlink to borehole scans on the BGS website.

Download AGS records directly from the BGS web service.

Visualise your data in a new dimension with the first version of Groundhog to include 3D graphics!





BH 1

BH 4

BH 3

BH 2

A

B

# Groundhog Professional

Express your conceptual understanding using our low-cost solution for modelling work.

Developed with LQM, Groundhog Professional has all the features of Community with added support for both conceptual site modelling and 3D geological model building.

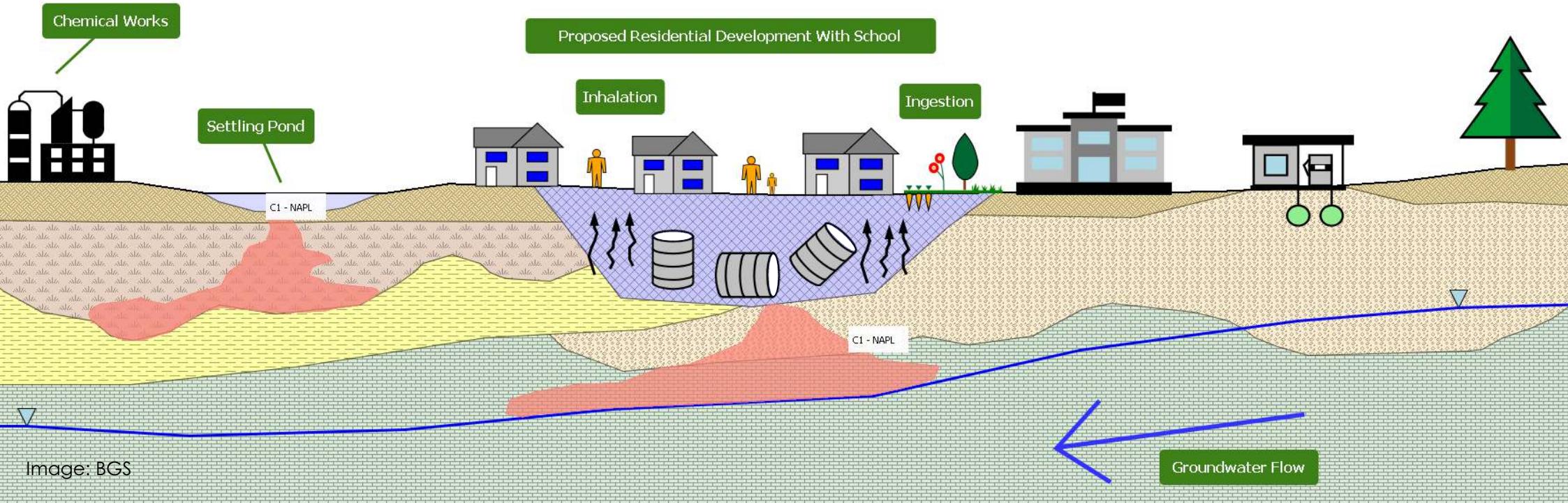
Trials and digital license keys for Groundhog Professional are available through LQM.



[www.lqm.co.uk](http://www.lqm.co.uk)

# Groundhog Professional

## Conceptual Site Models



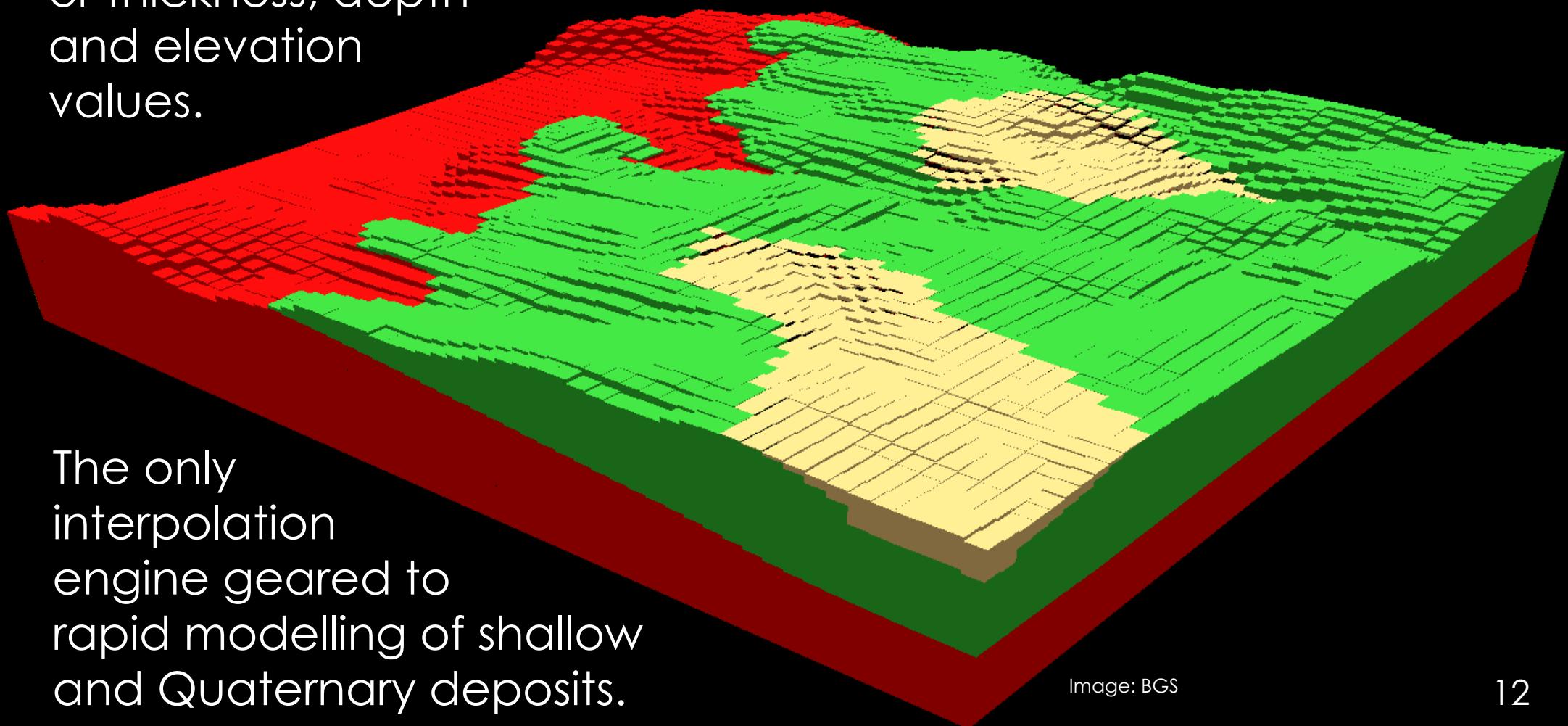
Developed closely with industry leaders Land Quality Management (LQM).

Add labels, call-outs, arrows and water levels.

Integrate geology into the CSM and include key site features using the in-built library of graphical objects.

Define contaminants, sources, pathways and receptors in the data model and construct contaminant linkages and network diagrams.

Dynamic, implicit modelling directly from data inputs including boreholes, points, linework, cross-sections, structure contours or thickness, depth and elevation values.



The only  
interpolation  
engine geared to  
rapid modelling of shallow  
and Quaternary deposits.

Image: BGS

# Features

Browse the key features of Groundhog Community and Groundhog Professional



# Features 1/5

## Import

	Community	Professional
AGS 4 & 3.1	●	●
Boreholes from text (.txt)	●	●
Boreholes from CSV (.csv)	●	●
Well data (.las)	●	●
ESRI ASCII grids (.asc)	●	●
Images and geo-registered images (.png, .jpeg)	●	●
Shapefiles (.shp)	●	●
3D objects (.obj)	●	●
GOCAD TSurf (.ts)	●	●
GOCAD Wells (.wl, .gp)	●	●

## Visualise Data

	Community	Professional
Interactive map view with pan and zoom controls (2D)	●	●
Interactive profile view with pan and zoom controls (2D)	●	●
All new 3D view (Beta)	●	●
GIS-style layer controls with re-ordering	●	●

# Features 2/5

## Visualise Data

	Community	Professional
Layer-specific transparency and clip controls	●	●
Window and data layer personalisation with editable styles	●	●
BGS Web Map Services (WMS) with identify tool facility and links to borehole scans and AGS data	●	●
Save configurations between sessions	●	●
Embedded UK gazetteer	●	●

## Cross-Sections

	Community	Professional
Automated terrain profile from elevation grid (UK 250m grid included)	●	●
Multi-segment alignments, including borehole positions if required	●	●
Geology digitizing tools with snapping	●	●
Borehole projection using buffer distance	●	●
Support for drawing lenses and faults	●	●
Geo-register profile images interactively (e.g. geophysical profiles, sketches)	●	●
Snap to: line-work, map and other sections	●	●
Annotate with labels, call-outs, arrows and graphics		●
Display profiles through imported elevation grids (e.g. water level grid)	●	●

# Features 3/5

## Cross-Sections

	Community	Professional
Dynamic link between cross-section and map views and between intersecting cross-sections	●	●
Synthetic slicing tool for 3D geological models	●	●
Graticule layer and geological legend	●	●

## Boring Logs

	Community	Professional
View borehole data in paginated log view panel	●	●
Interactive log template design tools with multiple column types	●	●
Save and share custom templates	●	●
Display and edit in metres or ft/in	●	●
Display using custom or in-built colours and ornaments	●	●
Export logs to PDF and image files	●	●
View in-situ and lab test data from AGS files	●	●
View geophysical logs from LAS files	●	●
Edit borehole data interactively	●	●

# Features 4/5

## Conceptual Site Models

	Community	Professional
Define multiple phases (Desk Study, Walkover, SI, etc.)		●
Specify contaminants, sources, pathways and receptors		●
Construct pollutant linkages as a data model		●
Auto-create and edit Network Diagrams		●
Add annotations to maps (labels, call-outs, arrows, pictures)		●
Add annotations to cross-sections (labels, call-outs, arrows, pictures)		●
Draw custom shapes and tag as CSM-layer objects (e.g. NAPL plumes)		●
Draw water levels into cross-sections	●	●
Define a Site Boundary	●	●

## 3D Modelling

	Community	Professional
Dynamic, implicit modelling engine with 3D visualisation		●
Model directly from multiple data sources on a per-layer basis		●
Stratigraphic (bedrock) and patch-based (Quaternary) algorithms		●
Define model grid and resolution interactively and define model extent from a shape layer		●
Model from borehole data		●

# Features 5/5

## 3D Modelling

	Community	Professional
Model from point layers (outcrop positions, subcrop positions, control points)		●
Model from shape layers (outcrop and subcrop maps, structure contours)		●
Model from drawn cross-sections		●

## Exports

	Community	Professional
Boreholes to text (.txt, .csv)	●	●
Maps, cross-sections and boring logs to images (.png, .jpeg)	●	●
To ESRI ASCII grids (.asc)	●	●
Cross-sections to 3D (.obj)	●	●
Geological 3D models to 3D (.obj)		●
Maps, cross-sections and boring logs to PDF (.pdf)	●	●
Shape and point layers to ESRI shapefiles (.shp)	●	●
Borehole data to AGS (.ags)	●	●
Boreholes and drawn cross-sections to GOCAD formats (.wl, .pl)	●	●
Drawn cross-sections and 3D model inputs to XYZ (.cvs, .txt)	●	●

**System Requirements:** Windows 7 or above (64-bit). Mouse with scroll wheel (laptop trackpad NOT recommended).

Dedicated graphics card recommended for optimum 3D graphics performance. May not function over network, virtual or remote-desktop type deployment platforms. Admin rights likely to be required during installation. Please ensure correct operation with your local IT administrator using a trial license to ensure satisfactory performance with your local IT policies.



Make every day a BGS Groundhog day!

# Of Users	Launch Price
Community	Unlimited
Professional Annual License	£0*
1	£500
5	£1,250
10	£2,000
20	£3,000

All prices are in GBP (£) and exclusive of VAT

\*Groundhog Community will always be free-to-use

For more than 20 users please get in touch

General Information & Download

[www.bgs.ac.uk/groundhog](http://www.bgs.ac.uk/groundhog)

[groundhog@bgs.ac.uk](mailto:groundhog@bgs.ac.uk)

Groundhog Professional License Keys

[www.lqm.co.uk](http://www.lqm.co.uk)

# Consultancy

# Customisation & Training

We can help you to integrate Groundhog into your organisation and workflows.

Using our plugin framework, the development team at the BGS are on hand to write custom features to help with integration and special requirements.

Just get in touch to find out more about these specialist services.

[groundhog@bgs.ac.uk](mailto:groundhog@bgs.ac.uk)

Together with our commercial training partner, LQM, you can access support & training services.

[www.lqm.co.uk](http://www.lqm.co.uk)





## The Development Team

We gratefully acknowledge support from  
The Geological Survey of Finland  
The Geological Survey of Sweden

This brochure is provided for guidance only. The BGS + LQM Groundhog Team are committed to a programme of continuous product development and as such all features, specifications and prices are subject to change without notice. BGS Groundhog Desktop is Beta software. Background images courtesy of [www.unsplash.com](http://www.unsplash.com). This brochure is licensed under the Open Government License (OGL) [www.nationalarchives.gov.uk/doc/open-government-licence/version/3/](http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/) please note images used throughout courtesy of Unsplash are subject to Unsplash licence terms [www.unsplash.com/license](http://www.unsplash.com/license)