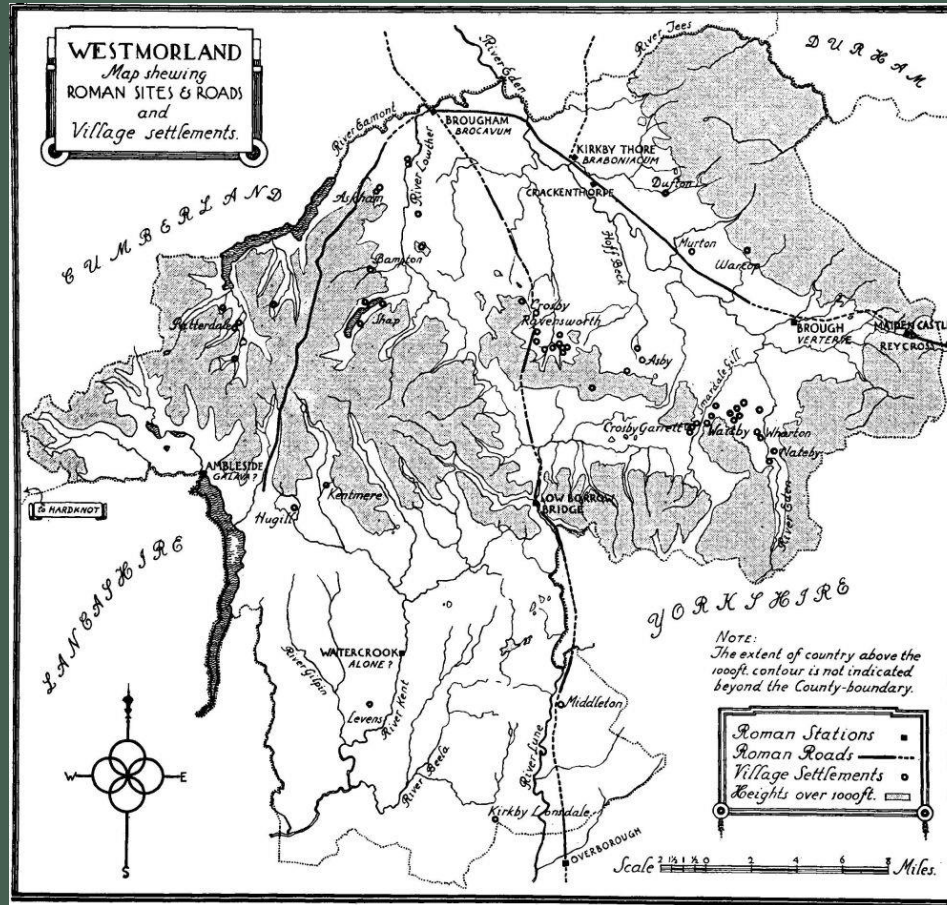


# I'll Take the High Road



Archaeological survey and excavation at  
Bampton Common



# Project Summary

- 'I'll Take the High Road' project aims to uncover new information about the Roman archaeology and landscape development of the Bampton Common area.
- Designed as a community archaeology project forming part of a wider project: 'Our Common Cause: Our Common Uplands' funded by the Heritage Lottery Fund.
- Aims to provide training opportunities in archaeological survey techniques and engage local people in research.

# High Street Roman Road

- High Street Roman Road (HER 1522 and SM 1003285) is believed to connect Brougham Roman Fort at Penrith with Ambleside, crossing through the Lake District Fells
- 5km of the presumed route crosses Bampton Common
- In 2006 three trenches excavated between Froswick and Thornthwaite Crag revealed a metalled surface and features associated with the prevention of flooding.
- Current inspection of the route by Historic England (aerial photography and ground-based observation)

# Historic England Sites

Recent survey by Historic England has identified:

- Bronze Age round cairns and monuments
- Later prehistoric clearance cairns, banks and ditches
- Medieval/post-medieval earthwork field boundaries, holloways and sheepfolds/enclosures (i.e. agricultural)
- Medieval/post-medieval charcoal burning platforms, lime kins, quarries and ruined buildings

# Fieldwork Methods

Validate the results of the Historic England survey using:

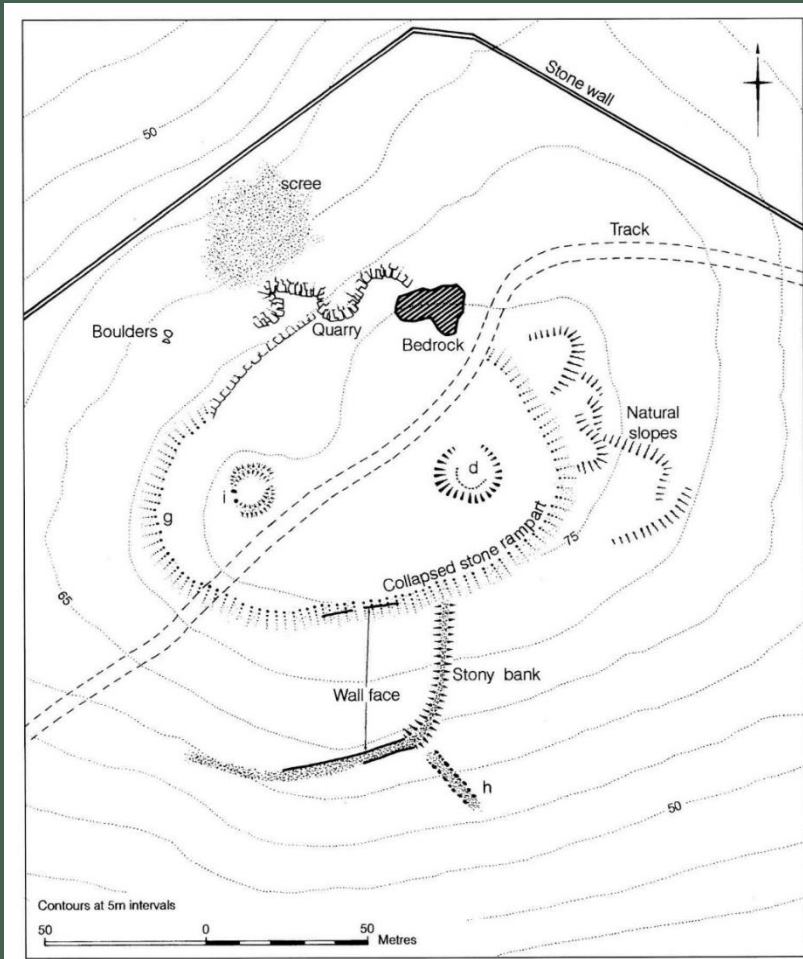
- Topographic archaeological survey of visible features
- Geophysical survey to detect subsurface features
- Small-scale excavation to confirm the route of the road
- Creation of a written gazetteer using a standard form (used to enhance the Historic Environment Record).

# Topographic Survey

Historic England Level 3 Survey of features/earthworks:

- Creation of core monument record using a *pro-forma*
- Ground photography (digital) to record visible features
- Control stations established to provide a survey framework
- Taped offset measurements taken from baselines to create scale plans of earthwork detail (hachured plans at 1:200)

# Topographic Survey



## Survey methods:

- Establish control stations/baselines
- Offset measurements from baselines
- Baselines recorded using GPS
- Detail drawn on permatrace sheets
- Hachures used to depict 'soft' detail
- Plans digitized in AutoCAD to provide scale survey drawings of earthworks

# What is Geophysical Survey?

- *Definition:* In archaeology, geophysical survey is a ground-based physical sensing technique used for archaeological imaging or mapping
- Used either as a *prospection tool* to detect unknown archaeological sites, or for *investigating* known sites (i.e. to provide new or more detailed information)
- Quality of information obtained is dependant on site conditions (e.g. geology, hydrology, soils and land use) and the particular technique used for the survey

# Earth Resistance Survey



- When an electric current is fed into the ground it encounters resistance
- This relies on the ability of the soil to conduct a current (moisture level)
- Two electrodes inject alternating current (AC) at a constant rate.
- Two probes sample the voltage to determine the resistance ( $R=V/I$ )
- High resistance is recorded if current encounters buried wall foundations
- Lower resistance is recorded where the current passes through silted up ditches

# What can you detect?

## High Resistance

### Anomalies:

- Walls/foundations
- Rubble/hardcore
- Made-up surfaces
- Roads/trackways
- Stone coffins/cists

## Low Resistance

### Anomalies:

- Ditches/pits
- Foundation cuts
- Drains
- Graves
- Metal pipes

# Surveying with a Resistance Meter



## Requirements:

- Low vegetation and moist soils (seasonal considerations)
- No obstructions (i.e. survey area needs to be free of obstacles)
- Probes must be able to make contact (compacted ground may be unsuitable)
- Four people ideal number for managing the instrument, cables and ropes
- Data downloaded into a laptop in the field for processing and storage

# Geophysical survey

King George V Playing Field



Google Earth

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# Processing Data

The screenshot displays the Archeosurveyor software interface for processing magnetic data at Site: Carrawburgh. The main window shows a magnetic intensity map with a grid overlay. The map is oriented vertically, with a scale bar indicating 400, 256: 5.30. The map shows a complex pattern of magnetic anomalies, likely representing archaeological features.

The interface includes several panels and toolbars:

- Manage:** Contains Zoom, Modify, Macros, Annotate, and Statistics.
- General:** Includes Clip, DeSpike, DeSlope, H/L Pass, Wallis, 2D FFT, and Maths.
- Mag:** Includes Stretch, DeStagger, DeDrift, DeStripe, and Notch.
- Res:** Includes Range Match and Edge Match.
- Modify:** Includes Interpolate, Compress, Move, Replace, and Mask.

The **Settings** panel is open, showing the following options:

- Display:** Clip at 1.00 SD, Clip to:  Clip to: 90.00°,  +/- 3 SD,  Value: -10 to 11.
- Shade:** Grid Lines (checked), Sub Grids (unchecked), Filenames (unchecked), Band Weight Eq. (unchecked), Grad. Shade (checked), Block Colours (unchecked), Flip Palette (unchecked), Contours (unchecked), Colour (black), Colour Contour (unchecked).
- Scale Intervals:** 10.
- Selection:** Full Left 0, Top 0, Area Right 0, Bottom 659.

The **Navigation Bar** shows the project structure:

- Y:\Geophysics Training
- Brocalta
- AutoCAD drawings
- email correspondence
- Geophysics
- Carrawburgh**
- Health and Safety
- Report
- Chollerford
- Corbridge
- New Folder
- William Howard School

The **Statistics** panel shows the following data:

Full

Statistics: Full

Min / Max: -76.53 / 58.29

Mean / Median: -2.45 / 0.00

Std Dev: 19.77346

Grid Size: N/A

Survey Size: 150 m x 330 m

X & Y Interval: 0.25 m x 0.5 m

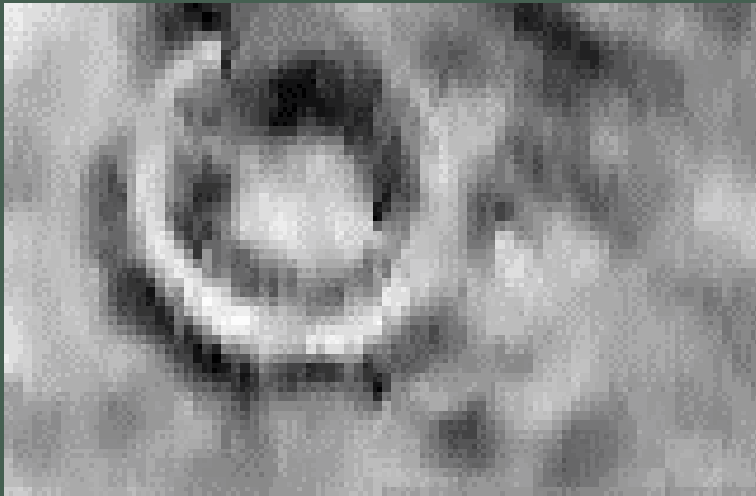
The **Navigation Bar** also displays a table of files:

Name	Date Modified
Area 1 - proc.xcp	19/02/2016 09...
Area 1.xcp	16/02/2016 13...

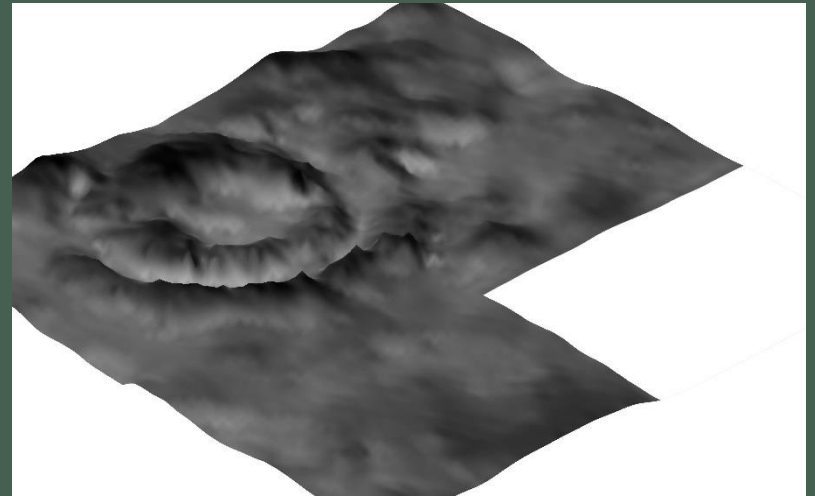
The **Navigation Bar** also includes buttons for Open Composite, Open Grid Assembly, Save Composite, Assemble Grids, Save Composite As, Site Details, Download, Import, Output, and DataLogging.

The Windows taskbar at the bottom shows the system tray with the time 11:08 and date 23/02/2016.

# Presentation of Results



Greyscale image



3D Model

Earth resistance data for a Roman Signal station (?)

# Archaeological Excavation

- “Archaeology is the study of human activity through the recovery and analysis of material culture”.
- Modern archaeology is married to the concept of stratigraphy (layered materials or strata) that were deposited at a site in sequence over time.
- Modern excavation requires that the precise locations of objects and features, be recorded (i.e. their context).
- Excavation progresses from most recent context to the earliest (or to the natural undisturbed geology)
-

# Roman Roads



Different classes of roads:  
Average width of 488 metalled  
Roman roads in Britain is 6.51m

Often have a pronounced *agger*  
with drainage ditches each side

Evidence for un-metalled lanes  
each side with outer ditches

Cuttings/terraces to maintain  
gradient. Foundations may be  
enhanced in wet or boggy areas

Maiden Way Roman Road near Alston showing a distinct *agger*  
(North Pennines Archaeology 2011)

# High Street



Haverfield reported a 10ft-wide (3m) metalled road with kerb stones in 1898

Excavated road surface comprised gravels and pebbles (no cobbles/kerb)

Assumed to be foundation layer (robbing of upper stone surface?)

Gravel-filled ditch for drainage

Banks of clay and gravel acting as a 'dam' to keep water from surface

High Street Roman Road between Froswick and Thornthwaite Crag  
(Greenlane Archaeology 2006)

Any questions?



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