



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Applied geoscience for our
changing Earth

BGS National Geotechnical Properties database

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Synopsis

- BGS National Geotechnical Properties Database
 - History of the BGS database
 - Access to data and data addition
 - Database content and relations
 - Queries
 - Validation and checking



BGS National Geotechnical Properties Database

- 1980's paper or spreadsheets. Limiting.
- Started ~1992, updated 2001, 2003 and 2009 (Corporate)
- Managed by Sue Self 2000 onwards
- Data primarily from third party site investigation reports
- Addition generally project orientated
- Contains 54 tables and 33 dictionary tables based on AGS 3.1

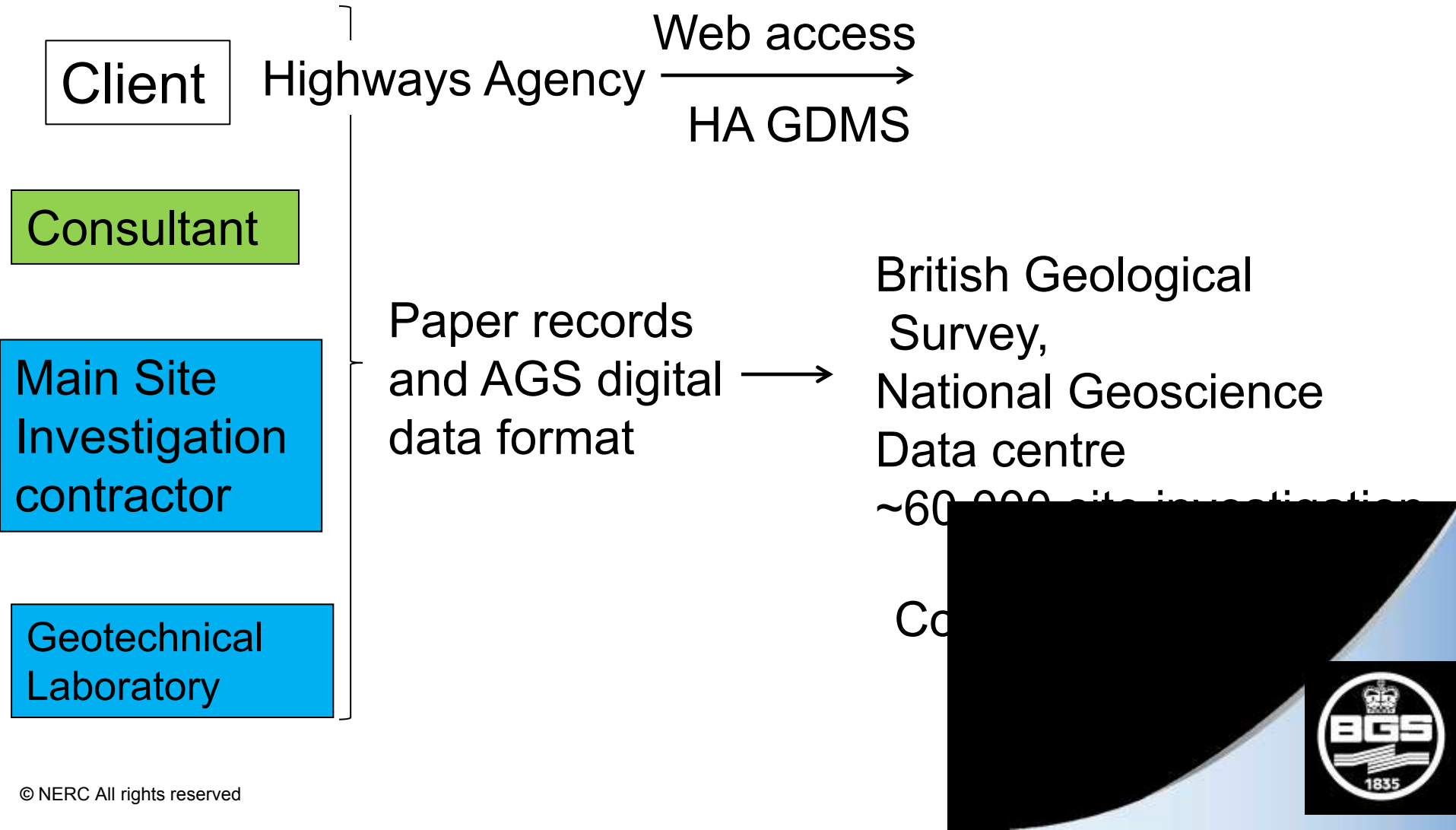
- Supports projects in
 - Engineering geology projects
 - 3D geological and property modelling
 - Enquiries



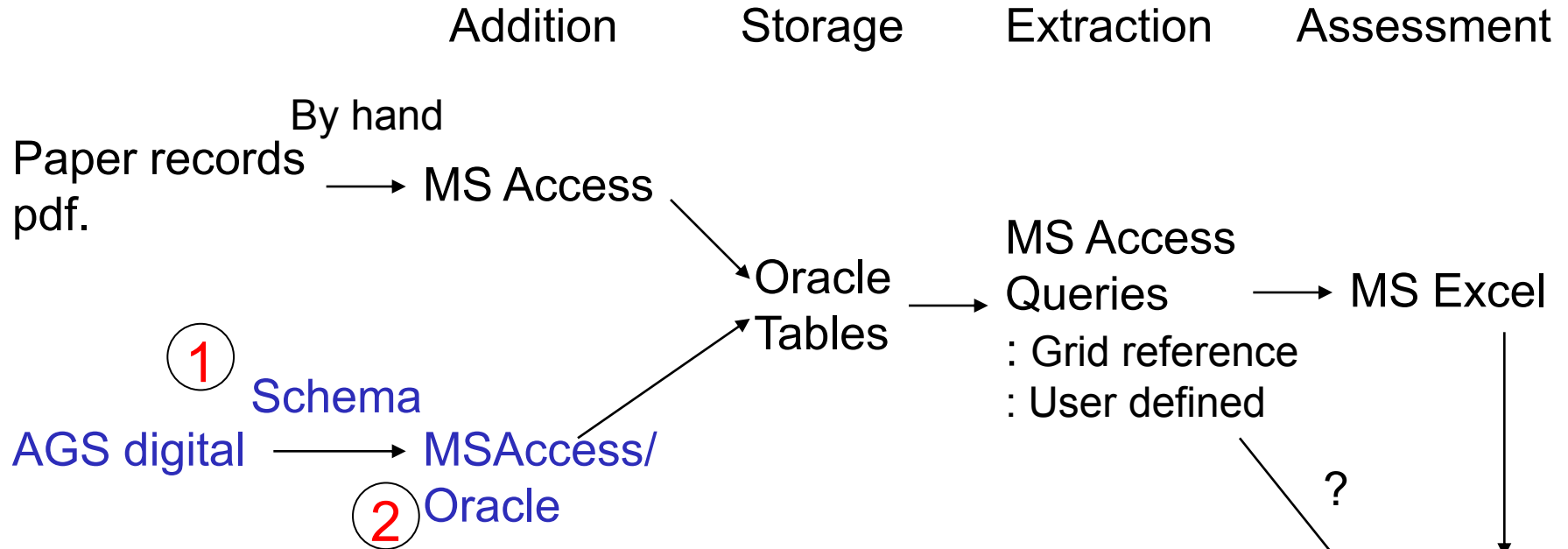
Data sources

<http://www.bgs.ac.uk/services/ngdc/records/depositing.htm>

<http://www.bgs.ac.uk/data/boreholescans/home.html>



Data addition National Geotechnical Properties Database



National Geotechnical Properties Database

- Tables based on AGS 3.1



Additional

- Extract data from the description (variety of data)
 - Lithological classification (BGS) (data analysis and 3D modelling)
 - Features, consistency (density, strength)
 - Weathering grade (including chalk classification)
 - Man-made materials (brick, chemical waste etc.)
- Lithostratigraphy (BGS lexicon) data analysis



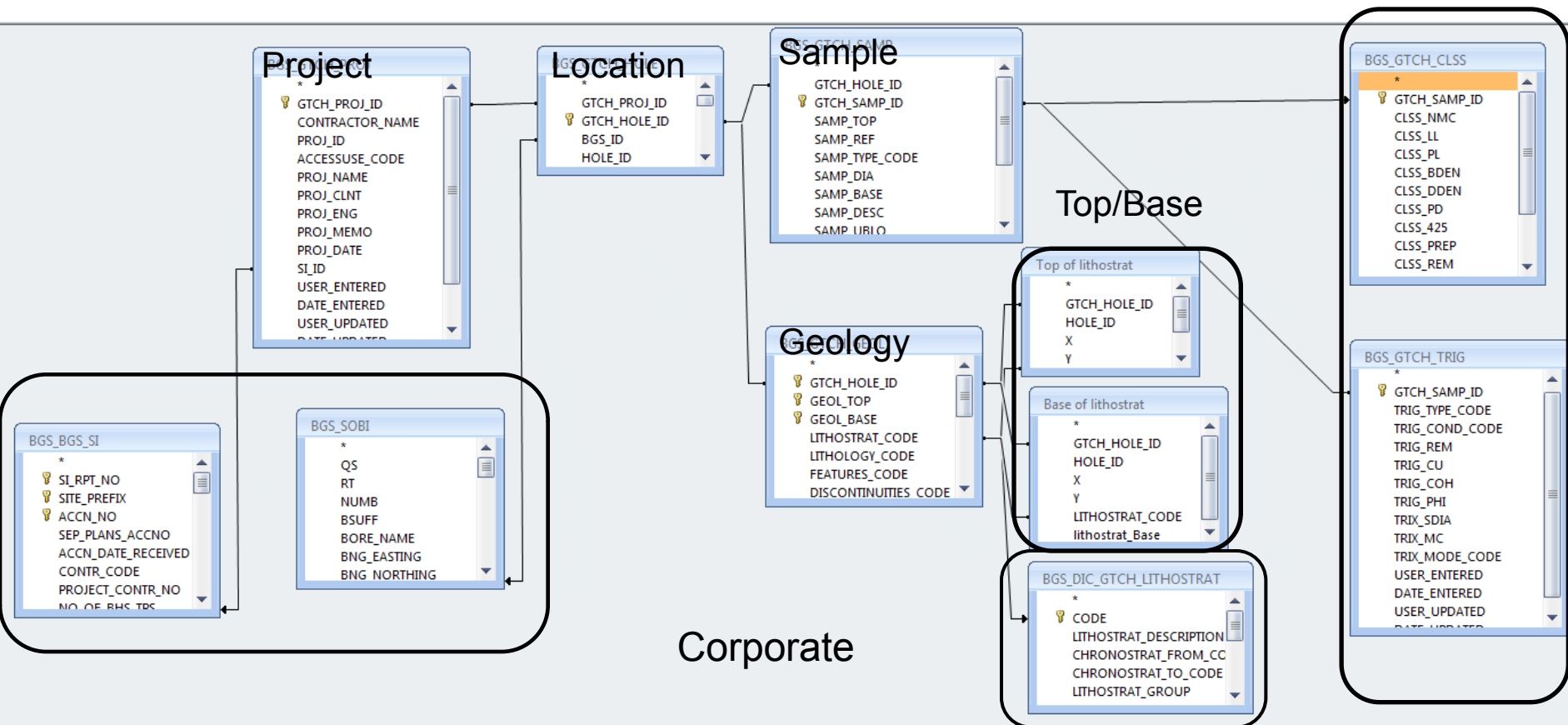
Access to data through Queries

- Access queries
 - Data from a number of tables as required by
 - National grid
 - User defined queries (e.g. geological unit, project etc)
 - Defined areas
- Additional tables for queries
 - Depth below unit top or base



Query for soil triaxial tests with plasticity

Laboratory



Data validation and checking

- Data rejected if the test not carried out to required standard
- Validation, including erasing data, usually during analysis for a project



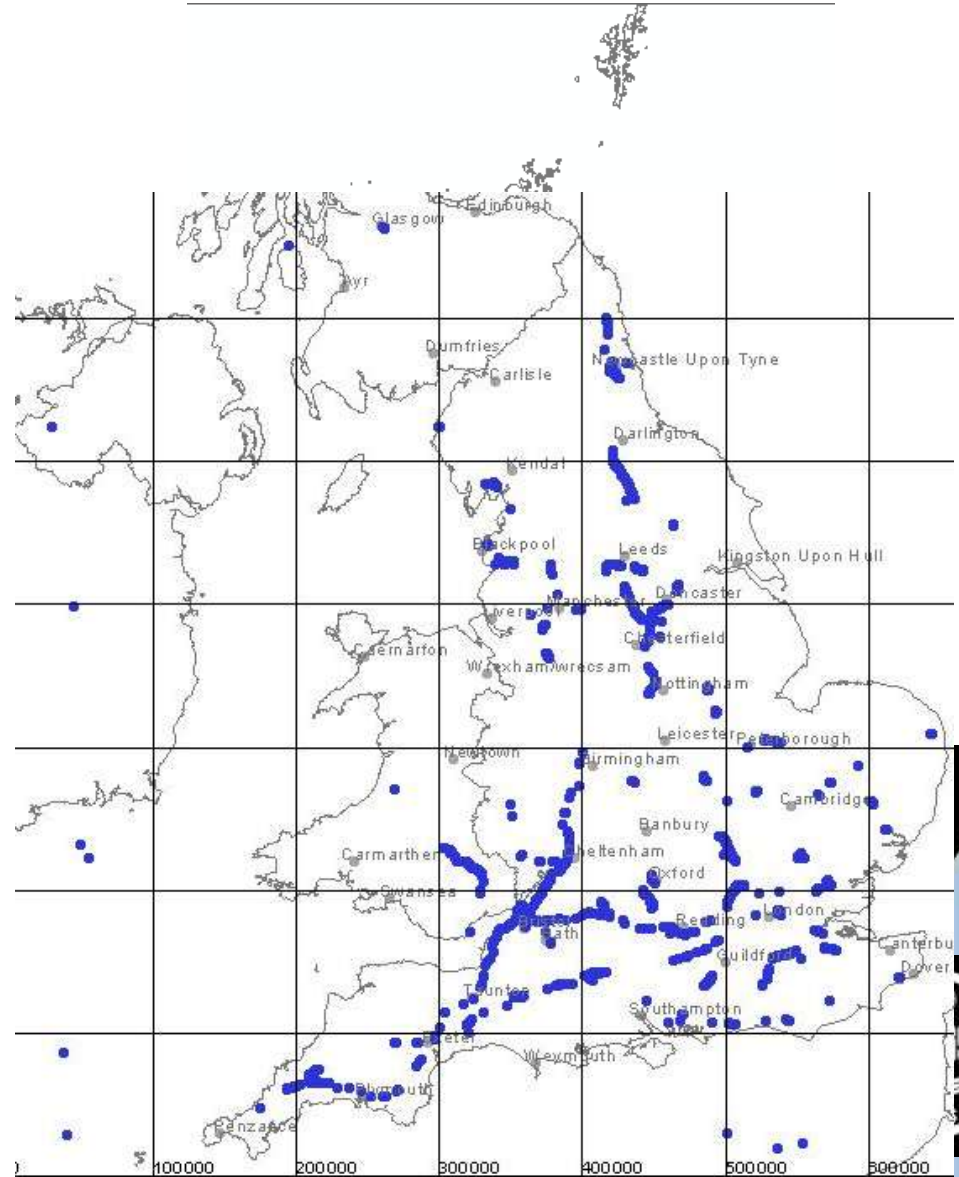
Current database holdings

Number of boreholes and pits

Total 95,800

AGS 39,700

Over 2.5 million data



Summary

- A relational database is the most efficient way to store and retrieve the variety geotechnical and geoenvironmental data.
- Flexibility of queries.
- Allows constraints on the data.
- No repetition of adding the same data
- The AGS digital data transfer format may be used as a guide to the design.



Thank you

