



**British
Geological Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL
**Arolwg
Daearegol Prydain**
CYNGOR YMCHWIL YR AMGYLCHEDD NATURIOL

Geoscience for our changing Earth

The stakeholder led approach to setting urban geology strategy: experience from Wales, UK

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The ‘take home’ message:
“Talk to your stakeholders – they will tell you what research needs doing”

Talk Outline

1. Motivation for Urban Geology
2. Stakeholder Engagement Programme
3. Examples of recent stakeholder-led projects



Motivation for Urban Geology in Wales

19th Century

Coalfield Landscape



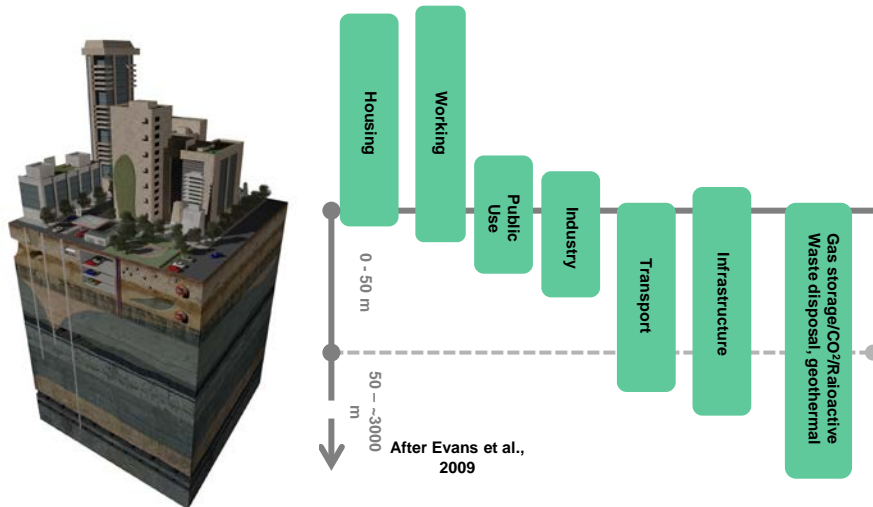
21st Century

Proposed Energy Lagoon



Urban growth and regeneration

Wales' towns and cities and their geographic catchments are growing, densely populated areas with a high demand for maintaining and developing infrastructure knowledge and service, and tourism based economies

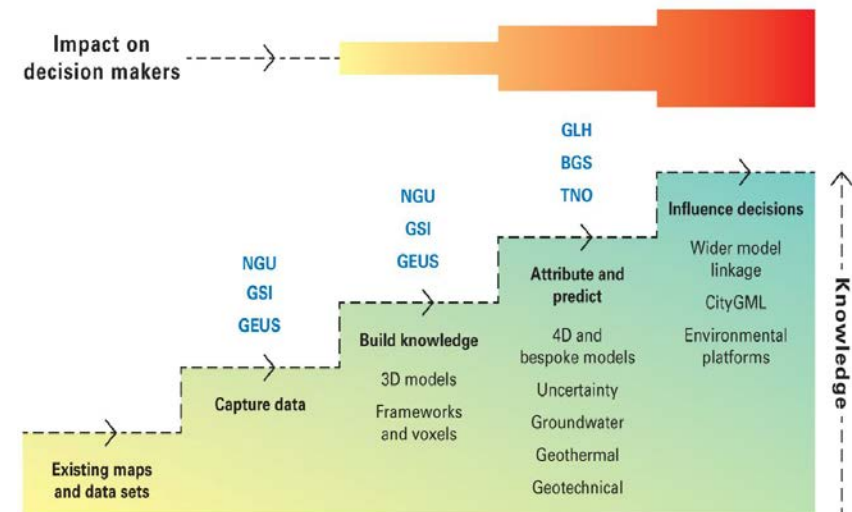


-These land uses are often in conflict and the role of the geologist is increasingly to characterise, model and advise on interactions between these factors

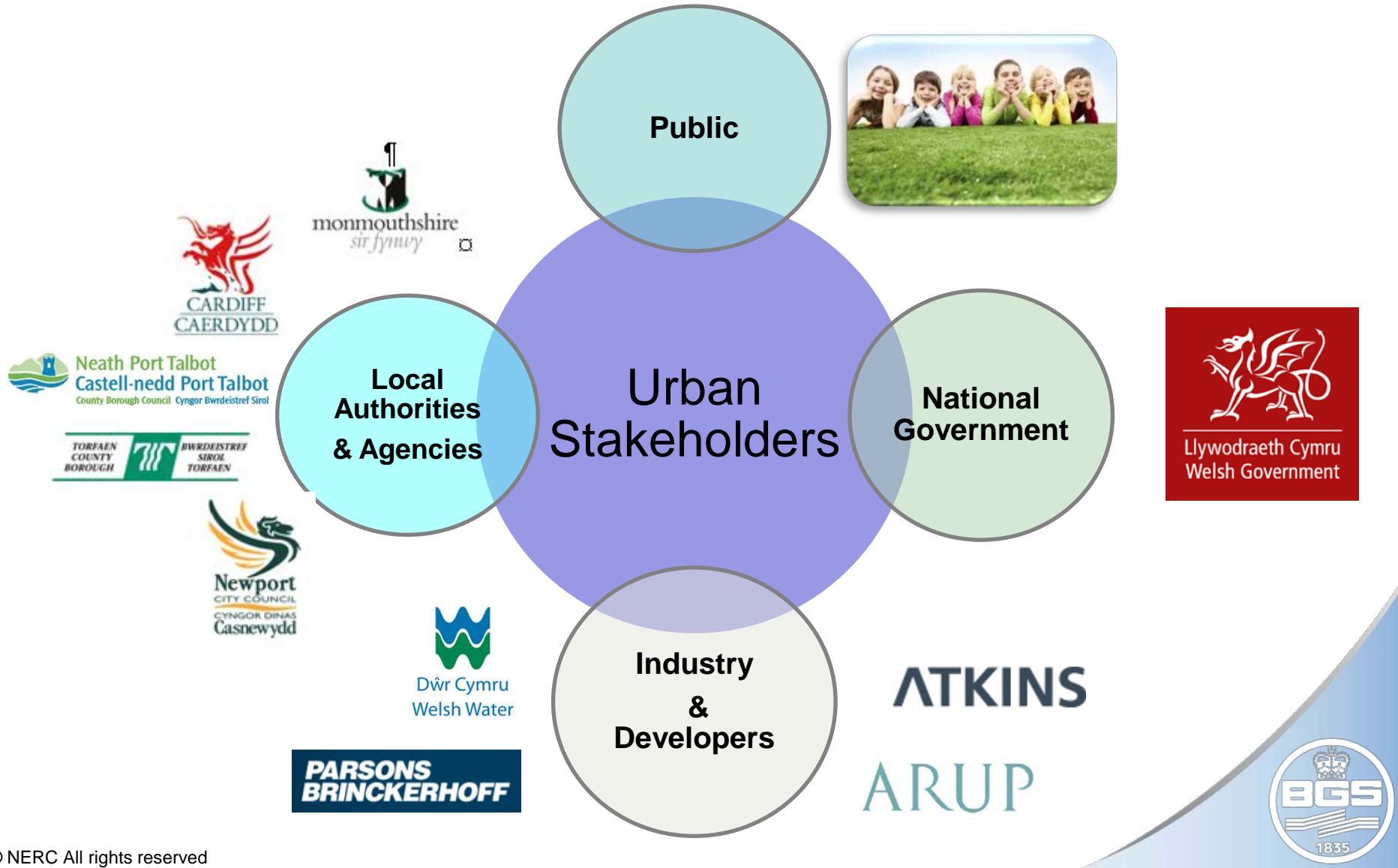
-Increased knowledge reduces 'ground risk'



-Urban infrastructure includes transport networks, underground services, building stock, water supply and other services



Who are your Stakeholders?

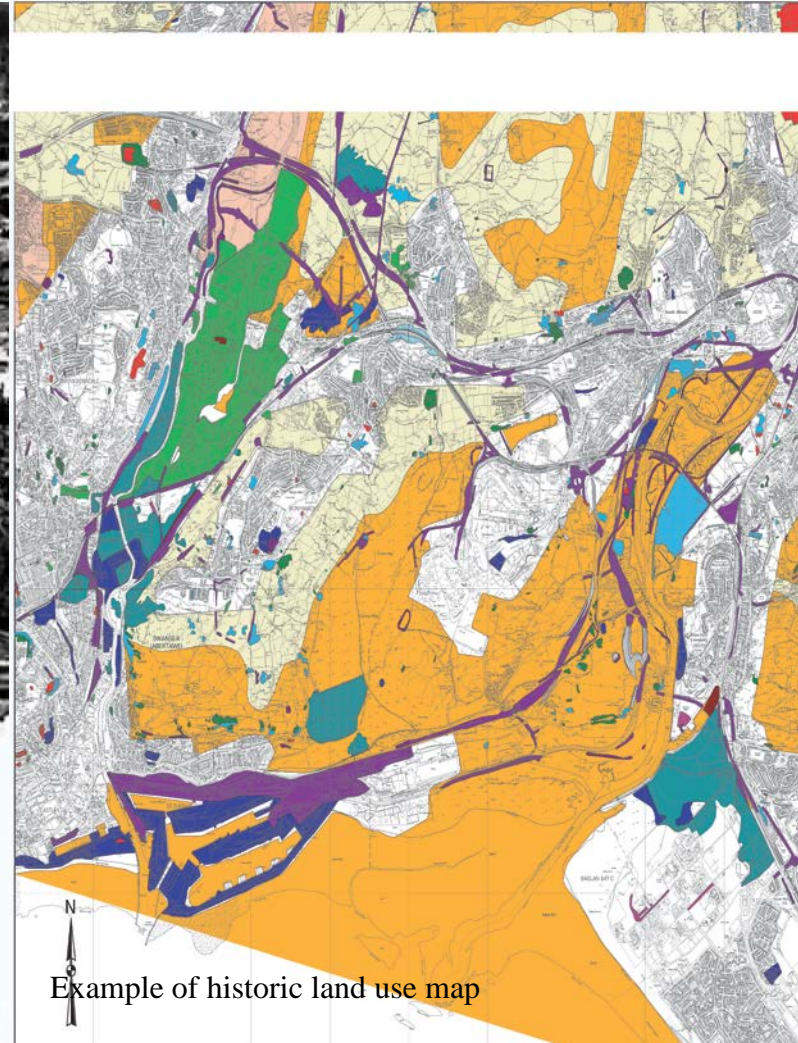


Why take a new approach?

...Experience from Swansea Bay City Region



Swansea was copper smelting centre of the world in 19C



Example of historic land use map

Steps in eliciting urban geology research priorities



Step 1: Horizon scanning

Planned & Proposed Infrastructure Investments

- e.g. M4 Relief Road
- 50 000+ new homes, SuDS & Flood Alleviation schemes
- Railway network upgrades
- Tidal power lagoons

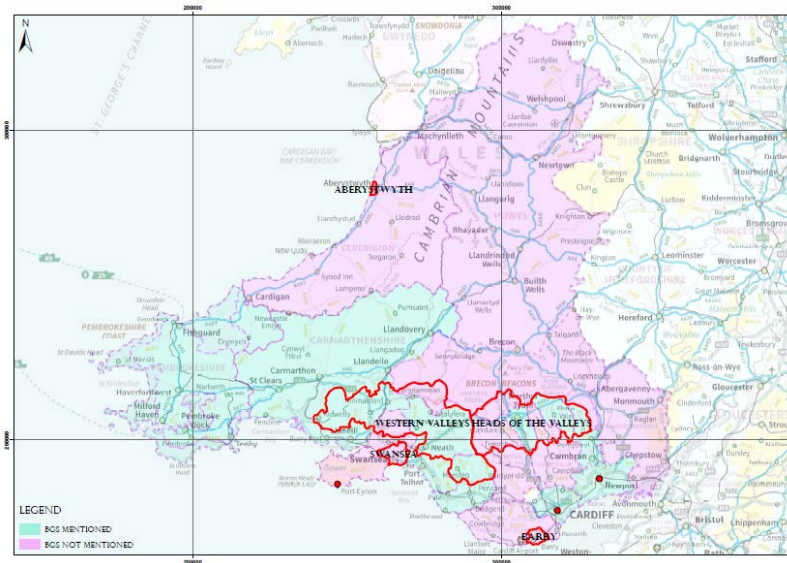
Review state of knowledge

- Review of previous urban geology research, what science had impact, what didn't & why



Step 2: Scoping Study

Public perception of geologic issues and role of geological survey



Analysis of development plans

Issue Requiring Geoscience Data	No. Local Authorities n=18
Mineral Resources	18
Waste Management	18
Water Resources	17
Contaminated Land and Groundwater	17
Flooding	17
Climate Change	16
Geoconservation	15
Renewable Energy	14
Instability and Subsidence	12
Brownfield Development	10
SuDS	8
Coastal Erosion	6
Coal	5
Ground and Surface Water	5
Soil Quality	4
Recycled Minerals and Aggregate	4
Wetlands	3
Ground Conditions	2
Sewage	2
Oil and Gas Exploration	2
Peat	1
Geological Conservation	1

Step 3: 'Active' Stakeholder Engagement



- Stakeholder presentations and discussion
- 'Listen' to their issues and aspirations
- Found a varying willingness to engage, dependent on skills profile, resources & timing

Main priorities for councils:

- Energy & resources: Low-Carbon energy, reduce CO₂ emissions, minerals, safe energy development (shale gas)
- Environmental: flooding, SuDS, contaminated land, controlling ground risk

Example 1: Cardiff City – Shallow Geothermal

Drivers:

- Council approving 40 000 new homes
- Targets to **reduce heating costs & CO₂**
- Waste Water Management (SuDS)



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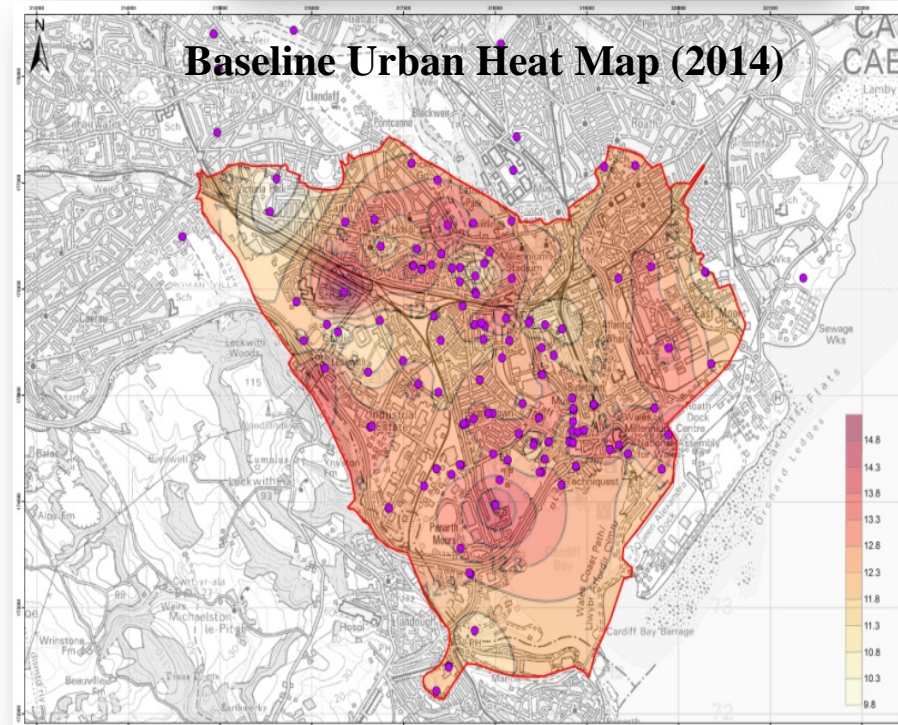
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Synergies:

- Willing and enthusiastic partner
- Groundwater monitoring network unique to UK

Activities:

- ✓ Forming **Research Partnerships** to enable cross-sector research in low carbon energy
- ✓ Trial **Data Sharing for risk reduction**
- ✓ Installation of Urban **Heat Monitoring Network**
- ✓ Provision of '**baseline**' Urban Heat Maps
- ✓ **Mapping** of artificial ground
- ✓ Planning tools for identifying and resolving conflicts
- ✓ **Knowledge exchange** through participation in EU programmes (e.g. COST 'SubUrban')



Conclusions



1. The British Geological Survey in Wales have taken a stakeholder-led approach to setting urban geology research priorities in Wales
2. Active stakeholder engagement increases the relevance and impact of your research, and provides 'value for money' for the tax payer
3. Partnership working seeds open collaboration, enables easier access to data, steers research direction and focuses efforts across organisations
4. Talk to your stakeholders & remember to listen to them!

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