



British
Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

Mapping to show the suitability of the subsurface for infiltration SuDS

What is sustainable drainage?

Sustainable drainage systems (SuDS) provide an alternative drainage solution to piped drainage networks. They aim to: (a) reduce damage from flooding; (b) improve surface water quality, and (c) protect and improve the environment. SuDS encompass a wide range of techniques that mimic natural processes, such as enhancing interception of rainwater by vegetation, allowing water to collect in ponds, filtering surface water through swales and wetlands and by encouraging water to infiltrate to the ground.

The Floods and Water Management Act 2010 requires that new developments, over the size of a single dwelling, should use sustainable drainage to discharge surface water where possible. The National Standards for Sustainable Drainage (draft) states a hierarchy to guide which SuDS systems should be installed; this gives precedence to SuDS which infiltrate to the ground.

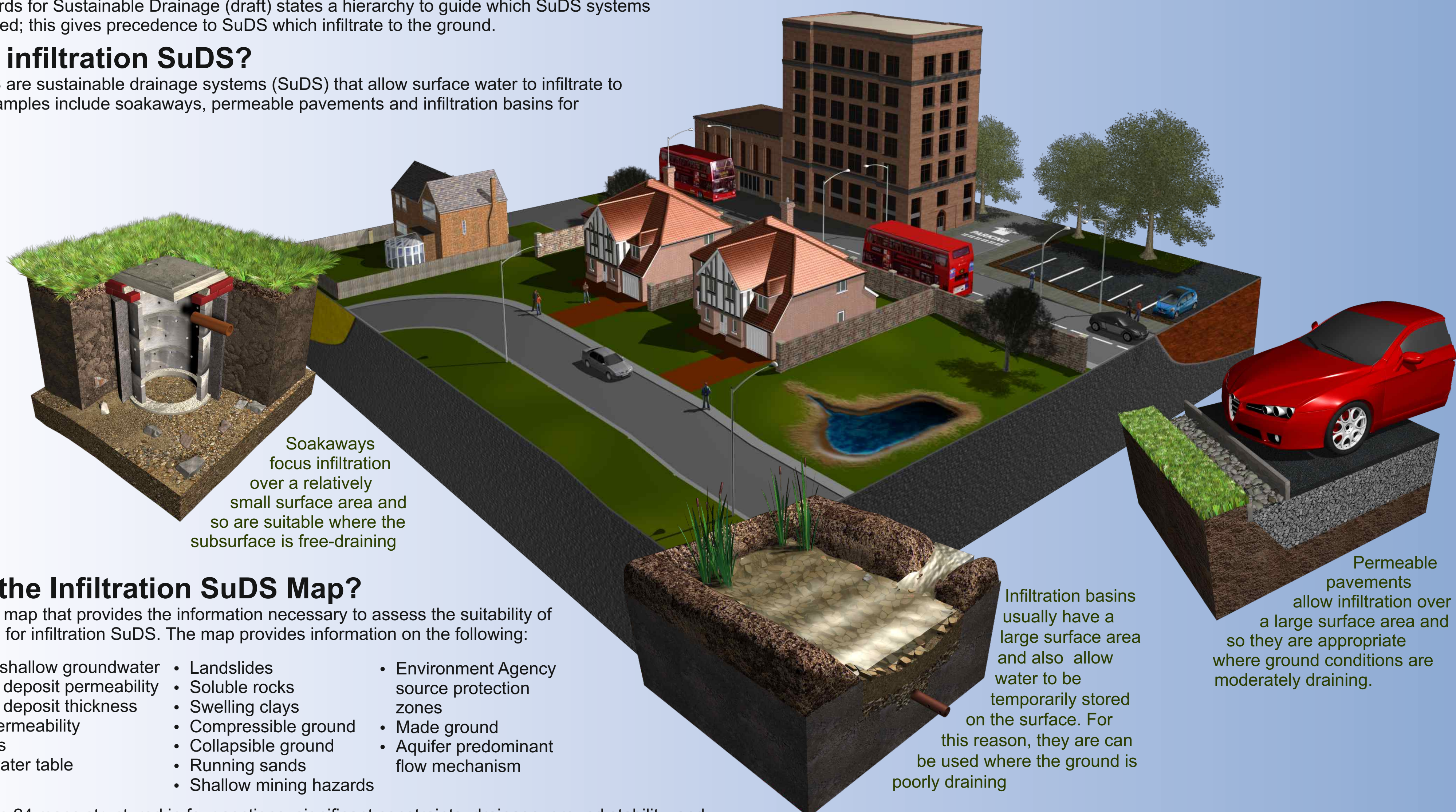
What are infiltration SuDS?

Infiltration SuDS are sustainable drainage systems (SuDS) that allow surface water to infiltrate to the ground. Examples include soakaways, permeable pavements and infiltration basins for example.

Can infiltration SuDS be installed anywhere?

Infiltration SuDS can be installed where the ground conditions are suitable. Consideration must be given to the drainage potential, the stability of the ground and the potential impact of infiltrating surface water to the quality of the receiving groundwater. Where ground conditions are optimal, infiltration may form the principal drainage solution, elsewhere, the ground conditions may influence the design of the infiltration systems and the extent to which they can be used.

At the start of any development project that requires drainage, the ground conditions should be considered to determine whether infiltration SuDS are likely to be appropriate, and importantly, what type of system might be appropriate.



What is the Infiltration SuDS Map?

It is a national map that provides the information necessary to assess the suitability of the subsurface for infiltration SuDS. The map provides information on the following:

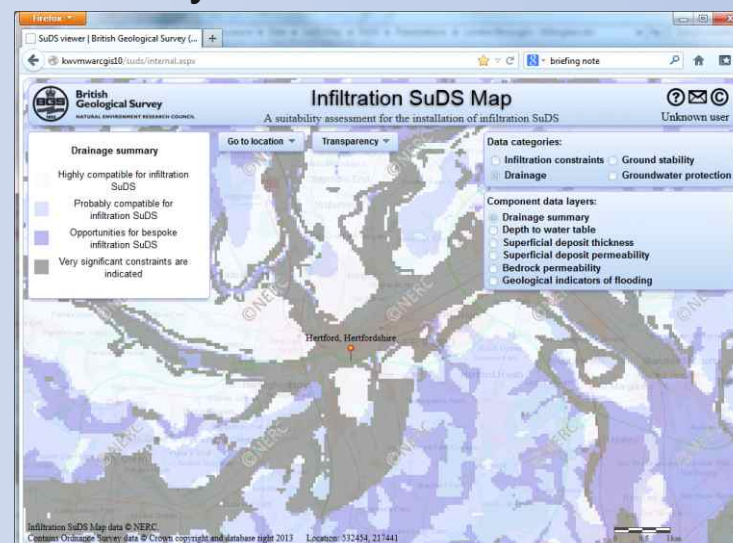
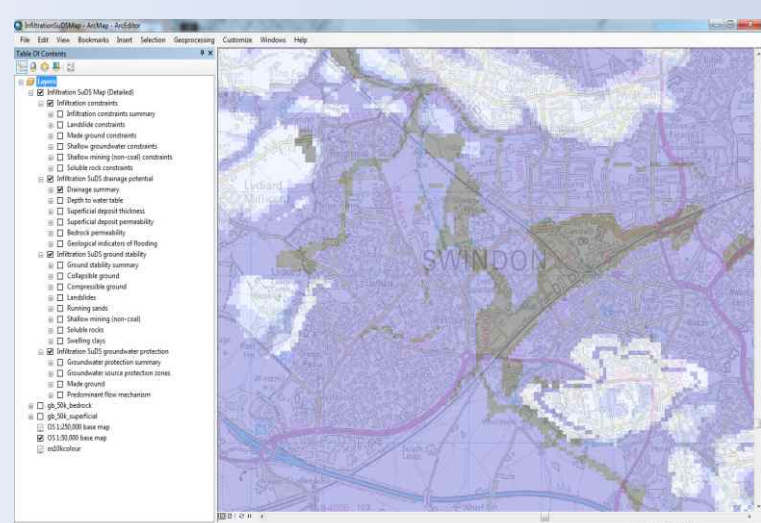
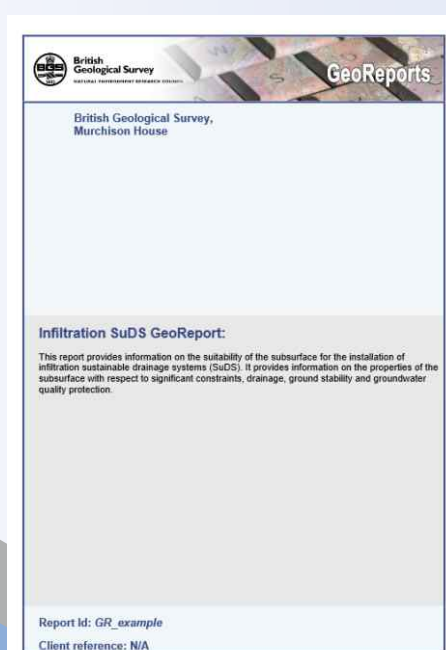
- Persistent shallow groundwater
- Superficial deposit permeability
- Superficial deposit thickness
- Bedrock permeability
- Floodplains
- Depth to water table
- Landslides
- Soluble rocks
- Swelling clays
- Compressible ground
- Collapsible ground
- Running sands
- Shallow mining hazards
- Environment Agency source protection zones
- Made ground
- Aquifer predominant flow mechanism

In total there are 24 maps structured in four sections; significant constraints; drainage; ground stability, and groundwater protection. The majority of this data is derived from the 1: 50,000 scale digital geological map. It should be used for planning and is not an alternative to a site investigation or soakaway test.

In what formats is the Infiltration SuDS Map available?

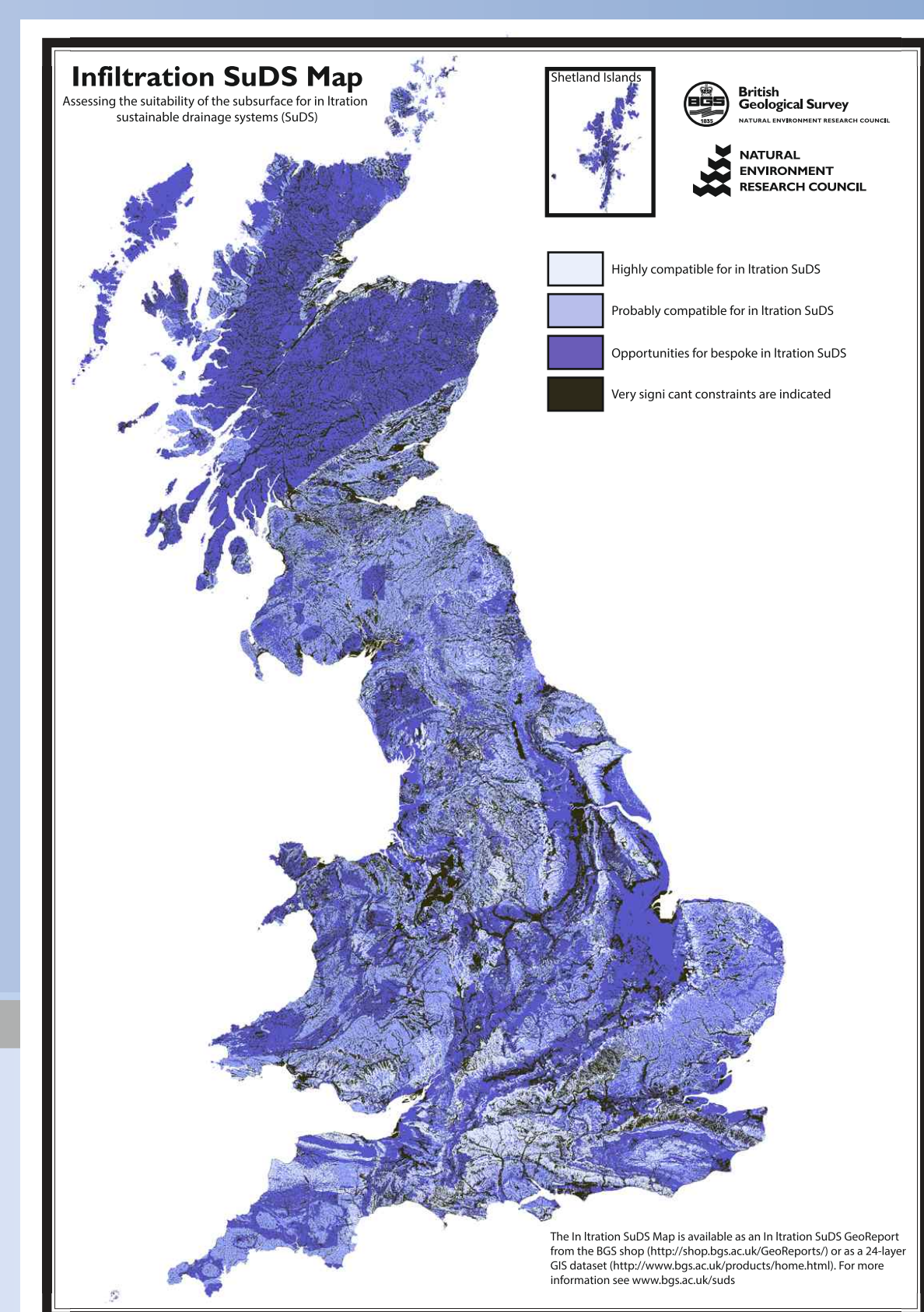
The Infiltration SuDS Map is available in a variety of forms:

- Infiltration SuDS GeoReport: A report containing the 24 maps for a chosen 2x2 km² area. Intended for the one-off assessment of small areas.
- Infiltration SuDS Map GIS files: GIS-format data that is ready to import into GIS software. Intended for organisations interested in large spatial areas, who have GIS-facilities.
- Infiltration SuDS Extranet: A subscription-based web viewer providing access to the entire national map. Intended for organisations who's interest in the data is frequent and dispersed across the country.



Who is using the Infiltration SuDS Map?

The map is currently being used by those who plan drainage design, in particular developers, consultants, water companies and architects. It is also being used widely by local authority SuDS Approval Bodies, who are required to assess and approve SuDS applications.



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