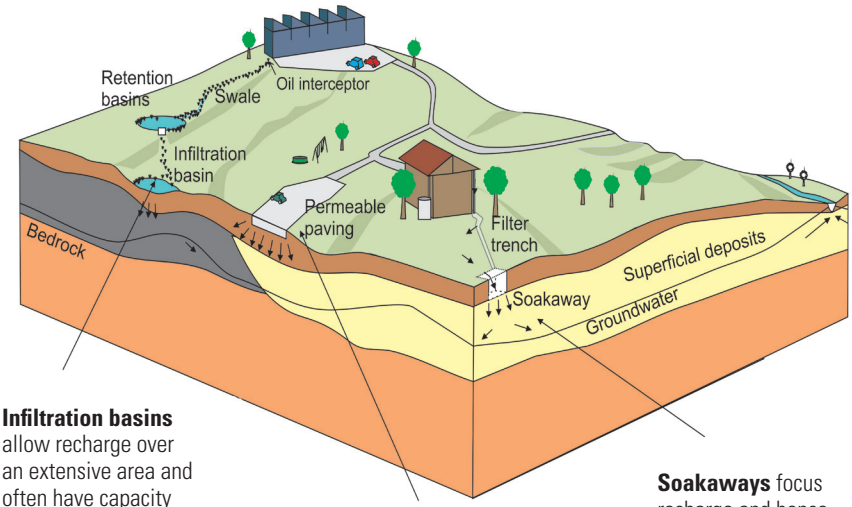
Infiltration SuDS Map

The British Geological Survey

Infiltration constraints | Drainage | Ground stability | Groundwater protection

Infiltration SuDS are sustainable drainage systems (SuDS) that allow surface water to infiltrate to the ground. Examples include soakaways, infiltration basins, infiltration trenches and permeable pavements. Before planning to install Infiltration SuDS, the suitability of the ground should be assessed. The British Geological Survey has developed a bespoke Infiltration SuDS Map that enables a preliminary assessment of the suitability of the ground for infiltration SuDS. The dataset is intended to support those involved in the planning and design of SuDS and those who approve SuDS planning applications within local authorities.



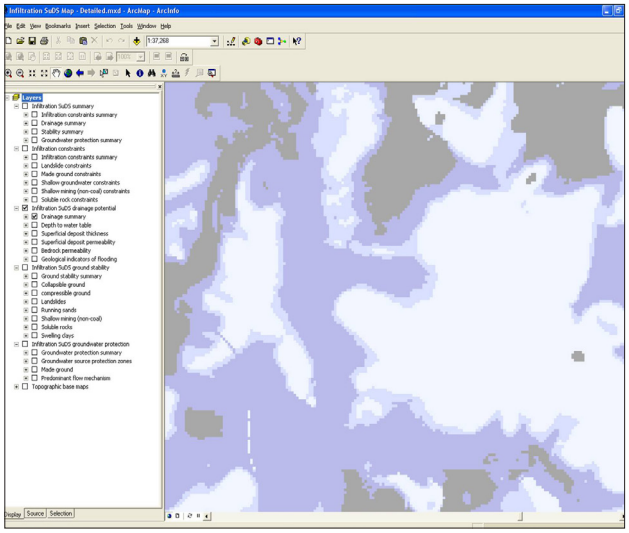
Infiltration basins allow recharge over an extensive area and often have capacity for standing water, so that they are suitable in poorly draining deposits.

Permeable pavements allow recharge over an extensive area, so that they are often suitable where drainage is insufficient for a soakaway.

Soakaways focus recharge and hence are only suitable in free-draining deposits.

The Infiltration SuDS Map is based on 15 nationally derived subsurface property datasets, some of which are a result of direct observations, whilst others rely on modelled data. The map allows consideration of the subsurface permeability, the depth to groundwater, the presence of geological floodplain deposits, the presence of artificial ground, ground instability (soluble rocks, collapsible ground, compressible ground, running sand, shallow mining, landslide and shrink-swell clays), potential for pollutant attenuation and the Environment Agency's source protection zones.

- The map comprises a series of layers, each providing information on the properties of the ground. For each data layer, text attributes provide information on the suitability of the ground for infiltration SuDS.
- The map provides information to facilitate decision-making on the suitability of the ground for infiltration SuDS; it does not state which type of SuDS are appropriate as this depends on the design of the system.
- The dataset is intended to be used at a preliminary stage and is not a replacement for a ground investigation.



There are two options available:

Infiltration SuDS Map: summary

The summary map comprises four overview layers, providing an indication of the suitability of the ground for infiltration SuDS. The layers summarise: the presence of severe constraints; the drainage potential of the ground; the potential for ground instability as a result of infiltration, and the susceptibility of the groundwater to contamination. This map is anticipated to be of use in strategic planning and not for local assessment. It does not provide specific subsurface data or state the limitations of the subsurface with respect to infiltration.

Infiltration SuDS Map: detailed

The detailed map provides the data layers described above, along with a further 20 individual, bespoke data layers. These data layers provide information on the properties of the ground (described below), which can be used to guide local SuDS planning and design. The data can be used to determine the likely limitations present at a site. This map is anticipated to be used by planners, developers, consultants and SuDS Approval Bodies.

The map is available in a format to suit your requirements

It is available to license at 1:50 000 scale, as a national-level dataset or cut to fit the area you are interested in; for instance, an area that is proposed for development or an area covered by a Unitary Authority. The Infiltration SuDS Map can be licensed as either a summary (contains 4 data layers) or detailed dataset (contains 24 data layers). For users without GIS capability, the data is available as an 'Infiltration-to-the-ground GeoReport' available from http://shop.bgs.ac.uk/georeports/

Data provided in each of the four decision-making steps in the Infiltration SuDS Map:

1. Are there any constraints that limit the potential for infiltration?
   Summary map, made ground, areas susceptible to persistently shallow groundwater and presence of significant soluble rocks, landslides and shallow mining hazards.
2. What is the drainage potential of the ground?
   Summary map, depth to groundwater, superficial deposit permeability, superficial deposit thickness, bedrock permeability and presence of floodplains.
3. What is the potential for ground instability when water is infiltrated?
   Summary map, infiltration hazards associated with collapsible ground, compressible ground, running sand, shrink swell clays, soluble rocks, landslides and shallow mining.
4. What is the potential for deterioration in groundwater quality as a result of infiltration?
   Summary map, made ground, unsaturated zone predominant flow mechanism and the Environment Agency's source protection zones.

Infiltration SuDS Knowledge Exchange at the BGS

Dr Rachel Dearden is funded by the Natural Environment Research Council to provide support in understanding the importance of ground compatibility for infiltration SuDS. Contact suds@bgs.ac.uk for more information.

For more information please contact:

Enquiries

British Geological Survey, Keyworth, Nottingham NG12 5GG

tel: 0115 936 3143 email: enquiries@bgs.ac.uk www.bgs.ac.uk/suds

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL