

Department of Environment, Food and Rural Affairs

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Glossary

Adsorption	The adherence of gas, vapours, or dissolved matter to the surface of solids.
Affordability	<p>Evidence shows that well designed SuDS systems are cheaper than the traditional piped counterparts. Concerns around any potential additional land-take for surface storage and conveyance should be addressed by considering opportunities for siting the SuDS on multi-functional, public open space.</p> <p>When comparing the affordability of SuDS with any alternative, the SAB and developer should consider the cost of providing pipes for a 1 in 30 year storm storage for the development and associated roads.</p> <p>However, the whole life cost and impacts of the approach to drainage in some areas of the country (due to factors such as current drainage capacity or other local factors) will mean that affordability will be set at whatever the local authority decides taking into account guidance from the EA and WaSCs and any local planning, sewerage and flood documents.</p> <p>The unitary authority for the area in which it is, or in which it is to be constructed or if there is no unitary authority, the county or county borough council for the area, to approve and where appropriate adopt SuDS.</p>
Amenity	A feature which provides benefits for residents and visitors.
Approving Body	The body which approves and where appropriate adopts SuDS. It is the unitary authority for the area in which a drainage system is located, or in which it is to be constructed or if there is no unitary authority, the county or county borough council for the area,
Aquifer	A sub-surface zone or formation of rock or soil containing a body of groundwater.
Attenuation	Reduction of peak flow and increased duration of a flow event.

Attenuation storage	Volume used to store runoff during extreme rainfall events. Comes into use once the inflow is greater than the controlled outflow.
Baseflow	The sustained flow in a channel or drainage system.
Basin	A ground depression acting as a flow control or water treatment structure that is normally dry and has a proper outfall, but is designed to detain storm-water temporarily.
Biodegradable	Capable of being decomposed by bacteria or other living organisms.
Biodegradation	Decomposition of organic matter by micro-organisms and other living organisms.
Biodiversity	The diversity of plant and animal life in a particular habitat
Bioretention area	A depressed landscaping area that is allowed to collect runoff so it percolates through the soil below the area into an under-drain, thereby promoting pollutant removal.
Block paving	Pre-cast concrete or clay brick sized flexible modular paving system.
Catchment	The area contributing surface water flow to a point on a drainage or river system. Can be divided into sub-catchments.
Catchpit	A small chamber incorporating a sediment collection sump which the runoff flows through.
Construction area	The area of land identified within a red line on a plan location plan accompanying an application for planning permission
Construction work	Means construction work which has drainage implications
Combined sewer	A sewer designed to carry foul sewage and surface runoff in the same pipe.
Control structure	Structure to control the volume or rate of flow of water through or over it.
Conventional drainage	The traditional method of draining surface water using subsurface pipes and storage tanks.
Conveyance	Movement of water from one location to another.
Criminal Sanction	Sanctions are penalties or other means of enforcement used to provide incentives for obedience with the law, or with rules and regulations. Criminal sanctions include fines or

	imprisonment.
Critical duration event	The duration of rainfall event likely to cause the highest peak flows at a particular location, for a specified return period event.
Culvert	A closed conduit carrying a watercourse beneath an obstruction such as road, railway or canal.
Curtilage	An area of land around a building or group of buildings which is for the private use of the occupants of the buildings.
Degradation	Being broken down to a less complex/lower state.
Deposition	Laying down of matter via a natural sedimentation process.
Design criteria	A set of standards agreed by the developer, planners, and regulators that the proposed development should satisfy. See drainage design criteria.
Designating Authority	(a) the Environment Agency, (b) a lead local flood authority, (c) a district council (whether or not it is a lead local flood authority), and (d) an internal drainage board.
Designing for exceedance	An approach that aims to manage exceedance flows during rainfall events, e.g. the use of car parks during extreme events,
Detention basin	A vegetated depression that is normally dry except following storm events. Constructed to store water temporarily to attenuate flows. May allow infiltration of water to the ground.
Detention pond/tank	A pond or tank that has a lower outflow than inflow. Often used to prevent flooding.
Developer	Means a person who commences or proposes to commence construction work
De-watering	The removal of groundwater/surface water to lower the water table.
Diffuse pollution	Pollution arising from land-use activities (urban and rural) that are dispersed across a catchment, or sub-catchment, and do not arise as a process effluent, municipal sewage effluent, or an effluent discharge from farm buildings.
Drainage design criteria	A set of performance levels agreed by the developer, planners, and regulators that the

	proposed drainage system should satisfy.
Drainage Implications	If the construction work will affect the ability of the land to absorb rainwater it is considered to have drainage implications and will therefore require approval.
Drainage stage	An individual component of a sustainable drainage system.
Environmental Impact Assessment	Is an assessment of the possible impact that a proposed project may have on the environment, together consisting of the natural, social and economic aspects.
Eutrophication	Water pollution caused by excessive nutrients that result in reduced oxygen levels. The nutrients are powerful stimulants to algal growth which in turn use up oxygen in water. The excessive growth, or "blooms", of algae promoted by these phosphates change the water quality in lakes and ponds which can kill fish.
Evapotranspiration	The process by which the Earth's surface or soil loses moisture by evaporation of water and by uptake and then transpiration from plants.
Extended detention basin	A detention basin where the runoff is stored beyond the time for attenuation. This provides extra time for natural processes to remove some of the pollutants in the water.
Filter drain	A linear drain consisting of a trench filled with a permeable material, often with a perforated pipe in the base of the trench to assist drainage.
Filter strip	A vegetated area of gently sloping ground designed to drain water evenly off impermeable areas and to filter out silt and other particulates.
Filtration	The act of removing sediment or other particles from a fluid by passing it through a filter.
Fines	Small soil particles less than 63 micron in size.
Flood frequency	The probability of a flow rate being exceeded in any year.
Flood risk area	(a) land in an area within Flood Zones 2 or 3; or (b) land in an area within Flood Zone 1 which has critical drainage problems and which has been notified for the purposes of article 10 of the Order to the local planning authority by the Environment Agency;
Flood routing	Design and consideration of above-ground areas that act as pathways permitting water to run safely

	over land to minimise the adverse effect of flooding. This is required when the design capacity of the drainage system has been exceeded.
Flow control device	A device used for the control of surface water from an attenuation facility, e.g. a weir.
Footpath	Means a highway over which the public have a right of way on foot only, not being a footway
Forebay	A small basin or pond upstream of the main drainage component with the function of trapping sediment.
Freeboard	Distance between the design water level and the top of a structure, provided as a precautionary safety measure against early system failure.
Foul drainage	The infrastructure that drains the water and sewage that is discharged from within houses.
Geocellular structure	A plastic box structure used in the ground, often to attenuate runoff.
Geogrid	Plastic grid structure used to increase strength of soils or aggregates.
Geomembrane	An impermeable plastic sheet, typically manufactured from polypropylene, high density polyethylene or other geosynthetic material.
Geotextile	A plastic fabric that is permeable.
Grass verge	A strip of land which borders a road or path
Greenfield runoff	The runoff that would occur from the site in its undeveloped and undisturbed state. Greenfield runoff characteristics are described by peak flow and volumes of runoff for rainfall events of specified duration and return period (frequency of occurrence).
Greenfield runoff volume	Volume of runoff from the site in its state before any previous development, for the 1 in 100 year rainfall event.
Green infrastructure	The living network of high quality green spaces, water and environmental systems in, around and beyond urban areas. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits for local communities.
Green Roof	Is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also

	include additional layers such as a root barrier and drainage and irrigation systems.
Groundwater	Water that is below the surface of ground in the saturation zone.
Heavy metal	Loosely, metals with a high atomic mass (sometimes given as metals with an atomic mass greater than that of calcium), often used in discussion of metal toxicity. No definitive list of heavy metals exists, but they generally include Cadmium, Zinc, Mercury, Chromium, Lead, Nickel, Thallium, and Silver. Some metalloids, eg Arsenic and Antimony, are classified as heavy metals for discussion of their toxicity.
Highways Authority	Body responsible for the maintenance of public roads. Includes local authorities, the Highways Agency, Welsh Government and Transport for London in accordance with Section 1 of the Highways Act 1980.
Highway drain	Drainage system on a highway maintainable at the public expense. It is vested in the highway authority.
Hydraulics	Hydraulics is another term for fluid mechanics used in the context of water engineering, and is the study of flows. In the context of this report, hydraulics covers the storage, conveyance and control of flows within the proposed drainage network.
Hydrograph	A graph illustrating changes in the rate of flow from a catchment with time.
Hydrology	The study of the waters of the Earth, their occurrence, circulation, and distribution; their chemical and physical properties; and their relation with the environment, including their relation to living things.
Impermeable	Will not allow water to pass through it.
Infiltration (to a sewer)	The entry of groundwater to a sewer through leaking joints etc.
Infiltration (to the ground)	The passage of surface water into the ground.
Infiltration basin	A dry basin designed to promote infiltration of surface water to the ground.
Infiltration device	A device specifically designed to aid infiltration of surface water into the ground.
Infiltration Drainage	Drainage system designed to convey and infiltrate surface water
Infiltration trench	A trench, usually filled with permeable granular material, designed to promote infiltration of surface

	water to the ground.
Interception storage	The capture and infiltration of rainfall depths.
Judicial Review	A procedure by which the courts in England and Wales supervise the exercise of public power on the application of an individual.
Lateral drain	(a) That part of a drain which runs from the curtilage of a building (or buildings or yards within the same curtilage) to the sewer with which the drain communicates or is to communicate; or (b) (if different and the context so requires) the part of a drain identified in a declaration of vesting made under section 102 or in an agreement made under section 104 of the Water Industry Act 1991.
Lifetime of Development	Consideration of making allowances in the design of drainage systems to allow for increases in rainfall over the lifetime of the development.
Local Government Ombudsman	Looks at complaints about councils and some other authorities and organisations in England (see Public Services Ombudsman for Wales)
Local Planning Authority	Local authority responsible for planning and development control. Has the meaning given in section 1 of the Town and Country Planning Act 1990(c);
Long term storage	Provided to allow volumetric runoff control during an event by discharging water very slowly during and after the storm event.
Natural Watercourse	A river or a stream
Non-Performance Bond	Is a bond of a kind and to a value specified in a condition imposed on the grant of an application for approval. It may be called upon by the SAB in the event that a drainage system is not completed or not built to specification in order to pay for any necessary works.
Mean Annual Flood	Referred to as QBAR, or the mean annual flood, is the value of the average annual flood event recorded in a river. This flow rate is used to provide a measure of the Greenfield runoff performance of a site in its natural state to enable flow rate criteria to be set for post development surface water discharges for various return periods.
Multi-functional, public open space.	Any space outside the curtilage of an individual property unit may be suitable for SuDS. For example, car parking and bike paths can be surfaced with permeable paving and may have a drainage channel, a play space may provide for

	excess water in flood conditions. Local authorities are encouraged to collaborate with developers to help facilitate the use of such space for SuDS.
Micropool	Pool at the outlet to a pond or wetland that is permanently wet and improves the pollutant removal of the system.
Micro-Businesses	Are defined according to their staff headcount and turnover or annual balance-sheet total
Off-line	A conveyance or storage component which bypasses the main conveyance route for the drainage system.
On-line	A conveyance or storage component which forms part of the main conveyance route for the drainage system.
Organic pollution	A general term describing the type of pollution that, through the action of bacteria, consumes the dissolved oxygen in rivers. The effects of organic pollution are described by the levels of bio-chemical oxygen demand, ammonia, and dissolved oxygen found in a waterbody.
Orifice plate	Structure with a fixed aperture to control the flow of water.
Orphan SuDS	A drainage system which has not been adopted by the SAB, local authority or sewerage undertaker
Pathogen	An organism that causes disease.
Pathway	The route by which potential contaminants may reach targets.
Peak previously-developed runoff rate	Peak rate of runoff from the development site on previously developed land in its previously-developed state taking into account any known surface water drainage system.
Peak greenfield runoff rate	Peak rate of runoff from the development site in its naturally vegetated state before any previous development.
Penstock	A sliding plate which moves vertically to vary the size of an aperture (or close it completely).
Percentage runoff	The proportion of rainfall that runs off a surface.
Percolation	The passing of water (or other liquid) through a porous substance or small holes (e.g. soil or geotextile fabric).
Permeability	A measure of the ease with which a fluid can flow through a porous medium. It depends on the physical properties of the medium, for example

	grain size, porosity, and pore shape.
Permeable pavement	A permeable surface that is paved and drains through voids between solid parts of the pavement.
Permeable surface	A surface that is formed of material that is itself impervious to water but, by virtue of voids formed through the surface, allows infiltration of water to the sub-base through the pattern of voids, for example concrete block paving.
Pervious surface	A surface that allows inflow of rainwater into the underlying construction or soil.
Piped system	Conduits generally located below ground to conduct water to a suitable location for treatment and/or disposal.
Planning Inspectorate	Acts on behalf of Ministers to undertake planning appeals and similar casework under planning and environmental legislation in England and Wales.
Pond	Permanently wet depression designed to retain storm water and permit settlement of suspended solids and biological removal of pollutants.
Porosity	The percentage of the bulk volume of a rock or soil that is occupied by voids, whether isolated or connected.
Porous surface	A surface that infiltrates water to the sub-base across the entire surface of the material forming the surface, for example grass and gravel surfaces, porous concrete and porous asphalt.
Porous paving	A permeable surface that drains through voids that are integral to the pavement.
Potable/mains water	Water company/utility/authority drinking water supply.
Practicality / What is 'reasonably practicable'?	<p>To determine what is reasonably practicable on a particular site involves gathering data and working through a structured series of decisions.</p> <p>Decision-making trees in the Standards and Guidance describe the process for determining whether and to what extent the use of surface water solutions including infiltration systems and attenuation is appropriate.</p> <p>Potential exceptions identify the criteria that would need to be met to move for example from Tier 1 to Tier 2, 3 or 4 and describe the evidence needed to demonstrate that these criteria have been met.</p>
Previously developed land	Land which is or was occupied by a permanent structure, including the curtilage of the developed

land and any associated fixed surface infrastructure. The definition of developed land includes defence buildings, but excludes:

Land that is or has been occupied by agricultural buildings.

Land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development management procedures.

Land in built-up areas such as private residential gardens, parks, recreation grounds and allotments, which although it may feature paths, pavilions and other buildings, has not been previously developed.

Land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time (to the extent that it can reasonably be considered as part of the natural surroundings).¹

Where development takes place on land which was previously partially developed, a pro-rata approach should be taken.

Previously-developed runoff volume	Volume of runoff from the site in its previously developed state, for 1 in 100 year rainfall event.
Private Land	Land which is not owned by the government.
Private Road	A road or driveway on privately-owned property, limited to the use of the owner or a group of owners who share the use and maintain the road without help from a government agency.
Public land	Land whose control and title rests with the government. Also called crown land.
Publicly Maintained Road	A road dedicated to public use to which the duty under section 41 of the Highways Act 1980 applies (maintenance at public expense); (and a reference to a road includes a reference to part of a road).
Public Services Ombudsman	Looks at complaints about councils and some other authorities and organisations in Wales (see Local Government Ombudsman for England)
Rainfall event	A single occurrence of rainfall before and after which there is a dry period that is sufficient to allow its effect on the drainage system to be defined.

1 in 1 year rainfall event

The highest frequency event to be considered to ensure that flows to the surface water body are tightly controlled for frequent events. Controlling post development flows to the equivalent greenfield rate at this level aims to ensure stream channels are not damaged by the development runoff.

1 in 30 year rainfall event

An intermediary event to assess system performance as it is used in the design of public sewer systems. New public sewer systems are designed so that surface flooding does not occur at this frequency. Compliance with the greenfield discharge rate for this event is only required where the surface water is discharged to a public sewer.

1 in 100 year rainfall event

Used in Planning Policy Statement 25 as the basis for making flood risk assessments. Controlling post development flows to the Greenfield rate at this event level aims to minimise increases in flood risk as a result of the development.

Rainwater harvesting or rainwater use system	A system that collects rainwater rather than allowing it to drain away. It includes water that is collected within the boundaries of a property, from roofs and surrounding surfaces.
Recharge	The addition of water to the groundwater system by natural or artificial processes.
Reed bed	Area of grass-like marsh plants, primarily adjacent to freshwater. Artificially constructed reed beds can be used to accumulate suspended particles and associated heavy metals, or to treat small quantities of partially treated sewage effluent.
Retention pond	A pond where runoff is detained for a sufficient time to allow settlement and biological treatment of some pollutants.
Return period	Refers to how often an event occurs. A 100-year storm refers to the storm that occurs on average once every hundred years. In other words, its annual probability of exceedance is 1 per cent (1/100). A 500-year storm is the storm expected to occur once every 500 years, or has an annual probability of exceedance equal to 0.2 per cent (1/500).
Riparian	Of, on, or relating to the banks of a natural course of water.

River	A large natural stream of water emptying into an ocean, lake, or other body of water and usually fed along its course by converging tributaries
Runoff /Surface run off/ Surface water runoff	<p>Water flow (including flow from snow and other precipitation) over the ground surface which has not entered the drainage system. This occurs if the ground is impermeable, is saturated or rainfall is particularly intense.</p> <p>The Water Industry Act 1991 and the Flooding and Water Act use slightly different terminology. However, the runoff with which the National Standards and guidance are concerned includes all such runoff.</p>
Runoff coefficient	A measure of the amount of rainfall that is converted to runoff.
Sewerage undertaker	This is a collective term relating to the statutory undertaking of water companies that are responsible for sewerage and sewage disposal including surface water from roofs and yards of premises.
Soakaway	A sub-surface structure into which surface water is conveyed, designed to promote infiltration.
Source control	The control of runoff at or near its source.
Statutory Consultee	<p>(a) the relevant sewerage undertaker</p> <p>(b) the Environment Agency,</p> <p>(c) the relevant highway authority</p> <p>(d) British Waterways</p> <p>(e) the relevant internal drainage board,</p>
Statutory Undertaker	Means a person entitled under a provision of an enactment listed in regulation 27 to carry out statutory works on public land.
Sub-catchment	A division of a catchment, to allow runoff to be managed as near to the source as is reasonable.
Sub-grade	Material, usually natural insitu, but may include Capping layer, below Formation level of a Pavement.
Substrate	An underlying layer; a substratum

Sump	A pit that may be lined or unlined and is used to collect water and sediments before being pumped out.
Suspended solids	General term describing suspended material. Used as a water quality indicator.
Swale	A shallow vegetated channel designed to conduct and retain water, but may also permit infiltration. The vegetation filters particulate matter.
The Minister	(a) for drainage systems in Wales, the Welsh Ministers, and (b) for drainage systems in England, the Secretary of State.
Treatment stage	A sustainable drainage component that protects or improves surface runoff by reducing suspended sediments or contaminants.
Trunk Road	Is a highway, or a proposed highway of national importance, which is a trunk road by virtue of section 10(1) or section 19 of the Highways Act 1980.
Unitary Authority	(a) the council of a county for which there are no district councils; (b) the council of a district in an area for which there is no county council; (c) a county borough council; (d) the council of a London borough; (e) the Common Council of the City of London; (f) the Council of the Isles of Scilly
Water Quality Treatment volume	The permanent volume of water in a pond between rainfall events which is designed to provide dilution and adequate detention of surface water runoff to allow sedimentation along with other treatment processes to occur to provide partial treatment of the runoff before it is discharged from the site.
Water table	The point where the surface of groundwater can be detected. The water table may change with the seasons and the annual rainfall.
Wetland	Flooded area in which the water is shallow enough to enable the growth of bottom-rooted plants.