

## Planning Advice Note PAN 61

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To recipients of Planning Advice Notes

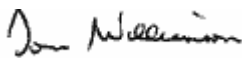
Dear Sir or Madam

### PLANNING ADVICE NOTE 61: PLANNING AND SUSTAINABLE URBAN DRAINAGE SYSTEMS

The Department has today issued Planning Advice Note (PAN) 61 - Planning and Sustainable Urban Drainage Systems. The PAN gives good practice advice for planners and the development industry complementing the Sustainable Urban Drainage Systems Design Manual for Scotland and Northern Ireland, which was published by CIRIA in March 2000 for the Sustainable Urban Drainage Scottish Working Party.

I attach a copy (ies) for your information.

Yours faithfully



**Assistant Chief Planner**

#### Planning Series:

- **National Planning Policy Guidelines (NPPGs)** provide statements of Scottish Executive policy on nationally important land use and other planning matters, supported where appropriate by a locational framework.
- **Circulars** which also provide statements of Scottish Executive policy, contain guidance on policy implementation through legislative or procedural change.
- **Planning Advice Notes (PANs)** provide advice on good practice and other relevant information.

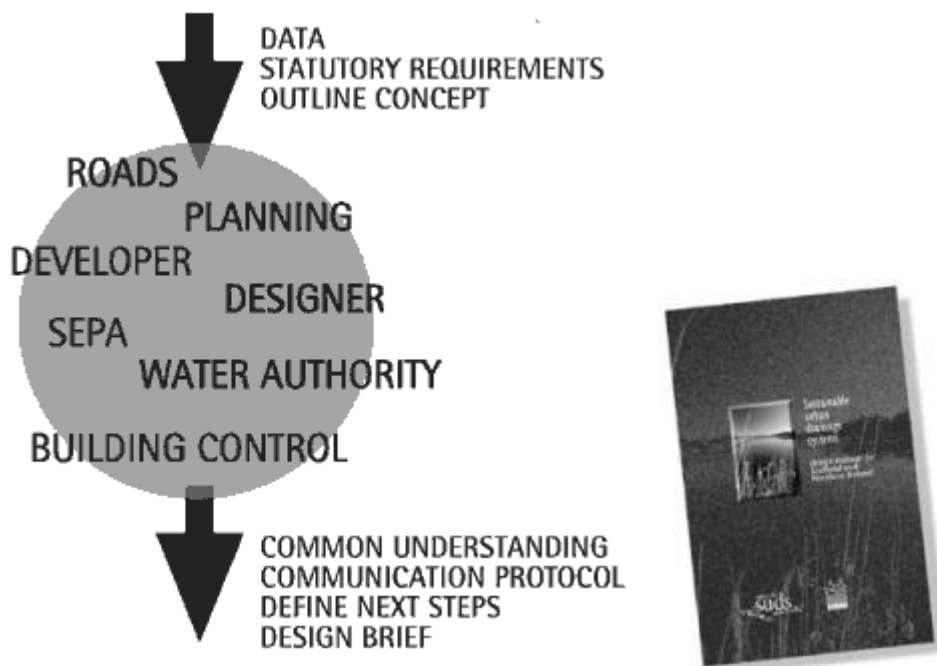
Statements of Scottish Executive policy contained in NPPGs and Circulars may, so far as relevant, be material considerations to be taken into account in development plan preparation and development control.

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## Introduction

1. Sustainable development implies taking a multi-disciplinary approach to address the many diverse and complex issues in the development process. One of these issues is surface water drainage. To provide Sustainable Urban Drainage Systems (SUDS) [1](#) requires a number of disciplines and agencies (developers, planners, drainage engineers, architects, landscape architects, ecologists and hydrologists) to work in partnership. Planners have a central co-ordinating role in getting SUDS accepted as an integral part of the development process. Planning policy should set the framework in structure and local plans and in masterplanning exercises. In implementing SUDS on the ground, planners have a key role through the development control process, from pre-application discussions through to decisions, in bringing together the parties and guiding them to solutions which can make a significant contribution to sustainable development.



2. The Sustainable Urban Drainage Scottish Working Party [2](#) published a Sustainable Urban Drainage Systems Design Manual in March 2000 [3](#). This was launched by the Minister for Transport and the Environment at a ceremony in Dunfermline East Expansion Area. Copies were sent to each Scottish local authority. The Manual contains considerable detail on the technical aspects of SUDS.



## Background To Surface Water Drainage



3. Drainage of land is required to make it suitable for development, to protect existing and proposed development from the effects of flooding, and to deal with pollution arising from the interaction of rainwater and the development. Development reduces surface permeability by replacing vegetated ground with roofs, roads and paved areas and through compaction of ground by vehicular movements. This reduces the amount of water infiltrating into the ground and increases surface run-off. The alteration of natural flow patterns (in both total quantity and in peak flow) can lead to problems elsewhere within the river catchment, particularly flooding downstream. Increased flow rates from hard surfaces can also cause erosion, decrease percolation into the soil, lead to low ambient flows in watercourses and damage stream and streamside habitats. Flood risk and other environmental damage can be managed by minimising changes in the volume and rate of surface run-off from development sites through the use of sustainable drainage systems.



4. The conventional method of draining excess surface water from built-up areas has been via underground pipe systems. Historically, this surface water would have been combined with foul water from toilets, wash hand basins and so on and drained through one combined sewer. However, surface water from rain storms can place a significant and variable burden on waste water treatment works. Recent practice has separated drainage systems to provide separate sewers for the foul and the surface water. The foul water is piped to the waste water treatment works whilst the surface water is piped to the nearest watercourse. These systems have not generally been designed with sustainable development objectives in mind, and have paid insufficient regard to good husbandry of water resources, amenity, landscaping potential or biodiversity requirements.

5. The capacity of conventional drainage systems can be a constraint on development. All proposals for development should therefore take account of the effects of potentially increased surface water run-off. This can increase the flows downstream and so increase the risk of flooding. This is particularly so for development on greenfield sites but the downstream impacts can also be significant for brownfield development where the existing drainage system may not have the capacity or be in a fit condition to carry the additional drainage without

substantial reconstruction. For brownfield development, therefore, sustainable urban drainage also contributes to the more efficient use of existing conventional systems.

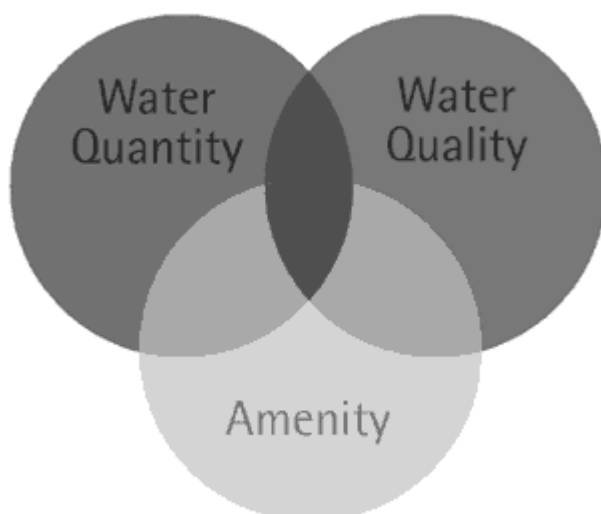


6. The use of land gives rise to a number of pollutants such as sediments, oils, grits, metals, salts, pathogens and litter. These raise not only amenity issues but, more significantly, can affect public health. Development proposals on contaminated land may also pose problems because of the risk that soil and debris may be washed onto other land or into surface waters at times of flooding. These pollutants are collectively termed "diffuse pollution" as they do not arise from a single source or activity, but are the product of all the land use and human activity in the urban area. Rainwater mobilises these pollutants and they are washed into surface water sewers and eventually into rivers. Because traditional drainage systems are designed to carry water away quickly without treatment, they cannot easily control poor run-off quality. SEPA data shows that 500 km of polluted watercourses in Scotland are due to diffuse pollution from urban areas. The importance of tackling this problem is underlined by the EC Water Framework Directive, which recently came into force. It requires that controls are introduced on all forms of diffuse pollution.

7. PAN 60 *Planning for Natural Heritage*<sup>4</sup> describes the application of ecological principles in the design of new developments. Examples are also contained in the SUDS Design Manual and related training material. SEPA also have a Habitat Enhancement Initiative which supports best management practices through newsletters, information leaflets, demonstration sites and award schemes <sup>5</sup>.

## Principles Of SUDS

8. Sustainable urban drainage not only reduces the amount of diffuse pollution but also improves the environmental quality of development to the benefit of the local community. The SUDS Design Manual requires SUDS to be considered for development at an early stage in project design in order to determine its applicability. It is SEPA policy to promote SUDS as the preferred solution for drainage of surface water run-off, including roof water, for all proposed development, greenfield and brownfield.



9. Part M of the Technical Standards for compliance with the Building Standards (Scotland) Regulations 1990, as amended, covers surface water run-off from buildings and a design incorporating SUDS should satisfy the

relevant standard. A revised Part M is expected to come into force in early 2002, with SUDS strongly promoted for surface water run-off from buildings and hard surfaces within the curtilage of a building.



10. SUDS aims to deal in an integrated way with the issues of water quantity, water quality and amenity. It works on the following principles:

- managing surface water run-off on-site as near to source as possible;
- slowing down run-off;
- treating it naturally; and
- releasing good quality surface water to watercourses or groundwater.

The overall objective is to return excess surface water to the natural water cycle with minimal adverse impact on people and the environment. The means by which this can be achieved can be designed as an attractive integral amenity feature within the development and can achieve significant ecological enhancement compared to conventional drainage options.

11. A range of component options is available to the designer to allow surface water to be drained in a variety of acceptable ways. Components may be selected and combined dependent on the nature of the development proposed. Each component may operate in several ways: attenuating (slowing down run-off), treating water quality, and disposing of the water to a greater or lesser degree depending on specific design within the environment. The design manual provides considerable technical details on the options.

### **Roles and Responsibilities of Statutory Bodies**



12. Within the curtilage of private properties, responsibility for surface water drainage lies with the owner. Outwith private properties, (unless the site is served by a private sewer) statutory responsibility for surface water drainage is split between roads authorities, responsible for the drainage of adopted roads, and water authorities, responsible for drainage of other land.

13. New development, including drainage, requires the approval of planning authorities. Roads authorities, water authorities and SEPA are all, in defined circumstances, statutory consultees to the planning process [6](#), and are responsible for giving approval to the design and technical content of the proposed surface water drainage proposals for any new development. The planning process can therefore be used to co-ordinate provision of SUDS in new developments. In addition local authority led Flood Appraisal Groups [7](#) are concerned with

assessing the risk of flooding and advising on measures to reduce that risk. SUDS can also assist in reducing flood risk following development.

14. Section 7 of the Sewerage (Scotland) Act 1968 provides for local authorities (roads authorities) and water authorities to enter into agreements for shared drainage. Some agreements provide for a single shared drainage system to drain water from properties and from roads. While generally considered to apply to piped sewerage systems, it has been used as the basis for an agreement for maintenance of public above ground SUDS (including swales, ponds, or other ground depression features) being the responsibility of the local authority, whilst below ground SUDS will be the responsibility of the water authority. A framework for a maintenance agreement for such shared drainage to be entered into between each local authority and its water authority is included in the Design Manual, Appendix A.

15. SEPA has powers under the Control of Pollution Act 1974 (as amended) to regulate discharges made to controlled waters, which are defined in that Act. Controlled waters include territorial waters for 3 miles seaward from the shore, coastal waters, inland waters above the freshwater limit including relevant lochs, ponds, reservoirs and canals, and groundwaters. Discharges of surface water run-off i.e. rainwater and mobilised pollutants, do not currently automatically require consent from SEPA. The Water Framework Directive will require that all discharges liable to cause pollution are subject to some form of prior approval. Until then, SEPA has discretionary powers which it may use. These discretionary powers allow SEPA to issue a "prohibition notice" or "conditional prohibition notice". It is not the intention to prohibit discharges, but to give SEPA powers to regulate the discharge through a consent, if it is considered necessary in a particular case. It is anticipated that SEPA will use its discretionary powers at the design stage by issuing a conditional prohibition notice on the developer, specifying that final drainage arrangements should be in accordance with the drainage design agreed during pre-application discussions. In addition, SEPA may use these powers during the construction phase to regulate discharges from the construction works. SEPA's powers relate to pollution control and are independent of any planning consent. These discretionary powers assist the development process by encouraging pollution prevention to be considered by the developer early in the development process. It is important to note that SEPA's powers in no way exempt anyone from the offence of causing or knowingly permitting pollution, as defined in the Control of Pollution Act.



## Planning SUDS

### Structure and Local Plans and Masterplanning



16. Structure and local plans should set out the planning authority's expectations in relation to the use of SUDS. At the structure plan level, a general commitment to SUDS should suffice. If however the plan's strategy envisages areas of major urban expansion or regeneration, more precise guidance should be expressed in

policy. The River Basin Management Plans that will be drawn up under the Water Framework Directive are also likely to emphasise the importance of SUDS.

17. Local plans should indicate the basis on which SUDS will influence the overall design of a major development or regeneration project. They should take into consideration the land requirement needed for SUDS when specifying housing density, and the opportunity that certain SUDS may contribute to satisfying a development's open space requirement. Planning briefs or masterplanning exercises may be appropriate (see below). Local plans should also set out in general policy terms how the SUDS approach will be applied to smaller sites.

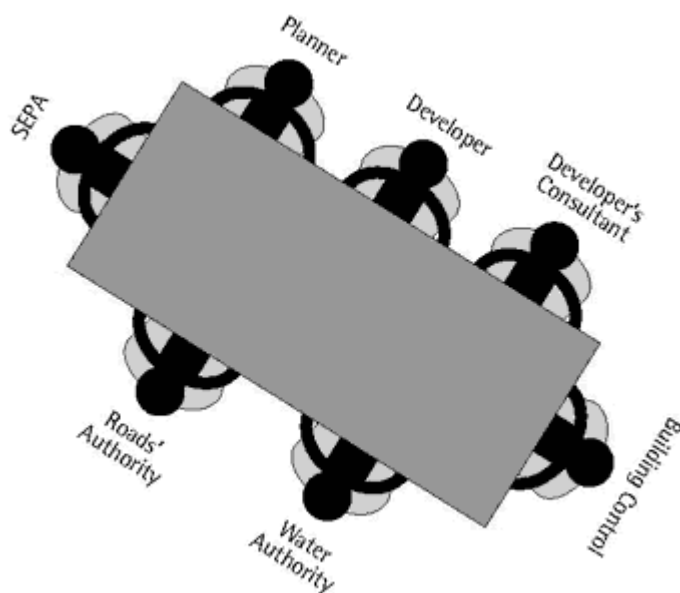


18. It is becoming increasingly common for master plans to be prepared for areas of significant new development e.g. East Dunfermline Expansion, Edinburgh/Midlothian South East Wedge, or for brownfield areas of urban regeneration e.g. Edinburgh North Waterfront. Master plans may also be appropriate for other areas experiencing incremental growth. Part of the masterplanning process for such areas should set out clearly the expected role for SUDS, so that as developers begin to work within the framework of the master plan, they are fully aware of these expectations.

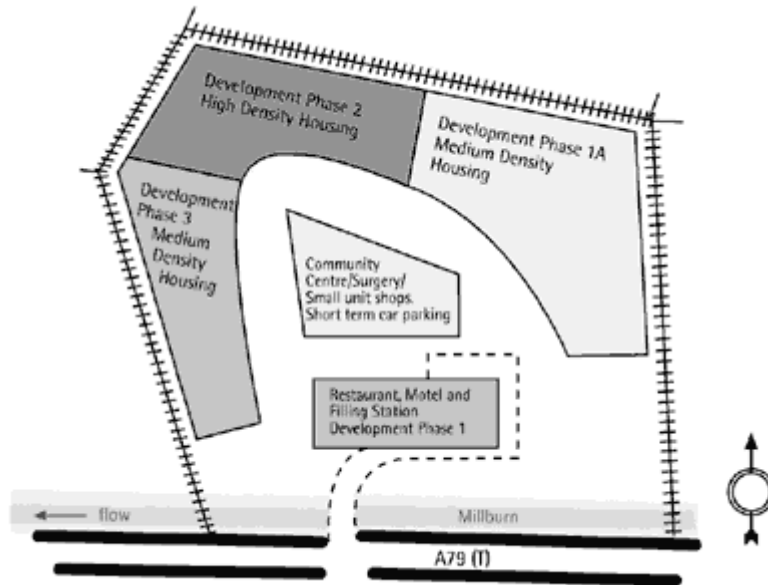
19. The consultation process through which all plan preparation goes provides the opportunity to involve all relevant parties and discuss in principle the types of approach that may be appropriate and the design and maintenance objectives.

### Development and Building Control

20. Planners have a key role in implementing SUDS through the processing of planning applications. Pre-application discussion can be invaluable in developing a common understanding of what is proposed, and to assist the efficient and effective processing of applications. Developers should be strongly encouraged to approach the planning authority at the earliest possible stage to explore which combination of SUDS measures are possible in the particular circumstances.



21. To ensure developers get consistent advice from the different authorities and agencies, the planning authority should consider convening a meeting of the developer and his technical advisers with the water authority and SEPA. Other regular invitees would include building control, roads or other officers of the local authority. The appropriateness of this can be decided by informal contact among the authorities and will depend on the scale and nature of the development. If a meeting is thought appropriate, then the developer should be asked beforehand to submit an outline development concept, in order that all parties to the meeting can come prepared to discuss the criteria for water quantity, quality and amenity issues related to the development concept and to the site and related sites upstream and downstream on the relevant watercourses, sewerage systems or groundwater.



22. The outcome of such a meeting should be that the authorities are aware of the scale and type of development and the expectation and scope for the implementation of SUDS. The developer should have guidance from the authorities on water quantity, quality, habitat creation and amenity. Agreement should be reached on lines of communication and contact points for further consultation as the application progresses.





23. The developer should proceed to draw up a drainage strategy which should be submitted as an integral part of the outline planning application. The drainage strategy should include:

- an indication of the types of measures to be used;
- which measures will be considered in the detailed design;
- evidence of sub-soil porosity and suitability for use of infiltration SUDS;
- pre- and post-development run-off calculations to determine the scale of SUDS required;
- assessment of flood risk where this is deemed appropriate;
- proposals for integrating the drainage system into the landscape or required public open space;
- demonstration of good ecological practice including habitat enhancement;
- estimates of land take for different drainage options based on initial calculations carried out to size any significant drainage structures.

24. By the stage of submitting to the planning authority a full or reserved matters application a detailed drainage design will be required. Preparing such a design involves five steps:

- the planning authority should agree with the other regulatory authorities the type of information that needs to be included in the planning application and inform the developer accordingly;
- the developer and drainage designer should liaise as necessary with the regulatory authorities to agree on appropriate criteria;
- the drainage designer should follow the procedures in the design manual for selection of drainage techniques;
- the developer should confirm with the regulatory authorities that the selected techniques are appropriate;
- the drainage designer, in consultation with relevant disciplines as necessary, should follow the guidance in the design manual to produce designs for planning, building warrant, drainage and road construction applications, and to meet the needs of prohibition notices where appropriate.

25. Throughout this process the planning authority should act as co-ordinator with the water authority, SEPA and the other regulatory authorities. If the process has worked effectively, separate applications will then be made to each regulatory authority under their respective powers. Each regulatory authority should then be able to approve the SUDS scheme for its own statutory interests. While sufficient compliance may be demonstrated for planning permission to be granted, nevertheless the design will have to satisfy the requirements of all the regulatory authorities and achieve all necessary approvals before implementation can commence.

26. During a transitional phase in the introduction of SUDS, there will be proposals where outline permission has been granted before any thought was given to installing SUDS. There may also be cases where the economics of a site which has been acquired or on which options have been negotiated, have been calculated prior to consideration of SUDS. In these circumstances it would not be reasonable for planning authorities to require SUDS, but in association with the other regulatory bodies they should explore with the developer the SUDS options compared with traditional drainage methods. The objective should be wherever feasible for the developer then to incorporate SUDS into the full or reserved matters application.

## Conclusion

27. This Planning Advice Note has described how the planning system has a central co-ordinating role in getting SUDS accepted as a normal part of the development process. Planners have a policy role in setting the framework in structure and local plans and in masterplanning exercises. In implementing SUDS on the ground, planners are central in the development control process, from pre-application discussions through to decisions, in bringing together the parties and guiding them to solutions which can make a significant contribution to sustainable development.

## Enquiries

28. Enquiries about the content of this PAN should be addressed to Tom Williamson, Planning Services Division, Room 2-H77, Victoria Quay, Edinburgh, EH6 6QQ, (0131 244 7531) or by e-mail to [tom.williamson@scotland.gsi.gov.uk](mailto:tom.williamson@scotland.gsi.gov.uk). Further copies of this PAN and a list of other current NPPGs and PANs may be obtained from Planning Services Division (0131 244 7543). This PAN is also available within the Scottish Executive web-site at [www.scotland.gov.uk/planning/](http://www.scotland.gov.uk/planning/).

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