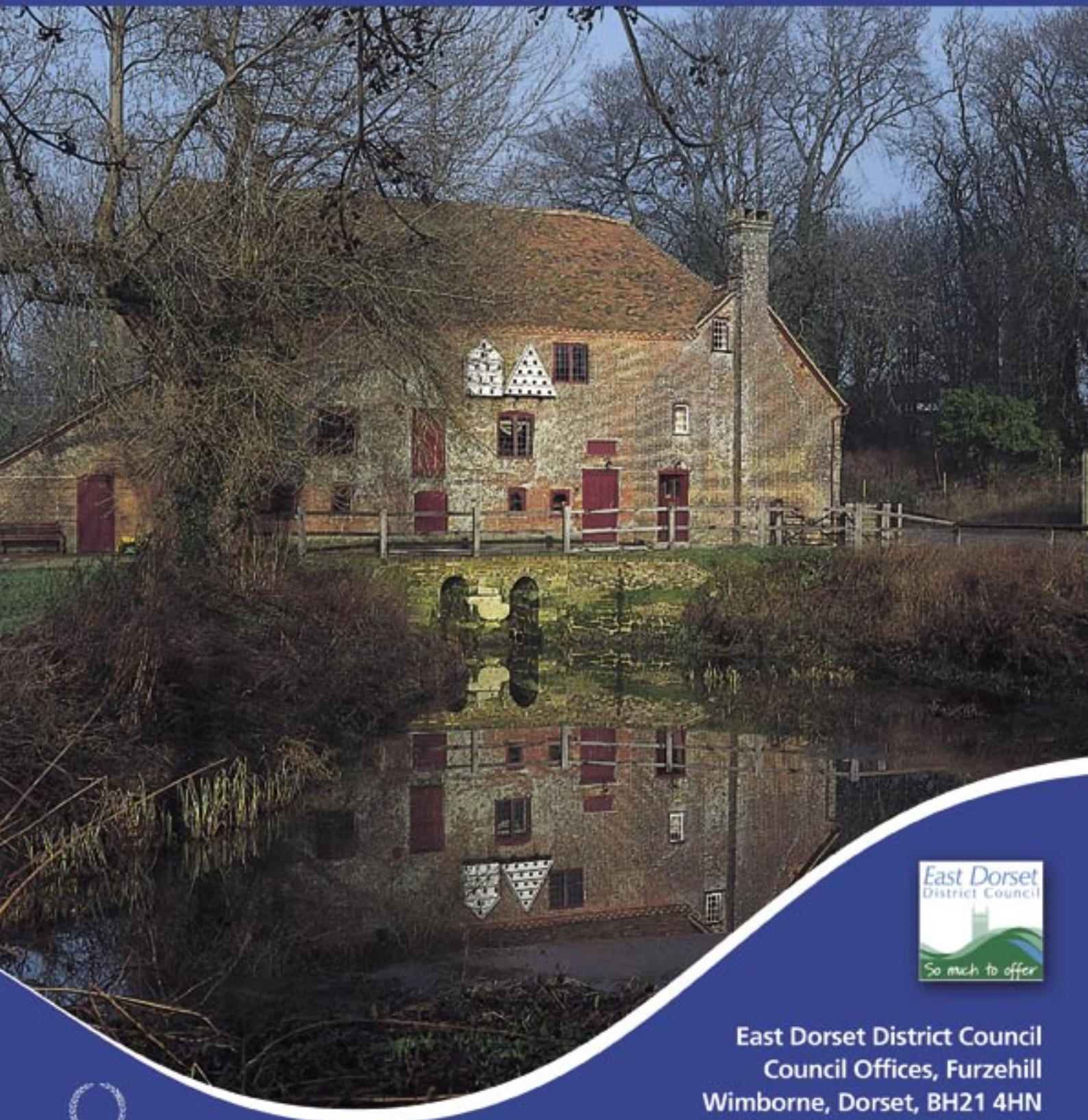
Supplementary Planning Guidance

Flood Risk, Groundwater and Sustainable Drainage



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£5.00

Contents

Introduction

1 This document has been produced by East Dorset District Council in conjunction with the Environment Agency. It provides supplementary planning guidance relating to three specific topics concerning the impact that development could have on the water environment:

- Flooding
- Drainage (including Sustainable Drainage Systems)
- Groundwater Protection

2 The guidance in this document should be read in conjunction with the East Dorset Local Plan (Adopted January 2002), which sets out the detailed planning policies concerning new development in the District.

3 It is intended that this document will be reviewed on a regular basis to incorporate:

- future changes in Government guidance;
- improvements in best practice concerning flood alleviation and surface water drainage;
- refinements of the flood risk maps produced by the Environment Agency; and
- refinements of the Source Protection Zones maps.

Flooding

4 East Dorset enjoys and occasionally suffers from an extensive and dynamic water environment. A series of streams and rivers cross or border the District, flowing south and east towards the sea. For the majority of time they provide the District with a beautiful and treasured environment. However, they are prone, as with any watercourse, to flooding, which can cause serious damage to property and endanger peoples lives.

5 For centuries, people have built homes and workplaces within flood plains, drawn by the need to be close to water for daily living requirements, defence, or as strategic crossing points. However, modern water supply systems no longer mean that we have to balance the need to be close to water with the risks of flooding. East Dorset District Council is committed to preventing development within flood plains and other high risk areas, where this would cause danger to lives and property and has adopted policies to prevent inappropriate development within areas at risk of flooding.

The Precautionary Principle

6 Understanding of the relationship between development and flooding is constantly being updated and improved. For instance, knowledge on climate change has increased significantly over recent times. The Rio Declaration in 1992 declared that:

"Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

7 This approach is incorporated within Planning Policy Guidance 25 (Development and Flood Risk 2001) and is to be applied when considering the relationship between development and flooding. This is known as the precautionary principle. It is the sole responsibility of the developer to demonstrate that a proposal is not at risk of flooding and will not increase the risk of flooding elsewhere.

Development Restricted by Flooding Policy

8 Applications that are likely to raise significant flood risk issues are where the proposal is:

- located in an undefended or defended flood plain or washland;
- within or adjacent to any watercourse;
- adjacent to, or including flood bank or other flood control structures;
- situated in an area where the Environment Agency, or the Council as local drainage authority for non-main rivers, has indicated there may be drainage problems;
- is of such a size that it may cause a significant increase in surface water run-off; or
- located in an area known to suffer from high groundwater.

9 The East Dorset Local Plan sets out detailed policies to prevent inappropriate development within flood plains and these are reproduced in **Appendix A**. The Flood Risk Maps which accompany this document in a separate book, are based on information provided by the Environment Agency in September 2005. These maps identify the outlines for both Flood Zone 2 (low to medium flood risk area: 0.1 - 1.0% chance of flooding each year) and Flood Zone 3 (high flood risk area: more than 1.0% chance of flooding each year). The information is based on the best available modelled information and historical flood data. However, the Environment Agency will be updating this information on a quarterly basis, therefore the most up-to-date Flood Map information can be found on the Environment Agency's website at www.environment-agency.gov.uk. On an annual basis the Council will, where necessary, publish those SPG Flood Risk Maps which have been updated by the Environment Agency.

10 Flooding need not be contained solely to those areas within recognised flood plains. Serious flooding has occurred in parts of the District because of local circumstances. For instance flooding can occur as a result of run-off from fields and high groundwater levels. Such risks are not easily predicted and those areas affected cannot therefore be shown on the maps. Nevertheless, the local plan policies reflect the fact that flooding does occur outside flood plains and that this is a material consideration to take into account when determining planning applciations.

Flood Risk Assessments

11 A Flood Risk Assessment should be commissioned at the earliest opportunity in the preparation of development schemes, where flood risk is an issue. A Flood Risk Assessment report should then be submitted with the planning application. This should identify how the proposal itself will be affected and what the flood risk impact of the proposal will be beyond the site. The scale of the assessment will depend upon the complexity of the scheme being proposed and its potential impact on flooding. In the case of particularly complex proposals the developer may be required to submit a preliminary/scoping report prior to the assessment, setting out the issues to be covered in the assessment.

12 Guidance on the minimum requirements of a Flood Risk Assessment can be found in Appendix F of Planning Policy Guidance Note 25. This is reproduced in Appendix B of this SPG. In addition, the Environment Agency has produced a set of four guidance notes on the minimum requirements of Flood Risk Assessments according to the type and location of the proposal. These are available from the Planning Department and can be viewed at: http://www.pipernetworking.com/floodrisk/index.html

Environmental Impact Assessments

13 For certain types of project there may be a requirement for an environmental impact assessment (EIA) to be undertaken. Developers should check at an early stage with the Council whether an EIA will be required and what it should cover. Projects that could require an EIA include:

- Flood relief works.
- Land drainage improvements that are permitted under the General Permitted Development Order 1995.
- Development that is likely to have a significant effect on the environment.

14 It should be noted that whilst flood plains are not specifically identified as a *'Sensitive Area'* that could trigger EIA, Schedule 3 of the EIA Regulations sets out general EIA screening criteria, and suggests that EIA might be required in *'wetland areas'*.

Drainage

Surface water run-off – the problem

15 In natural environments between 70% and 95% of rainfall soaks into the ground, replenishing groundwater sources and reducing the threat of flooding. Where development takes place this can reduce to as little as 5% and the implications of this may be compounded by the effects of climate change if flood peaks become shorter and more intense and droughts become deeper and more prolonged. Excessive surface water run-off results in the following major problems:

- Piping water away rather than letting it soak into the ground reduces the amount of water getting into the groundwater, which can cause low base flows in streams and rivers. This can harm biodiversity and amenity, as well as reducing available water sources for human use.
- Surface water run-off can contain many contaminants such as oil, organic matter and toxic metals. These can be highly polluting when there is quick run-off associated with heavy rain and when they combine with pollutants in larger volumes downstream.
- Higher peak run-off rates and volumes from a site can increase the risk of both flooding to the receiving watercourse and of localised flash flooding.

Run-off minimisation and water conservation

16 Whilst it is accepted that developing at higher densities reduces the need to develop further *'green-field'* land, and is consistent with wider sustainability objectives, consideration should be given in the design of such developments to keeping the amount of hard surfacing to a practicable minimum. Opportunities should also be seized through the development process to minimise the amount of run-off by ensuring that the use of natural seepage to the ground is used where possible and capturing and recycling water for use in activities such as landscape maintenance and vehicle washing. Developers are encouraged to incorporate measures into the design of their schemes which utilise, *'clean'* run-off water sources.

Run-off reduction

17 Development cannot proceed without adequate surface water drainage arrangements. To minimise flooding, surface water run-off from new development should be attenuated (slowed down), as near to the source as possible, to equate with that which would occur on the equivalent *'green-field'* site.

What are SuDS?

18 Sustainable Drainage Systems (SuDS) are a practical concept that seek to focus decisions about drainage, so that equal consideration is given to water quality, quantity, public amenity and ecosystems. They are a technique that seek to control surface run-off as close to its origin and attempts to mimic natural drainage processes thereby reducing flood risk and pollution and maintaining the hydrological balance of the natural environment.

What are the benefits of SuDS?

19 The benefits of such systems are numerous, including, amongst others:

- Reduction in flood risk by reducing and slowing run-off.
- Maintenance of groundwater levels and the flow of rivers.
- Provision of natural habitats, such as ponds.
- Conservation of river ecology.
- Reduction in erosion.
- Reduction in the need to upgrade sewer systems.
- Saving money in construction, long term maintenance and by reducing the need for wayleaves and easements.
- Opportunities to reduce water use by the re-cycling of run-off for use in, for example, landscape maintenance.

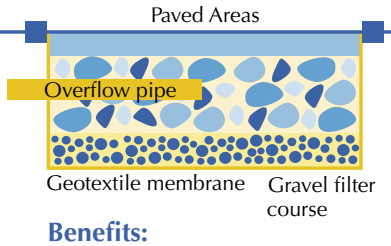
What should SuDS do?

20 A SuDS for a new development must meet the following basic requirements:

- For *'green-field'* sites there should be no greater run-off than exists prior to development, and for *'brown-field'* sites there should be a reduction in the run-off. This is in order to prevent flooding of downstream watercourses by controlling the peak run-off rate and volume from a site.
- Downstream watercourses and habitat should not be damaged by run-off generated by the development.
- Pollution in the run-off from a development should be treated or intercepted before discharge.
- The wider needs of the community and catchment should be considered in the development of the design.

21 SuDS are physical structures designed to receive surface water run-off, which can usually be incorporated into the planted or paved areas of the site. There a number of drainage devices that can be used, however it is important that these are not considered as isolated features, but are designed to operate collectively. The range of options available, as set out below, means that there are many ways to implement a SuDS.

Porous paving

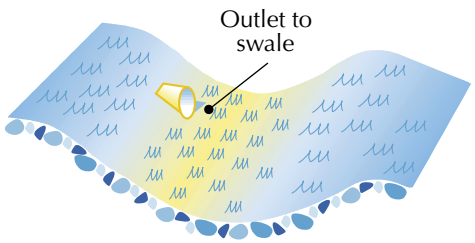


Benefits:

- **Stores water and attenuates run-off**
- **Filters run-off water**
- **Allows water to slowly infiltrate to groundwater**
- **Only occassionally overflows to watercourse**

Grassed swale

A swale is a shallow depression used to convey run-off slowly through grassed/planted areas.



Benefits:

- **Filters run-off**
- **Some losses through infiltration**
- **Provides temporary storage**
- **Slows flood response during heavy rainfall**

What types of SuDS can be used?

Permeable surfaces

22 These include gravelled areas, and special porous, paving laid on top of a permeable layer. They are designed to allow water to drain into the ground quicker than the rain falls.

23 Depending on the ground conditions the water may pass directly into the subsoil, or be stored in an underground reservoir (e.g. crushed stone layer) before slowly soaking into the ground. If necessary an overflow pipe can be used to keep the surface free of water in all conditions.

24 Pollutant removal occurs either within the surfacing material or by the filtering action of the reservoir or subsoil. If the groundwater below needs special protection from pollutants, such as in Source Protection Zones, an impermeable membrane can be placed under a sub-base.

Filter drains

25 Permeable surfaces are not as strong as solid impermeable surfaces, so are not therefore suitable for roads. A narrow permeable strip along the edge of the road can be used to allow run-off from the road and into the ground. Such a system is known as a filter drain.

Filter strips and swales

26 **Filter strips** are based on natural drainage systems, such as sloping vegetated areas. A filter strip slows down the flow of water which soaks into the topsoil, as long as it is not too compacted.

27 **Swales** are broad, shallow channels that water runs along when it has been raining. They have the potential to slow water even more than filter strips, by making the slope along the channel very gentle, or by having check dams to hold back water. The detention of water in this way can also help increase the rate that it drains into the ground.

28 As run-off flows through swales and filter strips it is filtered by the vegetation, trapping silt and other solid contaminants. Organic matter is reduced by micro-organisms in the soil and the plants themselves.

29 Normally both systems will be dry. They can help improve the amenity of an area by providing green corridors with a diverse habitat. Filter strips and swales should not be built on steep slopes, as this may lead to erosion. Equally, very shallow slopes could lead to waterlogging, which could kill the plants.

Infiltration devices

30 Infiltration devices make use of the ability of the soil and underlying geology to absorb water. They have large surface areas to encourage drainage and they have some storage capacity to hold run-off when the rainfall rate is greater than the ground absorption rate.

31 Soakaways, soakpits and infiltration trenches incorporate underground storage, including chambers with holes in the side and base, or within the voids of a layer of coarse crushed rock. Soakaways and soakpits are normally square or circular, while infiltration trenches are linear.

32 Infiltration basins hold water above ground, which then soaks through the ground. The ground should not therefore be compacted.

33 Infiltration devices reduce run-off by quickly disposing of water to the ground and are particularly effective if used close to the source of the run-off. As the water soaks into the ground it is filtered and biological action reduces organic pollutants. However, pre-treatment may be required to remove pollutants reaching sensitive groundwater or ecologically valuable locations. It should be noted that infiltration may not always be appropriate, for example where the site is contaminated and percolation could mobilise pollutants, or where land is unstable, for example at the top of banks or cliffs.

34 If there is likely to be a large level of silt flowing into the device, the water should be passed through a filter strip, to stop blockages. Infiltration devices cannot be used where they would wash out soils, so they cannot be located immediately adjacent to buildings and roads.

35 Infiltration devices need not have a visual impact, as soakaways and infiltration trenches are installed underground and infiltration basins can be easily landscaped to fit in with their surroundings.

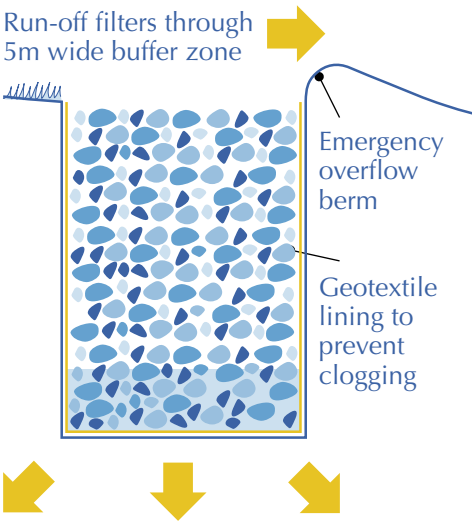
Storage Basins, ponds and wetlands

36 Storage basins are temporary water features that only fill during and after storms, allowing water to be released at a controlled rate, in order to prevent floods downstream. Ponds and wetlands are permanent water features and include balancing ponds, attenuation ponds and flood storage reservoirs. Basins and ponds hold water at times of storm which can then be released at a controlled rate.

37 If water is held for long enough, solids start to settle out, improving water quality. Further improvements to water quality can be achieved by using natural biological action to remove contaminants.

Infiltration trench

Trench 1.2m deep filled with 30-60mm diametre clean stone



38 As basins are normally dry, they can be used as public open space. Ponds and wetlands can provide valuable wildlife habitats and attractive features. Additionally, where water quality is good enough, ponds can be used for recreational purposes.

39 Basins, ponds and wetlands should not be fully operational until the vegetation has become established. For this reason they may need to be put in place during the earliest phase of development, and in fact they could even be used to reduce silt-laden run-off during construction. Maintenance will be required to ensure that the plant life flourishes. Additionally, ponds and wetlands trap silt, which will need to be removed on a regular basis. A small detention basin placed at the inlet of the feature can help the trapping and removal of silt.

40 Balancing ponds are inappropriate in undefended flood plains, because it is likely that they will be full of flood water when they are needed to take the run-off from urban areas.

41 For safety reasons it is advisable for ponds to have shallow margins, be appropriately planted and/or have a low fence to keep small children out.

Choosing the right SuDS

42 The choice of the appropriate SuDS will depend on:

- The pollutants present in run-off.
- The size of and drainage strategy for the catchment area.
- The hydrology of the area and infiltration rate of the soil.
- The presence of Source Protection Zones.

43 It is probable that large sites will incorporate a mix of the different systems. Small sites are more likely to use permeable surfaces, soakaways or soakpits, filter drains, filter strips and swales.

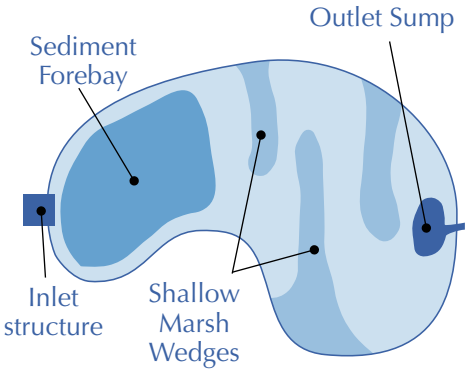
The Planning Process and SuDS

44 Drainage is an important consideration in the planning process. It is necessary for SuDS to be considered early on in the site evaluation, design and planning process. East Dorset District Council will expect all full planning applications to demonstrate how SuDS will be incorporated into development proposals. Detailed design information should be provided at the time of submission. A preliminary drainage scheme may also be required for outline planning applications, as money for maintenance of the drainage arrangements may have to be included in any planning obligation negotiations. Where a drainage scheme comes forward without the inclusion of SuDS, the Planning Authority will require clear justification from the applicant as to why this approach could not be incorporated. The Planning Authority may not approve a drainage scheme that provides an unacceptable degree of run-off attenuation, and does not keep clean roof water separate from dirty water.

Schematic wetland

Benefits:

- **Stores water and attenuates run-off**
- **Filters run-off**
- **Removes nutrients**
- **Can recycle grey water**



45 The Council will make use of surface water drainage planning conditions to secure the implementation of SuDS. In dealing with such drainage schemes the Planning Authority will consult the Environment Agency, the Technical Services Division of the District Council, and, where relevant, any organisation potentially involved in the maintenance of the drainage arrangements. It should be noted that notwithstanding approval of the drainage scheme by the Planning Authority, Land Drainage Consent may be required from the Environment Agency for any elements of the scheme which are within 8 m of a 'main' river or flood defence structure, or that could affect the flow in an 'ordinary' watercourse (e.g. an outfall).

Building Control and SuDS

46 Developers should be aware of the need to obtain Building Control Consent for surface and foul water drainage schemes. The detailed requirements are set out within Document H of the Building Act 1984, Drainage and Waste Disposal (2002 Edition). Developers are advised to contact the Building Control Section at the Council as early as possible, to determine the acceptability of drainage proposals.

Trees and SuDS

47 Drainage systems can have a significant impact on trees and vice versa. East Dorset is fortunate to have many trees of important nature conservation and amenity value and the Council considers that this should be protected and maintained for the long term.

Developers are advised to contact the Tree Section in the East Dorset Planning Department regarding SuDS and their relationship to trees.

Future Care

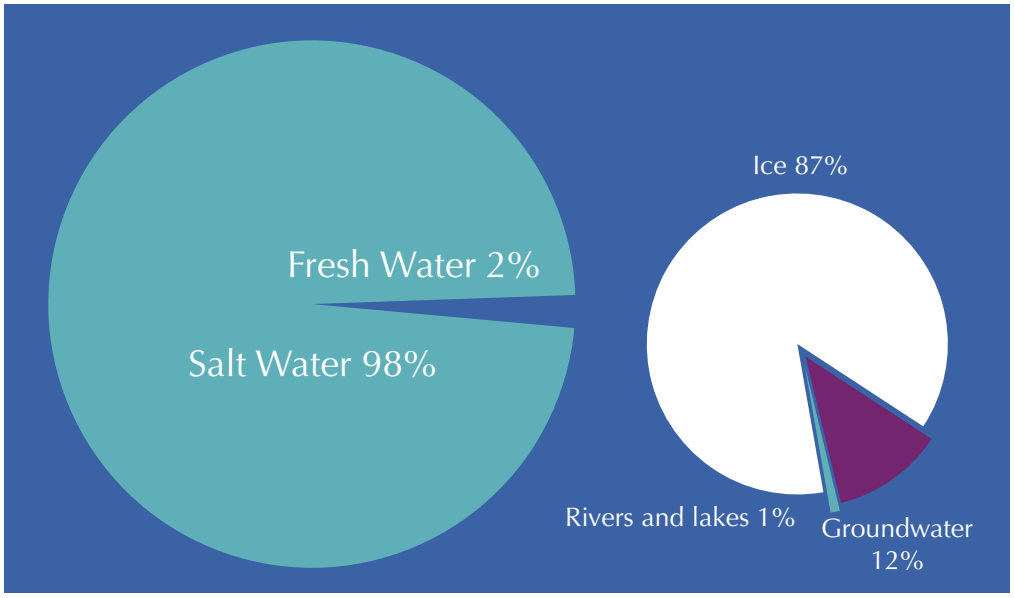
48 It is essential that following implementation SuDS are properly maintained over the long term. Developers will be expected to enter into an agreement with the Council to guarantee maintenance. If the developer does not wish to be responsible for future maintenance, ownership of the relevant land should be passed to either the Wessex Water, the District, Parish or Town Council. In such circumstances, a commuted sum to cover future maintenance will be required for the lifetime of the SuDS. Such a payment should include sufficient funds to pay for insurance against pollution. Alternatively, a private management company could be established with responsibility for maintenance. If this option is chosen, evidence will be required to show that the company has sufficient funds and skills to guarantee the future maintenance of the SuDS. Issues relating to the maintenance of SUDS, including the use of model legal agreements, are addressed in more detail in Chapter 7 of the Interim Code of Practice for Sustainable Drainage Systems published by the National SUDS Working Group in July 2004 (see Further Information Section for details).

Groundwater Protection

What is Groundwater?

49 Groundwater is the water that sits below the surface of the ground, between rock particles in special layers known as aquifers. An aquifer is like a giant sponge holding water that has seeped down through the ground until it is stopped by a solid layer. The diagram of World Water Distribution shows the importance of groundwater as a source of fresh water. The increasing demand for freshwater is placing immense pressure on water supplies. It is therefore essential that it is carefully used and protected.

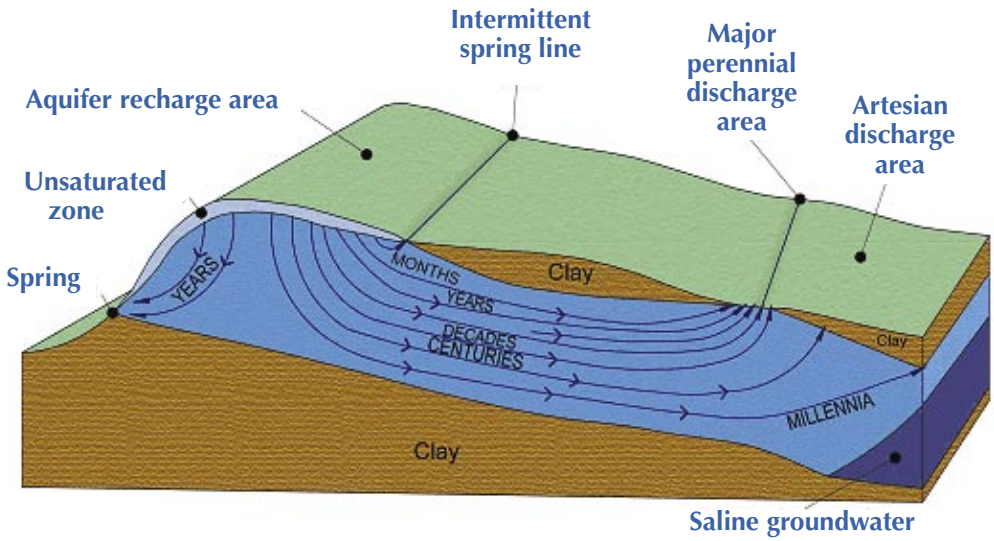
World-wide water distribution



The Pollution Hazard

50 Pollution of groundwater can occur through specific sources e.g. petrol stations, or it can be as a result of diffuse activity, such as agriculture, or atmospheric fallout.

51 The water in aquifers is always on the move, flowing from the recharge zone to the discharge zone. This movement has the effect of filtering the water, so that it is often cleaner than surface water. However, groundwater moves slower than surface water and the movement decreases the further into the ground the water is situated (See diagram). This means that if the groundwater becomes polluted it is likely to remain so for a long time.



Groundwater in East Dorset

52 Almost the whole of the District is underlain by aquifers from which water supplies are already drawn, or which may provide important resources for the future. It is essential that these are protected and managed properly in terms of the quality and quantity of water. For the larger public abstractions the Environment Agency has identified catchment areas known as Source Protection Zones (SPZ's), and has subdivided these into three zones of sensitivity according to, largely, the estimated time that water takes to travel to the abstraction point.

53 Once an SPZ becomes contaminated it may prove impracticable for the pollution to be removed and the source may be permanently lost. The East Dorset Local Plan therefore contains a policy to protect SPZ's from new development that would lead to over abstraction or potential contamination. This is attached as Appendix C.

54 Maps detailing the location of the SPZ's have been produced by the Environment Agency and are contained in a separate book which accompanies this document. The Environment Agency are continuously updating these maps to improve their accuracy and as and when new maps are produced this guide will be updated. If there are any detailed concerns relating to the maps these need to be addressed to the Environment Agency at the address given in this guide.

55 As indicated by the text of the Adopted Local Plan Policy, there may be proposed developments on an aquifer, outside of an SPZ, where the protection of groundwater may be a consideration during the planning process. It should be noted that SPZ's do not show the groundwater catchments for all abstractions.

56 Certain types of proposal (for example a petrol filling station) may not be acceptable in Zone 1 (the inner most sensitive part) of an SPZ, and hydrological risk assessments may be required depending on the location and nature of the proposals. Within the inner zones of an SPZ, drainage schemes which are based on infiltration may be unacceptable and it may be necessary to direct run-off to the nearest surface water sewer.

East Dorset Local Plan (Adopted 2002)

Flooding Policies

Appendix A

WENV2 - Within an undefended flood risk area a proposal in a developed area will only be permitted provided that criteria (a) and (b) below are fulfilled.

Within an undefended flood risk area a proposal in an undeveloped or sparsely developed area will only be permitted if it is essential transport and utilities infrastructure, or a recreation, sport, amenity or conservation use, and criteria (a) and (b) below are fulfilled.

A proposal whether in an undeveloped or developed area which is known to be sited where flood water frequently passes, or where defences are inadequate and there could be rapid inundation, will only be permitted if it is essential transport and utilities infrastructure, or a recreation, sport, amenity or conservation use and criteria (a) and (b) below are fulfilled:

(a) a sequential test satisfactorily shows that there are no other suitable sites with a lower risk of flooding; and

(b) a Flood Risk Assessment satisfactorily demonstrates that measures incorporated into the scheme would prevent either life being endangered or an unacceptable likelihood of damage to property.

WENV3 - Development within either a defended or undefended flood risk area will only be permitted provided that the proposal does not harm the integrity or maintenance of a watercourse for the purpose of minimising flood risk.

Appendix B

Appendix F of Planning Policy Guidance Note 25

Flood Risk Assessments - The Minimum Requirements

1. A location plan at an appropriate scale that includes geographical features, street names and identifies all watercourses or other bodies of water in the vicinity. This should include drainage outfalls and, if necessary, cross-refer to their operational arrangements in the body of the report.
2. A plan of the site showing levels related to Ordnance Datum, both current and following development.
3. A more detailed indication, if appropriate, of flood alleviation measures already in place, of their state of maintenance and their performance.
4. An assessment of the source of potential flooding - rivers, tidal, coastal, groundwater, surface flow or any combination of these.
5. A plan of the site showing any existing information on extent and depth of flood events or on flood predictions. Information may be anecdotal, photographic, survey results or model estimates. The events should be identified with date/time, source of the data and supporting information provided on rainfall and/or return period, or probability of occurrence of the flood or storm surge event, or combination. Recorded data are particularly valuable and, if available, should be highlighted along with evidence of any observed trends in flood occurrence. Any changes that have taken place since the last event should be identified.
6. A plan and description of any structures which may influence local hydraulics. This will include bridges, pipes/ducts crossing the watercourse, culverts, screens, embankments or walls, overgrown or collapsing channels and their likelihood to choke with debris.
7. An assessment of the probabilities and any observed trends and the extent and depth of floods for the location and in the catchment context and, if appropriate, routes and speed of water flow. At this stage best estimates, based on the most up-to-date findings, should also be made of climate change impacts on probabilities. The assessment should ensure that the development meets an acceptable standard of flood defence for the design life of the development.
8. A cross-section of the site showing finished floor levels or road levels, or other relevant levels relative to the source of flooding, and to anticipated water levels and associated probabilities.
9. An assessment of the likely rate or speed with which flooding might occur, the order in which various parts of the location or site might flood, the likely duration of flood events and the economic, social and environmental consequences/impacts of flooding.

10. An assessment of the hydraulics of any drains or sewers, existing or proposed, on the site during flood events. The methodology for assessment must be clearly stated.
11. An estimate of the volume of water which would be displaced from the site for various flood levels following development of the site and of the run-off likely to be generated from the development proposed.
12. An assessment of the likely impact of any displaced water on neighbouring or other locations which might be affected subsequent to development. This should address the potential for change of the flooding regime both upstream and downstream of the site due to ground raising or flood embankments.
13. An assessment of the potential impact of any development on fluvial or coastal morphology and the likely longer-term stability and sustainability.
14. Because of the uncertainties in flood estimation and expected climate change impacts, hydrological analysis of flood flows and definition of defence standards should include the allowances for increased flows and sea-level rise in MAFF's project appraisal guidance for flood defence cited in Appendix A of PPG25 (July 2001).
15. An assessment of the residual risks after the construction of any necessary defences. Where new or modified flood defence arrangements are provided, consideration should always be given to their behaviour in extreme events greater than those for which they are designed and information should be provided on the consideration given to minimising risks to life in such circumstances.

Appendix C

East Dorset Local Plan (Adopted 2002)

Groundwater Protection Policies

WENV1 - Development which would place an unacceptable risk upon the water quality, quantity or natural flow patterns of a groundwater resource will not be permitted. This is especially important within the groundwater Source Protection Areas defined in Supplementary Planning Guidance and also where land may have been subject to previous contamination.

Contacts

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Further Information

Planning Policy Guidance Note 25, Development and Flood Risk (July 2001), Department of Transport, Local Government and the Regions. Can be viewed at: **www.odpm.gov.uk**

Environment Agency Internet address: **www.environment-agency.gov.uk**

Sustainable Urban Drainage Systems - Design Manual for England and Wales CIRIA C522. Construction Industry Research and Information Association, 6 Storey's Gate, Westminster, London SW1P 3AU (Tel: 0207 222 8891).

The Interim Code of Practice for Sustainable Drainage Systems, published by the National SUDS Working Group in July 2004, can be viewed at: **http://www.ciria.org/suds/icop.htm**

Preparing for Floods - Interim guidance for improving the flood resistance of domestic and small business properties (October 2003). Office of the Deputy Prime Minister.
Can be viewed at: **www.odpm.gov.uk**

Building Act 1984, Document H - Drainage and Waste Disposal (2002 Edition). Department of Transport, Local Government and the Regions.
Can be viewed at: **www.odpm.gov.uk**

National Joint Utilities Group (NJUG): Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees (April 1995). Can be viewed at: **www.njug.org.uk**