



Surrey Building Control Guidance Note - Number 8



Drainage

This guidance note provides advice on the **main** issues affecting drainage systems.

General

For all drainage systems it is good practice to:

- Lay drains in straight lines. Keep any bends to a minimum and as slow as possible,
- Lay drains with even falls,
- Provide access to drains in the form of manholes, inspection chambers and rodding eyes at regular intervals. You should always provide access at changes in direction, fall, size etc,
- Backfill drains with materials, such as pea gravel, that will provide adequate support,
- Protect pipes from damage if they are shallow or laid in heavily trafficked areas,
- Identify anticipated flows and provide pipes of sufficient size,
- Establish the condition and watertightness of any existing drains you want to reuse,

Depending on your circumstances, additional items require consideration, such as:

Foul Drainage

- Foul Water should discharge, in order of priority, to a public sewer, a private sewer communicating with a public sewer, a septic tank or other wastewater treatment plant or finally a cesspool.
- Measures to control rodents in the drainage system are required,
- The diameter of drains serving more than 10 dwellings needs to be a minimum of 150mm,
- Pumped installations can be used as long as design details are provided.

Wastewater treatment systems and cesspools

- The siting of systems to ensure peoples health is not effected and that watercourses and water supplies are not contaminated.
Percolation tests and the optimum position of installations is important.
- The capacity of the installation,
- The design and size of any secondary treatment, examples include traditional soakaway systems, drainage mounds and wetland/reed bed systems,
- The need to provide notices detailing the type of installation provided, the frequency of emptying required and the type and frequency of any maintenance required.
This includes the tank and any secondary treatment provided
- Greywater and rainwater storage tanks are to be encouraged.

Stormwater drainage

- Storm water should discharge, in order of priority, to a soakaway or other infiltration system, a water course or finally a sewer,
- Soakaway design should be considered,

- Gutters and downpipes should have sufficient capacity,
- Paved areas around buildings which provide access to the building for disabled people must be adequately drained,
- Consider other methods of dealing with both rainwater and surface water run off including pervious paving, swales, infiltration basins, filter drains and detention ponds.

Building over Sewers

- Conditions apply where buildings, extensions or underpinning will take place over or within 3m of an existing drain or sewer shown on Thames Water records.

When you apply for Building Regulation approval and your building work is close to or over a public sewer we are required to consult Thames Water before approving plans or issuing a completion certificate.

It is vital that you check the public sewer sheets, prior to submitting your application. The public sewer maps can be viewed at the Civic Centre and advice will be given by Building Control on these matters.

By doing this you will be able to decide the right type of application to deposit, whether you need to provide information about how you intend to protect the sewer or whether you need to contact Thames Water to see if they will allow the work to be carried out.

Any works to a Thames Water Sewer are to be carried out in accordance with Thames Waters requirements.

Building notices cannot be used where public sewers are affected.

Please note that Thames Water have powers to protect sewers even if the Building Regulations do not apply to your proposals. You should discuss this with them direct.

- **When work affects a public sewer you should consider:**
 - **Undue risk in the event of failure of the drain or sewer**
Some soils, such as, fine sands, fine silty sands, saturated silts, and peat are easily eroded by groundwater leaking into the drain or sewer. Buildings should not be constructed over or within 3m of drains or sewers, in such soils, unless special measures are taken in the design and construction of the foundations to prevent undue risk to the building in the event of failure of the drain or sewer. Special measures need not be taken if the drain or sewer is:
 - Above the level of the foundations, and
 - Above the groundwater level, and
 - No more than 1m deep.

A building constructed over or within 3m of;

- Any rising main,
- Any drain or sewer constructed from brick or masonry,
- Any drain or sewer in poor condition

would be exposed to a high level of risk in the event of failure of the drain or sewer. Special measures will need to be taken.

- **Maintaining Access**
 - Buildings or extensions should not be constructed over manholes or inspection chambers or other access fittings on any sewer serving more than one property,
 - Satisfactory diversionary routes should be available so that the drain or sewer could be reconstructed without affecting the building,
 - Except with the permission of Thames Water the length of drain or sewer under a building should not exceed 6m,
 - Except with the permission of Thames Water buildings or extensions should not be constructed over or within 3m of any drain or sewer more than 3m metre deep or greater than 225mm in diameter.

- **Protection of the drain or sewer during construction**
 - Any drain or sewer should be protected from damage by construction traffic and heavy machinery.
 - Where piling works are being carried out care should be taken to avoid damage to any drain or sewer.

- **Protection from settlement**
 - Where a drain or sewer runs under a building at least 100mm of granular or other suitable flexible filling should be provided around the pipe. On sites where excessive subsidence is possible additional flexible joints may be advisable or other solutions adopted such as suspended drainage. Where the crown of the pipe is within 300mm of the underside of the slab, special protection should be provided.
 - Where a drain or sewer running below a building is less than 2m deep, the foundation should be extended locally so that the drain or sewer passes through the wall.
 - Where a drain or sewer runs through a wall or foundation suitable measures should be taken to prevent damage or misalignment.
 - Where the drain or sewer is more than 2m deep to invert and passes beneath the foundations, the foundations should be designed as a lintel spanning over the line of the drain or sewer. The span of the lintel should extend at least 1.5m either side of the pipe and should be designed so that no load is transmitted onto the drain or sewer.
 - A drain trench should not be excavated lower than the foundations of any building nearby.

Separate systems of drainage

- Where foul and stormwater drainage is being discharged to sewers, these should be kept separate,
- For sites where only foul or combined drains exist, and soakaways are not suitable, stormwater cannot discharge into the foul or combined drains without Thames Water approval.

For further information contact the Building Regulations Division

Please note that these guidance notes are for advice only and may not cover all situations. It is your responsibility to ensure that they are appropriate for use in your particular circumstance.