

GRAVITY DRAINAGE SYSTEMS FOR BUILDINGS

Peter Trotman and John Griggs

This Good Building Guide gives recommendations for above-ground drainage systems serving sanitary appliances in low- and high-rise dwellings, office buildings and public buildings. Systems in these types of buildings do not generally require additional ventilation pipework. This Guide does not cover systems for buildings such as hospitals, laboratories and factories where there is more specialised equipment. For these and more complex systems see BS EN 12056-2^[1]. This Guide does not deal with below-ground drainage systems which are covered in BS EN 752^[2].

PERFORMANCE REQUIREMENTS

Wastewater (other than rainwater and storm water) may be divided into two categories, reflecting the treatment that is necessary before re-use or discharge:

- greywater is wastewater not containing faecal matter or urine, and
- blackwater is wastewater containing faecal matter or urine.

Greywater from baths, basins, sinks and washing can be treated, recycled and used for WC flushing, as part of a water conservation strategy. However, greywater recycling is not covered in detail in this *Good Building Guide*; further information on greywater recycling can be found in BRE Information Paper IP 9/08 Part 3^[3]. The term 'foul water' when used in this *Guide* means blackwater and unrecycled greywater.

The basic requirements for an above-ground foul water gravity drainage system are to:

- convey the foul water to a below-ground system and hence to an outfall (a foul or combined drain or sewer, a cesspool, septic tank or holding tank),
- prevent foul air in the drainage system from entering the building under normal operating conditions*.



To fulfil these requirements the system should:

- have a means for ventilation,
- minimise the risk of blockage or leakage,
- be accessible for clearing blockages.

It should not:

- make the building more vulnerable to flooding,
- generate excessive noise.

* Fumes from foul water systems may contain chemicals including hydrogen sulfide, carbon monoxide, carbon dioxide and methane, the cocktail being noxious and odorous or odourless.

