

# Construction Notes

## Septic tanks

Septic tanks should only be used in conjunction with a form of secondary treatment (e.g. a drainage field, drainage mound or constructed wetland).

Septic tanks should be sited at least 7m from any habitable parts of buildings, and preferably downslope. Where they are to be emptied using a tanker, the septic tank should be sited within 30m of a vehicle access provided that the invert level of the septic tank is no more than 3m below the level of the vehicle access. This distance may need to be reduced where the depth to the invert of the tank is more than 3m. There should also be a clear route for the hose such that the tank can be emptied and cleaned without hazard to the building occupants and without the contents being taken through a dwelling or place of work.

Septic tanks should have a capacity below the level of the inlet of at least 2,700 litres (2.7m<sup>3</sup>) for up to 4 users. The size should be increased by 180 litres for each additional user. Septic tanks should meet the requirements of BS EN 12566-1. Particular care is necessary in ensuring stability of these tanks.

The inlet and outlet of a septic tank should be designed to prevent disturbance to the surface scum or settled sludge and should incorporate at least two chambers or compartments operating in series. Where the width of the tank does not exceed 1200mm the inlet should be via a dip pipe. To minimise turbulence, provision should be made to limit the flow rate of the incoming foul water. For steeply laid drains up to 150mm the velocity may be limited by laying the last 12m of the incoming drain at a gradient of 1 in 50 or flatter.

The inlet and outlet pipes of a septic tank should be provided with access for sampling and inspection (see Approved Document H1, paragraph 2.48).

Septic tanks should be provided with access for emptying and cleaning. Access covers should be of durable quality having regard to the corrosive nature of the tank contents. The access should be lockable or otherwise engineered to prevent personnel entry.

## Drainage fields

A drainage field or mound serving a wastewater treatment plant or septic tank should be located:

- a. at least 10m from any watercourse or permeable drain;
- b. at least 50m from the point of abstraction of any groundwater supply and not in any Zone 1 groundwater protection zone;
- c. at least 15m from any building;
- d. sufficiently far from any other drainage fields, drainage mounds or soakaways so that the overall soakage capacity of the ground is not exceeded. The disposal area should be downslope of groundwater sources. No water supply pipes or underground services other than those required by the disposal system itself should be located within the disposal area.

No access roads, driveways or paved areas should be located within the disposal area.

Drainage fields (see Diagrams 1) should be designed and constructed to ensure aerobic contact between the liquid effluent and the subsoil.

Drainage fields should be constructed using perforated pipe, laid in trenches of a uniform gradient which should be not steeper than 1:200.

Pipes should be laid on a 300mm layer of clean shingle or broken stone graded between 20mm and 50mm.

Trenches should be filled to a level 50mm above the pipe and covered with a layer of geotextile to prevent the entry of silt. The remainder of the trench can be filled with soil; the distribution pipes should be laid at a minimum depth of 500mm below the surface. Drainage trenches should be from 300mm to 900mm wide, with areas of undisturbed ground 2m wide being maintained between parallel trenches (see Diagram 1).

An inspection chamber should be installed between the septic tank and the drainage field.

Drainage fields should be set out as a continuous loop fed from the inspection chamber (see Diagram 1). To calculate the floor area of the drainage field (At in m<sup>2</sup>), the following formula should be used:

$$A_t = p \times V_p \times 0.25$$

where p is the number of persons served by the tank, Vp is the percolation value (secs/mm) obtained as described in paragraphs 1.34–1.38.

# General Notes

## Drainage Work

To be the entire satisfaction of Local Authority Engineer. All UPVC Drains to be to BS 4660:1989 for sizes 110 and 160 and BS5481:1977 (1983) for 200mm and above. All vitrified clay drainage products to be Super sieve or equal. No UPVC drains to be used below 1200mm deep unless otherwise specified. Walls are to have concrete intel over where drains pass through. Foundations to walls adjoining drains to be taken down below drains invert level. UPVC pipes to be encased in concrete are first to have joints wrapped in polythene sheet. UPVC pipes laid with less than 900mm cover should have a concrete slab 100mm deep spanning the trench over the selected backfill to the trench. All gullies to be back inlet type. Manholes to be constructed to regulations in 215mm thick 2nd class engineering bricks on 150mm deep concrete base. Manhole to have medium duty metal cover and frame set in reinforced concrete top. UVPC inspection chambers 450mm to be to BS 7158:2001 Grade II and to have cast iron cover frame Grade C2 to BS497 Part1:1976. Frame and cover are to be in place when backfilling takes place to prevent foreign matter entering the drain. Cast iron cover and frame to be bedded on a 150mm concrete plinth surrounding the chamber but not in contact with it. Any gully not connected directly into manhole to be access gully.

## Access Points

Access chambers 225mm diameter can be used to a depth of up to 600mm. Polypropylene inspection chambers 275mm diameter can be used to a depth pf up to 1000mm. traditional M.H. or concrete rings should be used for all situations over 1000mm deep. M.H. to be 1200mm x 750mm up to 2700mm deep. Manholes over 1500mm deep can be 1200mm diameter formed with concrete rings.

## Maximum Spacing of Access Points

From inspection chamber to inspection chamber 45metres. From inspection chamber to manhole 45metres. From access fitting to inspection chamber 22metres. From rodding eye to inspection chamber 45metres. From rodding eye to junction 22metres.

Notes:

1. Do not scale this drawing.

2. This drawing is to be read in conjunction with drawing TPY-PM-DRG-01.

Rev	Date	Drawn	Check	Appr'd	Details of Revisions
R0	02.11.23	SH	PM	PM	First issue

Client:  
-

Project:  
Sandbarn 1 and 2, Tarporley

Drawing Number:	Sheet No.:	Revision:
TPY-PM-DRG-02	-	R0

Title:  
Construction Notes

Status:  
For approval

Drawn:	SH	Date:	02/11/23	Scale:	NTS
Checked:	PM				
Approved:	PM				



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