

Technical Solution Sheet 3.09

3: Drainage (below ground sewer)

Property Sewerage Drains

AIM

The aim of this technical solution is to inform practitioners about some of the requirements for below ground sanitary drains. This technical solution may be read in conjunction with the technical solution “combined drains, overflow relief and inspection”.

PLUMBING REGULATIONS 2008

The *Plumbing Code of Australia* (PCA) is adopted by and forms part of the *Plumbing Regulations 2008*. Part C2 of the PCA specifies the objectives and performance requirements related to the installation of sanitary drainage systems. *AS/NZS 3500.2: Plumbing and drainage Part 2: Sanitary plumbing and drainage* is a “deemed to satisfy” document listed in Part C2 of the PCA and contains sections on location of drains, re-use of existing drains, and inspection shafts and boundary traps.

OBTAINING CONSENT

Prior to starting plumbing work for water supply, sanitary plumbing and sanitary drainage, you must first have the consent of the water authority which will prescribe “Conditions of Consent”.

For work involving below ground property sewerage drains, whether it be a new installation, an alteration to an existing drain or a replacement or repair, the water authority will also allocate a consent number (PIC number) as part of their consent.

INSPECTIONS

When booking inspections you will need the following items:

- Your licence number;
- PIN;
- The compliance certificate that you will lodge at the completion of the job; and
- The Consent Number issued by the Water Authority.

You must be in attendance on-site at the time of the booked inspection and you must have with you a copy of the conditions of consent and an accurate and legible 1:500 as-laid property sewerage plan.

LODGING COMPLIANCE CERTIFICATES AND RETURNING AS-LAID PROPERTY DRAINAGE PLANS

Compliance certificates must be lodged within 5 days of completing all plumbing work that you have been engaged to carry out.

The original copy or the compliance certificate details must be provided to the consumer. Also, the Victorian Building Authority (VBA) must be notified of details of the issued compliance certificate through e-Toolbox or the Interactive Voice Response (IVR) phone system.

The accurate and legible 1:500 as-laid property sewerage plan must be forwarded to the water authority that issued the consent, and you must place a tick in the relevant box on your compliance certificate before lodging the certificate.

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BUILDING OVER PROPERTY SEWERAGE DRAINS

When building over property sewerage drains, two frequently asked questions are:

- Can I lay a property sewerage drain under a building?
- Can I build over an existing drain?

The answer to both of these is yes. However, prior to building over the drain you need to consider:

- a. Whether you can divert the drain around the building.
- b. Whether the drain serves fixtures other than in that building.
- c. Whether the drain is a combined or shared drain with other properties connected.
- d. Existing drain material.

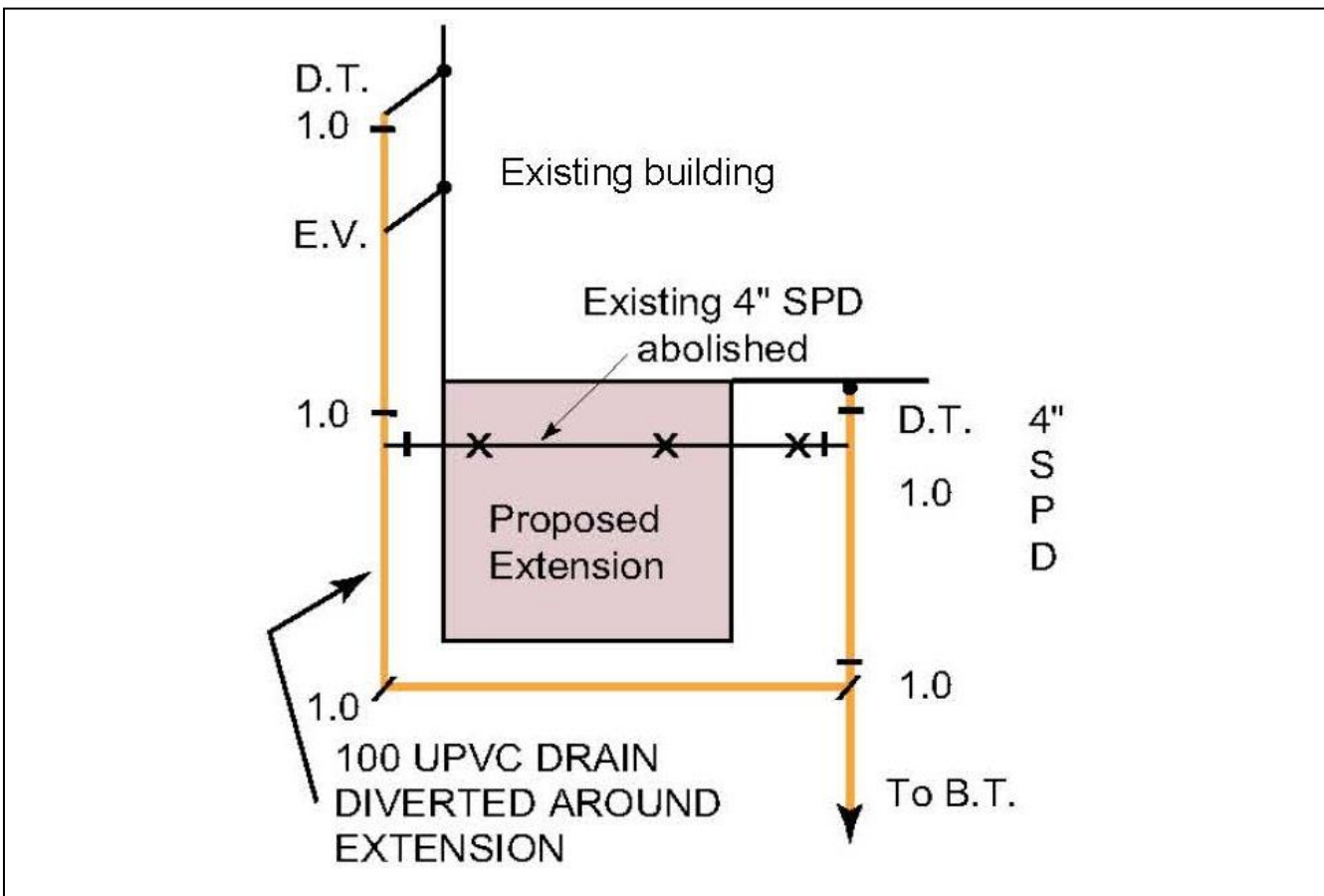
The requirements for each point are as follows:

a) Diverting the drain around the building

If it is practical to divert the drain around the building you should do so. If it is not practical to divert the drain, then drains may be laid or retained under the building subject to certain conditions (see parts b, c and d).

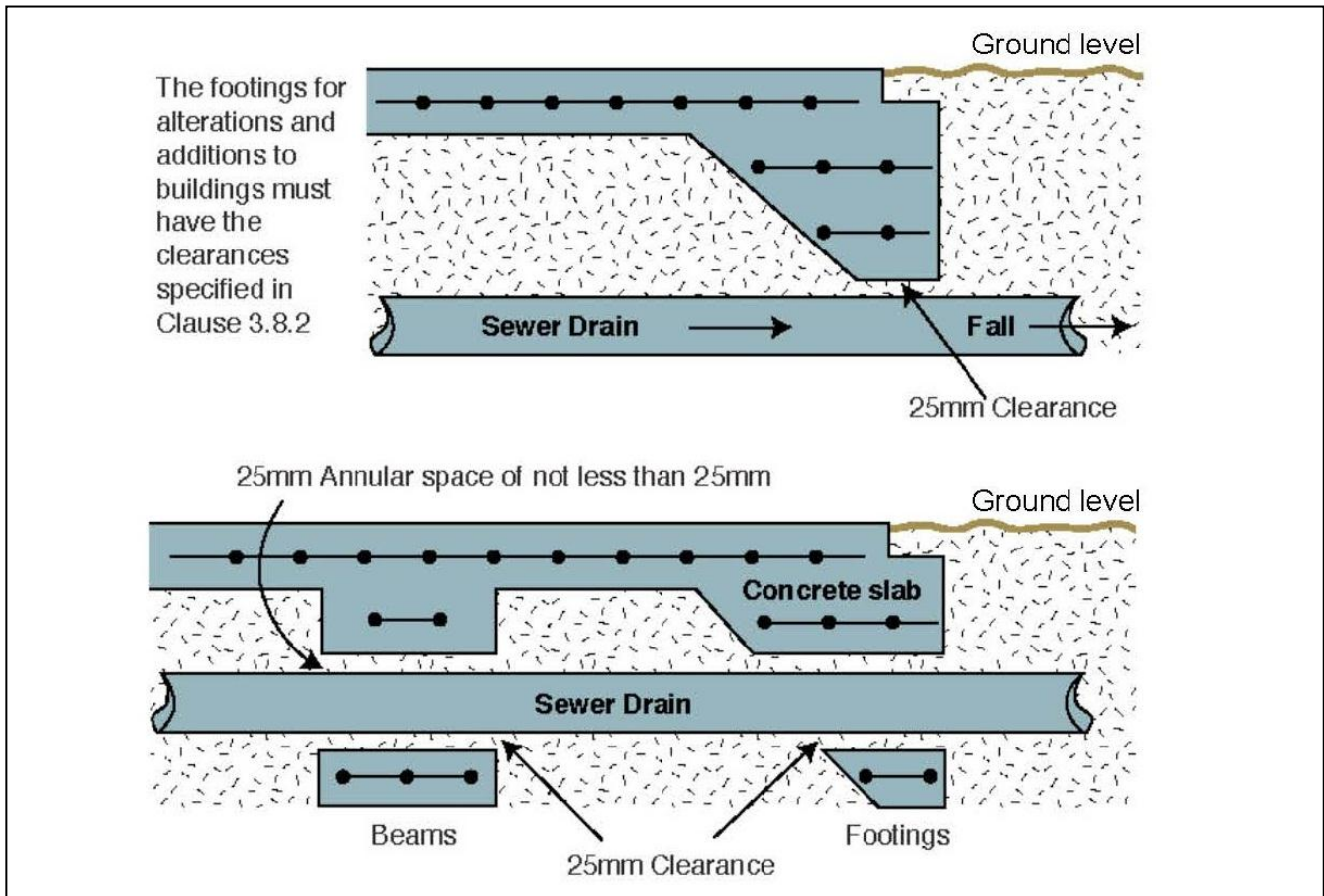
- The drains must be located clear of the building footings as specified in Clause 3.8.2 of [AS/NZS 3500.2](#).
- Also, any stumps must be clear of the drain and not impose any load on the drain the base of the stumps may need to be at the invert level of the drain (see Figures 1, 2 and 3).

FIGURE 1 - EXAMPLE OF DRAIN DIVERSION



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FIGURE 2 - EXAMPLE OF FOOTING CLEARANCES



b) The drain serves fixtures other than in the building

- Where the drain serves fixtures located in another building that is upstream of the building which will be located over the drain, then the drain should be diverted around the building.
- Where it is not practical to divert the existing drain around the building, you will need to apply to the VBA for a modification of the plumbing regulations to retain the drain under the building.

The modification, where permitted, requires:

- Replacing mortar jointed clay drains.
- Rubber ring jointed vitrified clay drains (RRJVC) and drains of other materials where approved to be retained, to pass a test as described in Clause 13.3 of [AS/NZS 3500.2](#)
- A straight line of drain.

- No connections to the drain under the building.
- Inspection openings to surface or finished level at the entry and exit points where the drain passes under the building in permanently accessible positions.
- Regulation clearance between footings and stumps.
- The new drain is to be constructed of [AS/NZS 1260 PVC-U pipes and fittings for drain, waste and vent application](#) or other approved material.

c) Whether the drain is a combined drain with other properties connected

- Where the combined section of drain is serving other properties the drain must be diverted.

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- Where the drain cannot be diverted you will have to apply to the VBA for a modification and the conditions described in b) apply.

d) Drain construction material

- Mortar jointed drains must be replaced with drains constructed of approved materials. To remain in use, RRJVC drains must pass a test (see Figure 3).

BUILDING OVER A BOUNDARY TRAP RISER OR INSPECTION SHAFT LOCATED AT THE PROPERTY CONNECTION

Boundary traps and inspection shafts shall be located clear of easements and within the property boundary. You cannot build over a boundary trap riser or inspection shaft if they are part of a combined drain or where more than one building is connected.

- Where necessary, a boundary trap or inspection shaft must be relocated clear of the building. If the building is to be constructed up to the property boundary, the boundary trap riser or inspection shaft will need to be recessed into the external wall to allow access for maintenance and clearance of blockages.

Alternatively, and subject to approval by the relevant authority (or council where applicable), the boundary trap or inspection shaft may be relocated to the basement, footpath or right of way. Where installed in a right of way, a heavy cover must be used.

Note: Some authorities require that the heavy cover be located at a specified depth below surface level.

If a low-level vent (ground vent) is required to be fitted to a boundary trap riser, the DN100 vent must be recessed in the wall. Where the boundary trap or inspection shaft is not part of a combined drain or unit development, you may build over either riser or shaft.

In the case of both concrete slab and timber floors, the riser or shaft:

Must have an inspection cap installed at ground or floor level.

- Must be readily accessible for inspection, and clearance of blockages with at least 1m vertical clearance above the ground or floor level.
- Must have overflow provision to protect the property against sewerage surcharge.
- In the case of boundary traps, include provision for downstream ventilation as required.
- Must be at least DN100 and in the case of slab floors (not subject to vehicular traffic) finish with an approved access cap or fitting (see Figure 4 and 5).

REDEVELOPING AND RENEWING DRAINS

When redeveloping and renewing drains, two frequently asked questions are:

1. If a site is to be redeveloped can I use the existing drains?
2. If a building is to be demolished and it is serviced by a combined drain, who is responsible for renewal of the drain?

In either case, if the existing drain is a mortar jointed clay drain then the drain must be replaced as follows:

- For other than a combined drain – back to the authority's sewer connection point.
- For combined drains – from property boundary to property boundary.

If a boundary trap and riser has been previously renewed in either PVC-U or cast iron pipe, or if an existing drain is in a material other than mortar jointed clay, then the installation may remain. The installation is subject to being tested in accordance with Section 13 of [AS/NZS 3500.2](#). The site developer or property owner is responsible for replacement (see Figure 6).

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FIGURE 3 - EXAMPLE OF BUILT OVER DRAIN REQUIRING MODIFICATION

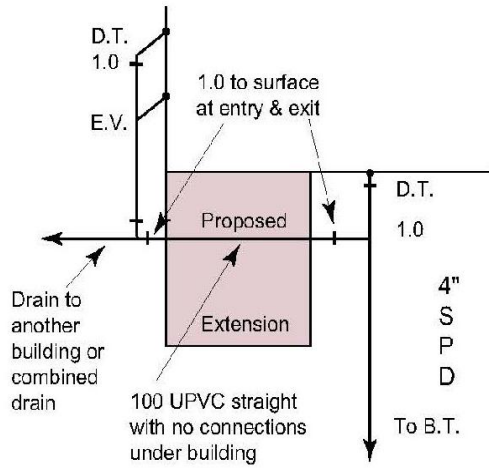


FIGURE 4 - EXAMPLE OF BOUNDARY TRAP AND SHAFT LOCATED IN RIGHT OF WAY

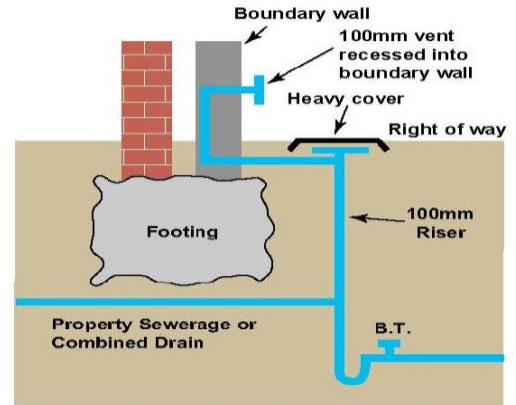
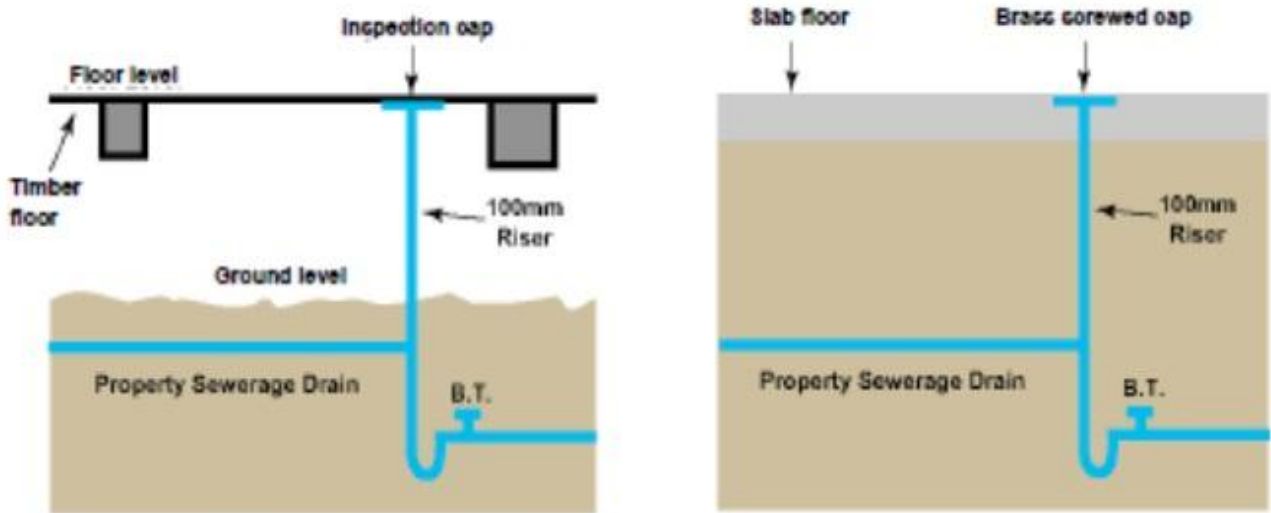


FIGURE 5 - EXAMPLE OF BOUNDARY TRAP AND SHAFT WITH ACCESS AT FLOOR OR SUB LEVEL



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FIGURE 6 - EXAMPLES OF A REDEVELOPMENT SITE

