Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**
Plumbers Licensing Board

Technical Note

Technical Advice Line 1300 360 897 **www.dmirs.wa.gov.au/building-and-energy**

Vacuum sewers

This technical note has been issued to provide advice to the Western Australian plumbing industry about the connection of main drains into vacuum sewer systems. In areas where vacuum sewer systems are provided particular conditions of connection are required.

Vacuum sewer connections and venting

The Plumbers Licensing and Plumbing Standards Regulations 2000 modify AS/NZS 3500.2:2021, clause 3.18 (d) for the installation of main drains connected to vacuum sewer systems. These modifications include mandatory installation requirements for downstream venting and inspection shaft configuration on main drains connected to vacuum sewer systems.

Main drains connected to vacuum systems shall be installed in accordance with the following:

(a) An inspection shaft connected to the drain with a junction shall be placed as close as practicable to, and upstream of, the collection tank or connection point.

(b) The junction inlet to the inspection shaft shall be against the grade of the drain so that any rodding of the line is in the direction away from the collection tank as per diagrams 2 and 3.

(c) Where more than one drain is connected to a collection tank, the spill level of both overflow gullies of the drains shall be installed level with each other wherever practicable.

(d) A DN 100 downstream vent shall be provided on the main drain to a vacuum sewer system as close as possible to the inspection shaft riser or connected further upstream as long as no other fixture is connected between the inspection shaft riser and the vent connection as per diagrams 2 and 3.

(e) Downstream vents may terminate at high level in accordance with AS/NZS 3500.2:2021, clause 6.9.4 or terminate at low level at a minimum of 150 mm and a maximum of 250 mm above finished surface or adopted flood level using one of the three methods shown in diagram 4. If the vent terminates more than 250 mm above finished surface level the vent must be supported.

(i) one 88° bend and a flat grate with invert level not less than 150 mm above finished surface or adopted flood level;

(ii) two 88° bends and a flat grate or vent cowl so that there is not less than 150 mm between the flat grate or vent cowl and the finished surface or adopted flood level; or

(iii) an air admittance valve not less than 150 mm above finished surface or adopted flood level installed in accordance with AS/NZS 3500.2:2021, clause 6.10.

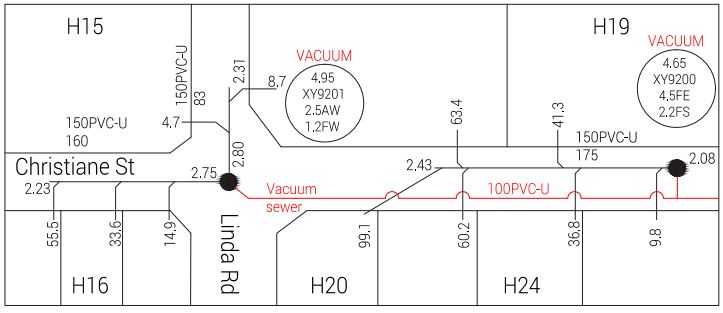

Diagram 1: Water services provider's E-plan indicating a vacuum sewer system is used

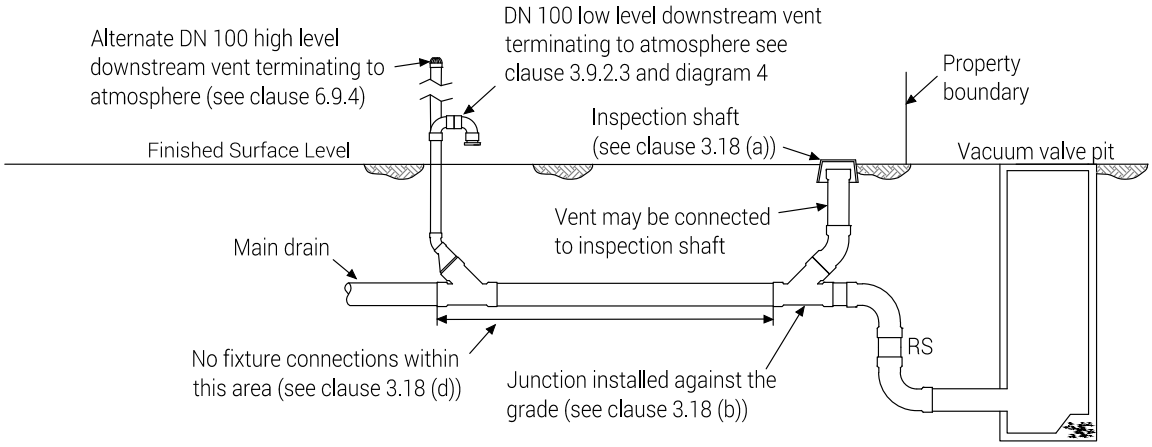

Diagram 2: Vacuum sewer installation inspection shaft and rising shaft configuration

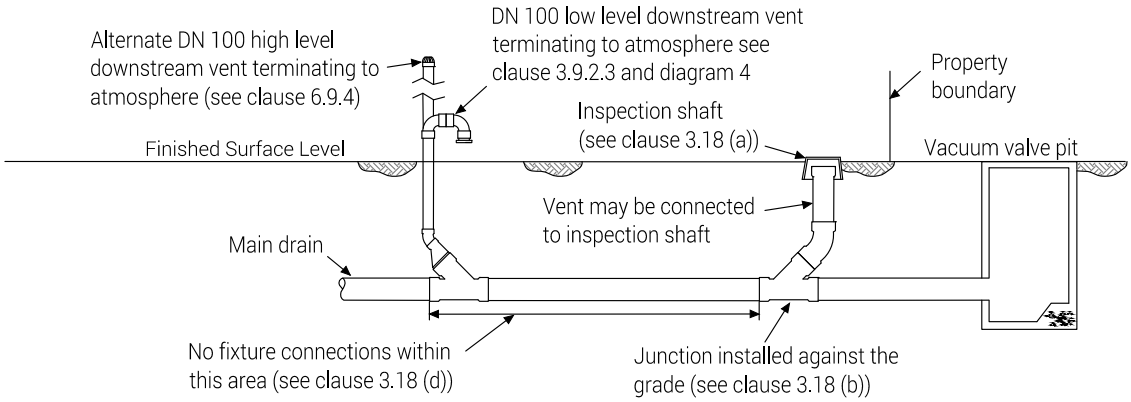

Diagram 3: Vacuum sewer installation inspection shaft square on back configuration

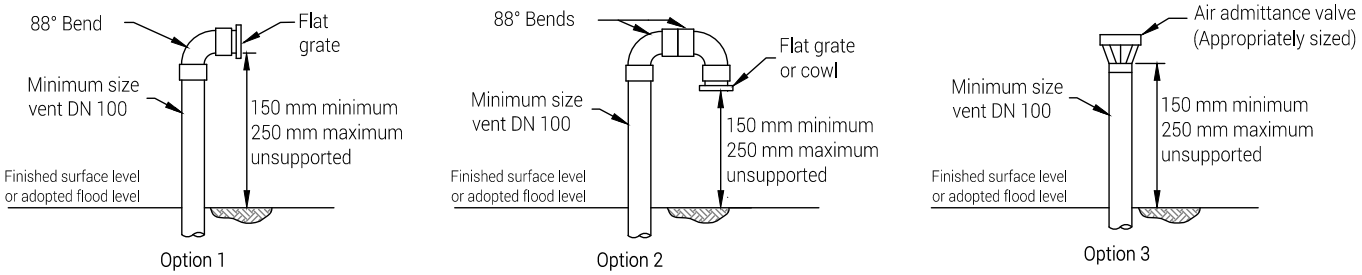

Diagram 4: Termination of vacuum sewer downstream vents at low level

Notes

The technical note series is issued by the Plumbers Licensing Board to assist the plumbing industry to comply with the Plumbers Licensing and Plumbing Standards Regulations 2000 (the Regulations) applicable to plumbing work in Western Australia.

Each technical note is to be read in conjunction with Part 6 of the Regulations that currently adopt the Plumbing Code of Australia (PCA) and the deemed to satisfy provisions of AS/NZS 3500:2021, parts 0, 1, 2 and 4 but modified in certain matters to suit the State's building approach and other local conditions.

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