

3 Legal Requirements /Applications

3.1 *South Australian Public Health Act 2011*

The *South Australian Public Health Act 2011* (SAPH Act) provides a head of power enabling administration of the Wastewater Regulations and DHA codes relating to on-site wastewater systems.

3.2 Wastewater Regulations

The Wastewater Regulations detail the legislative requirements to be satisfied with regard to the manufacture, installation, operation and maintenance of wastewater systems, including on-site wastewater systems.

This Code is a prescribed code and must be read in conjunction with the Wastewater Regulations. Note that the requirements for installation and operation of a CWMS can be found in the DHA prescribed code *Community Wastewater Management Systems Code*.

3.3 *Local Government Act 1999*

Section 177 of the *Local Government Act 1999* provides the power for a council to apply a service rate and/or an annual service charge for a prescribed service such as a connection to a CWMS.

3.4 Other Acts and regulations

Persons or agents facilitating the design, installation and operation of a wastewater system must ensure compliance with the requirements of other regulatory authorities.

3.5 Wastewater works approvals

Approval from the relevant authority is required prior to installation or alteration of an on-site wastewater system. This includes permanent greywater systems and connections to a CWMS. Applications must be submitted to the relevant authority as described in section 3.6.

The relevant authority for on-site wastewater system installations up to and including the capacities stated in chapter 5 is the local council for the area in which the system is to be installed, or the Minister for unincorporated areas of the state (see table 2-1).

The relevant authority must ensure that the following aspects are considered in the wastewater works approval:

- > The proposed on-site wastewater system is a product approved by the DHA
- > The approval takes into account the requirements of the DHA product approval
- > The conditions of approval take into account the requirements of this Code
- > Any other site specific installation and/or operational requirements.

3.6 Application for wastewater works approval

Application for approval for installation or alteration of an on-site wastewater system must be made on a form as specified by the Minister and accompanied by the appropriate fee. Installation or alteration of a wastewater system or part thereof shall not commence without approval from the relevant authority.

The work must not vary from that shown on the approved plan, attachments and the conditions of approval without prior written approval from the relevant authority. This may require submission of amended plans appropriately endorsed by the owner and the provision of additional supporting information to the relevant authority.

Note: Penalties apply for the provision of false or misleading information, or for the installation or alteration of the wastewater works without approval. The relevant authority has the power under the Wastewater Regulations to require rectification of incorrectly or illegally installed wastewater works and/or disconnection from the CWMS.

Sections 3.6.1, 3.6.2 and 3.6.3 outline the general information required as part of an application for approval to install an on-site wastewater/permanent greywater system and also include connection to a CWMS.

The relevant authority may request further information to support the application.

Note: Planning Officers and Environmental Health Officers need to closely liaise to achieve an effective understanding of development and wastewater system approval requirements.

3.6.1 On-site wastewater systems

The application should include:

- (a) Site and soil report in accordance with either section 8 or 9 of this Code
This should also include any site specific information as required by the relevant authority.
- (b) Detailed site and building layout plans (in duplicate) drawn to a scale of 1 in 250 or as otherwise specified by the relevant authority (see appendix A figures A1, A2 and A3) showing:
 - > Method of connecting the internal sanitary plumbing fixtures of a building to the external sanitary drainage system – including location of the sewer drain, inspection openings and inspection shafts, junctions and bends, size and grade of sewer drain, position and size of overflow relief gullies, vents and waste pipes
 - > Allotment dimensions
 - > Contours indicating natural ground fall
 - > Proposed location of sanitary drains, buildings, and all other structures as well as components required by AS/NZS 3500
 - > Position of the proposed on-site wastewater system (including land application systems), showing compliance with all setback distances and all required pipework and appurtenances within the system
 - > Details of any site modifications, for example benching, cutting and filling, and how this impacts on the proposed system
 - > Location of any structures and/or vegetation either on the subject allotment or on other land which may be affected by the installation of the proposed wastewater system
 - > Details and locations of any diversion measures to collect surface or migrating subsurface water
 - > Details and location of storm, surface and roof water disposal
 - > Details and location of any well or dam on the site, or in close proximity, used or likely to be used for human and/or domestic use
 - > Details and location of any water source used for agricultural, aquaculture or stock purposes
 - > Details and location of any watercourse passing through the site or in close proximity to it, used or likely to be used for human and/or domestic use
 - > Details of any trade waste discharge and required treatment apparatus (see section 1.5)
 - > The intended use of the building and the rooms within it
 - > Any other details as specified by the relevant authority.

4 Plumbing, Drainage and Installation

All new sanitary plumbing and drainage work must comply with:

- > The Wastewater Regulations
- > AS/NZS 3500
- > The National Construction Code (NCC) Volume 3 Plumbing Code of Australia (PCA)
- > The South Australian Variations and/or Additional Provisions as listed in Appendix A of the PCA
- > The wastewater works approval
- > Any other requirements of this Code.

4.1 Inspection requirements

The relevant authority reserves the right to carry out inspections on any aspect or component of the on-site wastewater system to determine compliance or otherwise with all relevant standards and codes. As a condition of approval, the relevant authority may also set out mandatory notification stages during the progress of wastewater works when a person is required to notify the relevant authority and stop the work pending an inspection carried out at the owner's expense.

4.2 Installation

The installation of an on-site wastewater system – including sanitary plumbing and drainage, wastewater treatment and disposal system, recycled water irrigation system and any connection to a CWMS – shall be undertaken by a suitably qualified person as defined by the Wastewater Regulations. The installation must be certified in accordance with section 4.3.

4.3 Certificates of Compliance

As required by the Wastewater Regulations, a suitably qualified person who has undertaken wastewater works subject to a wastewater works approval must, within 28 days after completing the work, provide the relevant authority and the owner or occupier of the land on which the work was undertaken with:

- > A certificate in a form approved by the Minister signed by the person or another suitably qualified person certifying that the work has been undertaken in accordance with the wastewater works approval; and
- > In the case of the installation of pipes, fittings or equipment a drawing showing the position and dimensions of the work undertaken.

Note: Penalties apply for non-compliance as per the Wastewater Regulations.

4.4 Connection to a CWMS – older premises

See appendix F section F1.4.

4.5 Independent certification

The relevant authority may also choose to request independent certification by a wastewater engineer:

- > For a wastewater system design lodged with a wastewater works application, in accordance with Wastewater Regulations; or
- > In addition to certificates of compliance for completed work. This may address plumbing, construction, installation requirements, and/or demonstrate that the work complies with:
 - > The relevant construction and installation requirements
 - > The manufacturer's and/or designer's instructions
 - > The relevant authority's conditions of approval
 - > Other relevant legislation, standards and codes
 - > Other requirements stipulated by the relevant authority for a trade waste discharge to the CWMS.

The owner must supply a copy to the relevant authority on request in accordance with the Wastewater Regulations.

4.6 Durable notice

The relevant authority may require provision of a durable notice to be permanently located in a prominent position (such as a power box) on the property showing, at a minimum:

- > Type of system installed
- > Date of system installation
- > Servicing/desludging frequency
- > Prohibited discharges
- > Relevant authority/manufacture details for further information.

4.7 Surface or subsurface water diversion

See section 8.3.5.

4.8 Systems to be installed in areas administered by water industry entities

On-site wastewater systems, such as permanent greywater systems, installed within an area administered by a water industry entity, may require specific design, installation and operation requirements. The relevant authorities must be contacted prior to installation in order to obtain the necessary approvals.

4.9 Commissioning and inspection

All on-site wastewater systems, including land application systems, must be commissioned prior to occupancy of the premises. Where necessary, the relevant authority may choose to inspect a site and charge the appropriate fee.

8 Land Application Systems

8.1 Introduction

The design of the land application system requires careful planning to ensure all public and environmental health requirements are met. Site and soil characteristics must be considered when designing a land application system in order to determine the most appropriate location, type and size of a land application system.

There are two approaches that can be used for designing the land application system – the South Australian approach as outlined in this chapter and the approach of *AS/NZS 1547 On-site domestic wastewater management* (see chapter 9 of this Code).

Note: Using a combination of both approaches is not acceptable.

The applicant/owner is required to provide evidence demonstrating that the site is capable of incorporating a safe and sustainable on-site wastewater system.

8.2 Site and soil assessment

Many factors are associated with the determination of site suitability, and the following aspects need to be investigated in assessing the site.

8.2.1 Wastewater engineer's report

The design of a land application system is dependent on the site and soil characteristics. A site intended for land application of effluent must be assessed by a wastewater engineer who must provide a report to the relevant authority confirming that the site and soil is suitable for long term effluent disposal or use of recycled water as per the requirements of this Code.

For indirect assessments, all soil samples shall be logged and described in accordance with AS 1726 *Geotechnical Site Investigations* or another recognised classification system based on the Unified Soil Classification (USC) system. Site characteristics must also be considered (see section 6.2.2). The report should provide a description of each soil layer encountered in each borehole and, in addition to classifying the soil, statements required by table 8-1.

Where the site fails to satisfy any of the site and soil assessment criteria, the wastewater system may need to be modified to include additional treatment and/or disposal requirements, or alternatively, require off-site effluent disposal. This may require further advice from a wastewater engineer.

Table 8-1: Site and soil report requirements

The wastewater engineer must provide a site and soil suitability report to the relevant authority. The report must include, but not be limited to:

- > Details of the investigations carried out
- > Site plan clearly showing:
 - > Soil sampling locations
 - > Allotment dimensions
 - > Location and dimensions of the proposed land application system
 - > Existing and proposed buildings and structures e.g. retaining walls
 - > Details of earthworks proposed as part of the site development
- > Type of proposed system to be installed
- > Information about the soil types encountered at the sampling locations in the area of the proposed land application system
- > Nominated effluent percolation rate (EPR), design loading rate (DLR) or design irrigation rate (DIR) as applicable;
- > Design of the land application system including soil horizon at which the base of the land application system is to be founded
- > Assessment of site suitability for long term effluent disposal/reuse
- > A summary of site characteristics as described in section 8.2.2
- > Supporting information with respect to climate characteristics including rainfall and evaporation which may affect the performance of the wastewater system
- > Comments regarding features on adjoining allotments which may affect or be affected by the proposed wastewater system
- > Any required surface water diversion
- > Any limitations of the proposed system
- > Any other requirements of the relevant authority.

1 Locations with highly permeable soils have an increased risk of effluent /recycled water polluting surface and/or ground waters. Careful consideration is necessary to mitigate the risk, and additional design and/or construction may be necessary. Soils demonstrating a percolation rate of greater than 150 mm /hour or category 1 and 2 soils as determined by AS/NZS 1547 (see chapter 9) require additional consideration. The site and soil assessment report shall include statements, supporting information and detailed strategies which will be used to minimise the risk of effluent /recycled water from the on-site wastewater system polluting ground and/or surface waters.

8.2.2 Site characteristics

The following site characteristics are required to be assessed as part of a site and soil report for the types of systems described in this chapter. See also chapter 9 for systems utilising the AS/NZS 1547 approach (see note 1).

a) Land slope

Land slope should not be greater than 20% (1 in 5) (see note 2).

b) Flooding

The site should not be subject to inundation or flooding more frequently than 1 in 10 years. Relevant authorities may impose other requirements relevant to their jurisdiction (see note 1).

c) Water table

The depth to a subsurface seasonal, tidal or permanent water table, fresh or saline, should be greater than 1.2 m from the ground surface level (see notes 2, 3 and 4). In the case of a subsurface disposal system, the base of the trench shall be at least 500 mm above the highest level of the water table.

d) Bedrock

The depth to bedrock or cap rock shall be suitable for the proposed system. For subsurface disposal systems, the depth of rock shall be at least 1.2 m below surface level provided the soils are suitable for application of effluent. The base of the subsurface disposal system must be at least 500 mm above any bedrock or cap rock (see notes 2 and 3).

e) Land area

The size of the area of land available for the land application system within the allotment must be adequate and suitable for the intended use.

f) Location of existing development

The location of existing development on the site or on adjoining sites, including upslope from the proposed land application area, must be considered to ensure that they do not adversely affect the proposed system or existing development. Care should also be taken to ensure compliance with the respective setback distances specified in this Code (see appendix B).

g) Land use

The number of persons using the site, the nature of the facilities to be installed and the type of land use will affect the capability of the design of the land application system (see chapter 5 and appendix E).

h) Availability of water

Some premises are dependent on stored rainwater and this will limit the potential volume of effluent for disposal or reuse (see section 5.2.1).

Notes:

- 1) *The relevant authority reserves the right to impose further requirements or restrictions for the land application system.*
- 2) *The applicant must ensure compliance with any other relevant Act or regulation*
- 3) *The 1.2 m depth is based on the assumption that the soil within the horizon is adequate for the proposed land application system.*
- 4) *Where the effluent disposal system is likely to be in a horizon subject to tidal water inundation, it will be necessary to determine that its placement will not create adverse environmental impacts within the marine (coastal) waters intertidal zone.*

Appendix A

Figure A1: Typical site layout plan

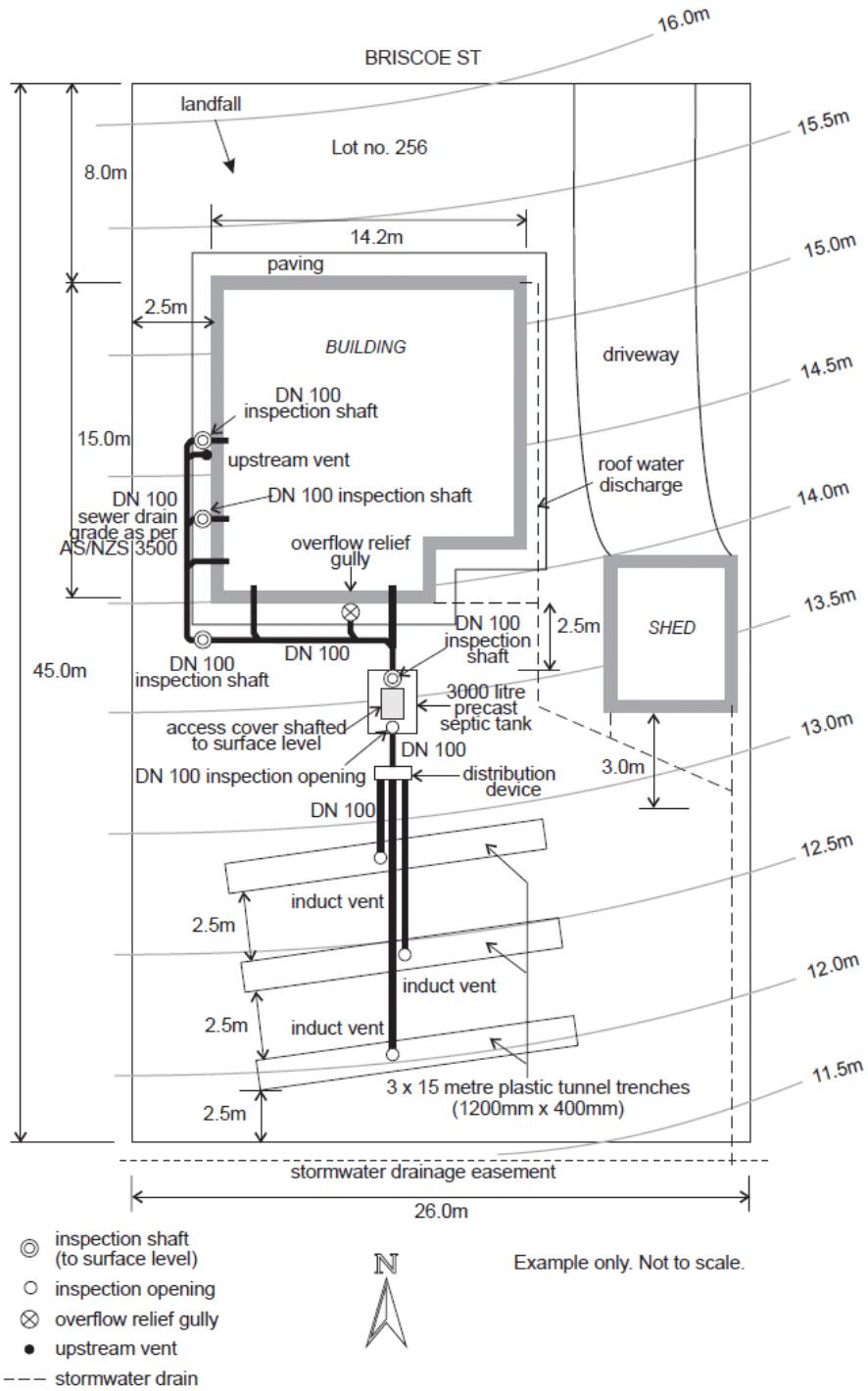


Figure A2: Typical building layout plan

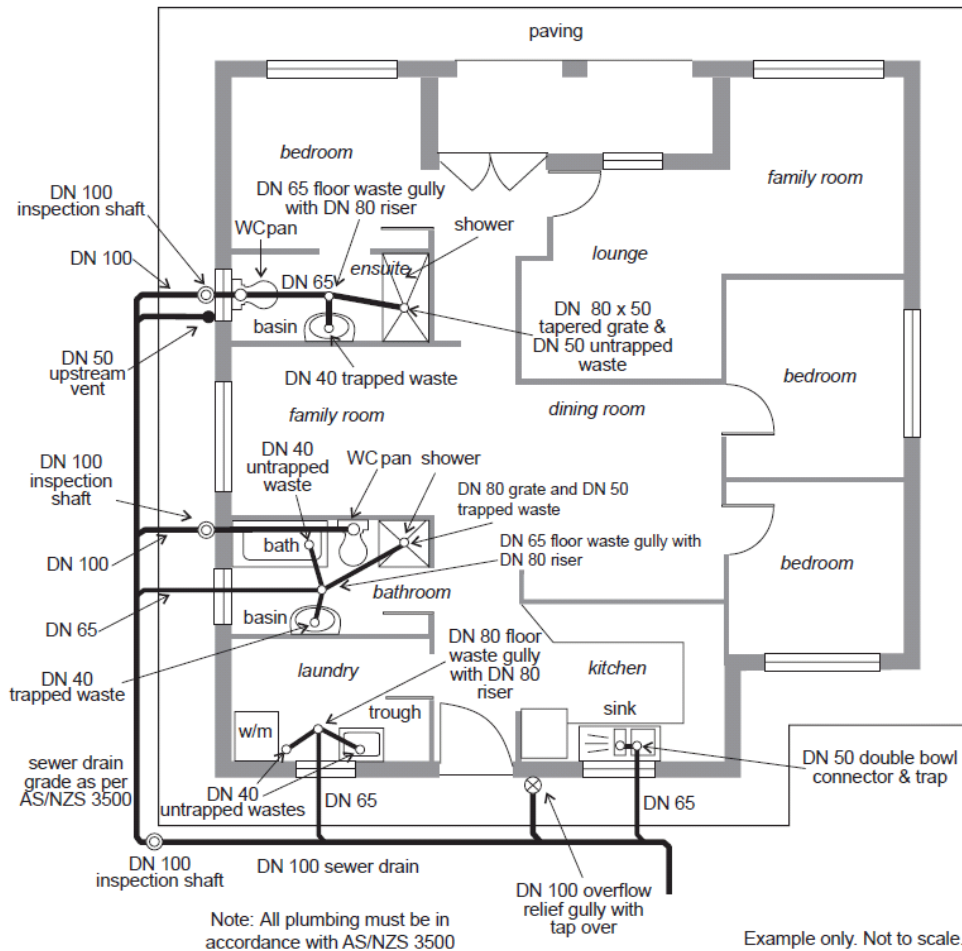


Figure A3: Typical site layout plan – two tank system and split irrigation area

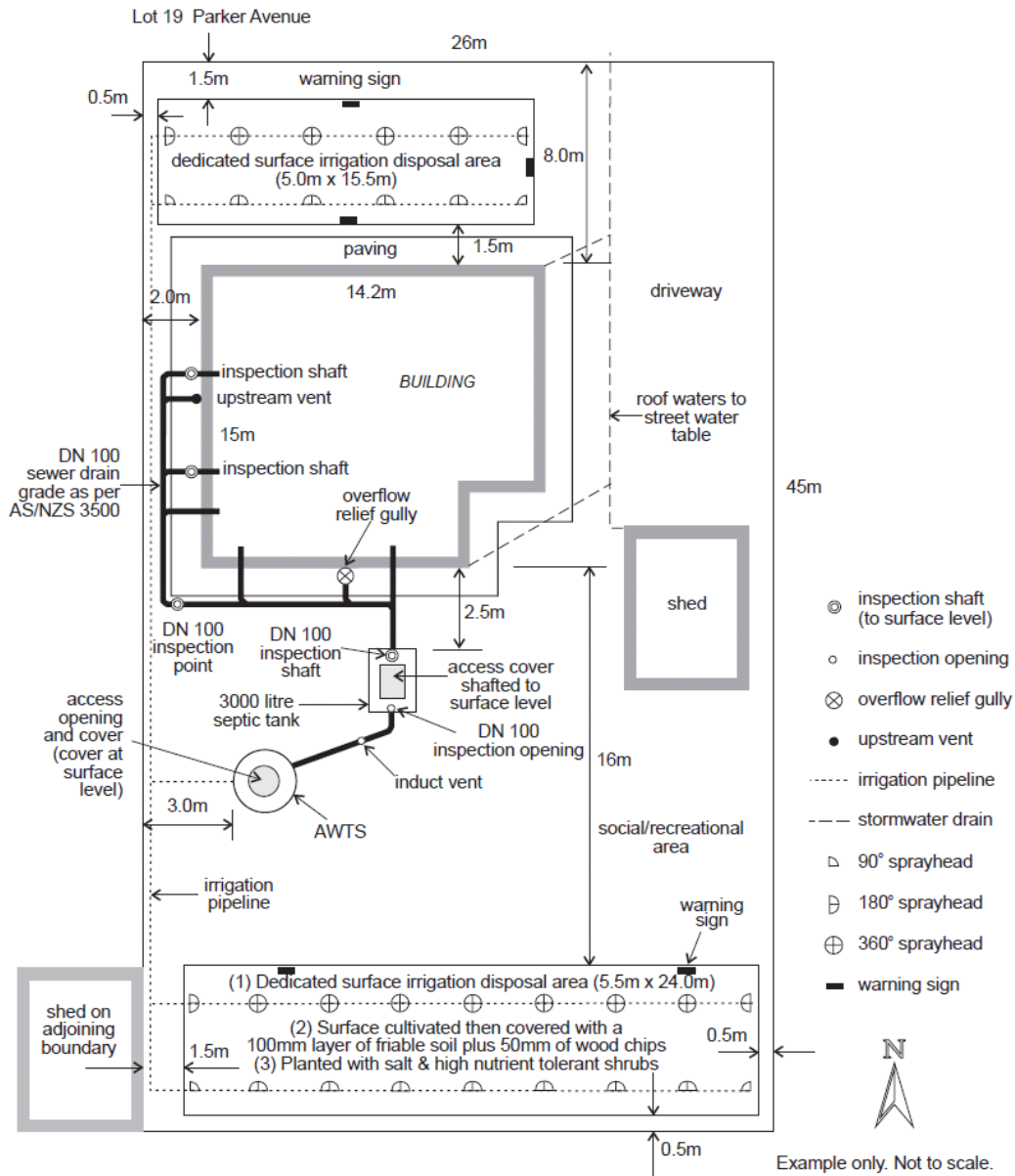


Figure A14: Typical site layout plan for an aerated wastewater treatment system and surface irrigation

