4.0 Design standards

The following standards are divided into four sections: soil infiltration, planting design, irrigation and maintenance. For a proposed development to achieve the intent of this guideline these standards must be adhered to. Applicants must complete and submit the checklist (Table 4) at the end of this section to demonstrate compliance.

Note that the minimum required landscaping areas for some development types under Council’s existing planning scheme, Brisbane City Plan 2000, are as follows:

- industrial 3% of total site area
- high density 25% of total site area
- medium density 25% of total site area
- low density 30% of total site area
- single unit dwelling 30% of total site area.

These values are also listed at the beginning of the checklist (Table 4).

4.1 SOIL INFILTRATION

Water is made available to plants by optimising rainfall infiltration and soil storage capacity.

4.1.1 SOIL, DEPTH, CONSERVATION AND MANAGEMENT

Topsoil and subsoils act as primary water storages for plants. More water is potentially available for plants as the depth increases, provided that the depth does not exceed the plants’ root zone. Watering will be required less often in deeper soils because the water storage capacity is greater; therefore, as soil depth increases, there is a greater likelihood that direct rainfall will supply more of the plant water needs.

Subsoils should be cultivated to a minimum depth of 150mm for both garden beds and turfed areas unless this will adversely affect the roots of established trees. (Refer to Brisbane City Council’s Tree Protection Guidelines for further details.)

For non-irrigated turf areas, the minimum topsoil depth must be 100mm; for irrigated turf areas, topsoil depth must be 200mm. Topsoil depths for garden beds must be a minimum of 400 mm. For ‘in-ground’ trees, the soil depth must be 1000mm over an area 1500mm x 1500mm. For trees supplied in pots or bags, the minimum topsoil depth must be equal to 1.5 times the rootball depth, or 400 mm, whichever is greater, over an area of twice the rootball diameter.

Existing topsoils must be conserved by either not disturbing the soil during construction or by stockpiling prior to reuse on site.
Where necessary, take steps to improve the soil structure based on the recommendations from soil testing undertaken at the site analysis stage of the project. Pay particular attention to:

- improving the soil’s macropore and micropore balance (a characteristic of soil structure)
- ensuring a stable soil ecosystem of macro and microorganisms including earthworms, springtails, ants and Mycorrhizae fungi.

Refer to Appendix 1 for guidance on soil amelioration measures.

Imported soil is a limited resource and it is recommended that priority be given to using existing site soil. Where additional soil is required to meet the minimum depths specified above, ensure that the soil also meets Australian Standard AS4419: Soils for Landscaping and Gardening Use. The imported soil’s characteristics should be specified to suit the proposed planting species.

4.1.2 MULCHES

For landscaped garden beds and trees, organic mulches must meet Australian Standard AS4454: Composts, Soil Conditioners and Mulches and be applied to a depth of 75–100mm. Mulches must be aged prior to application to prevent ‘nitrogen drawdown’ of the soil and must have a coarse texture to allow water penetration (for example, hoop pine bark, or forest blend woodchips).

Biodegradable mulch mat installed to the manufacturer’s instructions must be used on waterway embankments.

Inorganic mulches, such as quarried rock gravels, recycled concrete and brick cobbles are acceptable in feature or themed landscapes (such as arid plantscapes) or in windy areas where organic mulches may be blown away. River cobbles, river stone or river pebbles are acceptable in small feature landscapes only, but it is preferred that these materials are not used due to the environmental impacts of river extraction processes.

Plastic sheeting (typically used for weed suppression) is not acceptable as it prevents rainwater from infiltrating soils and gaseous exchange between soil and air is inhibited. Innovative permeable matting products that allow infiltration and gaseous exchange are acceptable provided a minimum 75mm layer of mulch is placed above.