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it happen*

DEVELOPMENT DESIGN

SPECIFICATION

D13

LANDSCAPE DESIGN

Amendment Record for this Specification Part

This Specification is Council’s edition of the AUS-SPEC generic specification part and includes Council’s primary amendments.

Details are provided below outlining the clauses amended from the Council edition of this AUS-SPEC Specification Part. The clause numbering and context of each clause are preserved. New clauses are added towards the rear of the specification part as special requirements clauses. Project specific additional script is shown in the specification as italic font.

The amendment code indicated below is ‘A’ for additional script ‘M’ for modification to script and ‘O’ for omission of script. An additional code ‘P’ is included when the amendment is project specific.

Amendment Sequence No.	Key Topic addressed in amendment	Clause No.	Amendment Code	Author Initials	Amendment Date
1	Distance to Structures, Light poles	D13.07(6)	M	MD/aw	19/10/2004
2	Kerbing separation	D13.10(2)	M A	MD/aw	19/10/2004
3	Trees	D13.11(1)	M A	MD/aw	19/10/2004
4	Council Specifications/Guidelines	D13.03(a)	A	MD/aw	20/10/2004

DEVELOPMENT DESIGN SPECIFICATION – LANDSCAPE DESIGN

CONTENTS

CLAUSE	PAGE
GENERAL	1
D13.01 SCOPE	1
D13.02 OBJECTIVES	1
D13.03 REFERENCE AND SOURCE DOCUMENTS.....	1
D13.04 CONSULTATION	1
D13.05 PLANNING CONCEPTS	2
D13.06 LANDSCAPE DESIGN REPORT.....	2
D13.07 GENERAL DESIGN GUIDELINES	2
D13.08 PLANT SPECIES	4
D13.09 LIMITATIONS	4
GRASSED AREAS.....	4
D13.10 GRASS SPECIES	4
D13.11 TREES.....	4
ROAD RESERVES.....	5
D13.12 DESIGN SIGHT LINES	5
D13.13 VERGE TREATMENTS	5
D13.14 MEDIAN ISLANDS	6
D13.15 LIMITATIONS TO DESIGN	6
BUSHLAND.....	6
D13.16 GENERAL PHILOSOPHY	6
D13.17 DESIGN CRITERIA.....	6

LANDSCAPE DESIGN

MAINTENANCE 7

D13.18 MAINTENANCE MANAGEMENT PLAN..... 7

D13.19 NUTRIENT AND IRRIGATION MANAGEMENT PLAN 7

D13.20 HANDOVER 7

DEVELOPMENT DESIGN SPECIFICATION – LANDSCAPE DESIGN

GENERAL

D13.01 SCOPE

1. This specification sets out standard and document requirements to be used in the design of landscapes for reserves, public open space and for subdivisional areas including road reserves and drainage sumps.
2. This specification also outlines the requirements for ongoing maintenance of landscaped areas, both in the short and long term.

D13.02 OBJECTIVES

1. This specification aims to provide designers with the flexibility to develop innovative landscapes while ensuring that the long term maintenance of landscapes can be managed in a cost effective manner and meet community expectations in respect to amenity, aesthetics and safety.

***Flexible and
Innovative
Design***

D13.03 REFERENCE AND SOURCE DOCUMENTS

(a) Council Specifications

WA - C273	-	Landscape Construction
STD39-1s C	-	Fencing Bollards
STD78 –1s	-	Link Mesh Fencing (1.2m).
STD79-1s	-	Verge Landscaping Setback and Sightlines.
STD77 – 1s	-	Tree Well Liners
Landscape Guidelines for Streetscapes and Public Open Space		

(b) Other

None

D13.04 CONSULTATION

1. The City of Swan encourages designers to enter into a consultative partnership with the City at the earliest stages of the planning and design process.
2. In support of this commitment, the City will allocate a liaison officer to each development proposal who will prepare an information kit outlining the policies, limitations and objectives associated with the design, construction and ongoing maintenance of landscaped areas.
3. It would be expected that Council's liaison officer would have input to the landscape brief for the subdivision and be present at meetings associated with design and construction matters of the overall reserve area.

***Consultative
Partnership***

Liaison Officer

D13.05 PLANNING CONCEPTS

1. As soon as practicable after the approval of the subdivision plan by the Western Australian Planning Commission, the designer should contact Council to discuss general issues and concepts. In line with the consultative process outlined above, Council will forward the information kit relevant to the subdivision to the designer. **Design Concepts**
2. The information kit will incorporate a guideline document outlining the desired landscape image and objectives for the landscaping. **Information Kit**
3. The location, configuration and complexity of the landscape and amenities areas design and construction shall achieve long term aesthetic and use objectives and also minimise maintenance. **Design Objectives**
4. For landscape areas the designer shall support the design objectives with visual goals at maturity of the planted sites together with the strategies required to reach those goals and any maintenance regimes necessary for the ongoing development of the site. **Visual Goals**

D13.06 LANDSCAPE DESIGN REPORT

1. The visual goals and objectives shall be contained within a landscape design report prepared by the designer. This report shall portray the intent of the design by defining the image required for the various elements as they mature. For example, where plants are used for screening purposes, it should be stated whether the planting element is for visual screening or a noise barrier etc. and therefore, significant foliage development should be retained to a specific height. **Landscape Design Report**
2. Where planting is deliberately crowded, the report should state whether each species group shall be isolated by pruning as necessary or left to intermingle with one species becoming dominant. The report should also detail how this treatment is to be managed and/or replaced overtime. **Mass Planting**
3. Where trees are planted in parkland, the report should state whether they be pruned to allow clear vision underneath or is it intended that they form a partial screen for a changing scene as people move through the area. **Trees in Parkland**
4. The visual appreciation of any grassland quality (e.g. high quality turf, meadow grass, medium quality parkland etc) should be nominated in the report so that maintenance levels can be determined. **Grassland**
5. Designers shall ensure that landscape development plans for any stage of an overall development are consistent and compatible with all other stages of the development. The landscape design report should include discussion on contextual aspects and rationale of a staged development on the overall development. **Consistent staged design**

D13.07 GENERAL DESIGN GUIDELINES

The following general guidelines shall apply to the design landscape areas within a subdivision:

1. The designer shall submit comprehensive landscape management plans and ancillary construction drawings displaying all aspects of the work necessary for Council to determine the issues of design and construction standards for the development. **It should be noted that water conservation is a critical issue and that the need for permanent water reticulation should be avoided as much as possible.** **Management Plans**
2. Plans are to include but not limited to all hard landscape elements such as paths, **Plan Details**

walls, bollards, etc., plant layout details of all landscape areas, species details including expected growth patterns and final dimension details, water requirements and reticulation layout, any drainage requirements, nutrient management plans and maintenance management plans.

3. All areas that are treated with trees, shrubs or grass may require to be watered. Wherever possible, the need for permanent watering is to be avoided however, if water reticulation is required it must be with an appropriate automatic watering system from underground water supply.

Planting Areas

4. If water reticulation is provided, the capacity of the water extraction system shall provide grassed areas with a minimum of 40mm over five applications per week, and shrubs and trees with a minimum of 10 litres and 20 litres respectively over three applications per week.

Minimum Watering Requirements

5. The City of Swan specifications for water production and reticulation shall be adhered to for installation and performance details.

Reticulation Specification

6. The minimum planting distance between a plant and any architectural or engineering structure, including road pavements and associated storm water drainage is required to be 750mm or 75% of the anticipated mature diameter of the plant foliage growth, whichever is the greater distance. For light poles the minimum distance shall be not less than 8 m.

Distance to Structures, Light poles

7. Designers are to be cognisant of the variation in cultivation requirements of each plant species and group those requiring similar watering and food requirements together and contain them within a particular watering control station. Should the design options preclude the opportunity for grouping, it would be necessary to install a water reticulation design that could be managed in such a way as to ensure that the variations required by the different species can be met.

Grouping Species

8. Other than in road reserves no tree shall be planted in such a location that the mature trunk is at a distance of less than 2.0 metres from a pedestrian access way or dual use path.

Adjacent to Paths

9. The skyline of a residential area is fundamentally dependent on the provision of large trees in Public Open Space Areas. Accordingly, Council is favourably disposed to the inclusion of large growing trees, both as specimens and groups, in these areas.

Large Trees

10. Council prefers the use of native trees and shrubs in the landscape to promote sustainability of native vegetation. The use of deciduous trees and shrubs should be minimised and will require justification in the landscape design report.

Native Species Preferred

11. Temporary landscaping may be applied to locations within any subdivision to highlight certain areas or functions. Such areas shall be identified on the landscape plans for approval. These areas are to be converted to a Council approved permanent landscape component of the subdivision prior to acceptance of the maintenance responsibility by Council.

Temporary Landscape Areas

- The landscape plan should identify how these temporary areas will be modified to compare them with other areas of the subdivision
- The developer must advise all property purchasers of the requirement to modify the landscaping of temporary areas and the anticipated installation time.

12. Where special features such as lakes, marsh lands or fountains etc. require approval of Statutory Authorities, such approvals shall be obtained prior to the submission of the detailed plans for approval by Council.

Special Features

LANDSCAPE DESIGN

D13.08 PLANT SPECIES

1. Theme species plantings and majority of other plant species used throughout any subdivision shall be Australian native species or cultivated varieties of these. **Theme Species**
2. Some feature planting and specimen trees may be exotic species.
3. Should the species nominated in the submitted plan not be acceptable, for whatever reason, the designer shall nominate an alternative that is acceptable to Council for the purpose and location. **Unacceptable Species**
4. Should an acceptable alternative not be available, the developer may use a nominated species under conditions as outlined in Council Policy for Subdivisional Development.
5. Designers should give preference to the use of plants that have lower maintenance requirements, particularly in relation to pruning, water application and feeding. While emphasis should be given to native species that meet these criteria, designers may propose the use of exotic species with similar characteristics where it is considered necessary to develop a particular landscape character. **Low Maintenance**

D13.09 LIMITATIONS

1. Higher maintenance plant species, particularly those that have a short life span, require a high manual labour effort or necessitate high applications of food and water, are not considered acceptable in the landscape planning schemes. **Not Acceptable**

GRASSED AREAS

D13.10 GRASS SPECIES

1. Plant species with husbandry requirements that necessitate supplementary water applications after an initial 24 month development period shall not be used. **Isolated Areas**
2. All grassed areas and areas using different vegetation treatments shall be separated from mass planting areas by a concrete kerb of 250mm x 250mm to a depth of 225mm below the soil surface or by some other method to be approved by Council **Kerbing Separation**
3. While Kikuyu Grass is the preferred grass species for all areas, the use of other grass species may be used subject to Council approval. **Grass Types**

D13.11 TREES

1. Where trees are planted within grassed areas, the spacing shall provide access by 1.8m ride on mower and to allow for a turning circle of 3m radius around any trees, structures and furniture..

ROAD RESERVES

D13.12 DESIGN SIGHT LINES

1. Regardless of any other guideline or landscape requirements, trees planted within any road reserve shall be under-pruned, at an appropriate stage of formative development, to a minimum level of 2 metres above the ground unless it will overhang the road pavement or crossover. **Minimum Clearances**
2. A tree overhanging the road pavement or crossover shall be under-pruned at an appropriate stage of formative development to have a ground surface clearance of not less than 4.2 metres as required by the Road Traffic Act. **Road Carriageway Clearance**
3. The height of any plant used in a road reserve, other than a tree, shall not exceed 600mm at maturity. Design sight envelopes for safe movement of vehicles, cyclists and pedestrians shall be maintained at all times in accordance with Standard Drawing ES 04-1-0. **Safe Sight Lines**
4. Any street tree must be planted in a location that conforms to the requirements of the Utility Providers 'Code of Practice' and the Road Traffic Act. **Public Utilities Code of Practice**
5. Any tree planted in a road reserve shall be of a species that shall attain a mature height of not less than 4 metres. Any tree planted adjacent to road pavement and/or crossovers shall be of a species that will attain a mature height of not less than 6 metres.

D13.13 VERGE TREATMENTS

1. Entry statement treatments, subject to Council approval, may comprise of reticulated grass with more intense horticultural and/or architectural features in the vicinity of the main signage. **Entry Statements**
2. Road verge areas abutting the frontage or side of private properties will not be maintained by Council subsequent to hand-over and therefore shall not contain landscape planting other than street trees planted as per Clause D13.12.4. The Developer is responsible for notifying this information to existing residents and intending purchasers. **Verge Treatments**
3. Verge plantings where permissible may comprise shrubs, ground covers and/or grass. The selection of plant species shall be of those that do not grow more than 600mm in height and do not require on-going watering.
4. Paving of a verge is not encouraged. **Verge Paving**
5. For plantings in a road reserve, no plant species, density of planting or method of husbandry shall be used that would cause growth in excess of 600mm, other than in the instance of street trees conforming to the requirements of this specification. **Maximum Height**

D13.14 MEDIAN ISLANDS

1. All trees planted within median islands shall be of suitable species so as to maintain desired sight lines and clearances previously outlined. Plant species selection shall require Council approval.
2. Where trees are to be located in paved medians or other areas, they shall be placed in tree well liners as outlined in Standard Drawing Number STD 77-1S

D13.15 LIMITATIONS TO DESIGN

1. Tree planting in road verge areas abutting the frontage of residential properties shall be limited to street trees that conform to the Council's policy related to Street Tree Species and Location. **Street Tree Species**
2. Landscape areas abutting the rear or side of residential property shall be limited to treatments that do not require watering after the 24 month establishment period, unless otherwise approved by Council. **Water Restrictions**
3. Watered landscaped entry statements, which contain an identified name of the estate, shall not exceed a dimension of 40 metres to any street frontage, unless otherwise approved by Council. **Entry Statements**

BUSHLAND

D13.16 GENERAL PHILOSOPHY

1. Council's landscape philosophy supports the retention of remnant bushland areas where practicable. To ensure the long term aesthetic impact and protection of these areas, the following design criteria should be incorporated into landscape design proposals where possible.

D13.17 DESIGN CRITERIA

1. All natural bushland areas to be retained shall have a management plan prepared by the landscape designer. The management plan shall identify existing plant species including weeds and grasses if present and shall identify measures for improving the sustainability of the bushland. New plantings or seeding, if required, should only include species natural to the area and, where possible, seed or cuttings should be sourced from the location being retained. **Supplement Planting**
2. Where possible, new plantings to bushland areas should be of tube stock and carried out in the early winter to avoid the need for follow up watering. If additional watering is required, a temporary system may be provided, subject to Council approval. **Reticulation**
3. Remnant bushland should be separated from other adjacent landscape treatments by a concrete kerb or other method, subject to Council approval.

MAINTENANCE

D13.18 MAINTENANCE MANAGEMENT PLAN

1. The developers shall provide Council with a Maintenance Management Plan containing maintenance details for the following:

**Information
Required**

- Special features within the design requiring specific maintenance requirements. Of particular note are water features such as remnant bushlands, lakes, marsh areas and fountains etc.
- Detailed as-constructed plans for each water supply and water reticulation system installed within the subdivision.
- All as-constructed plans associated with the landscaping of the subdivision together with any specifications or warranties associated with equipment and other assets incorporated into the design.

D13.19 NUTRIENT AND IRRIGATION MANAGEMENT PLAN

1. The developer shall undertake a Nutrient and Irrigation Management Plan (NIMP) in accordance with the guidelines set down by the Department of Environment, Water & Catchment Protection.

NIMP

2. The Developer shall submit the NIMP to the Department of Environment, Water & Catchment Protection for endorsement as a suitable management plan for the cultivation of turf and plant areas.

**Statutory
Authorities**

3. The approved endorsed plan shall be submitted to Council as part of the approval process.

D13.20 HANDOVER

1. The Developer shall advise the Council of the satisfactory completion of the landscaping plan, including the associated infrastructure for all stages within the subdivision.

Notification

2. During the construction period, Council shall undertake inspection of the landscape works as required and shall liaise with the Developer on any issues that may be identified during inspections. The Developer shall arrange with Council for practical completion inspection. Upon satisfactory acceptance of the landscape work by Council, the developer shall advise the Council in writing of the satisfactory completion and inspection. Council shall then acknowledge the commencement of the 24 month maintenance period.

Inspection

3. The Developers shall arrange with Council officers a minimum of three inspections of landscape works during the maintenance period at 12 months, 6 months and 3 months prior to the nominated handover dates. Landscape items identified for change/correction at these joint inspections shall be undertaken at the Developer's cost within 2-3 weeks of the respective inspection date.

4. At the completion of the maintenance period, the Council shall undertake a comprehensive inspection of the relevant areas with the Developer. The Developer is required to supply the following prior to the acceptance and take-over of the areas:

- Comprehensive as-constructed plans that include all changes/corrections that may

LANDSCAPE DESIGN

have taken place to landscape elements during the 24 month maintenance period.

- Instruction manuals
- Training of Council personnel on any special features or equipment required for the maintenance of the areas
- Warranty and Guarantee documents
- Copies of all tender documents and specifications related to the works undertaken
- Other items considered to be necessary for Council to effectively manage the areas