



FNQROC DEVELOPMENT MANUAL

DESIGN MANUAL

D9

LANDSCAPING

Issue No. 11/19

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GENERAL

D9.01 SCOPE

1. This section sets out the minimum standards for landscaping within new subdivisions and on-street works for private developments.
2. This manual contains procedures for the design of:
 - a. On-street landscaping works, including :
 - i. Verge and street tree planting
 - ii. buffer mounds,
 - iii. traffic islands and roundabouts
 - iv. Roof tops and podium level planning.
3. Public Open Spaces including, signage, furniture and playgrounds.

D9.02 OBJECTIVE

1. The objective of this manual is to define Councils minimum landscaping requirements and to assist the designer in achieving the following:
 - a. Visual enhancement of the streetscapes;
 - b. The use of a wide range of fit-for purpose plant species with an emphasis on native and particularly endemic species to develop increased habitat and plant diversity in order to provide a food source for indigenous fauna and reduce the potential impact of disease from monocultures.
 - c. Accessibility;
 - d. Enhanced living environments by reducing the impacts of noise, fumes and car headlights;
 - e. Provision of shade trees;
 - f. Crime prevention through environmental design (CPTED).

D9.03 REFERENCE DOCUMENTS

Note: Where Acts or reference documents are updated, reference should be made to the current version.

Local Authority

- Planning Scheme
- Local Laws and Policies.

Australian Standards

- AS 1158.3 "Lighting for roads and public spaces Pedestrian area (Category P) lighting - Performance and design requirements".
- AS 2303 Tree Stock for Landscape Use

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- AS 2507 The storage and handling of pesticides
- AS 4419 Soils for landscaping and garden use
- AS 4454 Composts, soil conditioners and mulches
- AS1428 Parts 1-5 Design for Access and Mobility
- AS2890.6 Off-street parking for people with disabilities
- Disability (Access to Premises-Buildings) Standards
- AS 3500.1 National Plumbing and Drainage, Part 1.2 Water Supply – Acceptable Solutions
- AS 4373 Pruning of Amenity Trees
- AS 4970 Protection of Trees on Development Sites
- AS/NZS 9001 Quality Management Systems
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Biosecurity Act and Regulation

ON-STREET LANDSCAPING WORKS

D9.04 GENERAL^{CRC}

1. At the time of development, the developer shall provide all on-street landscaping, this shall include street tree planting, grass establishment to road verges, and landscaping of traffic islands and buffer mounds.
2. All landscaping work that will be maintained by Council will be subject to a strict assessment process to ensure that the proposed works comply with the Planning Scheme and FNQROC Development Manual.
3. Council should be contacted prior to the commencement of the design to ascertain whether there are any site specific design requirements, policy documents that the designer should be aware of or particular requirements that council might have for each project. Some local authorities have plant selection guidelines and suburban planting themes.
4. Landscaping plans shall be prepared by a person of professional standing in the field of Landscape architecture or landscape design, at a standard acceptable to Council.
5. Unless otherwise approved by Council, CCA treated timber is not to be used for the construction of Council assets. Some uses of CCA treated timbers may still be deemed acceptable where members of the public are unlikely to come into frequent and intimate contact, (e.g. deck framing, screens, structural timbers, posts, piles and a host of industrial and commercial applications), however in these instances separate council approval will be required and all requirements of the APVMA met in relation to their use. In the event that CCA products are approved for use each individual timber element will be required to be burn branded with the text "Treated With Copper Chrome Arsenate" with letters being a minimum of 15mm in height and located in a clearly visible location.
6. ACQ, Copper Azole, LOSP, or another alternative timber treatments will be considered for approval by Council, so long as each individual piece of timber is clearly marked to show the treatment type, eg 'ACQ, Copper Azole, LOSP' or other similar text as appropriate. In some instances, (e.g. high use public areas), Council will require these markings to be burn branded into exposed timber areas also. In this regard reference should also be made to FNQROC and Council specific standard drawings for additional marking of treated timber elements that are used in the construction of Council assets in high use public areas.

D9.05 EXISTING VEGETATION

1. In order to retain any established landscape character, all trees located within existing road reserves shall be protected and retained unless approved otherwise by Council. Where existing vegetation is present a separate plan is to be included as part of the landscape plan submission indicating information about the proposed treatment, classification and description of existing vegetation to be retained or removed. The following information must be listed in tabular format for existing vegetation with a diameter at greater height 200mm or greater:
 - a. Position
 - b. Height
 - c. diameter at Breast Height (DBH) – Tree Protection Zone (TPZ)
 - d. Diameter at root flare, Structure Root Zone (SRZ)
 - e. Identify dead and defective trees not worth keeping
 - f. Botanic Name / Common Name if known

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g. Crown Spread

Measurements taken as per AS4970 – Protection of Trees on Development Sites

2. Significant trees located within the verge of new road reserves shall be protected wherever possible and where advised by Council. This may require the adoption of non-standard utility service alignments, therefore designers are encouraged to discuss proposed solutions with Council.

D9.06 VERGES^{CRC}

1. All existing and proposed street trees in verges must be shown on the landscaping plan.
2. When presented with a verge less than 1600mm in width, council must be contacted during the concept planning stages to discuss suitable species for on-street trees. Street trees are best suited for verges greater than 1600mm width, refer standard drawing S4210.
3. All verges shall be covered full width with topsoil to a depth of not less than 40mm and shall be lightly compacted and grassed in accordance with Councils minimum standards and Specifications.
4. In order to guarantee a high standard of maintenance all verges are to be in a mowable condition, free from rocks and loose stones, and graded to even-running contours.
5. Aside from grass establishment and tree planting, landscaping of the verge between the property boundary and kerb is not a Council requirement. Where there is a small area for planting on the verge between the property boundary and a footpath, landscape planting can be an alternative to turfing subject to council approval. Additional landscaping within the verge may be considered subject to Council approval. Generally, any additional landscaping shall be clear of underground services or alternatively limited to ground covers or small shrubs less than in 500mm height.
6. Root Barriers must be positioned on either side of the on-street tree where there is a footpath or the tree is within 2m of services, sewer and infrastructure. Refer S4210.
7. Should any excavation of the underground services in this vicinity of the additional verge landscaping be required, thus destroying the vegetation, Council will not be held responsible for plant replacement. Maintenance of planting in this vicinity will be the sole responsibility of the adjacent property owner/occupier.
8. The FNQROC Development Manual Standard Drawing S4100 provides guidance for the design of tree islands to incorporate street and car parking trees that may be required to be installed in parking areas within the road reserve. Generally, trees shall be planted at 15 metre centres and provide shade to car parking spaces.

D9.07 STREET TREE PLANTING^{CRC}

1. The ultimate aim of street tree planting is to provide:
 - a. An attractive streetscape with character and charm. An individual character may be obtained by using a specific tree species for each street.
 - b. Shade, and the reduction of heat and glare from the road pavement. Parked cars may remain cool during the summer months.
 - c. Habitat provision and enhancement. Native flowering trees provide a source of food and shelter for insects, birds and animals.
2. An avenue of trees of identical species and size planted at regular intervals has far greater visual and aesthetic impact than a mis-matched selection of incompatible trees. In order to promote continuity in new streetscapes, a single species should be nominated for each street.

3. Where a development is occurring in an established street setting, an assessment of the existing trees should be made, and the most prevalent and healthy species chosen for verge planting.
4. Tree species must be selected in accordance to the councils planning scheme policy for landscaping plant list. Tree species shall be selected for their suitability to the site conditions (eg. small trees under power lines, drought resistance, soil suitability).
5. To ensure consistency in growth rate and form all trees must be well established in their root and branch formation as per AS 2303 Tree Stock for Landscape Use. A minimum 25 litre container should ensure a good survival factor.
6. The alignment and placement of street trees measured from the tree at the estimated ultimate size shall be in accordance with the following^{CRC}:
 - a. Greater than 4.0 metres from electricity or telecommunication poles or pillars.
 - b. Greater than 7.5 metres from streetlights to ensure effective street lighting.
 - c. Greater than 4.0 metre radius from high voltage transmission lines.
 - d. Greater than 3.0 metres from any part of a driveway (where possible).
 - e. Greater than 2.0 metres from stormwater drainage pits.
 - f. Trees are to be planted in the front of properties at the centre of the lot at a rate of one per lot, or at the necessary rate to provide a maximum 20 metre spacing.
 - g. Trees are to be placed a minimum of 800 mm and a maximum of 1000mm from the back of kerb.
 - h. Trees are to be placed a minimum of three (3) metres from driveway.
 - i. At intersections trees are to be placed a minimum of ten (10) metres back from the face of the kerb of the adjoining street.
 - j. Trees are to be located so as not to obstruct access to any services or signage.
 - k. Trees are to be located so as not to obstruct pedestrian or vehicular traffic, nor create traffic hazard or cause damage to existing trees.
 - l. If at the time of planting the approved/endorsed locations for the street trees do not comply with the above street tree layout setbacks, the locations must be adjusted to achieve compliance. The minimum required street trees (under 1.f.) shall be installed and established within the approved area of works
7. Street Trees shall be planted in accordance with Standard Drawing S4210 and installed in accordance with Council Specifications.
8. Landscaping plantings near intersections, pedestrian facilities and bus stops shall be limited to low plantings (species that do not grow higher than 700mm) to ensure visibility/sight lines of motorists and pedestrians are not restricted.
9. Street trees should not be a plant listed in:
 - a. Biosecurity Regulation 2016 Schedule 4 Category 3 Restricted Matter: Section 13 Part 1 Invasive Plants
 - b. Local governments Pest Management Plan or the
 - c. Publication "Agricultural and Environmental Weeds – Far North Queensland" (Wet Tropics Management Authority, Department of Natural Resources and Mines)
10. The developer will^{CRC}
 - a. Notify Council in writing on completion of planting and maintain trees for a minimum of 13 weeks prior to 'works acceptance' and until Final Works Acceptance. or

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- b. Council at its discretion may accept a contribution at Works Acceptance/Plan Approval stage for the supply and planting of street trees after the completion of houses on the lots. A landscaping plan needs to be provided to prospective purchasers indicating locations for street trees.

D9.08 BUFFER ZONES

1. Mounds / Buffers adjacent to major roads controlled by the Department of Main Roads must comply with the requirements as specified by the Department of Main Roads and as detailed herein. Generally, these buffers are ten (10) metres wide along the full frontage of the major road.
2. Landscaping of Buffer Mounds shall be in accordance with Standard Drawing S4230^{CRC}.
3. The aim of the Buffer Mound landscaping is to:
 - a. Reduce the visual impact of adjacent development by screening rooflines.
 - b. Reduce the visual impact of proposed noise attenuation barriers, which may be constructed at some time in the future on the mound crest.
 - c. Reduce the visual impact of the mound's severe geometric landform by screening with foliage to ground level.
 - d. Introduce a "natural" vegetated landscape appearance by replacing open agricultural land with a facade of dense planting.
 - e. Reinforce the local character by indigenous tree and shrub species.
 - f. Provide additional functions, ie. shade over adjacent bikeways.
4. In order to accomplish the above aims, the species mix of plant selection should incorporate a range of species to provide variation in form, colour and texture, to contribute to a natural appearance. The front line of planting should have foliage down to ground level.
5. To ensure that buffer mounds are given the best possible chance of success, a temporary irrigation system shall be installed and decommissioned on establishment of the permanent irrigation solution. Preferred solutions are below the surface of the mulch type irrigation system, such as a drip-style irrigation, which reduces the chances of vandalism and reduces excess water loss as a result of runoff and evaporation.^{CRC}
6. Strong recognisable character is further reinforced by repetition of some suitable species as street and park trees in the adjacent subdivision
7. Use of disciplined plant selection based on themes such as colour, texture, or natural species associations, in addition to site suitability, creates higher quality landscapes than random assortments of nursery stock chosen solely for short notice availability and growth suitability.
8. Advance ordering and growing on contracts are desirable to ensure availability of desired species in the large quantities required.
9. Local rainforest species, which typify and reinforce the regions image, are preferred. Most are hardy, long-lived and have dense growth, which suppress weeds and reduce long-term maintenance.
10. The landscaping shall be designed so as not to create a safety risk to people using the mound and adjacent areas (i.e. no thorns, heavy nuts or poisonous fruits or berries).
11. Large shade trees to be planted no higher than 1/3 from the base of mound i.e. no trees on top of the mound.
12. Landscaping shall be designed so as not to create a safety risk to people using the mound and adjacent areas (i.e. no thorns, heavy nuts or poisonous fruits or berries)

PUBLIC OPEN SPACE

D9.09 GENERAL^{CRC}

1. At the time of development, the developer shall landscape all public open spaces to the satisfaction of Council and in accordance with this manual.
2. Where a development is proposing to undertake any work within existing or proposed park a landscaping plan shall be prepared for consideration by Council.
3. Landscaping plans shall be prepared by a person of professional standing in the field of landscape architecture or landscape design, at a standard acceptable to Council^{CRC}.
4. Unless otherwise approved by Council, CCA treated timber is not to be used for the construction of Council assets. Some uses of CCA treated timbers may still be deemed acceptable where members of the public are unlikely to come into frequent and intimate contact, (e.g. deck framing, screens, structural timbers, posts, piles and a host of industrial and commercial applications), however in these instances separate council approval will be required and all requirements of the APVMA met in relation to their use. In the event that CCA products are approved for use each individual timber element will be required to be burn branded with the text "Treated With Copper Chrome Arsenate" with letters being a minimum of 15mm in height and located in a clearly visible location.
5. ACQ, Copper Azole, LOSP, or another alternative timber treatments will be considered for approval by Council, so long as each individual piece of timber is clearly marked to show the treatment type, eg 'ACQ, Copper Azole, LOSP' or other similar text as appropriate. In some instances, (e.g. high use public areas), Council will require these markings to be burn branded into exposed timber areas also. In this regard reference should also be made to FNQROC and Council specific standard drawings for additional marking of treated timber elements that are used in the construction of Council assets in high use public areas.

D9.10 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

1. It is important when designing parks that the principles of crime prevention through environmental design are considered, in particular:
 - a. Dense stands of vegetation should be confined to park peripheries, and should not be located alongside paths and play equipment. Vegetation should not block casual surveillance of picnic and play areas from adjacent residences.
 - b. Landscaping should not restrict sightlines and opportunities for natural surveillance within and of a site therefore all new vegetation around centres of activity should be single clean trunked trees with shrubs which do not grow beyond 500 mm height. This will avoid the problem of concealment and allow a greater area of surveillance from the road.
 - c. Lighting where required should be sufficient to deter loitering and vandalism.
 - d. Large shrubs and trees should be planted in such a way as to prevent or reduce illicit access to buildings and neighbouring properties.
 - e. Safety in large parks or areas of vegetation within a development may be enhanced by planting trees in thin strips which maximises the number of trees planted but which also restricts the ability of offenders to hide within a "mass" of vegetation.

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D9.11 TREATMENT TO PARK BOUNDARIES

1. Vehicles should be prevented from driving into parks, drainage reserves and public open spaces by the provision of barriers along the road frontages. These may be barriers, bollards or natural features such as existing vegetation or newly planted and staked trees. Access for maintenance vehicles shall be provided through a lockable gate or removable bollard.
2. Definition of the park side boundaries should be indicated by installing barrier fencing or bollards at approximately 1.5 metre centres, down each side. These should be offset from the surveyed boundary by 100 mm in order to allow future erection of private fencing without having to remove Council's markers. Definition of the park boundary is intended to deter encroachment onto park by adjacent private properties and to define the park limits.
3. Barriers and bollards shall be in accordance with Standard Drawing S4300 unless otherwise approved by Council.
4. Bollards must be installed when a lay back kerb is installed, bollards are often not required if a barrier kerb is installed and there is sufficient natural features deterring access.^{CRC – Standard drawing S4170-CRC& S4171-CRC}

D9.12 INTERNAL CIRCULATION

1. The park layout should be designed to ensure that internal circulation or movement within the park is:
 - a. Safe
 - b. Unencumbered
 - c. Highly visible internally and externally
 - d. Linked to external cycle and pedestrian networks.
2. Design features including access points, street frontages, carparks, pedestrian/bike paths, park equipment and lighting should be considered.
3. Design of paths, carparking and access points should consider the needs of people with mobility challenges. Pathways shall be in accordance with Design manual D1 and comply with accessibility standards.

D9.13 PLANTING

1. Council parks seek to provide a range of recreation opportunities and there is scope to utilise planting design to help achieve this objective, options include:
 - a. Shade trees evenly planted throughout the site to maximise protection from the sun;
 - b. Island or corridor planting to concentrate trees for easy maintenance and encourage bird life for pleasure viewing;
 - c. Grouped planting will also provide shade adjacent to open space to allow unencumbered active play areas;
 - d. Lines of tree planting to define edges of informal kick-about areas.
2. Root Barriers must be installed for large shade trees that have the potential to disrupt services, play equipment embellishments and lawn. Refer Standard Drawing S4210
3. A minimum 75% of the proposed tree planting should be endemic, and species should be selected on their adaptability to site conditions, and their value to local fauna. Where the proposed park adjoins an area of

established native vegetation, an extension of this habitat into the park should be implemented by using compatible species. The designer should also be encouraged to use rare and endangered plant species, or species proven to have excellent bird, butterfly and insect attracting qualities.

4. In order to promote the unique landscape characteristics of the region exotic flowering trees and non-native palms should only be used as features or emphasis, where necessary.
5. Some Local Authorities have plant selection guidelines and suburban planting themes and designers are encouraged to consult with Council in the preparation of the landscaping design.
6. Street trees should not be a plant listed in:
 - a. Biosecurity Regulation Schedule 4 Category 3 Restricted Matter: Section 13 Part 1 Invasive Plants.
 - b. Local governments Biosecurity Plans, and
 - c. Publication "Agricultural and Environmental Weeds – Far North Queensland" (Wet Tropics Management Authority, Department of Natural Resources and Mines)

D9.14 GRASSING

1. All parks shall be covered with topsoil to a depth of not less than 40mm and shall be lightly compacted and grassed in accordance with Councils' minimum standards and Specifications.
2. In order to guarantee a high standard of maintenance all parks shall be in a mowable condition, free from rocks and loose stones, and graded to even-running contours.
3. Grass should be established within the proposed park as quickly as possible in order to avoid erosion and sedimentation to the local waterways, and prevent the establishment of weeds in accordance with Council's Manuals and Specifications.

D9.15 MOUNDING

1. Mounding may be used within the park design to provide topographical interest, to emphasise views, to help screen adjacent properties or eyesores, or as part of the internal design. The mounds should not exceed a gradient of 25% (1 in 4) in order to reduce erosion and allow mowing. Planting of trees and shrubs over the mound will further emphasise height and shape. Refer Drawing S4230 for planting guidelines.
2. Care should be given to ensuring that the mound does not restrict visibility into and out of the park thus threatening the safety of users or provide unwanted visibility into private properties.
3. Landscape mounding shall be in accordance with Standard Drawing S4220 unless otherwise approved by Council.

D9.16 FURNITURE^{CRC}

1. Park furniture should reflect the intended function of the park and compliment any distinguishing features present eg seating situated to maximise a viewscape. Some preferred features of furniture include:
 - a. Park benches located under a natural or built shade structure to allow day long use. If the shade is built, it should have an impervious roof eg colorbond to provide shelter during rain.
 - b. Well drained ground and hard surfacing below any structure. Surface material could be pavers, coloured or exposed aggregate concrete etc.
 - c. Shade structures should maximise protection from the sun during the hours of 11 am - 2 pm.

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- d. Council must be contacted to provide the specifications for the preferred Refuse Bins and whether a Refuse Bin is required.
2. Designs of furniture should reflect a strong aesthetic and vandal resistant appearance.
3. Where possible, natural features may be used eg mounding for seating, trees or natural rock for bollards to simulate park furniture.
4. All Park embellishments are required to be approved by Councils prior to installation. Some Local Authorities have park furniture themes and master plans, designers are encouraged to consult with Council in the preparation of the landscaping design.

D9.17 SIGNAGE AND INTERPRETATION^{CRC}

1. A park name sign is to be provided in accordance with the Standard Drawing S4390. The park name is to be submitted to Council for approval with the landscaping drawings. The proposed name is to preferably have the same theme as the subdivision's street names. The name is to be creative and imaginative in order to appeal to children for local parks and to adults for district and regional parks.
2. If the park has any historic, cultural or natural value the provision of interpretive signage will provide further interest to local users. Council can provide assistance in developing interpretive concepts.

D9.18 LIGHTING

1. Lighting requirements within parks will be advised by Council in accordance with the classification of the park.
2. As a guide two (2) park lights on poles shall be provided for every park of 4,000 square metres(excluding CRC). However, this may vary depending upon the shape and alignment of the park, and the presence of existing vegetation. Generally, parks should be well lit providing a safe nocturnal environment for local users. Council will consider the relaxation of one or both lights where existing street lights are adjacent to the park area. Underground power should be provided to each pole. Light fittings should be vandal resistant.
3. Pathways within parks that require lighting shall be lit to the lighting category determined from the road Lighting Standards AS/NZS 1158.3, "Pedestrian area (Category P) lighting".

D9.19 PROVISION OF WATER^{CRC}

1. Facilities for drinking, such as drinking tap / bubbler, shall be provided for each park area, and should be located near active recreational areas, adjacent to a well-used access route, and within an area serviceable from the road frontage. A soak-away trench shall be provided to the base of each tap to prevent ponding and waterlogging.
2. In order to irrigate the park one (1) hose cock on a 20mm stand pipe should be provided for each 2,000 square metre of park.
3. As an alternative, irrigation may be provided, on condition that the proposed system complies with the Council Standard Specification for Irrigation.
4. D9 Landscaping is to be read in conjunction with D6 Water Reticulation.

D9.20 IRRIGATION^{CRC}

1. All irrigation systems (temporary and permanent) connected to Council's water supply shall be metered, and installed to satisfaction of Council. The installation of water meters, backflow prevention device and isolation valves are mandatory in all irrigation system and are to be installed by a licensed plumber. Refer AS 3500 "National Plumbing and Drainage, Part 1.2 Water Supply – Acceptable Solutions".
2. The installation of an irrigation system to all landscaped traffic islands and roundabouts is mandatory^{CRC}.
3. An irrigation plan prepared by an irrigation consultant, shall be submitted to Council for approval together with the landscaping plans^{CRC}.
4. The design of all watering systems must ensure an efficient and economical application of water. Such systems are to be designed to use low water application, and shall run only during Council's nominated times. During periods of Council's restrictions on irrigation by sprinkler, the developer may need to obtain an exemption permit to irrigate outside the restricted hours. In this circumstance, an application must be made in writing to council.
5. The irrigation system shall use the following components and shall be installed in accordance with Council Specifications.
 - a. A backflow prevention unit, installed to the requirements of AS 3500.
 - b. 20mm, 25mm or 32mm or 40mm diameter PVC pipework (as required) to garden bed areas; laid in a ring around the periphery of each garden bed.
 - c. Pop-up sprinklers to periphery of garden beds. Fixed shrub heads to centre of islands only.
 - d. Automatically operated controller in PVC box laid flush with finished ground level.
6. All irrigation pipework installed under roadways shall be laid in minimum 100mm dia. uPVC Class 9 conduit.
7. The water connection and installation of the irrigation system shall be carried out by Council personnel or an approved contractor at the developers / applicants cost. The maintenance period for irrigation works shall be until Final Works Acceptance. Thereafter all maintenance and watering will be the responsibility of the Council.
8. The installation of an irrigation system on Council property, other than buffer mounds, traffic islands and roundabouts, eg. verges will not be permitted unless:
 - a. The system is separate from the development and all pipework is located adjacent to the kerb and channel.
 - b. Or the verge is irrigated from sprinklers that fall within the development property boundaries.
9. These requirements have come about in order to prohibit the installation of water lines across the underground services located within the verge. These water lines would not appear in Council records and are therefore at risk of breakage during service repair work/trench excavation.
10. If a separate irrigation system within the verge is desired, the developer will be required to pay all installation costs, which include:
 - a. Tapping into main
 - b. Installation of 25mm diameter (typical) backflow prevention device
 - c. Installation of pipework and pop-up sprinklers
 - d. Installation of solenoid valves and automatic controller.
11. Where required, temporary Irrigation is to provide establishment watering up to a point where the landscape can survive wholly dependent on rainfall. The property owner/applicant shall decommission all temporary irrigation prior to the Final Works Acceptance. All temporary irrigation shall comply with water conservation

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requirements(water restrictions, demand management and water security strategies etc) and designed in such a way to ensure public safety and limit risk of vandalism (ie, under surface installation where possible in public areas.)

D9.21 PLAYGROUNDS^{CRC}

1. To ensure play equipment is as safe as possible and appropriate for the intended users, it should conform to the current and relevant Australian Standards for playgrounds and play areas and additional standards as may be established by Council.
2. Playgrounds shall include improvements that provide opportunities for all abilities play.
3. Where playground equipment is required by Council as a condition of the development permit of the subdivision, or proposed to be installed by the developer, the following requirements should be considered and incorporated into the design:
 - a. Type of play equipment proposed should be selected in consultation with Council.
 - b. The age range of the users should influence the type of equipment provided.
 - c. The siting of the playground should not infringe upon adjacent residential properties; a minimum distance of 10 metres between equipment and park boundaries should be provided and suitably landscaped with a minimum of 3 metre of screen planting to reduce noise and visual impact. Such landscaping is to be consistent with CPTED Principles.
4. To conform to safety requirements impact absorbing surfacing in accordance with Australian Standard 4685 should be installed to the play area. eg sand, continuous rubberised matting^(excluding CRC), shredded car tyres^(excluding CRC). Playground edging shall be in accordance with Standard Drawing S4370 unless otherwise approved by Council.^{CRC}
5. Shade cover over playgrounds is to be provided, in order to encourage day long use. Preferably this should be a permanent shade structure approved by Council, however shade trees planted at maximum 6 metre centres around the safety area are acceptable.
6. Edging (not timber) installed at 250mm above ground level is to be installed if sand is used for the surfacing e.g. playgrounds, bubblers, fitness stations, seating. Edging flush with the surface level is not an acceptable edging.
7. The provision of seating overlooking the playground will be required.
8. Typical details of bench seating are shown on Standard Drawings S4340 and S4350. Alternate seating (ie. proprietary seating) may also be used subject to Council approval.
9. A cost estimate for all embellishments including play spaces shall be provided.

D9.22 ARTIFICIAL GRASS

1. Artificial grass turf on Local Government Managed Areas and Roads are a non-standard treatment which requires an Application for Operational Works 'General Works' to be lodged with Council in all cases. It is recommended to discuss any proposal for the installation of artificial grass with Council prior to submitting an application.

D9.23 MAINTENANCE

1. The design of a park should carefully consider long-term maintenance requirements. Mulched garden beds containing trees and shrubs are easier to mow around than numerous small trees and shrubs planted individually throughout the grassed areas.

2. Where single shade trees occur they should be mulched to 100 mm depth in a minimum 1.2 metre diameter circle, thus avoiding damage to trunks by mowers or whipper snippers.
3. Typical details of acceptable garden bed edging are shown on Standard Drawing S4380.
4. Access to the parks, drainage reserves and public open spaces for maintenance vehicles should be via a lockable gate or removable bollards.
5. A maintenance programme is required to be submitted to Council with the submission of the landscape designs. The programme should be prepared by the Landscape Architect / Designer and should detail all proposed maintenance works.

NATURAL AREA RESTORATION AND REVEGETATION ^{CRC}

See Cairns Regional Council Local Government Specific