

Landscape Guidelines

Development Control Plan No 31

march 2003



Kiama Council

The purpose of DCP is to assist in the preparation of suitable landscape plans and documents for proposed commercial, industrial and medium density developments within the Kiama Municipality. Basic information and design considerations are provided which will help applicants in meeting the requirements of the environmental legislation when preparing development applications.

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1.0 INTRODUCTION

1.1 Aims

The purpose of this plan is to assist in the preparation of suitable landscape plans and documents for proposed commercial, industrial and medium density developments within the Kiama Municipality. Basic information and design considerations are provided which will help applicants in meeting the requirements of the environmental legislation when preparing development applications.

1.2 Objectives

The objectives are to:

- Provide a high standard of landscape design which complements the design of the development and integrates within the streetscape or rural setting in size, scale, mass and bulk throughout the Kiama Municipality.
- Require landscaping to be considered in consultation with building and subdivision design as soon as possible in any development.
- Incorporate environmentally sustainable practices within the design.
- Reduce the impact of development activity on the landscape.
- Provide landscaping which requires low maintenance.
- Protect and enhance remnant native bushland areas by the retention and regeneration of indigenous flora.
- Reduce delays in approval procedures for landscape requirements.

1.3 Implementation

- To ensure that appropriate professional skills are being applied in the design as well as the presentation of landscape proposals, a suitably qualified Landscape Architect or Landscape Designer with relevant design experience is required to prepare landscape plans.
- To ensure a satisfactory standard of construction is achieved it is recommended that all landscape construction be carried out by a qualified landscape contractor. Membership to an accredited organisation encompassing both design and construction of landscapes such as LCA, AILD, AILA is desirable.
- If there are any doubts regarding the necessity for a landscape professional, contact Kiama Council's Engineering Department.

1.4 Approvals Process

Early consultation with Council's development assessment staff before submitting an application is strongly encouraged, preferably at concept stage. This will assist with a quicker assessment of the formal application when it is submitted.

As an aid to discussions, a brief site survey and site analysis with photographs of the site and adjoining properties along with a rough concept plan should be brought to the consultation.

1.5 Why Submit A Landscape Plan?

Most property development requires a landscape component which is assessed in order to improve the quality of the development by providing shade, privacy, streetscape, aesthetics, low maintenance and environmentally sustainable practices

1.6 Who Can Prepare Landscape Documentation?

A suitably qualified Landscape Architect or Landscape Designer with relevant design experience is required to prepare landscape plans or documents to ensure that appropriate professional skills are being applied in the design as well as the presentation

1.7 What Documents are Required?

The documentation required for each development category is listed below:

	CONCEPT LANDSCAPE PLAN	LANDSCAPE PLAN	VEGETATION SITE ANALYSIS	ENVIRONMENTAL SURVEY	ENVIRONMENT MANAGEMENT PLAN	CONSTRUCTION PLANS
INDUSTRIAL DEVELOPMENT	b	b	NR	NR	NR	NR
COMMERCIAL DEVELOPMENT	b	b	NR	NR	NR	NR
MEDIUM DENSITY RESIDENTIAL DEVELOPMENT	b	b	b	NR	NR	NR
RURAL DEVELOPMENT (Rural Dwellings Tourist Facilities)	b	b	b	NR	NR	NR
LAND IDENTIFIED AS HIGH CONSERVATION VALUE	b	b	b	b	NR	NR
LAND COVERED BY COUNCIL'S RIPARIAN CORRIDOR POLICY	b	b	b	NR	NR	NR

NOTES:

NR

Usually not required, however these plans may be requested for specific sites.

b

Documents are required.

MEDIUM DENSITY:

Dual Occupancy Development, Villa Homes & Courtyard Houses, Residential Flat Building and Integrated Housing Development

RURAL DEVELOPMENT
CONCEPT LANDSCAPE PLAN
Landscape Plan

Rural Dwellings and Structures in Rural A and all the Rural Environmental Protection Zones

When Development Approval ONLY is required.

When Development Application and Construction Certificate required.

2.0 DESIGN GUIDELINES

2.1 Industrial Developments

Landscape Plans are required to be submitted for Industrial Development Applications. This includes development of land for carparks, retail institutional uses, light and heavy industry.

2.1.1 Aims:

- Integrate the landscape with the architectural design of the buildings and enhance the overall existing streetscape.
- Screen and soften buildings and shade paved areas.
- Incorporate environmentally sustainable practices in the landscape design.
- Provide a landscape treatment which corresponds in scale and size relative to the bulk of the proposed development.
- Integrate planting into existing streetscape themes to provide unity and pattern to the precinct.
- Enhance safety and security in public spaces.

2.1.2 Design Guidelines:

- Provide planting beds a minimum 2.5 metre wide across the front of the site and a minimum 1.5 metre wide across the rear boundary where it adjoins residential property or public spaces, to screen the development and reduce the bulk and scale of the building. Height of trees at maturity to be a minimum 3.0m.
- Incorporate indigenous tree and shrub planting in the buffer zone areas if possible. A mix of planting forms and habits is desirable.
- Provide side boundary planting beds, minimum 1.0m wide (internal width), to help reduce the visibility into the site where the site adjoins residential areas or public space. Height of trees at maturity to be minimum 3.0m.
- Provide security fencing on street frontages of low visual impact, open design and coloured black to charcoal tones, located within and screened by planting beds. (See Section 4.6 for details of fencing)
- Provide landscape treatment within or adjacent to the carparking area which includes shade and screening.
- Separate landscaped areas from carparking and driveway areas by devices that prevent vehicles from damaging the planting.
- Use raised planter areas to minimise the possibility of landscape areas being used for parking or storage areas.
- Provide mulch to garden beds and planted areas; use a natural or biodegradable organic material compatible with Australian Standards 4454. Black plastic is unacceptable under mulching material
- Provide suitable edging materials to separate mulch and landscape from turf and hard surfaces.
- Where required, provide specimen trees of a minimum 75 litre pot size and 1500mm high when planted.

2.1.2 Design Guidelines: (Cont)

- Where required, landscape mounding is to incorporate screen planting and comprise a quality soil mix that can sustain the planting.
- Provide inground irrigation.
- Screen waste and service areas with suitable plant and building materials.
- Solid metal fencing is unacceptable on adjoining public roads or reserves. Use recessive colours if manufactured metal fencing is to be used. (See Section 4.6 for details of fencing)
- Maintain visibility of vehicular traffic moving in and out of the driveway. Australian Standard 2890.1 to be used for the design of driveways and turning circles.
- Consider the impact of the landscape on adjoining properties eg overshadowing, structural issues, views, by the careful selection and location of trees

2.2 Commercial Developments

Landscape Plans are required to be submitted to Council for approval for commercial development applications. As noted in Section 1.7, other reports may be required to assist in the assessment process.

2.2.1 Aims:

- Integrate with the architectural design of the commercial buildings and enhance the overall existing streetscape.
- Provide a landscape which visually reduces the bulk and scale of the buildings yet integrates with the overall streetscape.
- Enhance safety and security in public spaces.

2.2.2 Design Guidelines:

- Separate landscaped areas from carparking and driveway areas by devices that prevent vehicles from damaging the planting.
- Use raised planter areas to minimise the possibility of landscape areas being used for parking or storage areas.
- Integrate planting into existing streetscape themes to provide unity and pattern to commercial precincts.
- Provide mulch to garden beds and planted areas use a natural or biodegradable organic material compatible with Australian Standards 4454. Black plastic is unacceptable under mulching material.
- Provide suitable edging materials to separate mulch and landscape from turf and hard surfaces.
- Where required landscape mounding is to incorporate screen planting and comprise a quality soil mix that can sustain the planting.
- Provide in ground irrigation.
- Screen waste and service areas with suitable plant and building materials.

- Provide a dedicated landscape treatment within or adjacent to the carparking area which includes shade and screening.

2.2.2 Design Guidelines: (Cont)

- Solid metal fencing is unacceptable on adjoining public roads or reserves. Use recessive colours if manufactured metal fencing is to be used on other boundaries. (See Section 4.6 for details of fencing).
- Maintain visibility of vehicular traffic moving in and out of the driveway. Australian Standard 2890.1 to be used for the design of driveways and turning circles.
- Where required, specimen trees must be of a minimum 75 litre stock size and 1500mm high when planted.
- Consider the impact of the landscape on adjoining properties eg overshadowing, structural issues and views by the careful selection and location of trees.

2.3 Medium Density Housing Developments

Landscape plans are required for all Dual Occupancy Developments, Villa Homes, Courtyard Houses, Residential Flat Building and Integrated Housing Developments.

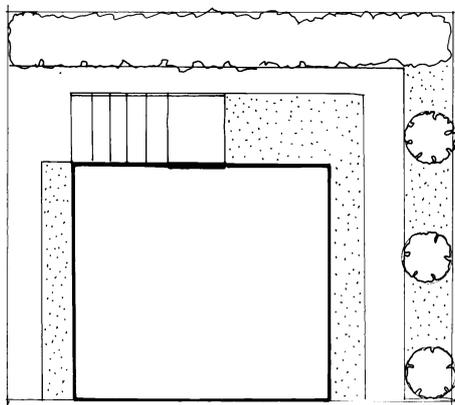
2.3.1 Aims:

- Screen large-scale buildings and provide a sense of continuity within the development.
- Improve the visual amenity, aid in privacy, noise attenuation and temperature control.
- Enhance safety and security in public spaces.

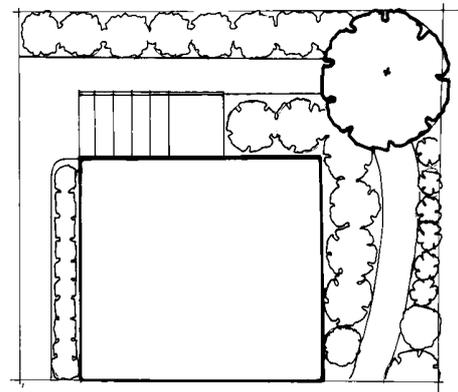
2.3.2 Design Guidelines:

- Provide planting at a scale in relation to the verticality of the buildings.
- Enhance boundary and driveway access with planting beds which are a minimum width of 1.0 metre (internal width). Include trees which reach a minimum mature height of 3.0 meters for screening where necessary.
- If possible, provide curved and splayed driveways to reduce a 'gun barrel' effect, particularly when placed against a side boundary.
- Landscape the front property boundary to include a range of tree canopy heights and differing plant forms and habits to provide linkage and amenity to the streetscape. (See Figure 1)
- Screen waste receptacles from street view.
- Provide mulch to garden beds and planted areas; use a natural or biodegradable organic material compatible with Australian Standards 4454. Black plastic is unacceptable under mulch material.
- Provide in-ground irrigation.
- Provide a suitable edging material to separate mulch and landscape from turf and hard surfaces.

- Maintain visibility of vehicular traffic moving in and out of the driveway. Australian Standard 2890.1 to be used for the design of driveways and turning circles.
- Consider the impact of the landscape on adjoining properties eg overshadowing, structural issues and views, by the careful selection and location of trees. Minimise shadow effects on residential courtyards, balconies and living areas.
- Solid metal fencing is unacceptable on adjoining public roads or reserves. Use recessive colours if manufactured metal fencing is to be used. (See Section 4.6 for details of fencing).
- Landscape is to be situated outside of private open space.
- Group planting to allow ease of maintenance by placing plants with similar requirements together. (See Figure 1)
- Consider planting to afford protection from the elements. (See Figures 2 and 3)



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Figure 1 - Consider maintenance at the design phase by incorporating planting behind mower strip and grouping plants with similar growing requirements. Avoid the use of narrow strips of lawn.

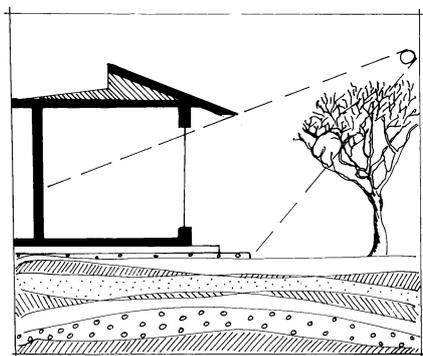


Figure 2 Winter sun

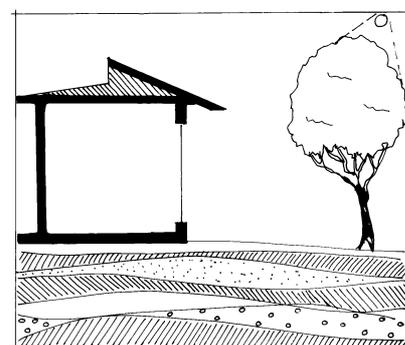


Figure 3 Summer shade

2.4 Rural Developments

This applies to the subdivision of existing rural holdings either for concessional lots or for broader scale subdivision and for development on existing rural lands. This includes rural land identified in The Kiama Local Environment Plan 1996:

- Rural A 1(a)
- Rural Environmental Protection (Scenic) 7(d)
- Rural Environmental Protection (Hinterland) 7(e)
- Rural Environmental Protection (Foreshore Protection) 7 (f)
- Rural Environmental Protection (General) 7 (l)
- Land identified as High Conservation Value.
- Land covered by Councils Riparian Corridors Policy

2.4.1 Aims:

- Minimise adverse visual and environmental impacts.
- Support the objectives of the zoning as set out in the Kiama Local Environment Plan 1996.

2.4.2 Design Guidelines:

- Buildings should not be located on the top of prominent ridge lines or knolls.
- Provide vegetative screening to dwellings, sheds, water tanks and outbuildings in such a way so as to break the form of the building and yet maintain desirable view corridors.
- Protect all areas of landscaping, adjacent to land used by stock by permanent stock proof fencing. This shall be maintained for 5 years in order for the planting to reach maturity.
- Provide details of stock fencing in landscape plan; (electrical tape is not considered permanent stock fencing).
- Minimise earthworks and soil erosion.
- Minimise the visual impact of driveways by the use of suitable materials and siting in relation to contours
- Incorporate indigenous species when linking the landscape design proposal into remnant vegetation.
- Solid metal fencing is unacceptable adjoining public roads or reserves. Use recessive colours if metal fencing and metal sheds are to be constructed. (See Section 4.6 for details of fencing)
- Consider fire risk in landscaping - refer to NSW Rural Fire Service publication "Building in a Bushfire Prone Area".
- Avoid plant species that may become a weed problem – See Section 4.7 and Appendix 1.

3.0 INFORMATION TO BE PROVIDED IN LANDSCAPE DOCUMENTS

This should be used as a checklist before submitting landscape plans. Plans will be rejected if this information is not supplied.

3.1 Concept Landscape Plans

A concept landscape plan is suitable when Development Approval only is required. The following details are required to be shown:

- Property owners name, postal address and telephone number.
- Applicant's name, address and contact phone numbers.
- Landscape consultants contact details.
- North point.
- Scale of the plan (Generally 1:100 or 1:200 but for specific developments others may be required).
- Location of all existing and proposed buildings and adjoining buildings.
- Details of all existing trees 3.0 metres or more in height showing location, species, canopy spread and height..
- Location, height and finished floor levels of all existing/proposed buildings and structures.
- Location of roads, driveways, parking areas and footpaths with details of materials and finishes.
- Existing ground levels and proposed design levels eg contours, spot levels.
- Location and height of proposed retaining walls.
- Schematic planting showing location and mature heights of planting.
- Further details which may be required:
 - Ø Arborist report including the following details:
 - * Reduced levels at tree base
 - * Precise location
 - * Height
 - * Canopy spread and dripline
 - * Name of species (Botanic and common)
 - * Health and condition

3.2 Landscape Plans

A fully detailed landscape plan is required prior to release of the Construction Certificate. Therefore it requires more detail than a concept plan. The following details are required to be shown:

- Property owners name, postal address and telephone number.
- Applicant's name, address and contact phone numbers.
- Landscape consultants contact details.
- North point.
- Scale of the plan (Generally 1:100 or 1:200 but for specific developments others may be required).
- Location of all existing and proposed buildings and adjoining buildings.

- Details of all existing trees 3.0 metres or more in height showing location, species, canopy spread and height..
- Existing or proposed drainage pits.
- Location, height and finished floor levels of all existing/proposed buildings and structures.
- Location of roads, driveways, parking areas and footpaths with details of materials and finishes.
- Existing ground levels and proposed design levels eg contours, spot levels.
- Location and height of proposed retaining walls.
- Maintenance program – See Section 5.1 and 5.2 for details.
- Details of inground irrigation.
- Planting schedule and plan to show:
 - Ø Plant symbol
 - Ø Botanic name and common name
 - Ø Quantity
 - Ø Mature height and canopy diameter
 - Ø Pot sizes
 - Ø Plant spacings
 - Ø Staking/tying
 - Ø A specification describing the method of preparation of planting beds, turfing, trees in grass, planting methods, fertilising, mulching, edging and staking
 - Ø Details of imported soils and plant growing medium.
 - Ø Detail and location of all edge treatments
 - Ø When necessary, standard construction and detail drawings eg sections through mass planting beds, tree planting details, retaining walls.
 - Ø Location of service areas and screening details eg garbage receptacle area, drying area, letterboxes, play areas, common open space.

Further details which may be required:

- Construction details of permanent stock proof fencing at a scale of 1:50.
- Location of all existing and proposed underground and overhead services and easements.
- Location of utility services and stormwater drainage lines.
- Method used to protect individual trees or bushland areas during and after completion of the development.
- Irrigation layout/tap location if applicable.
- Details of special treatment eg erosion control, creek bank stabilisation, roof gardens etc.
- Arborist report of trees on the site and street trees including the following :
 - Ø Reduced levels at tree base
 - Ø Precise location
 - Ø Height
 - Ø Canopy spread and dripline.
 - Ø Name of species(Botanic and common)
 - Ø Health and condition

3.3 Site Analysis

Specific developments nominated by Council may require more detailed analysis. Good site analysis will aid in the resolution of the landscape design. This has a flow on effect of creating a pleasant living environment for both the occupants of the 'development' in question and the neighbourhood. The following details are required to be shown:

- Consultant's name, address and contact phone numbers.
- Applicant's name, address and contact phone numbers.
- Site address, location map.
- Scale of plan 1:100.
- Date of drawing.
- North point.
- Plan reference number.
- Site boundaries and dimensions.
- Location, use and height of existing buildings within the site.
- Relationship of existing buildings to adjoining properties and key developments.
- Topography, slope and aspect.
- Views from the site.
- Potential constraints relating to overshadowing and overlooking.
- Street character.
- Prevailing winds.
- Surface run-off and potential impact of altered groundwater flows.
- Existing buildings.
- Spot levels and contours related to AHD where practical location of utility services and stormwater drainage lines.
- Location of existing historical or archaeological features.
- Location of existing contaminated soils or fill.
- Arborist report of trees on the site and or street trees including:
 - Ø Levels at tree base (to AHD where possible).
 - Ø Precise location.
 - Ø Height.
 - Ø Canopy spread and dripline.
 - Ø Name of species (Botanic and common).
 - Ø Health and condition.

3.4 Environmental Management Plans and Reports

These documents shall be prepared by appropriately qualified consultants. Specific reports may be required for developments within environmentally sensitive areas. Council will set the scope of details required for the survey/report according to specific sites requirements. These may include the following:

- Heritage status and/or Conservation Report.
- Soil analysis.
- Survey of Endangered or Vulnerable Species or Endangered Ecological Communities as listed in the Threatened Species Act.
- Eight Part Tests as required under the Threatened Species Act.
- Environmental Management Plan.
- Arborist Report

3.5 Detailed Construction Plans

Detailed construction plans of hard engineering works included in the landscaping such as retaining walls, raised gardens, roof gardens will be required to enable a comprehensive assessment of the landscape proposal.

3.6 Vegetation Surveys

These will be required when there is remnant bushland vegetation on the site. The surveys must be carried out by a suitably qualified person approved by Council and in accordance with accepted standard scientific methodology. The minimum detail to be provided shall include the following:

- List of species present on site.
- Location of any Endangered or Vulnerable Species or Endangered Ecological Communities as listed in the Threatened Species.
- List of any weeds declared as Noxious Weeds within the Municipality.
- Other detail which may be required include the following:
 - Ø Condition of vegetation including degree of weed invasion.
 - Ø Location and condition of significant trees.
 - Ø Eight Part Tests as required under the Threatened Species Act.

4.0 RELATED LANDSCAPE ISSUES

4.1 Street Tree Planting

It is the intention of street tree planting to establish a local identity. The tree selection must be in scale with the streetscape and offer sun and wind protection and improve the micro-climate of the area. Street tree planting is to be:

- Minimum 2.5m from either side of a driveway or vehicular crossing.
- Minimum 2.5m from either end of a car/bus parking bay.
- Minimum 20m from either side of an existing pedestrian crossing.
- Minimum 2.5m from electricity or telephone poles or pillars.
- Spaced so as not to block signage, access to services.
- Indigenous native species with preference over exotics where possible. (See Section 4.8 and Appendix 2 for species list).
- Selected with consideration to overhead power lines and views.
- Minimum 75 litre stock size with a minimum planted height of 1500mm.

4.2 Protection of Existing Vegetation

Refer to Section 9.0 for details of Council's Tree Preservation Order and the law regarding the removal or pruning of trees.

Existing vegetation and the means of protecting that vegetation must be clearly shown on any landscape plans.

Consider the following points when landscaping work is adjacent to remnant bushland or existing vegetation;

- Do not alter the topsoil from within the dripline of existing trees on site.
- Do not alter the topsoil from within the dripline of trees, which are out side of the site boundaries yet have a dripline and root mass, which extends into site.
- Do not divert or alter overland water flows to existing vegetation
- Do not use the area below the dripline of vegetation for site storage or stockpiling of materials.
- Do not run heavy machinery within the dripline of existing trees.
- Provide protection during the construction phase to trees or vegetation to be retained
- Provide protection to natural elements such as native animal habitats and endangered plant communities.
- If landscaping adjoining remnant bushland use indigenous native species to link the remnant bushland

4.3 Bonds/Bank Guarantee for Specific Vegetation

For development occurring on sites containing remnant vegetation or significant trees, Council may levee a bond or guarantee on the applicant to ensure the protection of the trees or vegetation. The bond will be held by Council for the duration of the maintenance period.

The sum of the bond will be determined by Council. The sum will be a reasonable estimate of the cost of rectifying any damage to trees or vegetation caused by the development works.

As part of the Development Application, a report compiled by a qualified arborist assessing the impact of the proposal on the vegetation in question must be lodged with Council prior to work commencing.

Reports assessing the vigour and health of the tree/s are to be provided during the maintenance period. The frequency of the inspections will be determined by Council and set out in the Development Consent.

Any remedial works identified in the report must be carried out at the owner's expense within 3 weeks of the arborist carrying out the inspection. To apply for the release of the bond the owner shall submit a final report by a qualified arborist approved by Council.

Council will retain a proportion of the bond for the purpose of carrying out the remedial works if these works identified in the reports have not been rectified.

4.4 Use of Footpath for Landscaping - A Deed of Lease

In certain circumstances where a developer or owner wishes to extend landscaping beyond the site boundary onto the footpath, application can be made to lease this land from Council.

Under the provision of the Roads Act 1993, if an encroachment occurs within a road reserve, an application must be made to Council to obtain a Lease Agreement over the encroaching structures eg landscaping, planter boxes etc.

All costs associated with the agreement setting out the liability and maintenance details shall be borne by the developer/owner. An annual fee will apply for the lease of the area and maintenance of the area will be the responsibility of the property owner.

Any works are to be approved as part of a landscape plan.

4.5 Promotion of Resident Safety

- Create an environment which enhances safety and security from property damage, theft and personal threat. Where possible, utilise 'Safer By Design' methodology recommended by NSW Police Service. This encourages crime prevention through environmental design by the application of design features, routine activities and space management which alter conditions that create opportunities for criminal behaviour. The following principles are central to this:

- ∅ *Surveillance* – includes natural, formal and technical surveillance. Natural focuses on the orientation of buildings, street layout, landscaping, fencing etc,
Formal or organised surveillance involves the tactical use of work areas, offices etc near high risk areas.
Technical surveillance is achieved through mechanical/ electronic measures.
 - ∅ *Access Control* – includes physical and psychological barriers to restrict, encourage and channel pedestrian and vehicle movement.
 - ∅ *Territorial Reinforcement* relies upon design features, actual and symbolic boundary markers and other means to encourage a community's sense of responsibility for places and facilities.
 - ∅ *Space management* involves the formal supervision, control and care of urban space.
- Generally the safety for pedestrians and vehicles should be provided for by the following:
 - ∅ Illuminate pedestrian access and driveways in communal open space and integrated developments (using relevant Australian Standards).
 - ∅ Ensure landscaping does not conflict with pedestrian and vehicular safety by blocking vision.

4.6 Fencing (See Figure 4 and Figure 5)

Fencing should be in character with the development and the surrounding streetscape.

4.6.1 Front Fencing Abutting a Road or Reserve

- Maximum 900mm high or 1500mm high but at least 70% visually permeable.
- A colour which is in harmony with the proposed building and adjoining properties.
- Maintain the integrity of existing frontages in "heritage precincts".
- Solid metal fencing is not acceptable.

4.6.2 Side and Rear Fencing Abutting A Road

- Maximum 1800mm high.
- Maximum 2/3 of the length of the boundary (the remaining 1/3 to be returned to the front fencing).
- Constructed of:
 - ∅ Faced/rendered brick or rendered blockwork columns with infill panels of landscaping (hedges), decorative steel, wrought iron, timber pickets.
 - ∅ Brushwood.
 - ∅ Timber palings.
 - ∅ Wire mesh
- Solid metal fencing is not acceptable.

4.6.3 Side and Rear Fencing Abutting a Reserve

- Maximum 1800mm high
- Maximum 2/3 of the length of the boundary (the remaining 1/3 to be returned front fencing)

- Constructed of:
 - Ø Faced/rendered brick or rendered blockwork columns with infill panels of landscaping(hedges), decorative steel, wrought iron, timber pickets,
 - Ø Brushwood.
 - Ø Timber palings
 - Ø Wire mesh
- Solid metal fencing is not acceptable.

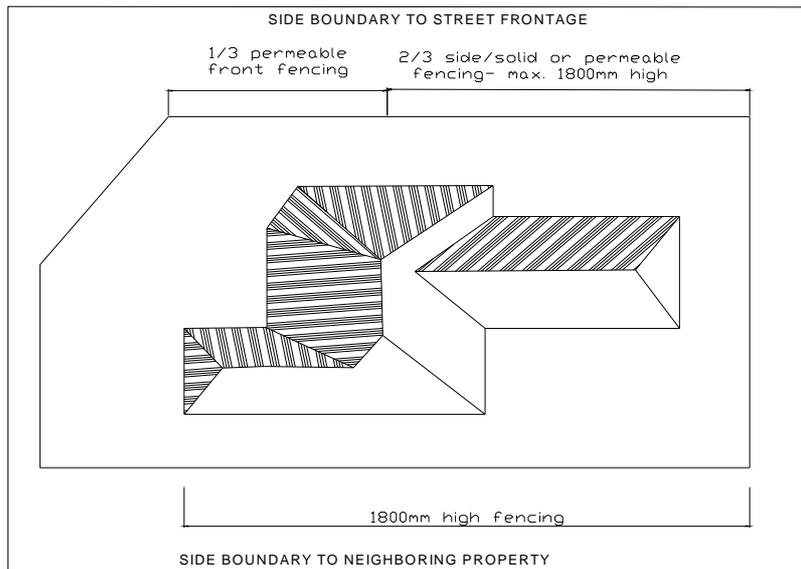


Figure 4 Front and side fencing abutting corner allotments

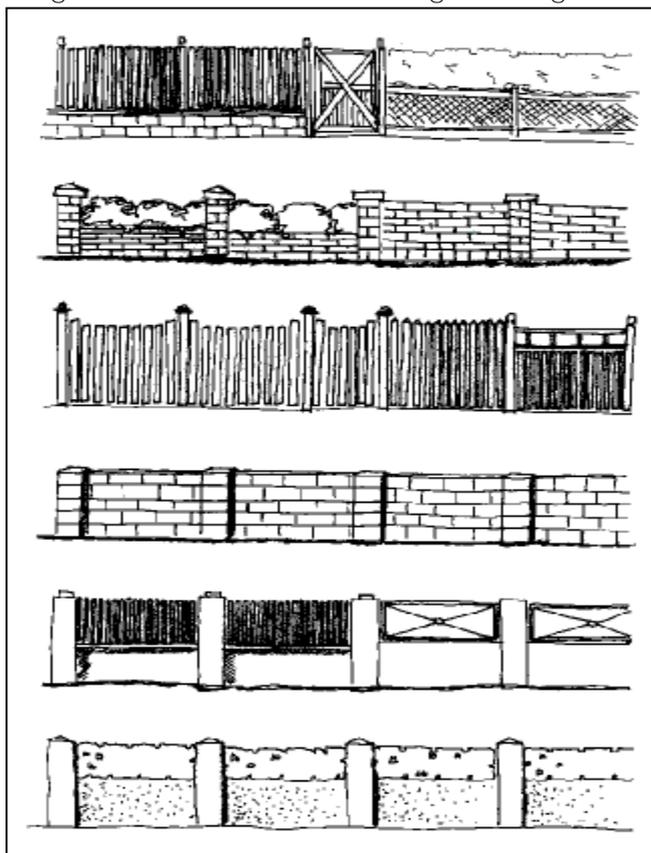


Figure 5. Some examples of fence types on street frontages

4.7 Undesirable Plants

These are plants which are considered unsuitable for landscape purposes in the Kiama Municipality because of the potential of these plants to cause serious environmental problems in the landscape. Therefore they are to be discouraged from use in gardens throughout the Kiama Municipality. Some of these plants are currently used in gardens and are already major weeds eg. Cotoneaster spp and Lantana camara, and their replacement should be encouraged. Others such as Pampas grass and Rhus tree have been declared noxious weeds and must be removed by law. They are listed in Appendix 1

4.8 Recommended Plants

The use of native plant species in landscaping is encouraged because they are a positive way of implementing Ecologically Sustainable Development Principles (ESD) because of their environmental benefits – they provide habitat for fauna, they require less water and less maintenance. In addition local indigenous species are preferred to native species from other areas. The use of these species will help to retain the landscape character of the region as well as helping to preserve the indigenous flora of the region. The use of local indigenous stock is particularly important in rural areas. Projects involving regeneration or enhancement of remnant bushland must use local indigenous stock grown from seed collected in the area. This is to preserve the genetic integrity of the local species. In order to assist in the selection of local indigenous native species a list of species suitable for use in landscaping is included in Appendix 2. This list is intended as a guide only and is not exhaustive, particularly for native bushland regeneration sites.

It is recognised that in urban areas other species (including exotics) may be more suitable for landscaping requirements because of particular site constraints.

The ultimate selection of suitable species is always dependent on specific site requirements.

5.0 LANDSCAPE MAINTENANCE

5.1 Maintenance Period

All property owners must be aware that they will be responsible for the maintenance of the landscaping for the maintenance period once the landscaping has been approved by a certifier as being complete and in accordance with the approved development consent.

The landscape maintenance period commences on the date of practical completion and extends for the duration of the specified maintenance period. A project is deemed to be at practical completion when all the hard and soft landscape features or any work depicted on the approved landscape plans have been installed and approved by a private certifying authority or Council.

MAINTENANCE PERIODS FOR VARIOUS DEVELOPMENTS

Industrial	Commercial	Medium Density	Rural
52 weeks	26 weeks	26 weeks	52 weeks

These maintenance periods may be extended for specific developments

5.2 Maintenance Program

A landscape maintenance program or specification is required with the landscape plan. This is to describe the means of maintaining the landscaping during the maintenance period and shall include but not be limited to plant establishment, watering, mowing, fertilising, weeding, staking, pruning, mulching, pest and disease control, and generally maintaining the site in a neat and tidy condition.

A Council officer shall inspect the site a minimum of two times during the maintenance period. Defects shall be replaced or repaired within 3 weeks of notification, at the owner's expense. Defects include any dead or unhealthy plant and any work that does not comply with the approved landscape plan and maintenance specification.

Missing dead and unhealthy plants are to be replaced with plants of a similar size and quality and of identical species/variety, unless a substitution is approved by Council.

Mulching of garden beds must adhere to Australian Standards AS4454.

Any pruning must be carried out to meet Australian Standards AS4373 'Pruning of Amenity Trees' and shall comply with Council's Tree Preservation Order.

6.0 TREATMENT OF TREES OF SPECIAL SIGNIFICANCE

Kiama Municipal Council is concerned about the conservation of an extremely important part of the heritage of the area, that is the trees of special significance in the Municipality. These may be single trees or stands or avenues of trees which may be significant for a number of reasons. The following criteria should be used as a guide in determining if a tree or group of trees are of special significance.

Occurrence

- Species listed as endangered on the schedules of NSW's Threatened Species Conservation Act 1995 and the Federal Environment Protection and Biodiversity Conservation Act 1999.
- Species which occur rarely within the Municipality; these may be native or exotic species.

Heritage

- Trees which have an historical significance because of their age or association or commemorative value.

Cultural

- Trees which may have a particular cultural value because of their use or identification by a particular group.

Landscape

- Trees which add special character to a site or form a particular group e.g avenues ,or add to the aesthetics in a special way or are a very prominent feature in the landscape.

Form or Habit

- Trees which are very large, or have a special shape or growth characteristics or have special botanical interest.

Environmental Benefit

- Trees which provide special habitat values or shade or food source or act as a significant erosion control.

Many of these trees are Figs, Norfolk Island Pines and Palms and the following design criteria are provided for those species. However, there are other trees not specified in this DCP which also require particular treatment because of their significance. Persons preparing landscape plans should consult early with Council's development assessment staff regarding the treatment of these trees. A report prepared by a qualified arborist shall be prepared for any tree of special significance affected by the development

6.1 Indigenous Fig Trees

Ficus coronata, Ficus macrophylla, Ficus obliqua, Ficus rubiginosa, Ficus superba

The Kiama region Fig species are a reminder of the area's once dominant sub-tropical rainforest. As development of the area occurred, many of these trees were lost and so the need to conserve the remaining trees for future generations is most important.

6.1.1 Design Criteria:

- ∅ No structures shall compromise the health and integrity of the roots and canopy of the tree or trees.
- ∅ Wherever possible access ways should be located beyond the dripline.
- ∅ In locations where access can only be located or partly within the dripline segmented pavers approved by Council shall be used. Alternatively, a suspended structure will be provided which allows vehicular and pedestrian access without impacting upon the tree root system and which allows aeration and water penetration.

6.2 Indigenous Palms:

Livistona australis, Archontaphoenix cunninghamiana

Easily recognised by their tall slender trunks and palm fronds which once protruded above the rainforest canopy, many palms remain dotted throughout the hinterland as reminders of the scale of the rainforest vegetation.

6.2.1 Design Criteria

No excavation shall occur within 3.0 metres radius from the trunk

6.3 Norfolk Island Pines:

Araucaria heterophylla (Norfolk Island Pine)

These trees are synonymous with the coastal landscape. Although not a native tree to this region, Norfolk Island Pines are a part of the historical landscape of the Municipality and part of its identity.

6.3.1 Design Criteria

- ∅ No structure shall compromise the health and integrity of the roots and canopy of the tree or trees.
- ∅ Wherever possible, access ways should be located beyond the dripline.
- ∅ In locations where access can only be provided within or partly within the dripline, a segmented paver shall be used. Alternatively, a suspended structure shall be provided to allow vehicular and pedestrian access without impacting upon the trees root system.

7.0 ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD).

Kiama Municipal Council is committed to the principles of Ecologically Sustainable Development.. These are:

- *Inter-Generational Equity* i.e. we will leave a healthy and productive environment as a legacy to our children.
- *The Precautionary Principle* i.e. we will use caution when making decisions involving risks to people or the environment
- *Maintaining Biodiversity and Ecosystem Integrity* i.e. we recognise that humans and other living things are interdependent. not separate and that biodiversity and productivity are essential
- *Improved Valuation And Pricing Of Environmental Resources* i.e. we need to account for the full costs of development including the cost of restoration

Present and future generations will benefit from the wise application of these principles.

To satisfy the principles of ESD, the landscape proposal should provide for the following:

- Native Gardens to provide a habitat for native fauna.
- Retain bushland to prevent further loss of native plants and animals.
- Minimise large expanses of open lawn areas.
- Minimise impervious surfaces by using porous materials or increasing garden bed size.
- Plant trees to aid in wind and shade protection, noise abatement and a more pleasing environment..
- Use and integrate local materials into the landscape where possible.
- Minimise earthworks.
- Minimise potential for erosion and sedimentation.
- Minimise demolition and excavation material by reusing, recycling or disposing in an environmentally sustainable manner.
- Retain existing mature trees and shrubs.
- Use rainwater tanks to conserve water.
- Allocate an area for composting of green waste.

8.0 TREE SELECTION FOR FIRE PRONE AREAS

Select plants that match the conditions of the environment (soils, rainfall, temperatures, frost and wind) but do not overlook fire as a factor. All plants will burn but some are more tolerant of fire than others.

Features of plants that provide protection from fire include:

- High salt content of leaves
- High moisture content of leaves
- Low volatile oil content of leaves
- Thick bark protecting conductive tissues and dormant buds
- Seed enclosed in woody capsules
- Dense crown
- Lowest branches out of reach of ground fires

Refer to 'Tree Selection for Fire-Prone Areas' NSW Rural Fire Service

9.0 THE TREE PRESERVATION ORDER

The objectives of the Order are:

- To provide a systematic approach to the preservation of trees.
- To retain as many trees as possible in order to maintain visual amenity and environmental protection.
- To further encourage community awareness of the benefits of trees and vegetation in general.
- To encourage planting of additional trees.

The Tree Preservation Order states that no tree specified by the Order shall be ring barked, cut down, topped or lopped, injured or removed without prior Council approval.

Written Council consent is required to disturb any tree which is:

- 3 metres or more in height, has a girth of 200mm or more at a height of 1 metre or has a branch span of 3 metres or more.
- Irrespective of size and height and is:
 - Ø Within Rural Environmental Protection Zones of the Kiama Local Environmental Plan 1996
 - Ø 7(b) - Wetlands
 - Ø 7(d) - Scenic
 - Ø 7(e) - Hinterland
 - Ø Within specified areas of Map 10 of the draft Illawarra Regional Environmental Plan No. 1
 - Ø Within 10 metres of any stream, creek or river.

Domestic fruit trees, Rhus trees, Privet trees, Loquat trees and Coral trees are excluded from the Order.

10.0 REFERENCES

Kiama Municipal Council Local Environmental Plan, 1996

Shellharbour City Council, Draft species list of undesirable plants 2002

Kiama Municipal Council Indigenous Native Plants Recommended Planting List 2002

Hawkesbury Nepean Catchment Management Trust Everything you wanted to know about ESD
Rod Griffith 1998

NSW Police Service Safer by Design Manual 2001

NSW Rural Fire Services Building in a Bushfire Prone Area

NSW Rural Fire Services Tree Selection for Fire Prone Areas



Appendix 1

PLANTS CONSIDERED UNSUITABLE FOR LANDSCAPE PURPOSES IN THE KIAMA MUNICIPALITY

The following plants listed below have been considered as ones to be discouraged from use in gardens throughout the Municipality of Kiama. Some of these plants are currently used in gardens and are already major weeds eg Cotoneaster spp and Lantana camara and their replacement should be encouraged; others such as Pampas grass and Rhus tree have been declared noxious weeds and must be removed by law. Species such as Equisetum spp should never be made available for use in gardens as they present significant weed risks.

Trees

Botanical Name	Common Name
Acacia baileyana	Cootamundra Wattle
Acacia saligna.....	Golden Wreath Wattle
Ailanthus altissima	Tree of Heaven
Cinnamomum camphora.....	Camphora Laurel
Erythrina x sykesii	Coral Tree
Ficus elastica.....	Rubber Tree
Grevillea robusta	Silky Oak Tree
Lagunaria patersonii.....	Norfolk Island Hibiscus
Ligustrum sinense.....	Small Leaf Privet
Ligustrum lucidum	Large Leaf Privet
Olea africana.....	Wild Olive
Olea europaea subsp africana	African Olive
Pinus radiata.....	Pine Tree
Populus spp.....	Poplar Tree
Pittosporum undulatum	Native Daphne
Robinia pseudoacacia	False Acacia
* Salix spp.....	Willow Tree
Schefflera actinophylla	Umbrella Tree
* Toxicodendron succedaneum	Rhus Tree

Shrubs

Botanical Name	Common Name
Ageratina adenophora.....	Crofton Weed
Agave americana	Yucca Plant
* Baccharis halimifolia.....	Groundsel Bush
Canna indica.....	Canna Lily
Cestrum parqui.....	Green Cestrum
* Chrysanthemoides monilifera	Bitou Bush
* Cortaderia spp.....	Pampas Grass
Coreopsis lanceolata	Coreopsis
Cotoneaster spp.....	Cotoneaster
Coprosma repens.....	Mirror Plant
Cytisus scoparius	English Broom
* Genista spp.....	Broom
Hypericum perforatum var angustifolium.....	St John's wort

Botanical Name	Common Name
Impatiens spp	Impatiens
Lantana camara	Lantana
Lilium formosanum	Formosa Lily
Nerium oleander	Oleander
Ochna serrulata	Mickey Mouse Plant
Phyllostchys spp	Bamboo
Polygala myrtifolia	Myrtle-leaf Milkwort
Polygala virgata	Purple Broom
Pyracantha augustifolia	Firethorn
Ricinus communis	Castor Oil Plant
Senna pendula var glabrata	Cassia
Senna pendula	Cassia
* Ulex europaeus	Gorse
* Opuntia spp	Prickly Pear
Raphiolepis indica	India Hawthorn
Zantedeschia aethiopica	Arum Lily

Groundcovers/Climbers

Botanical Name	Common Name
Acetosa sagittata	Turkey Rubarb
Alocasia macrorrhiza	Elephant Ears
Anredera cordifolia	Madiera Vine
Araujia hortorum	Moth Vine
Bryophyllum delagoense	Mother of Millions
Cardiospermum grandiflorum	Balloon Vine
Crocasmia x crocosmiiflora	Montbretia
Delairea odorata	Cape Ivy
Gazania rigens	Gazania
Gloriosa superba	Glory Lily
Hedera helix	English Ivy
Hedychium gardnerianum	Wild Ginger/Ginger Lily
Hieracium spp	Hawkweed
Hydrocotyle ranunculoides	Pennywort
Ipomoea indica	Morning Glory
Jasminum polyanthum	White Jasmin
Lonicera japonica	Honeysuckle
Macfadyena urguis-cati	Cat's Claw Creeper
Myrsiphyllum asparagoides	Bridal Veil Creeper
Nephrolepis cordifolia	Fishbone Fern
Parietaria judaica	Pellitory/Sticky or Asthma Weed
Passiflora edulis	Passionfruit
Pennisetum alopecuroides	oxtail Grass
Persicaria capitata	Japanese Knotweed
Protasparagus plumosus	Climbing Asparagus
Protasparagus aethiopicus	Asparagus Fern
Pyrostegia venusta	Golden Shower
Ranunculus repens	Creeping Buttercup
Tecomaria capensis	Cape Honeysuckle
Thunbergia alata	Black-eyed Susan
Tradescantia fluminensis	Wandering Jew
Tropaeolum majus	Nasturtium
Vinca major	Blue Periwinkle
Watsonia bulbifera	Bugle Lily

Palms

Botanical Name	Common Name
Phoenix canariensis	Canary Island Date Palm
Syagrus romanzoffianam	Cocos Palm

Aquatics

Botanical Name	Common Name
* Alternanthera philoxeroides	Alligator Weed
* Cabomba caroliniana	Cabomba
Elodea canadensis	Canadian Pondweed
* Eichornia crassipes	Water Hyacinth
* Equisetum spp.....	Horsetail
Ludwigia peruviana.....	Ludwigia
Myriophyllum aquaticum.....	Parrots Feather
* Pistia stratiodes	Water Lettuce
* Salvinia molesta.....	Salvinia

Planting of these species will have significant impacts on our environment, avoid the use of these species in the landscape.

- * Declared Noxious Weeds under the Noxious Weeds Act 1993. Contact the Illawarra Noxious Weed Authority for further information.

Appendix 2

Kiama: Indigenous Plants Suitable for Use particularly in regeneration or enhancement of remnant bushland

SMALLISH TREES			<i>Suitable for Habitat</i>						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Acacia binervata</i>	Two-Veined Hickory	small, regen	•		•				
<i>Acacia maideni</i>	Maidens Wattle	small-medium, regen	•		•				
<i>Acacia melanoxylon</i>	Blackwood	small-medium, regen	•		•				
<i>Acmena smithii</i>	Lilly Pilly	stays small in harsh and coastal sites	•				•		
<i>Alectryon subcinereus</i>	Native Quince	small, general use			•	•			
<i>Allocasuarina littoralis</i>	Black She-Oak	tall shrub-small tree, dry sandy				•			
<i>Allocasuarina verticillata</i>	Drooping She-Oak	small, hardy, coastal		•					
<i>Archontophoenix cunninghamiana</i>	Bangalow Palm	slender palm to 15m	•						
<i>Austromyrtus acmenoides</i>	Scrub Ironwood	small, general landscaping	•						
<i>Backhousia myrtifolia</i>	Grey Myrtle	small, hardy, attractive				•			
<i>Banksia integrifolia</i>	Coast Banksia	tall shrub-small tree, coastal, dry sites				•		•	
<i>Banksia serrata</i>	Old Man Banksia	tall shrub-small tree, dry sites				•		•	
<i>Callistemon salignus</i>	Pink Tips	small paperbark, poorly drained sites	•		•				
<i>Canthium coprosmoides</i>	Coast Canthium	small, coastal	•			•			
<i>Cassine australis</i>	Red-Fruited Olive-Plum	small, most sites including coastal	•			•			
<i>Clerodendrum tomentosum</i>	Native Clerodendrum	small, hardy, all soils,	•			•			
<i>Croton verreauxii</i>	Green Carscarilla	shrub-small tree, coloured leaves	•						
<i>Diospyros australis</i>	Black Plum	small, sheltered sites	•	•					
<i>Duboisia myoporoides</i>	Corkwood	small-medium, coast on sand, littoral RF	•			•			
<i>Ehretia acuminata</i>	Koda	small-medium, deciduous	•						
<i>Eupomatia laurina</i>	Bolwarra	tall shrub-small tree, moist sites	•			•			
<i>Exocarpos cupressiformis</i>	Brush Cherry	small, drier, poorer sites			•				
<i>Ficus coronata</i>	Sandpaper Fig	small, riparian, edible fruit					•		

SMALLISH TREES			<i>Suitable for Habitat</i>						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Geijera salicifolia</i>	Brush Wilga	small, dry RF regen	•						
<i>Hedycarya angustifolia</i>	Native Mulberry	shrub-small tree, RF, trial general use		•					
<i>Livistona australis</i>	Cabbage Palm	palm, slow growing, widespread use	•	•	•				
<i>Melaleuca armillaris</i>	Bracelet Honey Myrtle	tall shrub-small tree, shallow latite, dry						•	
<i>Melaleuca stypheloides</i>	Prickly Melaleuca	tall shrub-small tree, widely used					•		
<i>Melicope micrococca</i>	White Euodia	tall shrub-small tree, RF regen.	•						
<i>Myoporum acuminatum</i>	Boobialla	hardy, breaks in high wind	•			•			
<i>Notolaea venosa</i>	Native Olive	hardy, dry, coast, RF	•	•	•	•			
<i>Omalanthus populifolius</i>	Bleeding Heart	small, widely used, coloured leaves	•						
<i>Pararchicodendrum pruinosum</i>	Snow Wood	small-medium., foliage, flowers, pods	•			•			
<i>Planchonella australis</i>	Black Apple	small RF, edible 'apple'	•						
<i>Polyosma cunninghamii</i>	Featherwood	small, RF		•					
<i>Polyscias elegans</i>	Celery-Wood	palm-like, ht in confined space	•			•			
<i>Polyscias murrayi</i>	Pencil Cedar	palm-like, ht in confined space	•		•				
<i>Rapanea howittiana</i>	Muttonwood	small RF, fruit, gardens		•		•			
<i>Rapanea variabilis</i>	Muttonwood	small RF, gardens	•			•			
<i>Rhodamnia rubescens</i>	Brown Malletwood	small RF gardens	•						
<i>Stenocarpus salignus</i>	Scrub Beefwood	small, RF regen., farm forestry	•						
<i>Streblus brunonianus</i>	Whalebone	shapely, hardy, wind-prunes, urban	•			•			
<i>Synoum glandulosum</i>	Bastard Rosewood	better soils, RF regen		•					

MEDIUM TALL TREES			Suitable for Habitat						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>							
<i>Acmena smithii</i>	Lilly Pilly	medium-tall, edible berries	•	•	•	•			
<i>Acronychia oblongifolia</i>	White Lilly Pilly	medium , edible fruit	•			•			
<i>Alphitonia excelsa</i>	Red Ash	medium , RF, regen, street	•						
<i>Angophora floribunda</i>	Rough-Barked Angophora	tall, dry sites			•	•			
<i>Brachychiton acerifolius</i>	Illawarra Flame	medium, most sites, colour	•	•					
<i>Casuarina cunninghamiana</i>	River Oak	tall, riparian					•		
<i>Casuarina glauca</i>	Swamp Oak	medium, regen,, coast, not near building				•			
<i>Ceratopetalum apetalum</i>	Coachwood	tall, sandy soils higher areas		•					
<i>Cinnamomum oliveri</i>	Camphorwood	tall, relative of Camphor Laurel		•					
<i>Cryptocarya glaucescens</i>	Native Laurel	tall, RF regen.	•	•					
<i>Cryptocarya microneura</i>	Murrogun	tall, RF regen.	•	•					
<i>Doryphora sassafras</i>	Sassafras	medium-tall, moist, shady sites	•	•					
<i>Elaeocarpus kirtoni</i>	Pigeonberry Ash	tall, RF regen., esp. riparian		•			•		
<i>Eucalyptus botryoides</i>	Bangalay	tall, coastal, sandy				•			
<i>Eucalyptus eugenioides</i>	Stringybark	tall, drier regen			•				
<i>Eucalyptus fastigata</i>	Brown Barrel	tall, upper scarp, farm forestry			•				
<i>Eucalyptus paniculata</i>	Grey Ironbark	tall, sandy, volcanic soils			•				
<i>Eucalyptus pilularis</i>	Blackbutt	tall, farm forestry			•	•			
<i>Eucalyptus quadrangulata</i>	Coast White Box	tall, lower escarpment			•				
<i>Eucalyptus smithii</i>	Gully Peppermint	tall, escarpment, farm forestry			•				
<i>Eucalyptus tereticornis</i>	Forest Red Gum	tall, drier latite, farm forestry			•				
<i>Euroschinus falcata</i>	Blush Cudgerie	medium-tall, coastal RF	•			•			
<i>Ficus macrophylla</i>	Moreton Bay Fig	extra tall, for Flying Fox		•			•		
<i>Ficus obliqua</i>	Small-Leaved Fig	extra tall, for Flying Fox		•			•		

MEDIUM TALL TREES			Suitable for Habitat						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Ficus superba var. henneana</i> "	extra tall, for Flying Fox Deciduous Fig		•			•			
<i>Glochidion ferdinandi</i>	Cheese Tree	medium, streetscape, general	•		•	•			
<i>Guioa semiglauca</i>		medium RF regen., coast on sand	•			•			
<i>Litsea reticulata</i>	Bolly Gum	medium-tall, RF regen.		•			•		
<i>Melia azederach</i>	White Cedar	tall, grub prone, but attracts birds æ	•	•			•		
<i>Podocarpus elatus</i>	Plum Pine	tall, edible fruit		•		•	•		
<i>Sarcomelicope simplicifolia</i>	Yellow Wood	to 10m., lemon scented leaves	•	•		•			
<i>Scolopia braunii</i>	Flintwood	to medium tree , hardy, coastal extremes,	•			•			
<i>Schizomeria ovata</i>	Crab Apple	tall RF, edible fruit, shade		•					
<i>Syncarpia glomerulifera</i>	Turpentine Tree	tall, moist sites, farm forestry			•				
<i>Symplocos thwaitesii</i>	Buff Hazelwood	medium RF tree, floors, RF, shade	•	•					
<i>Syzygium australe</i>	Brush Cherry	tall, edible fruit, riparian					•		
<i>Toona ciliata</i>	Red Cedar	tall, deciduous, heritage, RF, moist		•			•		

SHRUBS			Suitable for Habitat						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>							
<i>Acacia sophorae</i>	Coast Wattle	semi-prostrate shrub, coastal				•			
<i>Alchornea ilicifolia</i>	Native Holly	tall shrub, general use, foliage	•			•			
<i>Allocasuarina littoralis</i>	Black She-Oak	tall shrub-small tree, dry sandy			•	•			
<i>Allocasuarina verticillata</i>	Drooping She-Oak	tall shrub-small tree							
<i>Commersonia fraseri</i>	Brown Kurrajong	ugly shrub, regen. only						•	
<i>Coprosma quadrifida</i>	Prickly Coprosma	prickly low bush, regen		•					
<i>Correa lawrenciana ssp. macrocalyx</i>		shrub, flowers			•				
<i>Dodonaea viscosa</i> Viscid	Hop Bush	shrub 1-3m., drier sites			•				
<i>Duboisia myoporoides</i>	Corkwood	coast on sand, littoral RF	•			•			
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	shrub, sandier soils			•	•			
<i>Eucalyptus apiculata</i>	Mallee Gum	tall shrub, multi-stemmed, small gardens			•				
<i>Eupomatia laurina</i>	Bolwarra	tall shrub-small tree, moist sites	•			•			
<i>Exocarpos cupressiformis</i>	Brush Cherry	shrub-small tree, drier, poorer sites	•		•				
<i>Goodia lotifolia</i>		to 3m, flrs, regen, gardens	•		•				
<i>Hakea dactyloides</i>		tall shrub, general purpose, poor sites			•				
<i>Hedycarya angustifolia</i>	Native Mulberry	shrub-small tree, RF, trial general use		•					
<i>Hibiscus heterophyllus</i>	Native Hibiscus	short-lived, RF regen., flowers	•		•	•			
<i>Hymenanthera dentata</i>	Tree Violet	tall shrub, trial general use	•	•	•				
<i>Indigofera australis</i>	Indigo Peabush	<1m, pink flowers, gardens			•	•			
<i>Leptospermum laevigatum</i>	Coast Tea Tree	tall shrub, widely used, hedges well				•			
<i>Leptospermum morrisoni</i>	Common Tea Tree	tall shrub, trial as street tree, gardens			•				
<i>Melaleuca armillaris</i>	Bracelet Honey Myrtle	shrub-small tree, shallow latite, dry						•	
<i>Myoporum boninense</i>		low shrub, headlands, coastal				•			
<i>Olearia argophylla</i>	Silver Bush	tall, RF margins, trial in gardens		•	•				
<i>Olearia viscidula</i>	Wallaby Weed	shrub to 2m	•		•				

SHRUBS			Suitable for Habitat						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Omalanthus stillingifolius</i>	Bleeding Heart	shrub, gardens public and private				•			
<i>Prostanthera incisa</i>	Cutleaf Mintbush	shrub, fragrance, flrs, shady gardens			•				
<i>Prostanthera lasianthos</i>	WhiteFlowered Mintbush	tall shrub, shade, flrs		•					
<i>Prostanthera linearis</i>	Linearleaf MintBush	shrub, sunny latite							•
<i>Rubus rosifolius</i>	Native Raspberry	suckering shrub, edible fruit, regen.	•	•	•	•	•	•	
<i>Solanum aviculare</i>	Kangaroo Apple	shrub, edible fruit, shade	•	•		•			
<i>Tasmannia insipida</i>	Pepper Bush	1-2m, peppery seeds, cooler, better soils		•					
<i>Telopea speciosissima</i>	Waratah	native Budderoo on good soils			•				
<i>Trema aspera</i>	Poison Peach Bush	nondescript, regen. only	•		•				
<i>Westringia fruticosa</i>	Coastal Rosemary	dense, salt hardy shrub 1-2m				•			
<i>Wilkiea huegelliana</i>	Veiny Wilkiea	prickly shrub, RF including Littoral, regen.	•						
<i>Westringia fruticosa</i>	Coastal rosemary	dense, salt hardy shrub 1-2mtrs				•			
<i>Zieria granulata</i>	Kiama Zieria	tall shrub, shallow latite, eg headlands						•	
<i>Zieria smithii</i>	Sandfly Zieria	shrub, flrs, stinky aromatic, gardens	•		•				

GROUND COVERS/ GRASSY SWARD			Suitable for Habitat						
			Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>							
<i>Aneleima acuminatum</i>		herb, spreading, moist		•				•	
<i>Canavalia rosea</i>	Coastal Jack Bean	vine, hardy, coastal				•			
<i>Centella asiatica</i>	Arthritis Weed	grassy sward, grassed areas, coastal							•
<i>Cissus antarctica</i>	Native Grape Vine	vine, groundcover	•		•	•			
<i>Dichondra repens</i>	Kidney Weed	grassy sward, shady grass areas							•
<i>Doodia aspera</i>	Rasp Fern	fern, hardy groundcover	•	•				•	
<i>Hardenbergia violacea</i>	False Sarsparilla	vine, hardy groundcover eg headlands							•
<i>Hibbertia dentata</i>		vine, ground cover							•
<i>Hibbertia scandens</i>	Golden Guinea Flower	vine, ground cover							•
<i>Hydrocotyle spp.</i>	Pennywort	grassy sward, shaded grass areas							•
<i>Kennedia rubicunda</i>	Running Postman	hardy vine, groundcover, exposed sites							•
<i>Oplismenus aemulus</i>	Mat Grass	grassy sward							•
<i>Oplismenus imbecillis</i>	Mat Grass	grassy sward							•
<i>Pollia crispata</i>	Pollia	groundcover, moist sites						•	
<i>Scaevola calendulacea</i>	Dune Fan Flower	groundcover, blue flrs				•			
<i>Smilax glycyphylla</i>	Sarsparilla	vine, bush 'cure', dry exposed	•		•	•			
<i>Sporobolus virginicus var. minor</i>	Marine Couch	grass, ground cover, salty, coastal				•			
<i>Stellaria flaccida</i>	Swamp Starwort	groundcover, very moist only						•	
<i>Suaeda australis</i>	Seablite	groundcover, salt tolerant							
		edible, sandy				•			
<i>Tetragona tetragonoides</i>	New Zealand Spinach	groundcover, edible, coastal				•			
<i>Themeda australis</i>	Kangaroo Grass	groundcover grass, hardy, coastal, regen,							•
<i>Viola hederacea</i>	Native Violet	groundcover, flrs, shaded sward						•	

PLANTS WHICH FORM CLUMPS			Suitable for Habitat						
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal	Riparian	Open grassy	Aquatic
<i>Bracteantha bracteata</i>	Golden Everlasting	annual herb, gardens, 6						•	
<i>Alocasia macrorrhizos</i>	Cunjevoi Lily	lily, riparian, shady,					•		
<i>Crinum pedunculatum</i>	Native Crinum Lily	lily, form, flowers-used at Olympic site, 4a				•			
<i>Cymbopogon refractus</i>	Barbed Wire Grass	grass, coastal, shallow soils, 6						•	
<i>Dianella spp.</i>	Flax Lily	ground cover/ coastal, general, 1,3,4	•		•	•			
<i>Eustrephus latifolius</i>	Wombat Berry	vine, bush tucker, decorative, 1,3,4	•		•	•			
<i>Gahnia aspera</i>	Small Saw Sedge	sedge, open forest regen, 3			•				
<i>Gymnostachys anceps</i>	Settlers' Flax	sedge, trial landscape use, shape, 1,2	•	•					
<i>Helichrysum elatum</i>	White Everlasting	perennial herb, flower gardens, 3			•				
<i>Lepidosperma laterale</i>		small sedge <1m, 3			•				
<i>Lepyrodia gracilis</i>		weeping sedge, trial watergardens, 3			•				
<i>Lomandra longifolia</i>	Mat Rush	Sedge, widely used, very hardy, 3,4			•	•			
<i>Plectranthus graveolens</i>	Cockspur Flower	herb on latite, 6						•	
<i>Plectranthus parviflorus</i>	Cockspur Flower	widespread herb, 1, 3	•		•				
<i>Poa labillardieri a</i>	Snowgrass	clumps to 1m. ht , 3			•				
<i>Pteris tremula</i>	Tender Brake	fern, clumps ,shady sites, 2,5		•			•		

FERNS									
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
Those listed below are amongst the hardiest and worth trialing.									
Tree Ferns grow readily from spore.									
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>							
<i>Adiantum aethiopicum</i>	Maidenhair Fern	ground cover, seepage areas					•		
<i>Adiantum formosum</i>	Giant Maidenhair	ground cover, moist shade					•		
<i>Adiantum hispidulum</i>	Rough Maidenhair	ground cover, moist shade					•		
<i>Asplenium australasicum</i>	Bird's Nest Fern	ground cover, grow from spore		•					
<i>Cyathea cooperi</i>	Tree Fern	slender upright to 3m, semi shade	•	•					
<i>Dicksonia antarctica</i>	Soft Tree Fern	stout trunk to 2m, full shade	•	•					
<i>Doodia aspera</i>	Rasp Fern	ground fern, groundcover	•	•			•		
<i>Pellaea falcata</i>	Sickle Fern	substitute for Fishbone Fern	•	•		•	•		
<i>Platyserum bifurcatum</i>	Elkhorn Fern	grow from spore		•					
<i>Pteris tremula</i>	Tender Brake	fern, clumps, shady sites		•			•		

WATER PLANTS									
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>	Dry Rainforest	Moist Rainforest	Open Forest	Coastal a	Riparian	Open grassy	Aquatic
<i>Species</i>	<i>Common Name</i>	<i>Form/Features/Suitable For:</i>							
<i>Alisma plantago-aquatica</i>	Water Plantain	<1m perennial, rooted in mud dams							
<i>Cyperus exaltatus</i>		Perennial to 2m, rooted in mud, dams							
<i>Elatostema eticulatum</i>	Waterfall Spinach	Herb, on streambanks, water gardens							•
<i>Eleocharis sphacelata</i>	Tall Spikerush	Tall rush, spreads in still water							•
<i>Isachne globosa</i>	Swamp Millet	Groundcover grass, seed, boggy areas							•
<i>Juncus usitatus</i>		Sedge to 1m, water's edge, damp places							•
<i>Ludwigia peploides</i>	Water Primrose	Floating, flrs, still pools							•
<i>Ottelia ovalifolia</i>	Swamp Lily	Floating, flrs, still pools							•
<i>Paspalum distichum</i>	Water Paspalum	low grass, spreads, edge of still water							•
<i>Persicaria decipiens</i>	Slender Knotweed	Herb, spreading, shallow water, dams							•
<i>Persicaria strigosa</i>	Spotted Knotweed	Herb, spreading, shallow water, dams							•
<i>Phragmites australis</i>	Common Reed	1-2m, spreading, waterbird habitat							•