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ENVIRONMENT MANAGEMENT PLAN MORETON WATERS ESTATE

A Subdivision at Wellington Road and Beckwith Street Ormiston

for Submission to The Manager,
Planning and Environmental Services
Redland Shire Council,
(file number **SB414601**)

*Not approved
VMP needs amendments
& changes*

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File number:	9906040-1
Issue number:	Draft B
Date of issue:	31 August 1999

*→ Figure 2
→ engineering drawings*

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1.0 INTRODUCTION

This Environment Management Plan (EMP) has been formulated in fulfilment of Conditions 18 to 25 inclusive of the Subdivision Approval granted by Redland Shire Council for the development of a residential community at Wellington Road and Beckwith Street, Ormiston, as shown in the Plan of Layout #4674-19-C prepared by T H Jensen and Bowers Pty Ltd, dated 3 September 1999.

The subject site comprises a total area of 4.628 hectares, with an RPD of Part of Lots 1 and 2 on RP1710, Parish of Cleveland, County of Stanley. The proposed development is to be known as 'Moreton Waters', and will be referred to thus below.

Anembo Consultants Pty Ltd have been commissioned to coordinate the preparation of the EMP on behalf of Petrac Property Ventures, the developers of the Estate. The detailed engineering design and survey information are provided by the Jensen Bowers Group, under separate cover.

1.1 SITE DESCRIPTION

The subject land is located to the South-east of the corner of Wellington Road and Beckwith Street at Ormiston, with a frontage to Moreton Bay (Raby Bay) at the Eastern boundary. Developed residential land lies to the North, West and South of the subject site.

The land rises gently from 16.5 metres AHD at Wellington Street to a high point at 20 metres AHD approximately 60 metres to the East, and then falls to the East over the balance of the site, to 8 metres AHD at the Eastern boundary with the proposed park, a distance of approximately 300 metres, or an average slope of 1 in 25 or 4%. Within the park, the land then falls gently to a level of 7.5m AHD at the top of a bank, thence slopes down to the intertidal zone at slopes of approximately 1 in 3. Drainage is generally by sheet flow from the site into the Bay, but a small number of erosion gullies have been formed where stormwater has been locally concentrated.

The site has largely been cleared for agricultural purposes, with small crops and horse agistment being the current land uses. The effect of these on the quality of stormwater runoff from the site will be discussed below.

1.2 PROPOSED DEVELOPMENT

The site is to be developed into a residential subdivision containing a total of 58 lots, varying from 450 to 885 square metres. A small park containing a large fig tree is proposed in the South-western corner of the site, on the Wellington Road frontage, and a bayside park of approximately 7522 square metres is proposed for the Eastern boundary with Moreton Bay (Raby Bay).

Proposed construction is for new roads to access residential lots, and the usual range of underground services, including stormwater and sewer. Stormwater is proposed to be discharged to the Bay, via a piped system and overland flow, with the 'first flush' water being diverted to an underground separation chamber within the road reserve.

1.3 EMP ISSUES AND METHODOLOGY

This EMP should be read in conjunction with the relevant plans and specifications for the Civil Engineering Works, documented by the Jensen Bowers Group (Plans E4674/1/01-1/04 and E4674/2/01 - 2/40), and the accompanying Landscape Works plans and specifications, documented by Anembo Consultants Pty Ltd (Plans 9906040-1/SK.1 and 9907044-1/WD.1).

The Redland Shire Council Development Approval Conditions 18 to 25 are attached hereto as **Appendix A**. These conditions relate in detail to the two major issues covered by this EMP, being the Management of Vegetation retention and protection, and of Stormwater Quality. In addition to these issues are those of Wildlife Impacts, and the Management of Waste generated during the implementation of the development.

The EMP describes the objectives of each section firstly in terms of design mitigation for each issue, secondly in terms of the controls documented for the construction phase of the development, and lastly the management tasks for the settlement and long term maintenance of the development.

2.0 ECOLOGICAL OVERVIEW

2.1 EXISTING SITE VEGETATION

A previous assessment of the site vegetation by Anembo Consultants has found that, although the majority was cleared for agricultural purposes, some remnant trees had been retained. These were divided into two major groups, each of which was found to have different environmental and visual amenity values:

The Wellington Street Frontage The first group is that dominated by the mature weeping fig (*Ficus benjamina*) and row of hoop pines (*Araucaria cunninghamii*) near the alignment along the Wellington Road frontage. This group is of very high significance for the Wellington Road streetscape, which is otherwise dominated by Poincianas (three of which also occur on the road reserve). The height of the hoop pines and massive spread of the weeping fig make this frontage one of the most notable within a notable street.

It was recommended that, to maintain the habitat resource for these trees, no development occur within the 'drip line' on the subject property, and this has now been confirmed as Condition. The plan of development has addressed this requirement (see Figure 2 below), and provided for a portion of park to be created around the weeping fig, which is regarded as a significant tree with the Shire. ??

It was also recommended that some overland flow of stormwater be directed towards the roots of the fig tree from the internal road, and that has also been included in the design. The intent was that the soil around the tree would not be compacted by construction activity, and the rootzone hydrology not be unduly impacted by loss of groundwater re-charge.

The Foreshore Forest An area of Tall Open Forest, dominated by *Eucalyptus tereticornis* and *E crebra*, was found for a width of 80 metres in the Northeast to 45 metres in the Southeast of the subject site. This portion of the land is similar to other nearby developed residential parcels, where a strip of Open Space has been dedicated along the foreshore.

The plan of development has now been modified to delete the previously proposed extension of Counihan Street entering the site from the South, and all but one of the existing trees will now be protected and retained. These trees are all in good condition, are koala food species, and this section of the foreshore provides a positive link in a generally recognised corridor for wildlife movement.

The proposed direction of some stormwater to the area covered by these trees is expected to assist in re-charging groundwater which would otherwise have been lost directly to Raby Bay.

2.2 EXISTING FAUNA

It is clear from an examination of scratches and scats, as well as direct observations of fauna, that the subject site provides a regular resource for koalas. Although the site is not regarded as of sufficient size to be core habitat, its values for corridor and refuge are obvious. It may also be visited by other arboreal species including possums and gliders, at different times of the year.

The main management issues for protection of wildlife in this regard are to provide physical safeguards during the construction process, and to protect and enhance the quality and persistence of the relevant tree species. Each of these is addressed within the Vegetation Management Plan below.

It is now concluded that the development layout is consistent with the provisions and intent of SPP 1/95, and with the conservation intent of the RSC Special Protection Areas in the Strategic Plan.

The above does not necessarily exclude impacts on other fauna species which may utilise the site from time to time, but the general conclusions about habitat and vegetation retention will also apply to these species. It is accepted that the loss of introduced grassland may have a low impact on the resource for granivorous birds, but the mobility of these species is such that they can search for alternative sites, and their current tenure is not assured in the face of the existing agricultural activities.

3.0 STORMWATER QUALITY MANAGEMENT PLAN

3.1 INTRODUCTION

This stormwater Quality Management Plan (SQMP) has been prepared as part of the Environmental Management Plan for the total development as required to satisfy Condition 23 of the Rezoning Approval issued by the Redland Shire Council.

The SQMP is required to provide the following information in achieving the catchment based stormwater quality goals as identified in the draft Redland Shire Stormwater Management Study, 1998 (in preparation).

- A statement of objectives, description of proposed strategies, potential impacts, actions/controls, maintenance, monitoring, performance indicators, reporting and corrective actions;
- Schedules and timing, including any staging program;
- Identification of possible sources of water pollution or other changes in water quality to the natural drainage system, including soil erosion, siltation and likely chemical composition of leachate from the site and/or introduced fill on the site;
- Runoff detention and sediment interception devices or measures to reduce flow velocities and to prevent topsoil, fill or other sediment entering the watercourses and drainage lines;

Specific detailing of the proposed surface stormwater mitigation measures will be contained in the civil engineering documentation submitted for Operational Works Approval.

With the change of the agricultural land use to an urban development, several impacts to the existing stormwater runoff quality and quantity arise. These are discussed below under the following headings:

- The receiving environment
- The existing site characteristics
- The proposed site drainage layout
- Stormwater quality criteria
- Stormwater management Best Management Practices (BMP's)
- Stormwater Quality Management Plan.

3.2 RECEIVING ENVIRONMENT

Stormwater runoff from the proposed development is received by Moreton Bay (Raby Bay) either directly or via an existing open drain in the Beckwith Street road reserve along the northern boundary of the subject site.

Previous discussions have been held with representatives of the Manager, Planning and Environmental Services regarding the EMP (Ms Darcelle Hegarty, Mr Peter Johnston, Mr Angelo D'Costa, and Mr Dulip Dias). The Redland Shire Council officers have advised that the Redland Shire Stormwater Management Study 1998 (in preparation) was not complete and as such would not be used as the basis for determining the stormwater quality goals.

However, the Queensland Environment Protection Policy (Water) states that water exiting a development site shall not be of less quality than that exiting the site prior to the development.

3.3 EXISTING SITE CHARACTERISTICS

The current mix of agricultural land uses for the site indicates that stormwater run-off will commonly contain various pollutants from time to time, depending on current activities, although no specific amounts have been measured. Small crop farming to produce vegetables generally consumes herbicides, pesticides and fertilisers, all of which may have a residual component that becomes dissolved in surface and groundwaters.

The majority of the site drains directly into Moreton Bay, and these chemicals may thus be being washed into the mangroves to the East of the site. In addition, it is expected that enteric bacteria will be washed off the horse agistment area on the lower part of the site.

The stormwater from the approximately 20% of the site that drains to the West will flow overland to Wellington Road, whence it will enter the piped system and join other run-off from nearby residential areas. Discharge is ultimately to the Hilliards Creek corridor. Similar pollutants to those listed above may occur in these waters.

3.4 PROPOSED SITE DRAINAGE LAYOUT

The proposed development of the subject site does not significantly alter the existing catchment areas or major drainage paths. However, the rate and quantity of run-off from the proposed new land use will result in higher peak flows since approximately 40% of the developed area will be relatively impervious.

Whilst the western catchment will discharge water to the existing piped system, some of this will be directed to re-charge groundwater in the figtree park. In addition, it is suggested herein that roof water from dwellings on Lots 1 and 21 be directed to the ground around the retained trees on the Wellington Road alignment, as part of the strategy to retain and protect these significant trees as per Condition 19 (see **drawing 9906040-1/SK.1 prepared by Anembo Consultants**)).

For the Eastern catchment, it is proposed to minimise the physical impact on the existing stormwater drainage system by designing the site layout to incorporate internal drainage, concentrating the flow to an underground concrete separation chamber at the end of the new road 1, as indicated on the engineering drawings.

Within this separation chamber, the pollutants within the 'first flush' will be separated, with the lighter hydrocarbons being directed to an upper chamber, and the heavier suspended particles entering a lower chamber, with the 'clean water' exiting from a middle chamber. The 'first flush' water from urban catchments typically contains high concentrations of pollutants, washed from the catchment in the first stages of a storm event, particularly after a period of dry weather. The purpose of this separation chamber is to remove these pollutants, which can in turn be removed from the chamber on a regular basis using specialised pumping machinery.

Beyond the 'first flush' storm, and up to the Q_2 storm which must be piped, it is intended that a second, parallel pipe will discharge stormwater to a roadside swale drain. From here, approximately 80 metres of overland flow will occur through a grassed swale on the northern side of Beckwith Street, before discharging into the mangrove zone. Beyond the Q_2 , larger events will also be taken overland.

3.5 STORMWATER QUALITY CRITERIA - BEST MANAGEMENT PRACTICES

It is generally necessary to demonstrate that downstream properties are not adversely affected by the discharge of stormwater from any proposed development. In this case, discharge of stormwater through the overland swale and park, should ensure that no increase in post-development erosion should occur, and no increase in the Q_{100} flood level occurs where it has the potential to cause real damage.

In the absence of any site specific water quality guidelines, stormwater best management practices shall be incorporated into the site's stormwater drainage system. The determination of the appropriate Best Management Practices (BMP's) is dependent on the site constraints and defined water quality objectives. The Queensland Department of Natural Resources, (1998) has provided a checklist of potential BMP's, from which an appropriate selection has been made for this project, and these are summarised in **Table 1**.

TABLE 1 Checklist of Appropriate Stormwater Management Practices and their Application to this Proposal

Management Practice	Structural	Non-structural	Applicable to Existing	Applicable to Proposed	Included in Proposal
Provide Educational Material		X		X	X
Use Planning Controls - land capability		X		X	X
Use water-sensitive urban design		X		X	X
Control sewer overflows		X	X		X
undertake erosion and sediment control construction activities	X		X	X	X
install buffer strips	X			X	X
install grassed swales	X			X	X
use planning controls - delineate floodplains	X			X	X
build grass swales for stream control	X			X	X
preserve existing habitats		X	X	X	X
use planning controls - delineate riparian buffers		X		X	X
reconstruct habitats	X			X	X
preserve existing vegetation		X		X	X
undertake replanting		X		X	X
provide structural protection measures against erosion	X			X	X
install energy dissipators	X			X	X
undertake riparian vegetation planting		X		X	X
undertake water quality management	X			X	X
plant indigenous vegetation against weed growth		X		X	X

3.6 STORMWATER QUALITY MANAGEMENT PLAN

Based on the site characteristics discussed above, the stormwater quality criteria and objectives and the BMP's, separate recommendations have been developed for the Design, Construction and Settlement phases of the project.

3.6.1 Design Phase

In the design of the works consideration has been given to incorporation of BMP's identified above, with the objective of maximising the quality of stormwater runoff. the components of the design solution are:

- **Installation of Underground Separation Chamber**

As discussed above, an underground separation chamber will be installed for on-site treatment of the first-flush stormwater, to remove hydrocarbons and suspended solids.

- **Roofwater discharge to park**

Roofwater from the lots immediately adjacent to the bayside park will be discharged directly to the park, in order to assist in the re-charge of the groundwater around the existing trees. The area into which this water will discharge is to be rehabilitated by mulching and planting with locally occurring indigenous species (see also drawing 9907044-1/WD.1).

- **Grass Swales**

Where stormwater pipes discharge to overland flow paths, grassed swales will be installed. In high flow areas, or areas which are subject to significant erosion, the swales shall be turfed.

The grass swales will have the effect of facilitating infiltration, reducing flow velocities and removing some pollutants from stormwater runoff. The main affects of this reduction of velocity will be the reduction of erosion, and deposition of the sediment suspended within stormwater runoff.

- **Buffer Strips**

As discussed above, all stormwater runoff will discharge across an existing grassed buffer strip or designated, grassed park area prior to entering the receiving waters.

Where this discharge is from underground stormwater pipes the discharge will be dispersed as much as possible to simulate the natural stormwater runoff flow regime. The buffer area's capacity to absorb pollutant loadings will be enhanced by the planting of riparian species along water course inverts and at selected areas immediately downstream of discharge points.

As with the grassed swales the buffer strips have the effect of facilitating infiltration reducing velocities and removing pollutants from stormwater runoff.

- **Stormwater Runoff Quantity**

As discussed above, a no adverse effects criterion applies to the impact of the increase in the quantity of stormwater generated by the proposed development. The site is separated into an Eastern catchment and a western catchment.

The eastern catchment is bounded to its east by Hilliard's Creek and stormwater runoff is to be collected by a combination of underground and overland drainage systems (into the fig tree park), discharged ultimately into Hilliard's Creek.

The peak quantity of stormwater runoff discharging from the developed area will be reduced somewhat by the use of the overland flow path. In addition, because of the small size of the contributing catchment, 1.0 ha approx, with respect to the Hilliard's Creek catchment, the increase may be considered negligible.

The stormwater runoff from the western catchment, of approximately 3.6 ha, flows directly into the bayside park and Raby Bay, and thus does not impact on any downstream waterway.

• Construction Phase

The achievement of the required stormwater quality objectives during the construction phase will be by the use of BMP's that control erosion and sediment.

Construction activities associated with the subdivision work results in the removal of vegetation and the excavation and placement of on site earthwork material. This disturbance to the existing topography results in a greatly increased risk of mobilisation of sediment and the potential consequential increase in sediment loads and pollutant laden runoff. As part of the Stormwater Quality Management Plan a Sediment and Erosion Control plan is provided (see drawing no. E.4674/2/28), whose principles are as follows:

Minimum Disturbance Worked areas will be kept to a minimum and will be controlled by appropriate sediment and erosion control BMP's.

Drainage Control The management of the site drainage has been dealt with in the Design Phase section of this report. Its main applicability to sediment and erosion control is in the sizing of sediment and erosion control measures, both permanent and temporary, especially where the control measures lie within designated flow paths.

Erosion Control Erosion control measures are an effective means of sediment control, while drainage control is the most effective means of erosion control. (The Institution of Engineers, Australia, 1996). It is generally more cost-effective and more desirable to prevent erosion than to trap sediments transported from eroding areas. This erosion control is best achieved (other than by drainage control measures) by:-

- Preserving existing ground cover
- Protecting exposed soils by:-
 - Surface roughening
 - Revegetating disturbed areas
- Wind and dust control

These measures are specified in detail in the engineering documents.

Sediment Control The determination of the type of sediment control measures are dependent on the soil type and the application. Typical sediment control measures include:-

- restricting site access points
- sediment traps and barriers (cause ponding resulting in the settlement of particles)
- sediment fences (filter sediment laden water and also ponding upstream of fence results in settlement of coarse particles - need maintaining regularly.)
- sediment basin (generally the last control measure in the treatment 'train'. Their design needs to consider location, sizing and implications of failure).

Revegetation As discussed in Erosion Control above, vegetation protection and revegetation is the most effective means of erosion, and accordingly sediment, control.

The design of the revegetation program will consider the following:-

- Local conditions; climate, soil, topography
- Plant species to suit the local conditions
- Soil preparation

Field Implementation Field implementation is essential to ensure the sediment and erosion control measures specified in the above five points are implemented, maintained and monitored. This field implementation will ensure that the objectives of the control plan are met.

- **Operational Phase**

The completion of the construction phase will require all the disturbed area to be fully revegetated, thus practically eliminating the risk of mobilised sediment caused by on-site erosion.

The completion of the construction phase will also signal the transfer of responsibility for the maintenance of the major water quality control measures being grass swales, buffer strips and the like within parks and drainage reserve areas to the Redland Shire Council. Recommended maintenance procedures will be provided to the Redland Shire Council at the time of transfer of the maintenance responsibility.

Educational material emphasising good water quality management practices will distributed to all lot owners and occupants within the estate.

4.0 VEGETATION MANAGEMENT

The following VMP is to be incorporated into the civil engineering specification for implementation of the development works.

4.1 SPECIAL CONDITIONS OF CONTRACT (Specification form)

An application was made to the Redland Shire Council to interfere with and remove protected vegetation during the necessary construction works required to carry out the approved residential development, all in accordance with the conditions of approval for the Engineering Works documented by the Jensen Bowers Group (plans E4674/1/01-04 and E4674/2/01-40), and the Landscape Works plans and specifications, documented by Anembo Consultants Pty Ltd (9906040-1/SK.1 and 9907044-1/WD.1).

The Contractor's representative (hereafter the Project Manager) warrants that he has visited and inspected the site, and inspected and understood the conditions of Subdivision and Engineering Approval, and that the intended works will not accidentally or otherwise breach those Conditions.

The Project Manager or his nominee shall provide direct Supervision of all works and shall liaise with Redlands Shire Council officers in the implementation of the Works and their Monitoring and Review. It shall be the responsibility of the Works Supervisor or Foreperson as a delegate of the Project Manager to ensure that all Works personnel including Plant Operators and Sub-contractors are familiar with the VMP and the Special Conditions of Contract herein.

The Project Manager shall apply the specifications and procedures under this VMP to all Works carried out on the site, whether related directly or not to the clearing or retention of vegetation on the site. For example, the procedures to eliminate accidental damage to vegetation should be carried out during excavation for services installation.

Access to the site during construction shall be restricted to authorised personnel, vehicles and equipment, and no access shall be allowed to protected areas without the express permission of the Superintendent.

Site Sheds and Worker Amenities shall be positioned on site according to the direction of the Superintendent, following the pre-start meeting. All incidental rubbish shall be deposited in bins provided for this purpose, and shall be emptied weekly and the rubbish removed from the site. This VMP shall be read in conjunction with other relevant Redland Shire Council Development Guidelines.

4.2 PROJECT MONITORING AND REVIEW

The program for monitoring and review of the civil engineering and landscape construction and any other works required for the approved development shall be agreed between the Project Manager and the Redlands Shire Project Officer, and a copy shall be kept on site by the Project Manager at all times, along with a set of the approved drawings that have been issued 'for construction'.

The person responsible for contract administration on behalf of the Applicant will be the Superintendent, who will represent the Applicant at all on-site and other meetings, and who will convey any necessary instructions to the Project Manager. Redlands Shire Council will nominate a Project Officer who will represent the Council at on-site and other review meetings. The officer will be familiar with both the project and the conditions of approval, and with the VMP document. The officer will also be familiar with the project time-frame

and will be reasonably available for consultation when required. Inspection intervals shall be agreed at a meeting on site prior to commencement of works.

If accidental damage occurs to vegetation, this should be reported immediately to the Superintendent, who will carry out an inspection and provide instructions to proceed with any necessary remedial work.

4.3 PLAN OF LAYOUT

The plan of the areas designated for the different activities associated with site works are divided between the engineer's drawings and the landscape architect's. The engineers (Jensen and Bowers) have located erosion control measures such as protective silt fences. They have also stipulated that the only necessary clearing of vegetation for this site are at the points of cut and fill, and of course the creation of the new drainage easements. Refer to drawings E4674/1/03 and E4674 /2/28). } clear

The landscape management plan (Anembo Consultants Pty. Ltd. plan 9907044-1/WD.1) shows protected areas such as the proposed park. } ✓

These plans of layout and specification shall be read in conjunction with other civil engineering drawings and specifications issued for this project, such as the sediment and erosion control plan. Any discrepancy between these plans and other relevant drawings or specifications shall be brought to the notice of and resolved by the Superintendent before commencement or continuation of works.

4.4 RETENTION AND PROTECTION OF EXISTING VEGETATION

The limit of clearing shall be as shown on the Engineering Plans . The Project Manager shall be responsible for the set-out in accordance with the limit of works as shown on the drawing. Where this is possible, areas excluded from clearing must be clearly marked using flagging tape, and all construction personnel instructed in the meaning of this tape. }

Individual trees marked for retention in areas to be otherwise cleared must be protected according to the specified detail, including the area of their root systems, as far as practical. Accidental damage to vegetation in areas not to be cleared must be reported immediately to the Superintendent so that he may decide how best to repair the damage or replace the damaged vegetation.

4.5 VEGETATION CLEARING

Areas to be completely cleared are those required by the construction of the approved works, and are generally indicated on the plan of layout. These areas are to be cleared to allow the progress of earthworks as required by engineering design, and for the safe installation of pavements and services.

If the detailed engineering design is changed during construction such that areas designated for clearing no longer need to be cleared, then those areas shall not be cleared, but shall be included in those areas that are to be protected from clearing.

The method of clearing is to follow that outlined in the Plan of Layout. Generally, any approved method may be used for broad areas to be cleared prior to major earthworks or services installation. If these methods are likely, in the opinion of the Superintendent, to cause unwanted damage to adjacent areas that are not to be cleared under the Contract, then alternative methods must be used in order to minimise such damage. Such methods may

include the use of an Excavator with grab bucket to pull trees away from areas to be protected, or progressive felling of the trees by chainsaw or bush saw. In doubtful situations, the method must be referred to the Redland Shire Liaison Officer for approval.

Once clearing work has begun on the site, this must proceed with reasonable progress such that the period of time during which the cleared areas are bare of ground cover before seeding, mulching or planting, is minimised. The objective of this clause is to minimise the chance of erosion and siltation occurring from random storm events, particularly between September and April.

Where clearing works are likely to cause erosion and consequent siltation of downstream portions of an uncleared site, progressive erosion control measures must be installed according to the Plan of Layout, to minimise the unprotected time. Under no circumstances must areas be left unprotected over a weekend, RDO or public holiday period.

4.6 Mitigation of Clearing Impacts on Fauna

Any fauna which has not been previously removed by permit, and found on site during construction shall be dealt with as specified by Redland Shire Council's conditions of development. If a koala is observed in a tree to be removed, work shall cease on that tree until the koala has moved on to another tree. In addition,

- (i) Vegetation removal in a manner which minimises unnecessary direct impact to native fauna, is achieved by minimising the amount of vegetation removal.
- (ii) Staged vegetation removal to direct fauna to 'safe' land, is achieved by the staging of the works from the existing main access road.
- (iii) Any fauna orphaned or injured shall be immediately reported to the Central Moreton District Officer of the Queensland National Parks and Wildlife Service on 3202 0200.

For injured or dead koalas (check to see if there are any ear tags) call the Daisy Hill Koala Centre immediately on 07 3299 1032. It is recommended that on site constructions crews should not attempt to catch or handle any disturbed or injured animals.

4.7 TOPSOIL AND WASTE MANAGEMENT

Top-soil that is stripped from the site prior to earthworks to be re-spread, must be stock-piled in the areas indicated by the on-site superintendent. No top-soil may be removed from the site. Re-spreading of top-soil to general areas to be grassed, such as building lots, must take place as soon as practicable after the final earthworks trim. Prior to spreading the top-soil, the subgrade should be de-compacted by cultivation to a minimum depth of 150 millimetres. Top-soil should be spread to a minimum depth of 100 millimetres.

Areas to be rehabilitated include areas of Open Space where engineering design requires the installation of services such as sewer or stormwater pipes, and the bikeway in the bayside park. Top-soil to be re-spread in such areas shall be stock-piled separately as directed on site by the Superintendent. Herbaceous material should be left on such areas after the necessary removal of woody plants during clearing, and the former mixed in with the top-soil stockpile in this case. The objective of this procedure is to retain as much native seed in the soil as possible in these kind of areas, such that natural regeneration can be promoted from the soil seed bank.

Green waste from cleared vegetation shall be mulched wherever possible and woody plant parts with a diameter less than 250 millimetres shall be wood-chipped on site, unless otherwise instructed by the Superintendent. The resultant mulch shall be spread on site over the areas to be rehabilitated to a minimum depth of 80 millimetres as directed or as shown on the Landscape Plans. Woody plant parts including trunks, stumps and roots with a diameter greater than 250 millimetres may be separated from the material to be mulched or chipped as above, and used to retain soil on fill batters, as part of the siltation protection measures. Durability Class I and II hardwood species* may be used for construction of log barriers, edging, fences or other specified landscape elements.

* Durability Class I hardwood species, commonly occurring on the site include:
Eucalyptus crebra and *E. tereticornis*

* Durability Class II hardwood species, commonly occurring on the site include:
Eucalyptus racemosa, *E. tessellaris*, and *E trachyphloia*

4.8 REHABILITATION OF OPEN SPACE AREAS

Some areas of the site in parks will have weed species removed, and be re-planted with indigenous species of koala food trees and other indigenous species, all according to the planting plan as indicated on 9907044-1/WD.1 of Anembo Consultant's documentation. All unwanted vegetation and rubbish shall be removed from these areas.] check ✓

Unwanted vegetation shall be restricted to plants Declared at the P1, P2 or P3 levels under the Rural Land Protection Act (1985-1990) , and other introduced weed species identified on the Siteworks and Vegetation Management Plan. Care shall be taken to remove the underground parts of woody weeds where these can regenerate, or to kill the remaining parts by application of an approved herbicide, where their removal may lead to erosion or disturbance of adjacent native vegetation.] check ✓

Plants delivered to site for reforestation purposes shall be true to species and variety, well-formed with healthy root systems, weed, disease and pest-free, of reasonable size for the container (see Plant Schedules on 9907044-1/WD.1 of Anembo Consultant's documentation for details).

All trees and other plants installed as part of rehabilitation or remediation works shall be maintained by the Contractor for an establishment period of twelve weeks from the date of 'on maintenance' of the Works.] ??

The maintenance of landscaping in the Open Space areas is regarded as integral to the long-term viability and sustainability of the design.

5.0 WASTE MANAGEMENT

As a result of construction activities on the site waste materials will be generated. These wastes will include oil and grease from vehicles, used and excess building materials and containers and wrapping. This Waste Management Plan aims to identify the different waste types and their disposal methods.

5.1 OIL AND GREASE WASTES

In general all oil and grease products are to be removed from site and disposed of through an approved waste disposal system. Oil and grease are most likely to be deposited on site through malfunction of machinery. Should any such spillage occur the contaminated soil is to be contained, removed from site and disposed of in an approved waste disposal system. Transportation of such waste shall be carried out using a sealed container.

At the time of the initial spillage suitable drainage is to be set up around the area to prevent contamination of other areas as a result of surface runoff.

Any malfunctioning machinery shall be immediately removed from site or contained on site (if there is a risk of contaminating other areas during transport).

5.2 USED AND EXCESS BUILDING MATERIALS

During construction works some used and excess building materials, including product wrapping and containers, will require disposal. Where possible these materials shall be kept and re-used or recycled.

All excess natural earth, topsoil and rocks are to be placed as fill on the site or stockpiled in a location as directed by the Site Superintendent.

All vegetation wastes resulting from works on the site shall be treated and disposed of in accordance with the Vegetation Management Plan.

All other wastes which cannot be re-used or recycled shall be disposed of off site in an appropriate manner. The builder or contractor shall provide bins or skips on-site for collection of such waste. Wastes which may contaminate the environment in leachate form are to be kept in sealed containers.

5.3 SANITARY WASTES

The builder or contractor shall provide temporary sanitary accommodation for use by workers. These facilities shall be kept clean and waste shall be removed on a regular basis.

5.4 PROVISION OF CONTAINERS

The location, number, size and type of waste containers shall be agreed on site by the Council's Representative, the Developer's Representative, and the Contractor's Representative prior to any works commencing.

6.0 IMPLEMENTATION CHECKLIST FOR MONITORING, REPORTING AND MAINTENANCE

Summary of items for inclusion in maintenance schedule for the development is as follows:

1. water quality management
2. management of nutrient input topark
3. capture of nutrients in underground chamber
4. protection of downstream Moreton Bay (Raby Bay) environment
5. fauna protection and conservation
6. long term weed control
7. management strategy for the control of mosquitoes & other insects
8. gross pollution/sediment control measures
9. erosion and sediment controls

6.1 WATER QUALITY MANAGEMENT

ISSUE:	STORMWATER DISCHARGE
OBJECTIVE	To promote the best possible quality of water exiting the site to Moreton Bay, and prevent the displacement of sediment, soil and pollutants across and offsite during storm events
MANAGEMENT STRATEGY	To effectively monitor all water quality exiting the site to ensure detrimental elements do not build up to excess levels. Maintain all sediment and erosion control measures as required.
TASKS	Monitor and report on the condition of the water entering, within, and exiting the development site, as below. All records to be maintained currently and available for inspection on site.
PERFORMANCE INDICATORS	Turbidity and algal levels to remain below guidelines, and no turbidity or algal blooms visually detected. No more than 10% change to colour and clarity (euphotic depth). No visible evidence of erosion on site.
FREQUENCY	weekly during implementation; monthly for the maintenance period, thereafter as required
RESPONSIBLE PERSON	Qualified personnel - Preferred consultant On site works by contractor.
REPORTING	As per Standard Checklist
CORRECTIVE ACTION	Utilise water supply to flush system, or physically remove offending water and dispose after remediation treatment. Turbid water to be retained on site until settlement has occurred. Erosion and sediment control strucutres to be reinstated/maintained.

6.2 MANAGEMENT OF NUTRIENT INPUT TO PARK

ISSUE:	FERTILISER MANAGEMENT CHEMICAL NUTRIENT CONTROL
OBJECTIVE	To ensure the correct use of recommended fertilisers for the optimum survival of the downstream environment and park.
MANAGEMENT STRATEGY	To effectively minimise the use of chemical substances in or near the bayside park
TASK	Recommend suitable products, with low N and P formulae, for householders Educate the need for minimal use of chemical substances
PERFORMANCE INDICATORS	A healthy watercourse area and park vegetation Minimal weed species evident
FREQUENCY	As required
RESPONSIBLE PERSON	Contractor - landscape
REPORTING	As per Standard Checklist
CORRECTIVE ACTION	Detect point source of problem if possible; if not flush system through with piped water, or remove offending parts

6.3 CAPTURE OF NUTRIENTS IN UNDERGROUND CHAMBER

ISSUE:	NUTRIENT CONTROL
OBJECTIVE	To ensure the levels of nutrients which naturally enter the underground chamber are removed at a regular interval
MANAGEMENT STRATEGY	To check the levels of pollutants in the chamber at regular intervals, and after all storm events
TASK	monitor chamber
PERFORMANCE INDICATORS	A clean and empty chamber
FREQUENCY	Initial monthly Immediate monitoring after all storm events subsequent to a dry period exceeding one calendar month
RESPONSIBLE PERSON	Civil contractor
REPORTING	As per Standard Checklist
CORRECTIVE ACTION	To Standard Checklist

6.4 PROTECTION OF DOWNSTREAM MORETON BAY (Raby Bay) ENVIRONMENT

ISSUE:	PROTECTION OF MANGROVES AND SEA GRASSES FROM POLLUTION
OBJECTIVE	To promote the growth of suitable low maintenance locally indigenous coastal plants within the the bayside park
MANAGEMENT STRATEGY	To encourage the growth of grass and sedge species for the nutrient capture and cycling, and revegetate to prevent weed infestation
TASKS	Avoid mechanical mowing, selective manual thinning is acceptable on annual basis if required. Implement weed control, on quarterly basis. Maintenance of planting areas with sufficient mulch
PERFORMANCE INDICATORS	Survival and spread of desired indigenous species
FREQUENCY	Annual review of park planting
RESPONSIBLE PERSON	Preferred consultant for design and Maintenance Personnel for implementation
REPORTING	As per Standard Checklist
CORRECTIVE ACTION	To Standard Checklist

6.5 FAUNA PROTECTION AND CONSERVATION

ISSUE:	FAUNA PROTECTION
OBJECTIVE	To encourage the indigenous fauna populations to increase at a natural rate to a desired level of species richness in the parks
MANAGEMENT STRATEGY	Protect existing populations on site, and facilitate connections with other remnant bushland areas in coastal strip
TASK	Make regular observations on use of site by indigenous fauna, and exclude introduced species.
PERFORMANCE INDICATORS	Visible species richness
FREQUENCY	As required to maintain the calculated equilibrium
RESPONSIBLE PERSON	Preferred consultant
REPORTING	As per Standard Checklist
CORRECTIVE ACTION	To Standard Checklist

6.6 LONG TERM WEED CONTROL

ISSUE:	LONG TERM WEED CONTROL
OBJECTIVE	To control exotic weeds in the long term, and ensure the survival of indigenous species free from excessive competition with weeds
MANAGEMENT STRATEGY	Reduce the number of weeds using predominantly appropriate manual, chemical or biological methods
TASK	Removal/ treatment of exotic and declared weed species
PERFORMANCE INDICATORS	Reduction of the amount of weeds visible Reduced growth of new weed plants Increased growth of native plants Increased habitat diversity
FREQUENCY	Concentrated during the wet season, and winter for annual species
RESPONSIBLE PERSON	Qualified maintenance personnel
REPORTING	As per standard checklist
CORRECTIVE ACTION	Reassessment of the problem and a new management strategy drafted if required To Standard Checklist

6.7 MANAGEMENT STRATEGY FOR THE CONTROL OF MOSQUITOES AND OTHER INSECTS

ISSUE:	MOSQUITO/INSECT CONTROL
OBJECTIVE	To control the mosquito/insect population at the source of their breeding (within the park), by limiting the time for which inundation occurs in the park
MANAGEMENT STRATEGY	Ensure construction of the park does not incur ponding, and maintain sub-surface drains and seepage lines free of blockage
TASK	general maintenance of park vegetation, and removal of rubbish and potential breeding sites
PERFORMANCE INDICATORS	Mosquito/insect population under tolerable threshold No complaints from residents
FREQUENCY	As required to maintain the low mosquito/insect numbers
RESPONSIBLE PERSON	Preferred consultant
REPORTING	Data from consultant As per Standard Checklist
CORRECTIVE ACTION	To Standard Checklist

6.8 GROSS POLLUTION/SEDIMENT CONTROL MEASURES

Fundamentally there are two key issues when determining gross pollution/sediment control measures:

- the manual removal of unwanted matter from the drainage system, and
- reducing the amount of pollutants entering the water system by educating residents within the catchment, and maintaining the Gross Pollutant/sediment Traps.

Residents can contribute to pollution control by modifying some of their own activities in and around their property, eg. selecting appropriate garden fertilisers and washing cars on the lawn can reduce the amount of pollutants entering the stormwater system. A pro-active environmental brochure will be available to local residents. This brochure is also recommended to be issued to new builders on the estate.

The gross pollutant/sediment traps stop insoluble pollutants (eg. litter) from entering the drainage system.

ISSUE:	GROSS POLLUTANT/SEDIMENT TRAPS
OBJECTIVE	To maximise the efficiency of the sediment traps in removing particular matter from water discharged into the evaporation pond
MANAGEMENT STRATEGY	To monitor levels of material in the sediment traps and arrange for clean-outs
TASK	Clean out sediment trap
PERFORMANCE INDICATORS	Lack of sand and larger particles in evaporation ponds
FREQUENCY	As required
RESPONSIBLE PERSON	Developer for maintenance period; thereafter, Redlands Shire Council
REPORTING	preferred contractor
CORRECTIVE ACTION	To Standard Checklist

6.9 EROSION AND SEDIMENT CONTROLS

ISSUE:	SEDIMENT MANAGEMENT
OBJECTIVE	To minimise the flow of sediment and unwanted litter from the catchment into the drainage system and thence Moreton Bay
MANAGEMENT STRATEGY	Achieve a visually pleasing solution Achieve a cost effective solution Minimise soil and waste loss from the catchment
TASK	Implement and maintain appropriate sediment and waste control measures as per current Environment Best Management Practice. In addition, house builders should be advised by building inspectors about their obligations under the EPA and EPP for Water.
PERFORMANCE INDICATORS	Minimal or no increase in the natural rate of sedimentation. No litter visible within the watercourse area
FREQUENCY	Bi-monthly (and after significant rain) maintenance of the proposed solution
RESPONSIBLE PERSON	Qualified maintenance personnel
REPORTING	As per Standard Checklist

CORRECTIVE ACTION	To Standard Checklist

6.10 WASTE MANAGEMENT

ISSUE:	Waste Management
OBJECTIVE	Compliance with Redland Shire's waste management regulations and EPA (1994) 'general environmental duty of care'.
MANAGEMENT STRATEGY	To dispose of waste in an appropriate manner preventing environmental contamination. Attention is to be given to recycling and/or minimising waste.
TASK	Suitable waste containers are to be provided on-site for storage and transport of waste to approved disposal facilities. Recyclable waste to be kept separate.
PERFORMANCE INDICATORS	Site to be free of all loose waste on weekly basis. No litter visible on site or nearby.
FREQUENCY	Weekly (and after significant rain) maintenance of the proposed solution
RESPONSIBLE PERSON	Contractor
REPORTING	As per Standard Checklist
CORRECTIVE ACTION	Any contamination of the environment to be rectified immediately upon discovery and appropriate authorities notified.

7.0 REFERENCES

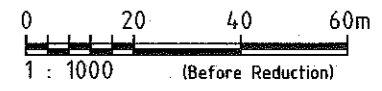
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- Institution of Engineers Australia 1996, *Soil Erosion & Sediment Control - Engineering Guidelines for Queensland Construction Sites*, Institution of Engineers Australia Queensland Division, Brisbane.

8.0 APPENDICES



DEVELOPMENT SUMMARY

TOTAL AREA LOT 1(DA005070)..... 4.628 ha
 TOTAL NO. OF LOTS..... 58
 PARK AREA..... 8165m² (17%)
 (CASH CONTRIBUTION FOR BALANCE)
 NO. OF LOTS > 600m²..... 27 (47%)
 NO. OF LOTS < 600m²..... 31 (53%)
 AVERAGE LOT AREA..... 561m²



Amendment—
 1. Lot 1 truncation added, Areas Lots
 40-45 & 48-58 amended... 19/05/99

Notes
 Any licence, express or implied, to use this document for any purpose whatsoever is restricted to the terms of the agreement or implied agreement between T.H.Jensen and Bowers Pty.Ltd. and the instructing party.
 Design subject to Local Authority approval and detail engineering design requirements. Areas and dimensions are approximate only and are subject to survey.

Project
MORETON WATERS
 BECKWITH STREET ORMISTON

Client **PETRAC PROPERTY VENTURE**

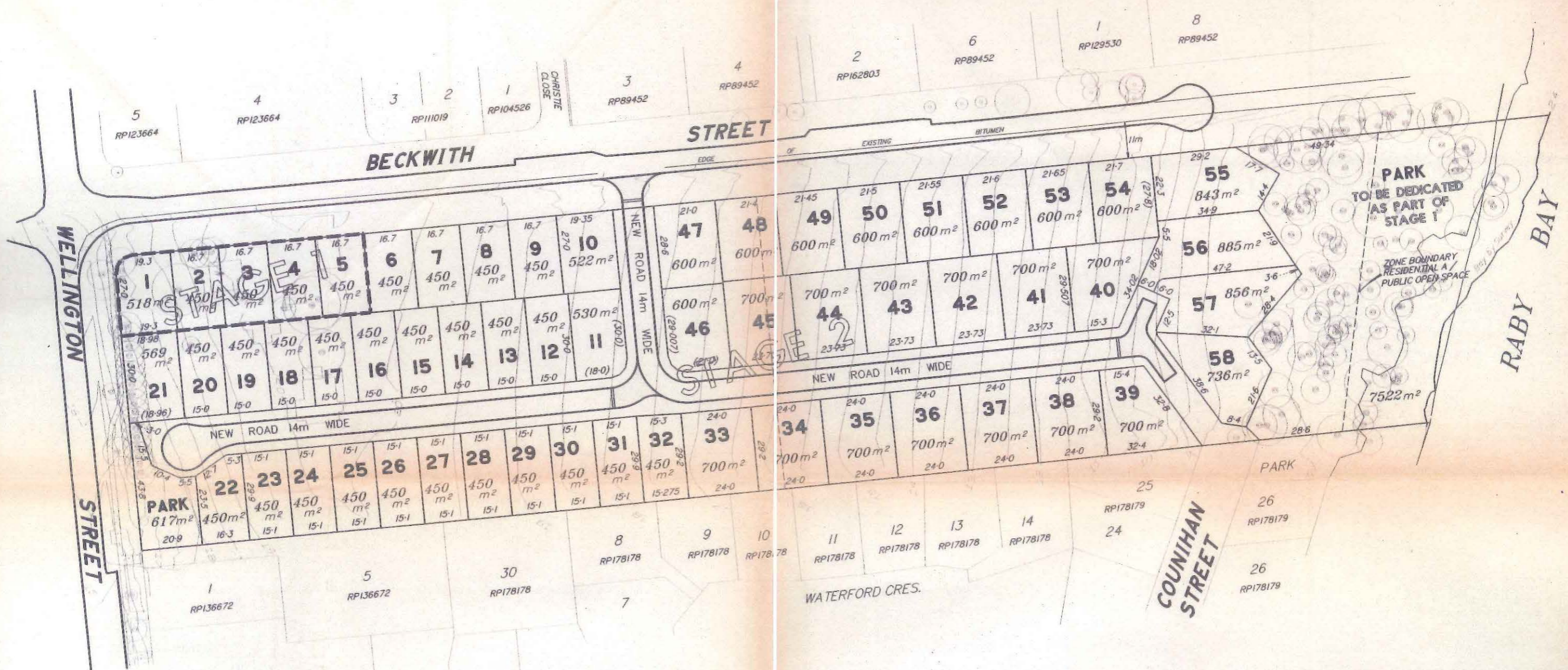
RP Description	PART OF LOTS 1 & 2 ON RP1710
Parish / County	CLEVELAND / STANLEY
Portion	93
Date of Compilation	9-3-1999
Local Authority	REDLAND SHIRE COUNCIL

**PROPOSED RECONFIGURATION
 OF LOTS 1 & 2 ON RP1710**

T.H.Jensen & Bowers Pty.Ltd.
 Consulting Surveyors
 ACN NO. 010 872 607
 72 Costin Street
 Fortitude Valley, Brisbane.
 Telephone: (07) 3852 1771
 Facsimile: (07) 3252 9818
 Email: jbgroupp@gil.com.au

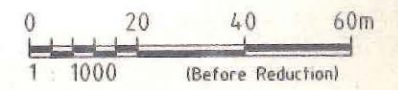
SHEET
1 OF 1
 Issue: A B C D
 Reference:
4674-18-C¹





DEVELOPMENT SUMMARY

TOTAL AREA LOT 1(DA005070)..... 4.628 ha
 TOTAL NO. OF LOTS..... 58
 PARK AREA.....8139m² (17%)
 (CASH CONTRIBUTION FOR BALANCE)
 NO. OF LOTS > 600m².....26 (45%)
 NO. OF LOTS < 600m²..... 32 (55%)
 AVERAGE LOT AREA 561m²



Notes Any licence, express or implied, to use this document for any purpose whatsoever is restricted to the terms of the agreement or implied agreement between T.H.Jensen and Bowers Pty.Ltd. and the instructing party. Design subject to Local Authority approval and detail engineering design requirements. Areas and dimensions are approximate only and are subject to survey.	Project MORETON WATERS <small>BECKWITH STREET ORMISTON</small>	Client PETRAC PROPERTY VENTURES	PROPOSED RECONFIGURATION OF LOTS 1 & 2 ON RP1710	T.H.Jensen & Bowers Pty.Ltd. Consulting Surveyors ACN NO. 010 872 607 72 Costin Street Fortitude Valley, Brisbane. Telephone: (07) 3852 1771 Facsimile: (07) 3252 9818 Email: jbgroup@gil.com.au	SHEET 1 OF 1 Issue: <table border="1"><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr></table> Reference: 4674-20-C	A	B	C	D	E
		A				B	C	D	E	
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Portion	93									
Date of Compilation	9-3-1999									
Local Authority	REDLAND SHIRE COUNCIL									





Redland
SHIRE COUNCIL

19 July, 1999

F-35

Redland Shire Council

Cnr Bloomfield & Middle Sts
Cleveland Qld 4163

PO Box 21
Cleveland Qld 4163

Telephone (07) 3286 8686
Facsimile (07) 3286 8765

E-mail: redland@redland.qld.gov.au
Homepage: http://www.redland.net.au

CORRESPONDENCE PREPARED IN ACCORDANCE
WITH REPORT DEALT WITH UNDER DELEGATED
AUTHORITY No. EN12
FOR [Signature]
DIRECTOR ENVIRONMENTAL PLANNING & DEVELOPMENT

Assessment Services

PUNCHED

08 SEP 1999

Your Ref: 4674
Our Ref: DDK:jmh
File No: **SB414601**

Contact: Land Development
Email: landdev@redland.qld.gov.au

Jensen Bowers Pty Ltd
PO Box 799
SPRING HILL Q 4004

Development Application Decision Notice

Dear Applicant

Registered Owner/Developer: R Andrew & A Pearson
Proposed Development: Reconfiguration
Application Reference No: SB414601
Site Description: Lots 1 & 2 on RP1710
Cnr Wellington & Beckwith Streets, Ormiston

The Development Application for Standard Format was assessed and after considering all relevant matters has been **approved** with conditions.

The following schedule provides all the relevant details.

1. **Referral Agencies:** Not Applicable Yes See below

2. **Conditions:**
Assessment Manager's
Conditions

This matter was considered by Council under Delegated Authority and you are advised that the application for substaging (into two stages) of the approved reconfiguration of proposed Lots 1 to 58 into standard format allotments, cancelling Lots 1 and 2 on RP1710, and situated at Beckwith Street, Ormiston, in accordance with Drawing 4674-20-C is approved subject to the following conditions:

1. Compliance with Council's previous conditions of the Development Permit for the reconfiguration of the of the subject two parcels into 58 allotments.

On compliance with the above condition of development approval, survey plan SP118149 will be signed on behalf of Council.

atlgp/RS

3. **Reasons for Refusal:** (not applicable)

4. **Approval Type:**

	Development Permit	Preliminary Approval
Building works	<input type="checkbox"/>	<input type="checkbox"/>
Plumbing or Drainage Works	<input type="checkbox"/>	<input type="checkbox"/>
Operational Works	<input type="checkbox"/>	<input type="checkbox"/>
Reconfiguring a Lot	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Material Change of Use	<input type="checkbox"/>	<input type="checkbox"/>

5. **Further Development Permits Required:**

- ◆ A development permit for operational works associated with this development is required. Those operational works, in the first instance in the form of engineering designs, will be reviewed in accordance with relevant codes including Council's Design Standards for Developments.

6. **Rights of Appeal:**

A copy of the rights of appeal under Section 4.1.27 and Section 4.1.28 of the Act for Applicants and Submitters are appended, together with Division 10 Part 1 (Chapter4) of the Act which deals with the making of an Appeal to the Planning and Environment Court.

7. **In addition to the above information, I advise that:**

- (b) **Written Notice:**

The Applicant may wish to give the Assessment Manager (Council) written notice of its intention not to make representations on conditions of this approval (decided by Council) in advance of the ending of the Applicant's Appeal period; so that further action(s) can be initiated by the Assessment Manager (Council).

In accordance with Section 3.7.3 of the Integrated Planning Act 1997, no subdivision plan will be approved until rates and charges are paid in full.

In order to expedite the processing of survey plans, we have enclosed a check list for your convenience which should be attached to the original survey plans when submitted to Council for signing and sealing.

Yours faithfully,

BT Appleton
Manager Assessment Services

B/C - R Andrew & A Pearson



27 May, 1999

CORRESPONDENCE PREPARED IN ACCORDANCE WITH MINUTE S OF DP COMMITTEE OF 18/5/99 FOR DIRECTOR ENVIRONMENT PLANNING & DEVELOPMENT

Redland Shire Council Cnr Bloomfield & Middle Sts Cleveland Qld 4163

PO Box 21 Cleveland Qld 4163

Telephone (07) 3286 8686 Facsimile (07) 3286 8765

E-Mail: redland@redland.qld.gov.au Homepage: http://www.redland.net.au

Your Ref: 4674 Our Ref: DDK:kaw

File No: SB414601

Contact: Development Services Email: landdev@redland.qld.gov.au

Jensen Bowers PO Box 799 SPRING HILL QLD 4004

PUNCHED 6 JUL 1999

F16

Development Application Decision Notice

Dear Applicant

Registered Owner/Developer: R Andrew & A Pearson Proposed Development: Standard Format Reconfiguration Application Reference No: SB414601 Site Description: Lots 1 & 2 on RP.1710 Beckwith Street, Ormiston

The Development Application for Standard Format Reconfiguration was assessed and after considering all relevant matters has been approved with conditions.

The following schedule provides all the relevant details.

1. Referral Agencies: Not Applicable [] Yes [x] See below

- Department of Environment and Heritage Department of Main Roads Department of Primary Industries Department of Natural Resources

2. Conditions: Assessment Manager's Conditions

This matter was considered at a recent meeting of Council and you are advised that the application for a Development Permit for the reconfiguration of Lots 1 & 2 on RP 1710 into 58 Residential A Standard Format lots, situated at Beckwith Street, Ormiston in accordance Drawing Ref: 4674-18-C1 dated 9th March 1999 is approved subject to the following conditions:

1. Council will give favourable consideration to the following non standard works:
 - a) Construction of the cul-de-sac head outside of the drip line of the fig tree and agreement to the relaxation of the verge width on the northern road boundary of the internal road to 2 metres.
 - b) Kerb and Channel in Beckwith Street to be constructed on a 11 metre alignment.

A sea gull type LATM at the intersection of the new road access from Beckwith Street with no further traffic calming devices in Beckwith Street.
 - c) The proposed park work shall include under scrubbing, clearing of noxious weeds and removal of existing fencing as agreed on site and a replanting program as per an approved plan. Construction of a pedestrian pathway to link Counihan Street to Beckwith Street on an agreed alignment. There will be no requirement for contribution towards park equipment.
 - d) Approval for a 3 metre setback from the frontage for all dwellings provided that the frontages of the dwellings are staggered.
 - e) The proposed internal road reserve to be 14 metres in width.
2. Prior to Council being required to sign a plan of reconfiguration a Site Contamination Report shall be submitted from a suitably qualified person to the satisfaction of the Manager of Environmental Protection. The report is to include, but not be limited to, details of any existing contamination and remediation measures proposed, and a statement of suitability where applicable.
3. The applicant is required to incorporate design and operational practices to minimise mosquito or biting midge production on or adjacent to the proposed reconfiguration during operational works and after the completion of the development. Particular attention shall be paid to stormwater drainage on and off the proposed site with documented stormwater management practices provided upon request.
4. A development permit for operational works associated with this development is required. Those operational works, in the first instance in the form of engineering designs, will be reviewed in accordance with relevant codes including Council's Design Standards for Developments.

The applicant is advised that under the provisions of Sections 31 and 32 of the Environmental Protection Policy for Water, Council Environmental Health Officers will issue on-the-spot fines of up to \$480 to any person who dump contaminants into a waterway and/or place contaminants where they can be washed into a waterway (kerb and channeling, catch pits etc).

The applicant is required to advise contractors of their obligation to ensure that all wastes are disposed of correctly.
5. Prior to moving any construction machinery to site, a 3 strand star picket fence shall be installed to the proposed parkland area. Any work and installation of services within the park shall require approval from Council.
6. Construction of Wellington Street to the following standards:
 - a) footpath earthworks, topsoil and grassing to an agreed non standard treatment;
 - b) concrete kerb and channel on an alignment to match existing construction and as per Council's planning layouts.

- c) underground stormwater drainage to Council standards;
 - d) road construction to Council standards with appropriate surfacing between existing full depth construction and proposed concrete kerb lip including tapers where required;
 - e) undertake to carry out any alterations necessary to public utility services;
 - f) road signage and pavement marking in accordance with Manual of Uniform Traffic Control Devices Queensland.
7. Construction of Beckwith Street to the following standards:
- a) footpath earthworks, topsoil and grassing to an agreed non standard treatment with landscaping and street tree planting of endemic species with details to be included in a landscape plan for approval by The Manager Environmental Management;
 - b) concrete kerb and channel on an alignment of 11 metres or as agreed on site;
 - c) underground stormwater drainage to Council standards;
 - d) road construction to Council standards with appropriate surfacing between existing full depth construction and proposed concrete kerb lip including a truck turnaround facility generally at a location as indicated in the applicant's plan;
 - e) undertake to carry out any alterations necessary to public utility services;
 - f) road signage and pavement marking in accordance with Manual of Uniform Traffic Control Devices Queensland.
8. The applicant shall be required to contribute a sum of \$30,000 for the construction of a roundabout at the intersection of Beckwith & Wellington Streets in lieu of the impact that the development has at that intersection and other Council controlled roads in the area.
9. Provision of a 6 metres by 3 chord truncation at the corner of Beckwith & Wellington Streets.
10. Provision of underground electricity reticulation to each lot and street lighting to Australian Standard A.S.1158.1 and the requirements of ENERGEX and Council.
11. Installation of underground telephone conduits to service each lot in accordance with requirements of Australian Standards to accommodate carriers and submission of documentary evidence that an agreement has been entered into with a carrier for the provision of such a service to each lot prior to release of survey plans by Council.
12. Allotment drainage to Level III as specified in Queensland Urban Drainage Manual shall be provided to drain upstream allotments which contribute a potential catchment area in excess of 0.5 hectares to downstream allotments.
13. Provision of roof water and allotment drainage, as specified in Council's "Design Standards for Developments", in allotments which cannot drain to kerb and channel. Where roof water drainage is directed to kerb and channel, a kerb adaptor shall be cast in situ to the kerb.

14. Provision of a water connection to each allotment in accordance with Council's approved Standard Drawings. The services into each of the proposed allotments shall be on an 0.5 metre alignment, 0.75 metres into the allotment and at least 0.45 metres below the finished surface level. The developer shall install water meters to each water service provided in the development. The water meters shall be supplied by Council to the developer at approved rates and the water service, including meters, shall be installed in accordance with relevant Council standards.

If any connections are to be made from existing mains the applicant shall request "Redland Water" to make such connections at the applicant's expense.

15. Contribution to water supply augmentation in accordance with Council policies at rates applicable at the time of signing and sealing plans for reconfiguration of allotments. (Contributions are reviewed annually in July.
Rate for 1998/99 is \$1520 per additional equivalent tenement).
16. Provision of sewerage reticulation to each lot.
17. Contribution to sewerage augmentation in accordance with Council policies at rates applicable at the time of signing and sealing plans for reconfiguration of allotments. (Contributions are reviewed annually in July.
Rate for 1998/99 is \$1200 per additional equivalent tenement).
18. Vegetation Protection Order (VPO) - All native vegetation along the western boundary - Wellington Street road frontage of proposed Lots 1 and 21 shall be protected, maintained and enhanced as per an approved Vegetation Management Plan and is 'protected vegetation' for the purposes of Division 4, Section 25 of Council's Local Law No. 6 – Protection of Vegetation. The criteria to be recorded in the Vegetation Protection Register are: a, m, o and r.
19. The dwellings to be built on Lots 1, 21, 22 & associated cul-de sac and the Wellington Street road reserve are to have regard to the drip line of the significant vegetation along the western boundary (native pines, fig and poincianas). Road, infrastructure and building design is to ensure the long term survival of this vegetation. This vegetation is to be tagged and a fenced Vegetation Protection Area (VPA) is to be established prior to the commencement of any clearing of vegetation and construction activities. The VPAs including suitable exclusion fencing and signage is to be approved by Council.
20. Infrastructure Design - Roadworks, services and driveways are to be co-located where practicable to minimise loss or disturbance to native vegetation. The design of the access should incorporate minimal disturbance to any large and/or significant trees. Any trees required to be removed are to be tagged and approved by Council prior to the commencement of any clearing of vegetation and construction activities.
21. Environmental Management Plan (EMP) - An EMP shall be prepared and approved prior to the commencement of any works. The EMP shall provide for control strategies that address the environmental management of potential impacts at the Design Phase, Construction Phase and Post-construction phase of this overall development. Discussions are to be convened with the Managers, Assessment Services and Environmental Management regarding the EMP prior to commencement of its preparation for confirmation of contents and issues to be covered.

The EMP shall address the following environmental management issues in addition to other design construction and post-construction matters:

- Vegetation Management; and
- Stormwater Quality Management.

22. Vegetation Management Plan (VMP) - It is intended that existing native vegetation and replanted vegetation is to be managed so as to maintain and enhance the site's environmental values and manage weeds. A Vegetation Management Plan (VMP) which is to include both graphical and textual information shall be prepared by a suitably qualified person in consultation with the Managers, Assessment Services and Environmental Management. The VMP shall be forwarded and agreed in writing prior to Council being required to determine an application for operational works. The VMP is to be prepared for the following management areas:

- Areas to be dedicated as park including adjacent footpaths;
- Areas to be dedicated as road reserves; and
- Areas to be declared as Vegetation Protection Orders (VPO's) (proposed lots 1 & 21).

The following details are to be submitted within the VMP for each of the management areas identified above:

- A statement of objectives, a description of management strategies, potential impacts, actions/controls, maintenance, monitoring, performance indicators, corrective actions and reporting;
- Plant species and densities to be utilised shall include combination of endemic species (park and VPO) and other species (road reserve);
- Planting schedules and timing, including any staging program;
- Details of fertiliser use.
- Weed management is to be addressed in terms of declared plants and environmental weeds as defined in the RSC pest management plan. The vegetation management plan is to outline the extent, location and eradication of 'weeds'; and
- The VMP shall be authorised by the applicants' hydraulic consultant to ensure stormwater overland flow paths and areas required for the treatment of stormwater are not affected.

This work is to be carried out in accordance with details indicated on the approved VMP and to "AS 4373-1996" prior to site construction works being accepted 'On-maintenance'

Dedication of the area shown as park.

23. Stormwater Quality Management Plan (SQMP) - A SQMP is to be prepared addressing the quality and quantity of stormwater runoff from the site. Detailed information of stormwater quality management and treatment methods must be provided and should be incorporated in the SQMP Plan to ensure that stormwater is treated to an appropriate standard prior to discharge.

- A statement of objectives, a description of management strategies, potential impacts, actions/controls, maintenance, monitoring, performance indicators, corrective actions and reporting;
- Schedules and timing, including any staging program;
- Identification of possible sources of water pollution or other changes on water quality to the natural drainage system, including soil erosion, siltation and likely chemical composition of leachate from the site and/or from introduced fill on the site;
- Run off detention and sediment interception devices or measures to reduce flow velocities and to prevent topsoil, fill or other sediment from entering the watercourses and drainage lines;

All design and construction methods should be based upon the guidelines and measures advised in the following:

- Pollution Control Manual for Urban Stormwater;
 - Queensland Urban Drainage Manual;
 - Soil Erosion and Sediment Control - Engineering Guidelines for Queensland;
 - Stormwater Quality Control Guidelines, Dept of Environment; and
 - Draft Redland Shire Stormwater Management Study 1998 (in preparation).
24. The proposed areas to be dedicated as park; and where existing trees are to be retained within proposed dedications of land for town planning (park) purposes and / or road reserve(s), all dead wood and potentially dangerous tree(s)/tree limbs are to be removed. Where construction works impact on the health of a tree to initiate deterioration and/or death to the whole or part of the tree during the period of construction, the applicant is to attend to the removal of that tree or part thereof to the satisfaction of the Principal Officer, Parks and Conservation.
25. The disposal of cleared vegetation shall be carried out in an environmentally acceptable manner and in accordance with relevant local laws. Milling or chipping cleared vegetation are preferred options.
26. a) Construction of roads and drainage to Council standards, including provision for an ARI 100 year overland flowpath through roads, parks and drainage reserves. An assessment of the effect of 50% blockage of the inlets shall be included in the drainage calculations.
- b) The applicant shall design all underground drainage components to reflect the concerns for the environment at the outlet to public open space/conservation area. The design and construction of the stormwater system shall incorporate facilities which would ensure Best Management Practice with regard to the quality of stormwater being discharged to the environment and the Bay.
- c) Bicycle safe grates as approved by A.S.3996-92 shall be used on all catch pits and anti ponding pits.
27. If any of the allotments were to be filled in excess of 300mm and/or if any part of the allotment were to be suspected of having any contaminants and/or uncontrolled filling a report shall be submitted from a qualified geotechnical consultant that all unsuitable material has been removed from site and that all areas that have been disturbed have been compacted to Council requirements and to A.S.3798. All filling in excess of 800mm in future residential/commercial allotments shall be to a level 1 responsibility as per A.S.3798.

The applicant shall produce a soil investigation test for all allotments that have been filled. The test results shall confirm that the fill material and compaction is satisfactory and supports the design of standard residential dwelling footings on the site. Problem sites as defined in AS2870 will not be accepted and remedial work shall be carried out in such allotments.

28. Road base reporting actual soluble sulphate in excess of 250mg/kg SO₄ and/or total sulphate after oxidation by peroxide of 2000 mg/kg SO₄ is regarded as having substantial potential for causing damage to asphalt by sulphate induced blistering.

Prior to the use of road base material, the developer shall submit certified evidence from a qualified geotechnical consultant that the proposed unbound material to be used does not contain sulphate amounts in excess of quantities that may induce sulphate blistering in the bitumen seal.

29. If the development of the subject property requires soil to be imported or exported, the applicant shall identify the allotments which would be used for borrowing or filling and shall obtain Council approval for such works in addition to engineering approval for the development. In this regard, the applicant shall obtain Council approval for the route of transport, the period and time of transport during the construction phase of the development. A sum of \$2,000 shall be bonded with Council, prior to prestart meeting, to be used to clean up public roads as a result of spillage of material where not promptly cleaned up.

Council reserves the right to require the applicant to provide a report from a qualified consultant to determine the impact the material placement and removal may have on the environment at the fill and the borrowing sites.

30. Permanent Survey Marks shall be located at positions as determined by the Manager Engineering Design.
31. Survey control information to establish AHD, co-ordinate systems and location of permanent survey marks shall be provided by Council. Survey information shall be supplied to Council in association with engineering designs and as constructed drawings as per Chapter 2 Section D of Council's Interim Design Standards for Developments.
32. At the time of submission of a plan of survey for signing and sealing by Council, the applicant shall also provide Digital Cadastral Survey information in accordance with Chapter 2 Section D of Council's Interim Design Standards for Developments.
33. Erosion and Sediment Control
- a) During the construction phase of this development the applicant shall be responsible for the installation and maintenance of erosion and sediment management facilities until the development has been accepted as completed by Council.
 - b) The applicant shall submit details of erosion and sediment management procedures for approval by Council at the same time as engineering drawings for each stage of the development. The silt management plans shall include a schedule detailing the stages at which various management techniques would be in place.
 - c) Recommended erosion control techniques include:
 - * soil disturbance, particularly within nominated building envelopes, should be restricted to a minimum;
 - * runoff should be diverted away from disturbed areas;
 - * disturbed areas should be stabilised using mulches (straw, forest mulch, etc.) or other techniques. These mulches must be free of exotic, weed and declared pest plant seeds and other material capable of propagation.
 - * refer to the "Best Practice Guidelines for the Control of Stormwater (Pollution from Building Sites)" published by Brisbane City and Gold Coast City Councils, 1998. A copy of this document is available from Manager, Development Services.
 - d) Sediment control shall include but not be limited to the provision of gross pollutant traps, cut off drains, silt fences, hay bales and turfing.
 - e) Council reserves the right to enter the site for the purposes of rectifying any erosion and sediment management facilities which are inadequate, improperly maintained or not operating in a satisfactory manner, in accordance with the approved plan.

- f) The applicant shall be responsible for the restoration of the site and any adjoining affected lands where sediment deposition has occurred as a consequence of the development. Such restoration shall be completed in a reasonable time determined by the Manager Development Services.
- g) Prior to commencement of construction the applicant shall submit a program of works for the control of dust on the development site and on roads for the approval of the Manager Development Services.
34. Construction shall comply with the Environmental Protection Act, Policies and Guidelines to prevent or minimise either environmental harm or nuisance.
35. The applicant shall contribute \$21.00 per allotment to Council for the purpose of paying the State Government Split Valuation Fees. Such amount shall be paid prior to signing and sealing of the Plan of Survey and be for each allotment contained on the Plan of Survey, excluding balance lots.

3. **Reasons for Refusal:** (not applicable)

4. **Approval Type:**

	Development Permit	Preliminary Approval
Building works	<input type="checkbox"/>	<input type="checkbox"/>
Plumbing or Drainage Works	<input type="checkbox"/>	<input type="checkbox"/>
Operational Works	<input type="checkbox"/>	<input type="checkbox"/>
Reconfiguring a Lot	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Material Change of Use	<input type="checkbox"/>	<input type="checkbox"/>

5. **Further Development Permits Required:**

A development permit for operational works associated with this development is required. Those operational works, in the first instance in the form of engineering designs, will be reviewed in accordance with relevant codes including Council's Design Standards for Developments.

6. **Rights of Appeal:**

A copy of the rights of appeal under Section 4.1.27 and Section 4.1.28 of the Act for Applicants and Submitters are appended, together with Division 10 Part 1 (Chapter 4) of the Act which deals with the making of an Appeal to the Planning and Environment Court.

7. In addition to the above information, I advise that:

- (a) Submissions Received (not applicable)
- (b) Written Notice:

The Applicant may wish to give the Assessment Manager (Council) written notice of its intention not to make representations on conditions of this approval (decided by Council) in advance of the ending of the Applicant's Appeal period; so that further action(s) can be initiated by the Assessment Manager (Council).

You are further advised that the requirements of survey for this development are:

1. That the standard requirements of the "Design Standards for Developments" and Redland Shire Council's "Standard Drawings - Road, Sewerage and Water Supply" are met.
2. That two (2) permanent marks be placed in each cul-de-sac providing access to the subdivision. The exact location to be determined by the Consultant Surveyor, with each site being suitable for future GPS observations, and being equally distributed across the subdivision.
3. That survey data be provided on Redland Shire Council co-ordinates.
4. That PSM28565 be adopted for the vertical control of this subdivision.

So that these requirements can be met, the following information is supplied.

- a) An extract from the Redland Shire Council Control.
- b) A list of Redland Shire Council co-ordinates for adjacent Permanent Survey Marks.
- c) A map showing adjacent Permanent Survey Marks.
- d) SCDB data on each adjacent Permanent Survey Mark.
- e) Redland Shire Council Control Accuracy Definitions.

In order to expedite the processing of survey plans, we have enclosed a check list for your convenience which should be attached to the original survey plans when submitted to Council for signing and sealing.

In accordance with Section 3.7.3 of the Integrated Planning Act 1997, no subdivision plan will be approved until rates and charges are paid in full.

Yours faithfully,

D Kirby
Acting Director
Environment, Planning and Development

Enc

B/C - R Andrew & A Pearson

REPORT

Date: 26 October, 1999
File: SB414601
To: MANAGER - ASSESSMENT SERVICES
From: ALEX WATSON -
INTEGRATED COMMERCIAL UNIT
Subject: BECKWITH STREET RECONFIGURATION - ORMISTON.



Background

On 27th May 1999 Council gave approval as per Development Permit No SB414601 to the reconfiguration of Lots 1 and 2 on RP 1710, Parish of Cleveland, and situated at Wellington and Beckwith Streets, Ormiston.

Stage one (1) of this development resulted in seven (7) allotments of which Lot 900 on SP 118149 was dedicated to Council as "Park" in fee simple.

The conditions of the said Development Permit No SB414601 state inter alia:

Condition 22:-

22. *Vegetation Management Plan (VMP) - It is intended that existing native vegetation and replanted vegetation is to be managed so as to maintain and enhance the site's environmental values and manage weeds. A Vegetation Management Plan (VMP) which is to include both graphical and textual information shall be prepared by a suitably qualified person in consultation with the Managers, Assessment Services and Environmental Management. The VMP shall be forwarded and agreed in writing prior to Council being required to determine an application for operational works. The VMP is to be prepared for the following management areas:*

- *Areas to be dedicated as park including adjacent footpaths;*
- *Areas to be dedicated as road reserves; and*
- *Areas to be declared as Vegetation Protection Orders (VPO's) (proposed lots 1 & 21).*

The following details are to be submitted within the VMP for each of the management areas identified above:

- *A statement of objectives, a description of management strategies, potential impacts, actions/controls, maintenance, monitoring, performance indicators, corrective actions and reporting;*
- *Plant species and densities to be utilised shall include combination of endemic species (park and VPO) and other species (road reserve);*
- *Planting schedules and timing, including any staging program;*
- *Details of fertiliser use.*
- *Weed management is to be addressed in terms of declared plants and environmental weeds as defined in the RSC pest management plan. The vegetation management plan is to outline the extent, location and eradication of 'weeds'; and*
- *The VMP shall be authorised by the applicants' hydraulic consultant to ensure stormwater overland flow paths and areas required for the treatment of stormwater are not affected.*

This work is to be carried out in accordance with details indicated on the approved VMP and to "AS 4373-1996" prior to site construction works being accepted 'On-maintenance'

Dedication of the area shown as park.

After a few months of meetings and negotiations Council was supplied with a drawing No 9902044-1/WD.01/issue A. Council reviewed this drawing. This review included several meetings and on site discussions with the qualified Landscape Architect (Dr. David Hassell). Council recommended some changes and as a result was supplied with a drawing, the same number as above marked "issue B".

At this point in time all parties were satisfied with the final result and Council then approved this drawing for the purposes of complying with Condition No 22.

The only further amendment to this drawing was the inclusion of Koala Food Trees on Beckwith Street itself.

To date the following action has taken place:

1. In consultation with David Hassell, Greening Australia was engaged by the developer to commence weed eradication as outlined in the approved V.M.P. These works were commenced and conducted to the satisfaction of Council Officers and in accordance with the V.M.P. The only remaining works to complete the V.M.P requirements were revegetation and mulching including replanting.
2. Demalex Pty Ltd, landscaping Contractors have since been employed to clear the "deadwood and weeds" from Council's Park.
3. On Tuesday 19th October 1999 Mr Jeff Kidner, Council's Principal Officer, Parks and Conservation inspected the site and declared that sufficient clearing had been completed in the Park and indeed was of the belief that excessive clearing had taken place. As the officer delegated to supervise this work Mr Kidner stated that he did not want further clearing and advised that the Landscaping Contractors should proceed with the replanting program.
4. On Wednesday 20th October Mr Bill McDowell, Council's Principal Officer, Urban Landscapes Design, advised both Mr Mark Spedding of Petrac Property Ventures and Mr David Taylor of Demalex Pty Ltd by fax of Council's requirements.
5. About 5.p.m. on the night of Wednesday 20th October Mr McDowell hand delivered a copy of this fax to Mr Mark Spedding of Petrac property Ventures, the principal developers. At this point in time Mr McDowell was presented with a drawing numbered as before but marked "Issue "D". This drawing was in complete contrast to the previous drawings and differed completely from Council's Requirements for the conservation of Lot 900 on SP118149.

Purpose

For noting by the Development Assessment Committee.

Consultation

The Manager, Assessment Services, Principal Officer, Urban Landscapes Design, and Principal Officer, Parks and Conservation, King and Company, Councillor Cr Newton – Local Councillor, Cr John Burns, Chairman, Development Assessment Committee and the Mayor Cr Santagiluiana

Discussion and Conclusion

The Vegetation Management Plan has been approved by Council's delegated officer Mr Bill McDowell, Principal Officer, Urban Landscaping Design. This approval was conveyed to the Developers Consultants, Anembo Consultants Pty Ltd by Facsimile dated 13th October 1999 and letter under the hand of Manager Assessment Services dated 25th October 1999. Copies of these documents are attached marked "Annexure A".

On Thursday 21st October 1999 at the recommendation of King and Co a meeting was convened at Council Chambers between Mr Mark Spedding of Petrac Property Ventures, David Taylor of Demalex Pty Ltd and Council Officers. At this meeting Mr Mark Spedding indicated that he his company had a right to carry out the work involved in the VMP on Council's Park. In reply Council served notice on both Mr Spedding and Mr Taylor that certain actions were required from Petrac Property Ventures and Demalex Pty Ltd. This notice is attached marked "Annexure B"

Petrac Property Ventures responded by advising that they intended to complete the works on the VMP including the removal of trees from the bank. Copy of this letter is attached marked "Annexure C"

Unfortunately Council did not state clearly in either the Operational Works Approval SB414602, or the Reconfiguration Approval, SB414601:

1. Who exactly was to be responsible for the execution of this VMP or
2. Take a Bond from the developers, which clearly and unequivocally states that that is what the bond is to be used for.

Clause 13 of Operational Works Approval No SB4146102 (Copy attached marked "Annexure D") states that a Ten Thousand Dollars (\$10,000) Environmental Bond shall be paid by the Developers, Petrac Property Ventures, to Council.

Consultation with King and Company has indicated that the wording of this clause makes the bond effective only to recover costs of any damage the developers or their agents may cause in Council's Conservation Reserve during construction of the earth works connected with the reconfiguration. It is not a general service bond for the completion of the VMP.

Thus, at this point in time, Council had no recourse as regards obtaining monies by means of the Estreatment of a Bond given to Council by the developer to enable completion of Council's Conservation Reserve.

On Monday 1st November 1999 Council wrote to the developers of the properties, Petrac Property Ventures. This communication advised them that no further work was to be done by either the developers or their agents within Council's Conservation Reserve east of the concrete path which runs approximately north/south on the development. A copy of this letter is attached marked "Annexure E".

As a result of this letter an on site meeting was held between the original applicants, the Jensen Bowers Group, represented by Garry Hargrave and Cr Burns, Cr Newton, Bruce Appleton, Manager, Assessment Services, Jeff Kidner, Principal Officer, Parks and Reserves, Bill McDowell Principal Officer, Urban Landscape Design and Alex Watson, Assessment Officer, Integrated Commercial Unit.

At the above meeting all points of view were expressed in a forthright manner.

The consensus reached was that all work required to be completed east of the concrete path which runs approximately north/south on the Conservation reserve shall be carried

out by Council with Petrac Property Ventures paying a commercial rate for these works. All replanting and revegetation to the west of the said concrete path would be carried out by the agents of Petrac Property Ventures to the satisfaction of Council.

On Friday 5th November 1999 Council wrote to The Jensen Bowers Group and advised them in detail Council's expectations of from the above meeting. A copy of this letter is attached marked "Annexure F"

Council Officers now await the outcome of negotiations between Mr Garry Hargraves of The Jensen Bowers Group prior to deciding the course of any further action.

Council can obtain some relief as regards the replacement of vegetation removed by the developers agent, Demalex Pty Ltd, for the vegetation removed in without the prior written approval of Council and outside the provisions of the approved Vegetation Management Program.

(a) Corporate/Program Plan Implications

Council should consider a review of their integrated approval systems to ensure that such an oversight does not re occur

(b) Financial Implications

Should the above arrangements be agreed to then no financial implications have been identified.

(c) Policy Implications

No policy implications have been identified save mention in (a) above.

Officer's Recommendation

That the Development Assessment Committee note the actions taken by the various Council Officers and Elected representatives.

A. Watson
**Assessment Officer – Compliance
Integrated Commercial Unit.**

