Appendix L

Visual Assessment

Transpacific Industries Proposed Resource Recovery Recycling Facility, Rutherford

Visual Assessment for the Environmental Assessment

August 2005

Transpacific Industries

PARSONS BRINCKERHOFF

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1. Introduction

This visual assessment has been prepared as part of the Environmental Assessment for the proposed Resource Recovery and Recycling Facility at Rutherford, hereby referred to as "the Facility".

The report assesses the impact of the proposal on the existing scenic and landscape resources of the subject site and its surrounding residents and land uses. The study area is defined as the site's visual catchment, which incorporates the general area from where the facility would be seen. An aerial view of the existing site (with the boundary identified in white) is shown as Photograph 1.

Photograph 1: Aerial view of existing site

The report is divided into three parts:

- explanation of the study methodology;
- description of the proposal; and
- a discussion of visual issues and recommendations.

This report has been prepared by Stacey Brodbeck, an employee of Parsons Brinckerhoff, on behalf of Transpacific Industries (TPI). The author has substantial experience in preparing visual assessment reports. A summary of her qualifications are presented in Appendix A.

2. Methodology

General Description

The study methodology addresses the potential visual issues associated with the project. It is based on a commonly used system developed by the United States Forestry Service (1974). Similar methods have also been adopted by Queensland Department of Main Roads (1997), the Forestry Commission of Tasmania (1990) and the NSW Department of Planning (1988).

The method involves:

- assessing the characteristics of the physical landscape, including landscape character and scenic quality;
- determining the visual catchment from where the site can be seen;
- identifying any visually sensitive parts of the site in terms of current and likely future land uses;
- describing the visual changes associated with the proposed facility;
- presenting recommendations for future management of visual and landscape values.

The following provides more detailed information on the methodology.

Terminology

Scenic Quality

Scenic quality measures the degree to which the visual aesthetics of a landscape are valued from a human point of view. Relevant studies on scenic quality have concluded that we tend to prefer landscapes that are relatively natural and vegetated, especially those with water features, dramatic topography, and contrasting features. Landscapes we usually least prefer are those with a high degree of human disturbance, as well as landscapes with few trees and landforms that are flat and unvaried.

Landscape Character

Landscape character refers to the particular type and aesthetics of a landscape. Elements that combine to create various landscape character types include landform, location, vegetation, land use and available views to and from an area. It identifies the main features that combine to form a sense of place for a nominated location.

Visual and Landscape Sensitivity

The assessment also considers visual and landscape sensitivity to potential visual changes. This sensitivity takes into account two main aspects:

- Visual sensitivity: the degree to which any visual change to the landscape is likely to socially affect humans, taking into account both visual prominence (how easily a site is seen) and visual accessibility (how closely and often a site is seen).
- Landscape sensitivity: the sensitivity of a particular landscape type to visual change.

Locations normally the most sensitive are those with high and/or fixed viewing populations and sites that are visually prominent and/or elevated. The potential for impact also usually increases as the viewer's position becomes closer. In terms of visual change, the highest impact will usually be on local or foreground views (less than 1km away), with sub-regional or mid-ground views moderately sensitive (1-5km), and regional or distant views (over 5km) the least sensitive (Queensland Department of Main Roads, 1997).

Landscapes most sensitive to change include natural environments with particular characteristics that are vulnerable to alteration, such as vegetated areas and water courses. Other landscapes can be sensitive due to their social values such as those associated with landmarks or culturally important sites.

Visual Catchment

Visual catchment is a term used to describe where a site can be seen from. It is usually defined by topographic features such as ridgelines that limit the extent of views. Potential views can be limited by intervening vegetation, buildings and infrastructure. The visual catchment can identify what parts of the site can be seen from outside viewpoints, as well as what outside areas can be seen from within the site itself.

3. Context and Potential Visual Impact

Site Context

The subject site (Lot 223 DP1037300) is located just off the New England Highway on the western edge of Rutherford. Access is via a narrow driveway from Kyle Street. To the west of the site, on the adjacent side of the New England Highway, is the Rutherford aerodrome. The surrounding area is in a state of land use change, with previous rural land being replaced by developing industrial land surrounding the site as part of the Rutherford industrial zone. A new industrial area has also been recently approved for future development across the highway, to the south of the main aerodrome area. Figure 1 illustrates the general context of the site.

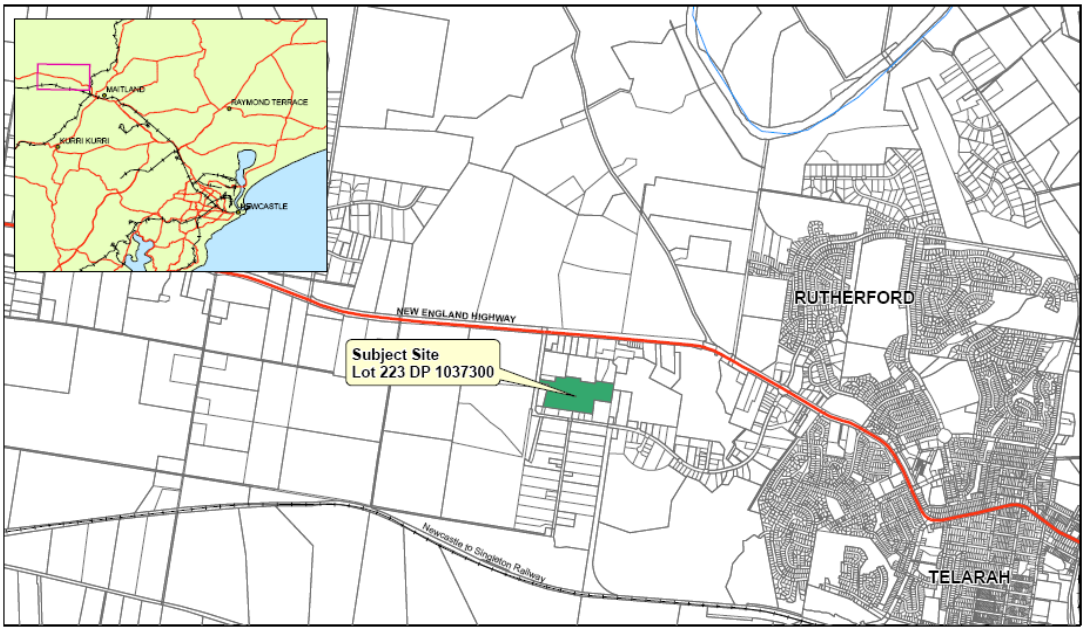


Figure 1: Site Context

There are older and more recently developed residential areas surrounding the site to the east, west and south, with more areas planned for release in the near future along Anambah Road. The topography is generally flat, with the site itself in a natural low point surrounded by low ridges. Nearby residential areas are generally situated on local ridges that allow some longer views over both the aerodrome and existing Rutherford industrial areas.

The Anambah land-fill site is nearby on the east side of Anambah Road. This is planned for future recreational uses. There is also a golf course and the Main Northern Railway Line to the south of the subject site.

Photograph 2: View of the existing main building on the site

The site was previously used for textile manufacturing from 1945 until the site closure in 2000. It currently consists of several disused, large, factory-style buildings that were part of the previous textile mill. It is very flat and includes several groupings of mostly native trees around the boundary (refer Photograph 2).

Description of Proposed Development

The proposed development will consist of waste resource recovery and recycling facilities including oily water treatment and waste oils transfer station, recycling of oil to bas lube specification by hydrogenation, chemical fixation stabilisation and solidification (CFS), waste water treatment plant, onsite laboratory, dangerous good store, industrial cleaning services depot, environmental recovery services depot, truck wash, and transport vehicle depot.

TPI proposes to renovate existing buildings and infrastructure and construct additional infrastructure to operate the Facility for the recovery of a wide range of industrial, commercial and domestic wastes. Where possible components of the proposed development will be constructed and operated within existing site buildings and infrastructure. The proposed site layout is shown on the *Landscape Concept Plan*, Figure 2 (chapter 4).

The main new components that would become part of the outside areas of the site include:

- Hydrogenation plant and associated infrastructure;
- CFS silos;
- Truck wash and transport depot;
- Waste water treatment plant; and
- Oily water treatment and waste oil transfer station.

Hydrogenation plant

The proposed hydrogenation plant is located in the western portion of the site. The hydrogenation plant will consists of three separate tank bunds. The light ends storage tank bund will consist of one (1) 100,000 litre tank (diameter 5 metres, height 6 metres), the processed oil tank bund will consist of five (5) 200,000 litre tanks (diameter 7 metres, height 6 metres) and the processing area tank bund will consist of eight (8) 100,000 litre tanks (diameter 5 metres, height 6 metres). The hydrogenation plant will also consist of a boiler, bleaching plant, flare, stripper and cooling tower. The flare, stripper and cooling tower are all 16 metres in height.

CFS silos

Two silos for the storage of fly ash and concrete for use in the CFS process will be located at the northern end of the eastern most existing metal shed. The silos are approximately 20 metres in height.

Truck wash and transport depot

The truck wash is approximately 30 metres in length and 10 metres in width. The truck wash will consist of two imperviously bunded pits with rollover bunds. The truck depot area is approximately 70 metres in length and 50 metres in width and will consist of hardstand area.

Waste water treatment plant

The waste water treatment plant will consist of eight (8) upright 100,000 litre above ground storage tanks (diameter 5 metres, height 6 metres) and will be located to the east of the CFS curing area. Tanks would generally be painted green in colour to be sympathetic to the surrounding environment, however two (2) of the tanks may be painted black to encourage phase separation of oil and water by heat. One (1) filter press will also be incorporated into the waste water treatment plant.

Oily water treatment and waste oil transfer station

The oily water treatment will consist of four (4) upright 100,000 litre above ground storage tanks (diameter 5 metres, height 6 metres) and will be located to the east of the CFS curing area. Tanks will generally be painted green in colour to be sympathetic to the surrounding environment, however two (2) of the tanks may be painted black in colour to encourage phase separation of the oil and water by heat. One (1) filter press will also be incorporated into the oily water treatment.

The waste oil transfer station will consist of ten (10) upright 100,000 litre above ground storage tanks (diameter 5 metres, height 6 metres) and will be located to the east of the CFS curing area. Tanks will be painted green in colour to be sympathetic to the surrounding environment.

Other Facilities

There would also be a truck wash facility for vehicles up to semi trailer length. Machinery on site would include a number of front-end loaders and a windrow turner.

Landscape Works

A concept landscape plan has been prepared for the site (refer Figure 2). Discussion of this plan is included in chapter 4.

Landscape Character and Scenic Quality

The scenic quality of Maitland Shire is strongly defined by its interspersed rural and urban areas. Large areas of open pasture and pockets of native vegetation to the west of Rutherford form a defined western boundary to the urban area of Rutherford and the greater Maitland area. The local government area has a variety of landscape types such as highly scenic rural and natural landscapes, heritage streetscapes, existing and new residential areas and commercial and industrial development.

The site and its immediate environs have an industrial character and a rather low scenic quality. Factors that contribute to defining this level of scenic quality include the flat topography, low height of surrounding trees and adjacent industrial and commercial development.

Impacts on Landscape Character and Scenic Quality

There would be little change in landscape character as a result of the proposed development, as one industrial use would be replaced by another. The existing buildings have a neglected and aged appearance and are of no real aesthetic value. This low scenic quality provides an opportunity to improve the site and surrounding views to it through the proposed re-development.

There are several groups of native trees that currently serve to relieve and improve the look of the site. The site layout has been designed so as to retain as many established, native trees as possible. Additional landscape works are also proposed to improve the final overall character and aesthetics of the site. Some of the existing vegetation is shown in Photograph 3.

Photograph 3: View of some trees on the site south of the existing pond

The subject site would be affected by the removal of some native and other trees. This would have a short term impact of 5-10 years that would be slowly ameliorated as planned landscape works mature.

Visual Catchment and Potential Viewers

Visual catchments are areas of land usually defined by major ridgelines that prevent views beyond. The subject site falls into a visual catchment defined most strongly by

the surrounding ridgelines to the immediate west, south, and east. North of the New England Highway flat pastoral land extends for some kilometres to distant low ranges. None of the proposed re-developed parts of the site would be higher than the existing buildings, which means the existing visual catchment would remain constant and not impact on additional viewers.

The following assessment describes views for local and mid-distant to distant viewers. Local views (within one kilometre) are generally the most sensitive due to their closeness.

Local Views

Views of the site of less than one kilometre are currently possible from the New England Highway, the surrounding industrial area and from the edge of the Rutherford Aerodrome site. There are no residential areas within one kilometre.

New England Highway

The proximity of the New England Highway, and its high number of users, means that any change to views from the highway towards the development would be sensitive to change. There are currently limited glimpses of the site buildings possible while travelling on the New England Highway.

Maitland City Council (2001) has identified this part of the New England Highway as part of the gateway to Maitland for travellers from the west, from areas such as the Upper Hunter Valley and the Central Tablelands.

The proposed development would not be any higher than the existing buildings and would therefore remain visible from very few points along the New England Highway. These glimpses would be likely to be further reduced as other intervening sites along the Highway are re-developed in the future. Therefore there would be little impact on the character of the highway as a result of the development.

Existing Industrial Area

There are views of the existing building from the surrounding industrial area. Direct views from Kyle Street are partially screened by trees on both the subject site and alongside the adjacent industrial site's boundary. The site is also partially screened by buildings and vegetation from the street to the south. There would be little change to the general character of the surrounding area and views from within the industrial estate.

Rutherford Aerodrome

There is a dense band of trees within the aerodrome site that currently prevent most views toward it. It is understood that this intervening vegetation would remain with the planned development of the eastern part of the aerodrome site to industrial.

Mid–distant and Distant Views

Mid-distant views of the site are currently possible from a number of locations, such as the residential areas of Rutherford to the east, Wollombi Road to the south (and rural properties along it) and residents along Beacon Hill Road to the west of the aerodrome. However, many potential views from these locations are obscured by existing vegetation and industrial buildings.

Residential Areas

The newer Rutherford residential subdivision to the east is about 1.5 kilometres away at its closest point, with elevated areas that have some views towards the site (from about two kilometres away). Those on more elevated areas include residents in Christine Close, Robert Close and Rebecca Close, with those in Adam Avenue, Carol Avenue, and Joshua Close at a slightly lower elevation. The residents on the lowest areas cannot see the site.

Present views of these residents already include the existing industrial subdivision, which displays a range of visually dominant building types and colours. The re-development of the subject site would be unlikely to be noticeable to these residents.

Anambah House

Anambah House is a recognised heritage building located approximately one kilometre along Anambah Road from the highway, and over two kilometres from the subject site. Although slightly elevated, the rolling landscape and intervening vegetation and buildings between the house and the site mean that there are, and would continue to be, no views of the subject site from the house or its immediate surrounds.

Other Viewpoints

Some residents along Beacon Hill Road just west of Rutherford Aerodrome have views towards the site, but would be unlikely to notice the change from the existing buildings to the proposed development. Viewers along Wollombi Road and older parts of Rutherford to the east would similarly be unlikely to notice any change due to distance and intervening trees, landform and buildings.

4. Visual Issues and Recommendations

This section describes the main visual issues associated with potential redevelopment of the site, and then makes recommendations to reduce likely visual impacts of the proposed industrial redevelopment.

Visual Issues

Most industrial sites have a rather low visual quality. Aspects of their character that contribute to this include:

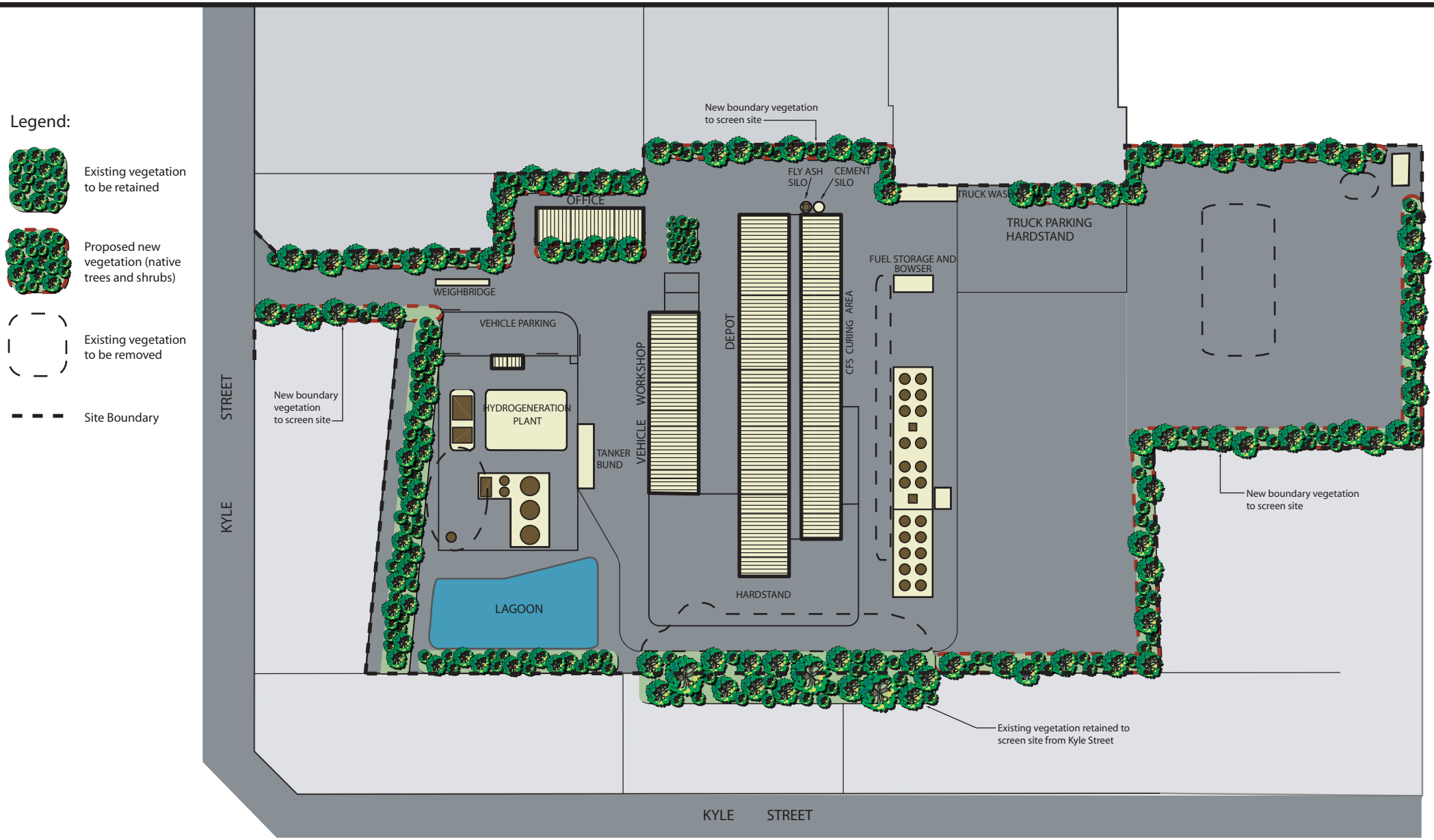
- very large warehouse-type buildings that have a poor relationship to human scale;
- limited variation of construction materials;
- large, bare car parking and storage areas;
- large signs and an extensive use of them;
- high use of unattractive security fencing; and
- inadequate landscaping and use of street trees.

Many of these negative visual outcomes can be managed by improved design and appropriate landscape works. As identified in the previous section, there are some limited viewpoints to the site from the New England Highway and the nearest residential areas. These views would be further reduced by implementing perimeter landscape planting.

Recommendations

The following recommendations for the proposed development have been made to improve the often poor visual outcomes traditionally associated with industrial development, and to address the visual issues described above.

- Encourage the design of buildings with a more human-like scale by using techniques such as defined entrances of one storey (about three metres) height and using colour tones or different materials to break up the visual scale (such as darker colours or different materials on the lower section.
- Limit the main building colours to a defined colour palette (such as different tones of green, terracottas and mid to dark greys) with only other brighter colours used in a minor way to highlight features.
- Specify the use of black-coloured security fencing (including black - coloured poles) for perimeter fencing, where such fencing is needed.
- Design signs to be of a high quality presentation and limited in number and overall size.



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Concept Landscape Plan

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- Discourage the use of non metallic/shiny materials that may cause reflection and glare.
- Implement a high standard of landscape planting as shown on the Concept Landscape Plan as soon as possible (refer below).

Landscape Concept Plan

A Landscape Concept Plan has been prepared for the site to mitigate potential visual impact and enhance the final scenic quality and landscape character as shown in Figure 2. The basic design objectives of this plan are to:

- provide partial screen planting along perimeter areas;
- undertake rehabilitation works along the site's watercourse to remove weeds and revegetate; and
- use locally-native plant species.

All planting should also occur in fully prepared planting beds (preparation to include weed removal, soil improvement, mulching) with a combination of 50-50, 250-300mmm pot sizes and seedlings (tubestock). A 12 month maintenance period should be implemented, and include replacement of failed plants, weed management and watering.

Conclusion

There would be little impact on the surrounding area due to the proposed re-development of the site. Minimal changes would occur to views from the nearest residential areas and the New England Highway. The existing low scenic quality of the site, largely due to the current ageing sheds, should be improved by the site's redevelopment and proposed landscape works.

5. References

Forestry Commission of Tasmania (1990). *Visual Management System*.

Maitland City Council (2001). *Maitland Urban Settlement Strategy*.

New South Wales Department of Planning (1988). *Rural Land Evaluation Manual*.

Queensland Department of Main Roads (1997) *Road Landscape Manual*. Prepared by Edaw (Aust).

United States Forest Service, United States Department of Agriculture (1974). *National Forest Landscape Management Agriculture Handbook Number 462,* Chapter 1 - The Visual Management System.

Appendix A

Author's Qualifications

STACEY BRODBECK

Principal Urban Designer & Planner, Parsons Brinckerhoff, Newcastle
PB Professional Associate

Years of Experience

15 (5 with PB; 10 with others)

Education

Master of Environmental Planning, Macquarie University, 1999
Bachelor of Landscape Architecture, University of NSW, 1989

Professional Affiliations

Associate, Australian Institute of Landscape Architects
Member, Planning Institute of Australia (Urban Design Chapter)
Member, Central Coast SEPP 65 Urban Design Review Panel (Ministerial Appointment)

Professional Registrations

Registered Landscape Architect

Key Qualifications

Stacey has prepared many visual assessments studies for large infrastructure and development projects. Her work also frequently includes consulting with local community members. Stacey's expertise has been acknowledged by a ministerial appointment to the Central Coast Urban Design Review Panel which advises on urban design issues and residential flat developments for Gosford and Wyong Councils. She recently prepared a peer review and additional visual assessment for DIPNR for the Sydney Gas Methane Plant in western Sydney, which also involved a Statement of Evidence.

Some of the reports she has prepared:

- preparation of urban design strategies such as Thornton North Master Plan, Anna Bay North Structure Plan, Thornton – Killingworth Sub-regional Strategy
- visual assessment report on options for a proposed new electricity transmission corridor near Cessnock for Energy Australia
- numerous major highway corridor evaluations in terms of visual/urban design and landscape considerations (such as the Pacific Highway, Bonville Deviation; Coopernook Bypass; Corowa Bypass; Byron Bay Bypass; Pacific Highway, Bulahdelah Upgrade; and the Eungai to Kempsey Upgrade)
- various visual assessments and urban design strategies for local environmental studies.

Awards

- Planning Institute of Australia (NSW) Excellence Award 2004 for Thornton-Killingworth Conservation & Development Sub-Regional Strategy – key author (Category: Rural & Regional Planning Achievement)
- Urban Development Institute of Australia (UDIA) Best Professional Consultancy, 2003 for Thornton-Killingworth Conservation & Development Sub-Regional Strategy

Published Papers

A View for the Public, Australian Planner, March 2005. Peer-reviewed paper on visual assessment methods for environmental assessment reports.