

Appendix C

Visual assessment of combined retaining structures and noise barriers

Appendix C: Visual Assessment

of

Combined Retaining Structures

And Noise Barriers

Prepared by

CALDIS
COOK
GROPP



Architects
Interior Designers
Heritage Consultants
Landscape Designers
Project Managers
Building Auditors
ACN: 051 302 900
ABN: 57 051 302 900
Principal Architect: Stephen Caldis
Registration No: 4265
Level 2
45 Chippen Street
CHIPPENDALE NSW 2008
Tel: (02) 9557 5066
Fax: (02) 9557 4066
Email: projects@caldiscook.com
Website: www.caldiscook.com

Revision: 17 August 2006

Table of Contents

1	INTRODUCTION.....	1
2	BROOMFIELD STREET.....	1
3	DESIGN TREATMENTS	3

List of Figures

Figure 2. 1. View of houses, eastern side of Broomfield Street

Figure 2. 2. View of the western side of Broomfield Street

Figure 3.1. Blockwork wall

Figure 3.2. Landscaping

Figure 3.3. Retaining structure and noise barrier

Figure 3.4. Underbridge wall

Figure 3.5. Textured blockwork

Figure 3.6. Concept Design of wall, Broomfield Street

1 Introduction

1.1 Overview

Following public exhibition of the Environmental Assessment, for the proposed Southern Sydney Freight Line (the proposal or SSFL), concern was raised in a number of submissions regarding the visual impact of the combined height of retaining structures and noise barriers. Due to the topography and urban context in the northern part of the proposed SSFL route, combined retaining structures and noise barriers are required, with one of the areas of greatest impact being the southern end of Broomfield Street, Cabramatta. This Visual Assessment has been prepared by Caldis Cook Group Pty Ltd based on a refined concept design, which applies in more detail the urban and landscape design guidelines/principles from Section 3.4.6 of Volume 1 of the Environmental Assessment to areas where proposed retaining structures and noise barriers are combined.

2 Broomfield Street

2.1 Affected Area

Investigations carried out for the Environmental Assessment of the proposed SSFL determined that the residential areas along Broomfield Street would require noise barriers to mitigate increased noise levels from freight trains. Concerns have been raised about the high visual impact of the proposed barriers combined with the retaining structure along the southern section of this street, where single storey dwellings predominate (Figure 2.1).



Figure 2.1. View of houses, eastern side of Broomfield Street

The existing RailCorp track alignment, leading north from the Broomfield Street (Sussex Street) underbridge is on an embankment, approximately 4 metres above street level (Figure 2.2). Between the underbridge and Cabramatta Railway Station, the natural ground level gradually rises and the level of the embankment decreases.



Figure 2.2 View of western side of Broomfield Street, near the underbridge

The proposed SSFL horizontal alignment would be on the eastern side of the rail corridor on a widened embankment, and at a similar vertical alignment to the RailCorp tracks. This would necessitate earthworks with a retaining structure and a noise barrier on top. At the southern end of Broomfield Street, the retaining structure would be approximately four metres high plus a 3.5 metre noise barrier. Closer to Cabramatta Railway Station, the height of the retaining structure would be greatly reduced due to the topography, and the noise barriers would need to increase to 4 metres high to be effective. Elsewhere the combined height of retaining structures and noise barriers would be equal to or less than the height of Broomfield Street, Cabramatta.

Design strategies and mitigation measures were proposed in the Visual Assessment (See Technical Paper No 5 of Volume 2 of the Environmental Assessment), and these are investigated further in the following section.

3 Design Treatments

3.1 General

This Section describes the proposed strategies for the visual treatment of the proposed retaining structure and noise barrier at Broomfield Street, Cabramatta.

Design Objective - to reinforce the local character as viewed along the rail corridor and to reduce impacts on affected residential areas.

The following urban and landscape design guidelines/ principles are proposed and these are outlined in Section 3.4.6 of Volume 1 of the Environmental Assessment:

- Enhance the local character and gateways using landscaping and built structures appropriate to location.
- Undertake community consultation to present the available options (e.g. level of screening and materials) for visual and/or noise barriers in the areas identified for implementing those measures.
- Consider appropriate screening, including soft landscaping, which responds to the environment in which it is located (e.g. rural, residential, or recreational areas). Avoid changing the type or form of screens in a random manner, where rationale for doing so is not apparent
- Consider earth mounding used in conjunction with screen barriers to reduce their overall height
- Consider noise barriers as three dimensional elements, recognising that they are often seen from both sides. Recognise potential for interaction of noise barriers with earth mounding and vegetation, and to reflect local character
- Ensure noise barriers are designed to suit the surroundings (e.g. transparent materials should be used for areas of scenic interest or earth mounding in more natural environments)
- Select textiles and patterns in preferences to plain or smooth finishes
- To reduce the occurrence of graffiti, place a line of plantings in front of barriers to restrict access
- Apply graffiti-proof coatings on vulnerable surfaces, such as plain concrete surfaces.

3.2 Guidelines

The following photographs are examples of retaining structures and noise barriers, which demonstrate the general principles of good design.



Figure 3.1. Blockwork noise barrier made up of textured and coloured panels



Figure 3.2. Landscaping combined with noise barrier



Figure 3.3. Retaining structure and noise barrier, with established planting

Figure 3.4. Underbridge wall with striped bands



Figure 3.5. Textured blockwork on a curved wall that casts interesting shadows

3.3 Retaining Structure

The widened embankments for the proposed SSFL at Broomfield Street would be retained by a keystone wall system. A keystone wall is made up of units, which are designed to interlock with adjacent units, thus forming a high strength wall. The keystone units are durable, with a highly textured rough-cast face, which discourages graffiti. The keystones are available in a limited range of colours.

The visual strategy for the proposed keystone wall would be to use a light coloured “Limestone” block for the main wall and capping course, with a subtle pattern of contrasting strips along the wall at irregular intervals. These contrast panels would be made up of a slightly darker coloured “Bluestone” block.

The contrast panel would be approximately 2.7 metres long by 0.2 metres high (using half-height blocks), placed at irregular intervals to the face of the wall and at centres of not more than 3 metres, to produce a subtle pattern (Figure 3.6. Refined concept design). As the viewing distance to the wall could be close from the adjacent footpath, more detail would be visible.

Figure 3.6. Refined concept design of retaining structure and noise barrier at Broomfield Street



3.4 Noise Barrier

A noise barrier would be part of the SSFL works for Broomfield Street, Cabramatta. The noise barrier would be designed to meet the urban and landscape design guidelines/principles above. These include a design that would:

- discourage graffiti, by incorporating a textured surface, or anti-graffiti finish
- include the use of colour to create a visually pleasing effect; and
- use horizontal and vertical joints in the panels for visual effect.

3.5 Landscaping

Landscaping would also be incorporated into the proposed concept design as an element to enhance the streetscape and soften the proposed wall including;

- A planting strip at the top of the retaining wall would allow for small shrubs, ornamental grasses or creepers.
- At the base of the retaining wall (street level), small planting areas at regular intervals would allow for an avenue of trees to grow.

3.6 Conclusion

Along Broomfield Street, Cabramatta, the SSFL would be on a widened embankment, at the same level as the existing rail alignment and this would necessitate the construction of a retaining structure combined with a noise barrier, which would address both engineering functions and the residential visual amenity. Careful detailing of the proposed keystone wall and noise barrier, in combination with a landscaping strategy along its length, would result in minimising the visual impact caused by the combined retaining structure and noise barrier and contribute to a positive outcome for local residents and the streetscape. As already committed to, ARTC would further refine the concept during detailed design in consultation with directly affected residents.

In other parts of the SSFL route where a combined retaining structure and noise barrier would have a visual impact the refined concept design discussed above would be applied to the locality during detailed design to minimise the visual impact.