Sydney Motorway Corporation | WestConnex

WestConnex

Stage 2 – King Georges Road Interchange Upgrade

Urban Design and Landscape Plan – Part 2A: Implementation of Feature Wall

Doc No. WCX2-REP-2100-UD-033A

V.08 September 2016

Table of Contents

Document Details

This *Urban Design and Landscape Plan – Part 2A: Implementation of Feature Wall* (UDLP 2A) has been saved as follows:

Document Details	
Project Number:	D/00635
Filename:	Doc No. WCX2-REP-2100-UD-033A
Location:	TeamBinder (KGRIU) as a controlled document

Approval and Authorisation

Approval and authorisation		Title
Prepared By	[redacted]	Principal Landscape Architect (AECOM)
	[redacted]	Project Engineer (SMC)
	[redacted]	Community Engagement Officer (SMC)
Reviewed By	[redacted]	Community Engagement Manager (SMC)
	[redacted]	Environmental Manager (SMC)
	[redacted]	Senior Project Manager (SMC)
Approved for Issue By	[redacted]	Project Director New M5 (SMC)

Document Revision History

The following table lists the revisions made to this document:

Issue	Date	Revision Description

V.01	07/03/2016	Issue for Internal Review
V.02	16/03/2016	Issue for Internal Review
V.03	22/03/2016	Issue to DPE
V.04	18/05/2016	Issue to DPE
V.05	07/06/2016	Issue for Internal Review
V.06	04/07/2016	Issue to DPE
V.07	18/08/2016	Issue to DPE
V.08	06/09/2016	Revised as per DPE Conditional Approval Letter

Executive Summary

The WestConnex King Georges Road Interchange Upgrade (KGRIU) project involves:

- Widening the M5 East from Penshurst Road to Cooloongatta Road
- Adjusting the motorway east and westbound on and off ramps at King Georges Road
- Building a new bridge span on the Cooloongatta Road Bridge

To address the Minister's Conditions of Approval (MCoA) B15 and B16 for the project, an Urban Design and Landscape Plan has been prepared.

The Urban Design and Landscape Plan has been staged as follows:

- *Urban Design and Landscape Plan – Part 1: Construction* approved by the NSW Department of Planning and Environment (DPE) in December 2015 and amended in March 2016;
- *Urban Design and Landscape Plan – Part 2A: Implementation of Feature Wall* which is this document; and
- *Urban Design and Landscape Plan – Part 2B: Implementation of Other Improvements*.

This document, the *Urban Design and Landscape Plan – Part 2A: Implementation of Feature Walls* (UDLP 2A) specifically outlines the outcomes of the proposed "Public Art Opportunities", initially discussed in *Section 1.5.6.2* of the UDLP 1.

1 Introduction

1.1 Background

AECOM has been commissioned by Sydney Motorway Corporation (SMC) to address the Minister's Conditions of Approval for the Project relating to Urban Design and Landscape (conditions B15 and B16), as set by the NSW Department of Planning and Environment (DPE) for the KGRIU Project.

The Urban Design and Landscaping Plan is staged as follows:

- *Urban Design and Landscape Plan – Part 1: Construction* (UDLP 1), which was approved by the NSW Department of Planning and Environment (DPE) in December 2015 and amended in March 2016;
- *Urban Design and Landscape Plan – Part 2A: Implementation of Feature Wall* (UDLP 2A) which is this document; and
- *Urban Design and Landscape Plan – Part 2B: Implementation of Other Improvements* (UDLP 2B), planned to be released in mid-2016.

This document should be read in combination with UDLP 1, which addresses the majority of Minister's Conditions of Approval (MCoA) B15 and B16, including information regarding the project and the general urban and landscape design vision.

Table 1.1 and Table 1.2 outlines where the MCoA B15 and B16 conditions are addressed in the UDLP 1 and UDLP 2A documents.

Table 1.1: Minister's Conditions of Approval – B15

B15 – The Proponent, shall where feasible and reasonable, give consideration to the opportunities, and implement the mitigation measures identified in the *King Georges Road Interchange Upgrade – Visual Amenity, Built Form and Urban Design Report, AECOM 2014.* Where an opportunity is not considered feasible or reasonable, this will be clearly demonstrated to the Secretary in conjunction with the submission of the Urban Design and Landscape Plan required by condition B16.
Design Response
Urban Design Vision The urban design vision for the KGRIU Project has been adopted from the WestConnex Motorway Urban Design Framework, RMS Centre for Urban Design and the Sydney Motorway Corporation, 2013, which is: 'The WestConnex Motorway will be a sustainable, high quality and transformational project for the people of Sydney and NSW. Exhibiting design excellence as a whole and in all constituent parts, it shall be sensitively integrated into the built and natural environments, and help build local communities. It will enhance the form, function, character and livability and contribute to the future livability of the city' - Australia's 'Global City'. (*WestConnex Motorway Urban Design Framework, p 44)* **Urban Design Principles**

The following urban design principles were adopted in order to achieve this vision outcome from the *WestConnex Motorway Urban Design* Framework Vision:

- Environmental responsiveness;
- Connectivity and legibility;
- Place making;
- Urban renewal and livability;
- Memorable identity and a safe, enjoyable experience; and
- A new quality benchmark.

Urban Design and Landscape Plan

This *'King Georges Road Interchange Upgrade; Urban Design and Landscape Plan', AECOM 2015* (the UDLP) refers to and adopts the same strategy to that articulated in the *King Georges Road Interchange Upgrade – Visual Amenity, Built Form and Urban Design Report, AECOM 2014.*

The *King Georges Road Interchange Upgrade – Visual Amenity, Built Form and Urban Design Report, AECOM 2014* discusses potential impacts of the King Georges Road Interchange Upgrade (M5 KGRIU) Project, together with the urban design measures to be adopted in order to minimise those impacts through the urban and landscape design. It also describes the likely physical and visual impacts of the project and sets out an urban and landscape design strategy to minimise and manage those effects. The stated aims of the strategy are to:

- Protect the existing natural systems and ecology of the corridor;
- Protect and enhance the heritage features of the corridor;
- Provide a safe and legible travel experience for all users of the corridor, including motorists, cyclists and pedestrians; and
- Protect and enhance the amenity of adjacent residents and stakeholders, especially those who interface with the corridor.

The UDLP 1 is organised in a number of sections to respond specifically to the *King Georges Road Interchange Upgrade – Visual Amenity, Built Form and Urban Design Report, AECOM 2014,* including:

- **UDLP 1, *Section 3 Urban and Landscape Design Objectives and Principles*** describes, in detail, the prescribed Project design objectives and principles in order to achieve the Project vision;
- **UDLP 1, *Section 4 Concept Design*** provides a detailed landscape response to the road corridor and includes indicative plant schedules for the landscape treatment;
- **UDLP 1, *Section 5*** *Urban Design* provides a detailed description of the urban and landscape elements within the project. These elements include noise walls, retaining walls and embankments, bridges, fences and other detailed elements;
- **UDLP 1, *Section 6*** *Mitigation Measures* describes the key strategies to be put in place during design development, construction and operation to minimise the Project impacts; and
- **UDLP 1, *Section 7*** *Maintenance of Assets* outlines the Project's key permanent components within the road corridor and maintenance activities required to be undertaken to ensure their continual and ongoing upkeep for the life of the project.

This UDLP 2A is in response to an opportunity identified in UDLP 1, Section 1.5.6.2 which identified an opportunity for "community based public art" whose design process would "be a collaborative and iterative process that is driven by the community". While this was the intent at the time of writing the UDLP 1, further evaluation revealed that this would not be considered feasible or reasonable, as explained in **UDLP 2A, *Section 2.1*** *Conceptualisation*.

Table 1.2: Minister's Conditions of Approval – B16

B16 – Prior to the commencement of permanent built works and/ or landscaping, or as otherwise agreed by the Secretary, an Urban Design and Landscape Plan shall be prepared and implemented (following approval) for the SSI. The Plan shall be prepared by suitably qualified and experienced person(s), in consultation with

the Relevant Council and community, for the approval of the Secretary. The Plan shall present an integrated urban and landscape design for the SSI, and shall include, but not necessarily be limited to:	
Requirement	**Design Response / Location in Report**
a) identification of design objectives, principles and standards based on: i) environmental and heritage values, ii) urban design context, iii) social context and infrastructure, iv) sustainable design and maintenance, v) community safety, amenity and privacy, including 'safer by design' principles where relevant, vi) relevant design standards and guidelines, and *vii) 'King Georges Road Interchange Upgrade – Visual Amenity, Built Form and Urban Design Report', AECOM 2014;*	i) Refer to **UDLP 1 Section 3 Urban and Landscape Design Objectives and Principles** ii) Refer to **UDLP 1 Section 3 Urban and Landscape Design Objectives and Principles** iii) Refer to **UDLP 1 Section 3 Urban and Landscape Design Objectives and Principles & UDLP 1 Sub-Section 5.2.12 Shared User Path** iv) Refer to **UDLP 1 Section 3 Urban and Landscape Design Objectives and Principles** v) Refer to **UDLP 1 Section 3 Urban and Landscape Design Objectives and Principles & UDLP 1 Section 8 Safety in Design** vi) Refer to **UDLP 1 Section 2 Design Reference Documents, UDLP 1 Section 3 Urban and Landscape Design Objectives and Principles, UDLP 1 Section 5.2.4 Noise Walls & UDLP 2A Section 2.2.1** vii) Refer to **UDLP 1 Section 5 Urban Design & Table 1.1 above**
b) the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/ revegetated shall be provided, including their appropriateness to the area and habitat for threatened species (including rehabilitation of aquatic vegetation);	Refer to **UDLP 1 Section 4 Concept Design, UDLP 1 Section 6 Mitigation Measures, UDLP 2A Section 2.1 Previous Noise Wall and Status & UDLP 2A Appendix 8 Landscape Drawing**
c) a description of disturbed areas (including compounds) and details of the strategies to progressively rehabilitate, regenerate and/ or revegetate these areas;	Refer to **UDLP 1 Section 4 Concept Design**
d) design features, built elements, lighting and building materials (including noise walls, cycle and pedestrian paths);	Refer to **UDLP 1 Section 5 Urban Design & UDLP 2A Section 2**
e) an assessment of the visual screening effects of existing vegetation and the proposed landscaping and built elements. Where receivers have been identified as likely to experience high visual impact as a result of the SSI, the Proponent shall in consultation with affected receivers, identify opportunities for providing at-receiver landscaping to further screen views of the SSI. Where agreed to with the landowner, these measures shall be implemented during the construction of the SSI;	Refer to **UDLP 1 Section 4 Concept Design, UDLP 1 Section 6 Mitigation Measures & UDLP 2A Section 2.7**

f)	graphics such as sections, perspective views and sketches for key elements of the SSI, including, but not limited to built elements of the SSI;	Refer to **UDLP 1 Section 4 Concept Design, UDLP 1 Section 5 Urban Design & UDLP 2A Appendix 7**
g)	monitoring and maintenance procedures for the built elements, rehabilitated vegetation and landscaping (including weed control) including performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail; and	Refer to **UDLP 1 Section 6 Mitigation Measures, UDLP 1 Section 7 Maintenance and Regeneration & UDLP 2A Section 2.3 Owner / Operator Consultation**
h)	evidence of consultation with the Relevant Council and community on the proposed urban design and landscape measures prior to its finalisation.	Refer to **UDLP 1 Sub-Section 1.5 Consultation, UDLP 2A Section 2.3 Council Consultation & UDLP 2A Section 2.5 Community Consultation**
Note	The Plan may be submitted in stages to suit a staged construction program of the SSI.	Refer to **UDLP 1 Section 1.5.6 Proposed Improvements & UDLP 2A Section 1.1 Background**

The UDLP 2B shall address all other proposals to the M5 KGRIU Project discussed in *Section 1.5.6* of the UDLP 1, namely:

- Pocket Parks;
- Northern Pedestrian crossing;
- Rosetta Lane Pedestrian Connectivity; and
- Topsoil.

1.2 Purpose

The purpose of this document, the *Urban Design and Landscape Plan – Part 2A: Implementation of Noise Walls* (UDLP 2A) is to specifically outline the results of the proposed improvement to an exposed length of noise wall at the end of Elouera Street (North) Beverly Hills, described in the *Urban Design and Landscape Plan – Part 1: Construction* (UDLP 1), *Section 1.5.6.2 Public Art Opportunities*.

2 Elouera Street Noise Wall

A 40m* long by 4.9m – 5.5m high exposed segment of noise wall at the cul-de-sac end of Elouera Street (North) Beverly Hills provides an opportunity for a feature wall as there is no room for planting by virtue of its clearance to the shared user path. The specifics of this noise wall are detailed in UDLP 1 Figures 5.8 and 5.10 and relevant design standards and guidelines are listed in Section 2 (Project Specific Requirements). The width of the shared path is a predefined design constraint and cannot be further narrowed to make room for planting (refer to the Pedestrian and Cycling Access Strategy Part 2 Implementation). However, to provide some visual relief for affected residents a single specimen canopy tree is proposed at the end of the Elouera Street (North) cul-de-sac together with additional screen planting in the adjacent pocket park and open space (refer UDLP 2B: Implementation of Other Improvements, Section 2).

To reduce the risk of this section of exposed wall becoming a target for graffiti, a neighbourhood feature wall was considered a suitable design treatment. A feature wall design developed with community input could improve amenity and aesthetics for local residents at this location.

Figure 2.1 below shows the approximate location and extent of the proposed feature wall.

Figure 2.1: Elouera Street (North) Beverly Hills Feature Wall Location in relation to the KGRIU Project

* UDLP 1 Section 1.5.6.2 incorrectly stated that the exposed length was 30m based on concept design.

2.1 Previous Noise Wall and Status

This section provides information on the existing noise wall at the cul-de-sac end of Elouera Street (North) Beverly Hills that precedes the proposed feature wall, as it was before commencement of the KGRIU Project (i.e. the “Previous Noise Wall”) and its current status for context.

Figures 2.2 and 2.3 show that the existing noise wall comprised two panels vertically between posts with sparse screening planting present between the existing noise wall and asphalt path.

Figure 2.2: Previous Elouera Street (North) Noise Wall

Figure 2.3: Shrubbery Adjacent to Previous Elouera Street (North) Noise Wall[1]

[1] Google, 2014, [Shrubbery Adjacent to Previous Elouera Street (North) Noise Wall], Available at https://goo.gl/YrsFPt

The 2.5m minimum width of the Upgraded Shared User Path (SUP) means there is insufficient room for screening plants to grow in front of the proposed feature wall. However, the screen planting in other areas of this noise wall will be more substantial than what was planted previously.

UDLP 1, Appendix 1, WCX2-IFD-20-2100-LD-20150622_LANDSCAPE_LAYOUT_0006 shows substantial screening planting a short distance either side of the proposed Noise Wall, compared to Figures 2.2 and 2.3 which show an inconsistent line of mid-range screening shrubs either side of the Previous Noise Wall. This appendix has been reproduced as Appendix 8. Landscape Drawing.

The proposed feature wall will not significantly differ from the Previous Noise Wall in terms of alignment, the only visible change will be the texture and colour of its panels. The height of the proposed feature wall is unchanged from that mentioned in UDLP part 1. The height ranges from 4.9m – 5.5m and will always be at least 100mm higher than the acoustic requirement determined in the Operational Noise Review.

At the time of writing the Previous Noise Wall has been removed due to construction access requirements. The Previous Noise Wall affected work adjacent to and nearby critical elements such as retaining walls, drainage lines, communications and electrical lines, pavement, shared user path and preparation works for other noise wall panels. Had the noise barrier remained, the aforementioned construction works would have been delayed until alternate access could be provided, delaying over half a year of construction work and subsequent works. Such a scenario would result in the Project not being completed in the timeframe promised to the community, an obviously undesirable result.

The Construction Noise and Vibration Management Plan (available at: http://www.westconnex.com.au/documents/kgriu_cemp_app_b3.pdf) is being implemented to mitigate noise and vibrations effects in areas affected by noise wall demolition, as with all areas falling within the KGRIU Project, as required by the MCoA.

2.2 Conceptualisation

Early concepts including UDLP 1 envisaged that the feature wall would be the result of “a collaborative and iterative process that is driven by the community, incorporating broad cultural themes such as symbols, images, events and / or words pertinent to the community”. However, the dominant (>85%, Appendix 1) subject of actual feedback received from the community pre-December 2015 was not the incorporation of locally significant symbols or images but rather the urgency of noise wall reinstatement and thus feature wall installation. Responding to this feedback, the conceptualisation process was restructured around options of feature wall treatments that were conducive to faster production and therefore earlier installation.

A new feature wall design process was clearly required which:

- prioritised the community's concern for noise wall construction to be completed quickly;
- ensured the community's time was not wasted proposing or voting for proposals that the owner / operator could not maintain or afford; and
- ensured relevant Design Principles (such as those in Section 2.2.1) were met.

Therefore, the following accelerated feature wall design process was implemented:

- engage an urban designer to develop possible feature wall designs;
- consult with SMC and the owner / operator RMS to understand future maintenance concerns to narrow the design options to those preferred; and finally
- consult with the community to decide the final design.

2.2.1 Design Principles

In establishing the design principles to guide the development of the feature noise wall, the urban design principles outlined in the *Urban Design and Landscape Plan – Part 1: Construction* (UDLP 1), *Section 3 (Urban Design Objectives and Principles)* and *Section 5.2.4 (Noise Walls)* were referenced to ensure a level of consistency across the project. The driving urban design principle used to guide the development of the feature noise wall was: '*The built elements of the project must contribute to creating good public spaces by providing a high quality experience for customers*.'

From this the design principles for the feature wall to guide its design were developed. These design principles included:

- Simple, robust and effective – the design for the feature noise wall should consist of readily available materials, have a design life equal to that of the project and not be complex or intricate in its design or application;
- Low maintenance – graffiti removal should be easy to manage as part of the overall asset management;
- Site responsive – the design for the feature noise wall should reflect the local community and surrounding context; and
- Integrated and coordinated with the overall noise wall design and urban design approach for the project.

The way in which these design principles align with those in the UDLP 1, Section 5.2.4 *Noise Walls* is shown Table 2.1 below.

Table 2.1: Design Principles – Comparison between UDLP 2A and UDLP 1

UDLP 2A Section 2.2.1 Design Principles	UDLP 1 Section 5.2.4 Design Principles
Simple, robust and effective – the design for the feature noise wall should consist of readily available materials, have a design life equal to that of the project and not be complex or intricate in its design or application.	Noise wall panels comprise robust, vandal-resistant materials where possible. Noise wall composition must be resilient to damage by adjacent planting. The designed noise walls shall be constructed of modular, precast concrete systems or other approved material. Noise walls have been designed to be simple, monochromatic, modular planar panels of consistent height, with a horizontal top edge.
Low maintenance – graffiti removal should be easy to manage as part of the overall asset management.	The apparent scale and visual impact of noise walls will be matched with appropriate screen planting adjacent to noise wall structures wherever possible to minimise their visual impact.
Site responsive – the design for the feature noise wall should reflect the local community and surrounding context.	All vertical posts have been designed to be of consistent height and set-out. Where appropriate, the post set-out matches that of the vertical joints in supporting structures below. For example, when noise walls are mounted above retaining wall systems, the two systems have been designed to be visually integrated.
Integrated and coordinated with the overall noise wall design and urban design approach for the project.	Generally, the ground level below noise walls would be as even, horizontal and as linear as possible. Noise walls are been designed to be installed with a top line as consistent and parallel with the adjacent ground-line as possible, ideally horizontal.
	It is proposed that coating systems and applied colours must be durable, readily available, and easily and exactly matched throughout the life of the wall.
	All joints, fixings and panels have been carefully coordinated as an integrated, three-dimensional design.
	All noise walls have been designed as part of a hierarchy of walls that includes retaining walls, abutments and parapet walls, such that each element appears to be visually coordinated.

2.2.2 Possible Application Finishes

The design process commenced with AECOM considering the different possible applications for a feature wall, including:

- Concrete panels with an integrated relief pattern;

- Ceramic mosaic tiles;
- Vertical green wall; and
- Murals and traditional mosaics.

Concrete panels with an integrated relief pattern is the most common noise wall application for road infrastructure projects based on their past performance record, durability and minimal maintenance requirements. This would also fit with the noise wall panels on either side of the feature wall.

Ceramic mosaic tiles were also considered as they have been used extensively at train stations and underpasses and would satisfy the owner / operator's graffiti management requirement. However, the higher maintenance effort associated with tiled noise walls compared to concrete noise walls open to the elements was considered a major concern. Tiled mosaics are traditionally used in areas not directly exposed to the elements, such as underpasses. Maintenance effort would be higher than the traditional noise wall, as tiles must be replaced as like for like and one tile coming loose may start a domino effect if maintenance is not undertaken quickly. Therefore, this was eliminated as a feasible option.

A vertical green wall allows small trays of plants to be mounted in rows or columns to cover the noise wall surface. This solution would result in onerous maintenance requirements, including ongoing regular watering and pruning to ensure uniform and sustained growth. If not maintained regularly, the effectiveness of the vertical green wall would quickly diminish. Additionally, mounting objects onto the noise wall close to the shared user path may introduce safety issues as plants, soil, dust and containers can fall onto the path or path users. Due to these considerations, it was not selected for further design development.

Murals and traditional mosaics require an interactive and iterative process, which could result in a delay to complete the feature noise wall. As an accelerated noise wall program was the priority, this option was also eliminated.

The initial nine (9) proposal designs comprised three (3) integrated relief patterns and six (6) options for the ceramic mosaic tile application, which can be seen in Appendix 1.

The integrated relief patterns were shortlisted as the preferred applications for further development because of their:

- durability and past performance on other infrastructure projects;
- lower maintenance requirements;
- integration with the noise wall panels and adjacent conditions either side of the feature noise wall; and
- compressed design process would not impact on the noise wall construction program.

2.2.3 Design Refinement

Out of the proposal designs, the following were selected as they best reflected the surrounding context and satisfied the owner / operator's asset requirements:

- Option 1 - Light Terrain relief pattern with applied colour 'Shale Grey' (integrated with concrete panel);
- Option 2 - Heavy Terrain relief pattern with applied colour 'Fair Oak Grey' (integrated with concrete panel).

Option 2 - Heavy Terrain relief pattern 'Fair Oak Grey' (concrete panel) was then further considered and refined, by way of a transition being developed. The feature noise wall panels were extended either side to transition into the adjacent proposed planting. This transition effect also alludes to the connection of the Elouera St (north) space to the King Georges Road Interchange – both areas will be upgraded as part of the KGRIU Project and both will have matching feature noise wall panels. Doing so links the areas to a nearby feature that has immensely shaped the local community and surrounding environment, reflecting not only the current KGRIU Project but also the previous M5 East Motorway Project that introduced noise walls to the area. Note that the length of the entire noise wall (both non-feature and feature panels) in this location (north-east of Cooloongatta Rd) remains unchanged.

Refer to Appendix 2 for the refined proposed feature wall design.

2.3 Owner / Operator Consultation

Consultation with the owner / operator, Roads and Maritime Services (RMS) on the feature wall was completed to ensure RMS was comfortable with the feature noise wall options and associated maintenance obligations once completed and ownership is transferred to RMS (refer UDLP 1 Section 7).

Consultation with RMS on this proposed feature wall occurred throughout the conceptualisation phase, which included a meeting with the RMS Urban Design and Landscaping Asset representatives on Tuesday the 1st of March, 2016.

RMS endorsed both Option 1 and Option 2 from an urban design and maintenance perspective.

2.4 Council Consultation

Consultation was also completed with the local council, Canterbury City Council.

Council had no comments or objections on the design options and supported the proposal for SMC to consult the local residents about the preferred design.

Refer to Appendix 3 *Council Feedback* for more details.

2.5 Community Consultation

2.5.1 Designs for Community Consultation

Following RMS' comments, the designs which the community can vote for were:

- Option 1 - Light Terrain relief pattern 'Shale Grey' (concrete panel); and
- Option 2 - Heavy Terrain relief pattern 'Fair Oak Grey' (concrete panel).

As this resulted in there being only one alternative to Option 1 - the "no feature wall" design - a third option was included which could be seen as a compromise between the two (2) design options. This third option would have the same heavy terrain relief pattern as Option 2, but with the lighter 'Shale Grey' colour of Option 1. This new option does not draw as much attention from afar as Option 2 above as there is no contrasting colour change, but up close the deep set relief pattern is much more interesting than Option 1.

Thus, the designs taken to the community for consultation included:

- Option 1 - Light Terrain relief pattern 'Shale Grey' (concrete panel);
- Option 2A - Heavy Terrain relief pattern 'Shale Grey' (concrete panel); and
- Option 2B - Heavy Terrain relief pattern 'Fair Oak Grey' (concrete panel).

These options are shown in Appendix 4.

2.5.2 Community Consultation Results

Consultation with the community was completed with those most affected by the feature wall design – local residents whom would see the feature wall on a daily basis. All local residents located on Elouera St (north) and Kirrang St (north) were consulted with, including all residents identified in UDLP 1 Section 6.2 as 'Sensitive Residential Receptors' on these streets.

On Friday the 4th of March, 2016 a community door-knock was undertaken to obtain a consensus on the preferred feature wall design. Two door knocking sessions were conducted – one in the morning and one later that afternoon. A letter* was left in the mailbox of residents which were not home for either session – refer to Appendix 5 for the letter.

From the twelve (12) residents contacted through the door-knock, eight (8) voted for Option 2B and three (3) indicated they had no preferences. Additionally, three (3) votes were received by email, with all three (3) votes for Option 2A.

Table 2.2 summarises the votes cast for each option.

Table 2.2: Community Consultation Results

Feature Noise Wall Design Option	Number of Votes	Comments

Option 1 - Light Terrain Relief Pattern 'Shale Grey'	0	0% of Total Vote	
Option 2A - Heavy Terrain Relief Pattern 'Shale Grey'	3	21.5% of those who responded	67% Response Rate
Option 2B - Heavy Terrain Relief Pattern 'Fair Oak Grey'	8	57% of those who responded	
No Preference	3	21.5% of those who responded	
No Response	7	33% No Response	

* Note that the letter requested feedback by the 08/03/16 to encourage fast feedback. Any feedback received later than this date but before the UDLP 2A was drafted was counted and included in UDLP 2A Table 2.1. Also note that height was not mentioned as panel height remains unchanged from the approved UDLP 1.

It is clear from the results that the residents' preference is for Option 2B - Heavy Terrain Relief Pattern 'Fair Oak Grey' as:

- The majority of the selected this option;
- Only a minority (selected Option 2A; and
- The remaining minority had no preference.

It was noted that the prevailing verbal feedback received during this doorknock was to install the noise wall "as soon as possible".

2.6 Construction Timing

Soon after determining the preference of the residents, it became clear that the Light Terrain Relief Pattern panels would be produced at a much faster rate than the Heavy Terrain Relief Pattern panels, due to complexities of the Heavy Terrain detail and manufacturing constraints. Utilising the Light Terrain Relief Pattern panels would allow the installation of the noise wall along Elouera St North to finish months before Option 2B.

The estimated installation timings based on panel type are outlined below:

- Light Terrain Relief Pattern panels can be installed in **August** 2016; and
- Heavy Terrain Relief Pattern panels can be installed in **December** 2016.

As the community's chief concern has been for the noise wall to be completed quickly – as outlined in Section 2.2 *Conceptualisation* and reiterated verbally during the consultation round discussed in Section 2.5.2 – the timing difference was deemed significant enough to warrant more consultation based on this information.

A new design based on the Light Terrain Relief Pattern was produced to take advantage of the earlier installation time. It utilises the contrast 'Fair Oak Grey' colour of the Heavy Terrain Relief Patter panels, but contains the contrasting colour to the centre 10 panels only.

Consequently, the following options were to be presented to the community:

- Light Terrain Relief Pattern 'Fair Oak Grey' which can be installed in **August** 2016;
- Heavy Terrain Relief Pattern 'Fair Oak Grey'* which can be installed in **November** 2016.

* Previously Option **2B** in Section 2.5 *Community Consultation*

2.6.1 Community Consultation Results

The second round of consultation commenced on Friday the 24th of June, 2016 with affected residents. Residents had until Friday the 1st of July to provide feedback, as per the letter shown in Appendix 6. As with the initial consultation round, all local residents located on Elouera St (north) and Kirrang St (north) were consulted, including all residents identified in UDLP 1 Section 6.2 as 'Sensitive Residential Receptors' on these streets.

Feedback was received by one resident, as shown in Appendix 6, Table A.2. The resident was concerned that the Heavy Terrain Relief Pattern panels would be thicker than the Light Terrain Relief Pattern panels, and therefore would perform better as a noise barrier. The resident was advised that both panel designs perform equally as noise barriers, and it is actually the Light Terrain Relief Pattern panels which are thicker than the Heavy Terrain Relief Pattern panels.

2.7 Final Design and Implementation

The proposed feature wall will be constructed at Elouera St (north) will be the Light Terrain Relief Pattern 'Fair Oak Grey' design shown in Appendix 7, due to its earlier installation time which aligns with the community's strong priority for wall construction completion. It has been endorsed by the owner / operator based on urban design and maintenance considerations.

This feature wall will be constructed as soon as practicable to minimise disruption to local residents. The installation of feature wall panels is estimated to be completed within 5 business days of the first feature wall panel being installed, contingent on weather and manufacturing progress. The current feature wall timeframe is outlined in Table 2.3.

Table 2.3: Feature Wall Timeframe

Activity	DPE Approval of UDLP 2A	Installation of feature wall panels and posts**
Start - End	March 2016 - July 2016	August 2016 - September 2016

** Activities subject to successful approval by DPE and construction progress