

Retaining Walls



09



Caption - Image description
(Landscape shown at full maturity and is indicative only)

9 Retaining Walls

9.1 Overview

Throughout the Project, retaining walls will be a key visual element for both road users, adjacent residential properties, pedestrians and cyclists. The design of retaining structures has been undertaken in consideration of all other elements such as bridges and landscape works and provide a cohesive and unified design outcome.

Key outcomes for retaining walls

The key design principles and design intents for the design of the retaining walls have been developed in accordance with Project requirements and are as follows:

- All walls must be high quality, robust walls of architectural merit, and appropriate architectural finishes that fit sensitively into the places where they are located
- Integrate walls with landscape plantings to mitigate the visual impacts associated with large extents of visible walls
- Where walls are located in a visually prominent location within the public parklands or have the opportunity for public interaction, the walls have a textured pattern finish to add depth and provide a light and shadow aesthetic to the surface
- All walls must be architecturally designed as an integral part of the interchange and parkland, and within the parkland and landscape areas must reinforce the parkland character and identity
- Where walls are located away from the public and not in an easily visible location or accessible, these walls are to provide a simple design aesthetic and will be coloured in a recessive neutral colour
- Wall tops are to form continuous smooth flowing lines with no irregular stepping. If stepping is unavoidable, then stepping will be in a continuous, rhythmic and smooth overall alignment
- Wall plan layouts are simple, with straight or large radius curved alignments, without sharp changes of direction
- Minimise extents and locations of retaining walls by using vegetated batters where applicable. Maximum slope to the behind, in front of or between retaining walls to be 1(v):3(h)
- Wall designs must consider potential vandalism and long-term management and maintenance
- Integrate the design of handrails, balustrades and jointing patterns with the design of walls.



Figure 9-1: Retaining walls constructed on M4 East Project

9.2 Major retaining wall types

A range of major structural retaining wall types are required to construct the Project. The main wall construction types are listed below:

IN-SITU OFF-FORM REINFORCED CONCRETE RETAINING WALL

Reinforced in-situ concrete retaining wall on shallow spread footing foundations. A variety of wall finishes have been utilised to reinforce local character and identity.

PRECAST CONCRETE PANEL RETAINING WALLS

Typically used as a cladding system in front of cut and cover structures, buildings or piled retaining walls. A variety of wall finishes have been utilised to reinforce local character and identity.

REINFORCED SOIL WALLS

Reinforced Soil Walls (RSW) will incorporate 2m x 2m wall cladding panels in front a retained earth soil mass. A variety of wall finishes have been utilised to reinforce local character and identity.

MASONRY CLAD RETAINING WALLS

Typically used as a cladding system in front of major retaining walls to respond to local character and identity. Generally comprises sandstone or brick clad retaining walls.

Retaining wall finishes

In consideration of the wall construction type, location and adjacent land uses, the following high quality finish treatments have been developed to provide a unified aesthetic for the project for each retaining wall finish:

- Plain off-form concrete
- Vertical rebates
- Varied width rebate pattern
- Sandstone cladding
- Brick cladding

Plain finish

Generally applies to concrete retaining walls that are small and / or not highly visible to the public. These walls will have a class 2 finish and be visually recessive.

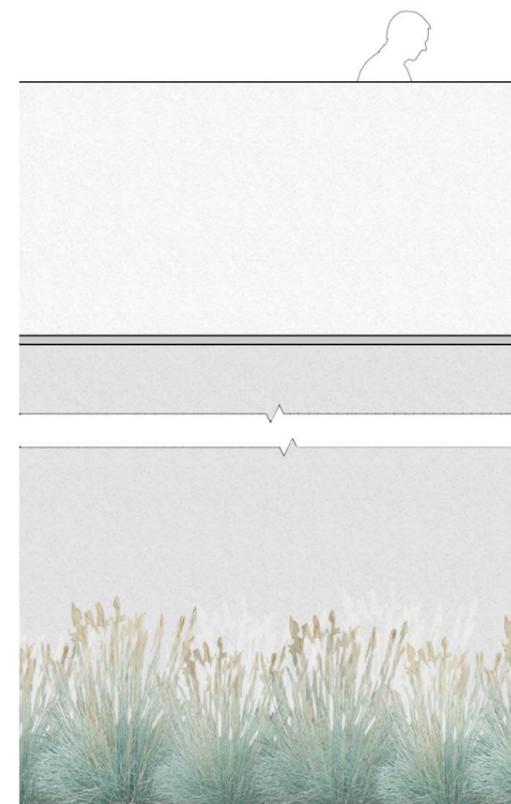


Figure 9-2: Retaining wall finish - Plain finish

Vertical rebates

For retaining walls that are viewed predominantly by road users, a simple vertical banding pattern will be incorporated. The rebate will generally be 50mm wide x 20mm deep and spaced at nominal 1000mm centres (unless otherwise specified).

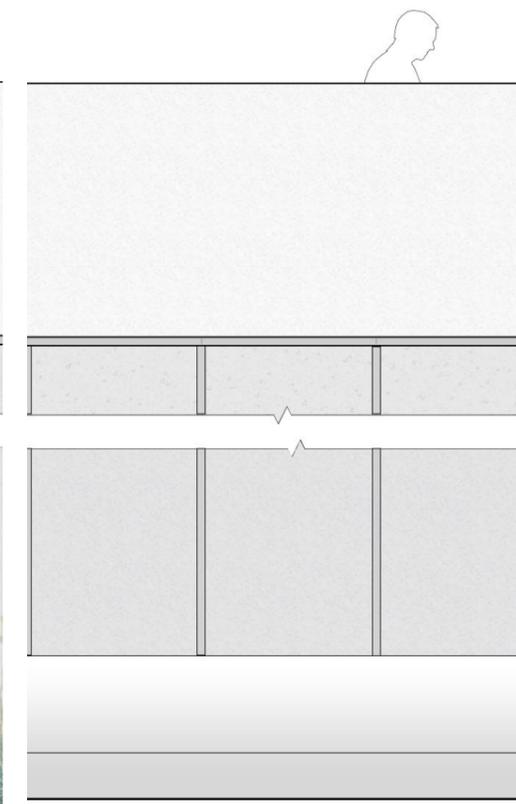


Figure 9-3: Retaining wall finish - Vertical rebates

Varied width pattern

Retaining walls that relate to adjacent streetscape or pedestrian environments will have varied width vertical rebate pattern finish applied to add a higher level of quality to the wall finish.

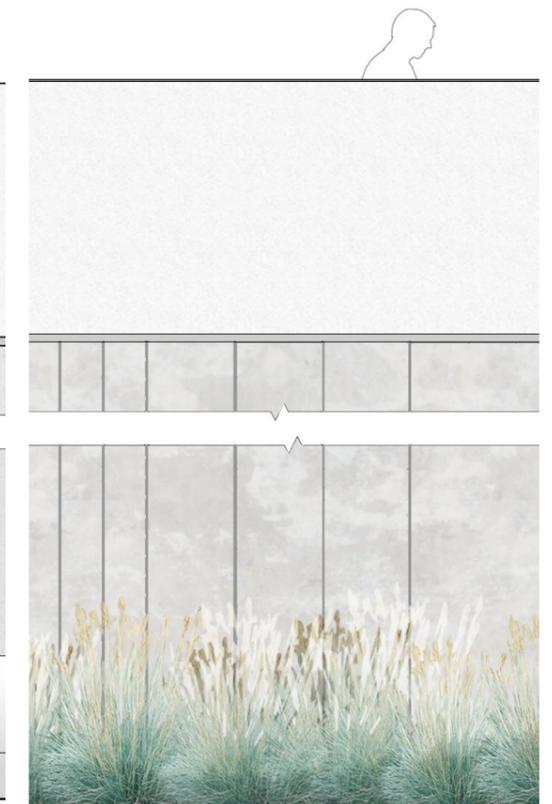


Figure 9-4: Retaining wall finish - Textured pattern

Sandstone cladding

In-situ concrete walls will be finished with select, coarse, sandstone cladding where relevant to blend into the existing context.

Brick cladding

In some locations, small landscape retaining walls will be clad with the following select brick laid in a stack bond format to respond to the built vernacular of the existing terraces houses in the area:
 - Bowral 'Brahman Granite'



Figure 9-5: Retaining wall finish - Sandstone cladding

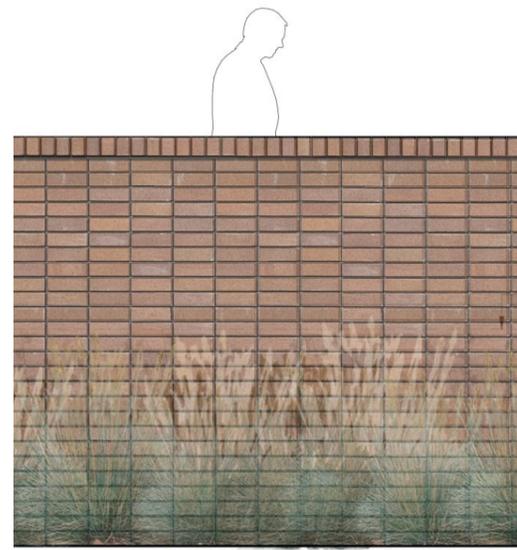
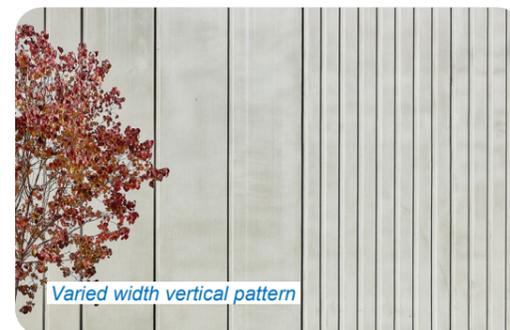


Figure 9-6: Retaining wall finish - Brick cladding



9.3 Landscape retaining walls

Landscape retaining walls generally relate to minor wall elements that are non-critical infrastructure and are less than one metre in height.

Landscape walls have been designed and selected in compliment to the major retaining walls described earlier. A range of landscape retaining wall types have been adopted across the Project to suit the urban design outcomes. The main wall construction types are listed below:

PRECAST CONCRETE TERRACE WALLS

Spectator seating set within the landscape topography of the Rozelle Rail Yards comprising of precast seat walls that are 450mm in height and separated by wide landscaped verges.

INSITU CONCRETE RAISED PLANTER WALLS & DWARF WALLS

Reinforced in-situ concrete planter and dwarf walls to provide soil depths for planting above structures with integrated seating opportunities.

SANDSTONE WALL

Typically used on top of existing sandstone rock faces to build up soil levels for new landscape areas. Walls comprise raw and split, coarse sandstone block laid informally to suit the varied sandstone topography.

SANDSTONE BLOCK WALL

Stacked natural sandstone logs laid in neat courses to support landscape restoration.

BRICK CLAD BLOCK WORK WALL

Typically used as a cladding system in front of reinforced concrete block retaining walls. Cladding will have the same visual appearance as described in the previous section.

GABION WALL

Wire mesh baskets of varying dimensions with recycled sandstone infill to support landscape restoration.



9.4 Retaining wall colours

Colour selection has been considered for in-situ and precast concrete walls, so that walls remain visually recessive, blending into the adjoining landscape and remain consistent across the Project.

Retaining walls across the Project will typically be post-painted, integrally coloured or kept in a natural finish. All walls will have anti-graffiti coatings post-applied to reduce the risk and impacts of vandalism.

Where space and landscaping permits, creepers and climbers will be planted at the base of some walls to soften their appearance and visually integrate with the landscape.

Mineral silicate painted walls

Select walls will be post-painted in a water repellent, low pigmentation, mineral silicate colour system or similar as follows:

- Keim '9008' - Charcoal - Keim Concretal-Lasur
- Keim '9582' - Mid-Grey - Keim Concretal-Lasur
- Keim '9595' - Light Grey - Keim Concretal-Lasur

The majority of the surfaces will be spray painted via a specialist contractor. Where painting may be close to residential properties, paint will be applied by a roller. Work method statements will be provided to ensure the project achieves the desired finish.

Integrally coloured oxide walls

Select walls will be coloured with a full depth (integrally coloured) oxide pigment system or similar which works as follows:

- CCS 'Snow White' in off white cement
- CCS 'Stallion' 6%

The oxide system offers a permanent, UV stable method for colouring of precast concrete panels. The powdered pigments are added directly during the mixing process where the oxide is dispersed deep into the concrete.

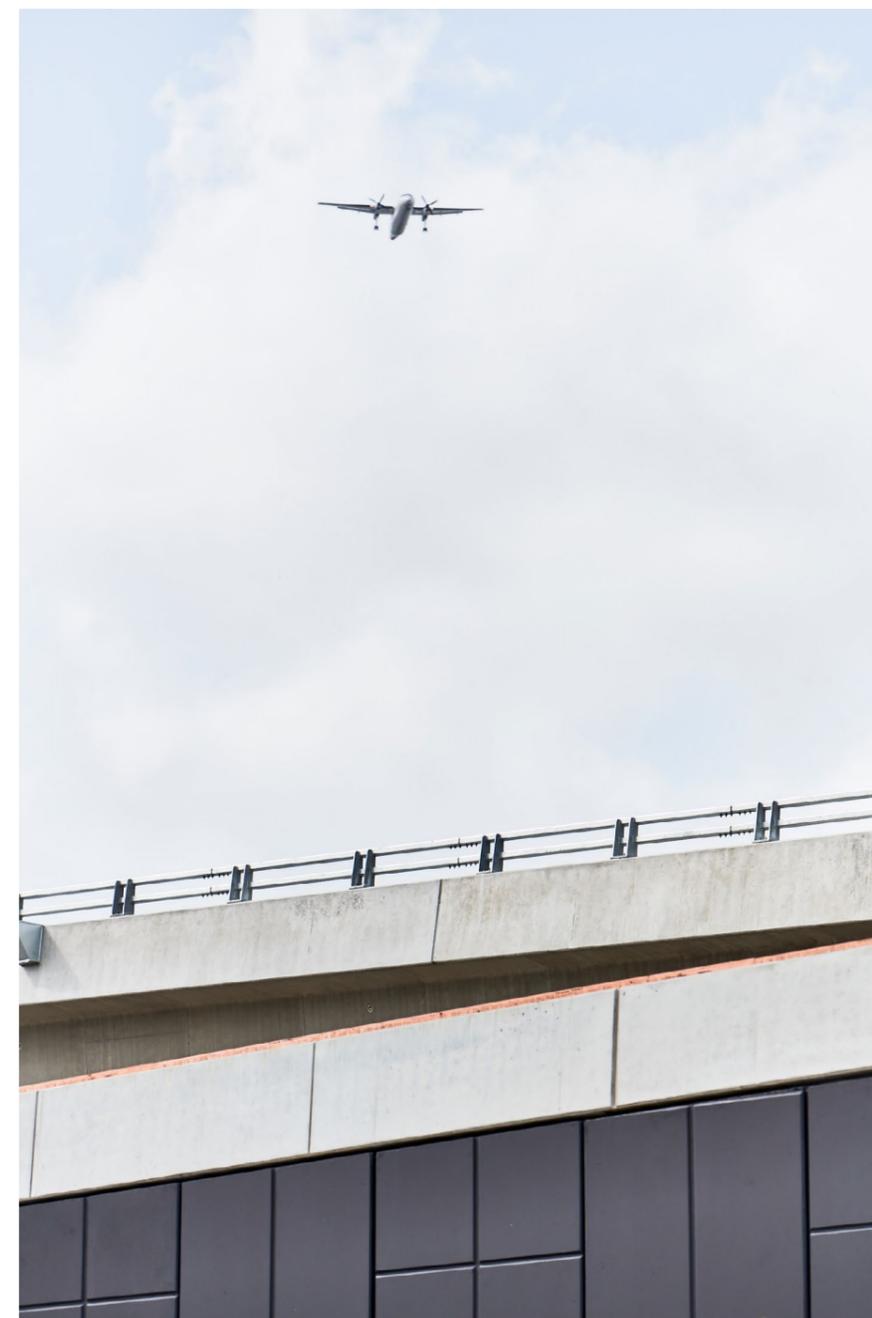


Figure 9-7: Example of painted retaining wall finish

9.5 Rozelle wall locations

Rozelle and the Rozelle Rail Yards is unique in terms of its heritage, its parkland design and location, including the varying conditions related to civil works (both below and above ground), as well as the suite of bridges and tunnel portals at varying heights. With this in mind, a range of retaining wall types will be constructed to suit each location and its function, whether it is related to the parkland or infrastructure.

The design identified numerous locations where retaining walls are required to complete the Project. The adjacent figure and table below provide a description and location of retaining wall types and finishes in the Rozelle Rail Yards and surrounds.

Table 9-14: Rozelle Rail Yard - Major Retaining walls

No.	Wall Type	Finish	Colour
RW01	Reinforced Soil Wall	Vertical Rebates	Natural Grey
RW02	Reinforced Soil Wall	Vertical Rebates	Keim '9582'
RW03	Reinforced Soil Wall	Vertical Rebates	Natural Grey
RW04	Not used	-	-
RW05	In-situ reinforced concrete wall	Vertical Rebates	Natural Grey
RW06	In-situ reinforced concrete wall	Varied width pattern	Keim '9585'
RW07	In-situ reinforced concrete wall	Varied width pattern	Keim '9585'
RW08	Masonry clad retaining wall	Sandstone cladding	-
RW09	In-situ reinforced concrete wall	Varied width pattern	Keim '9585'
RW10	In-situ reinforced concrete wall	Vertical Rebates	Natural Grey
RW11	In-situ reinforced concrete wall	Plain Finish	Keim '9582'

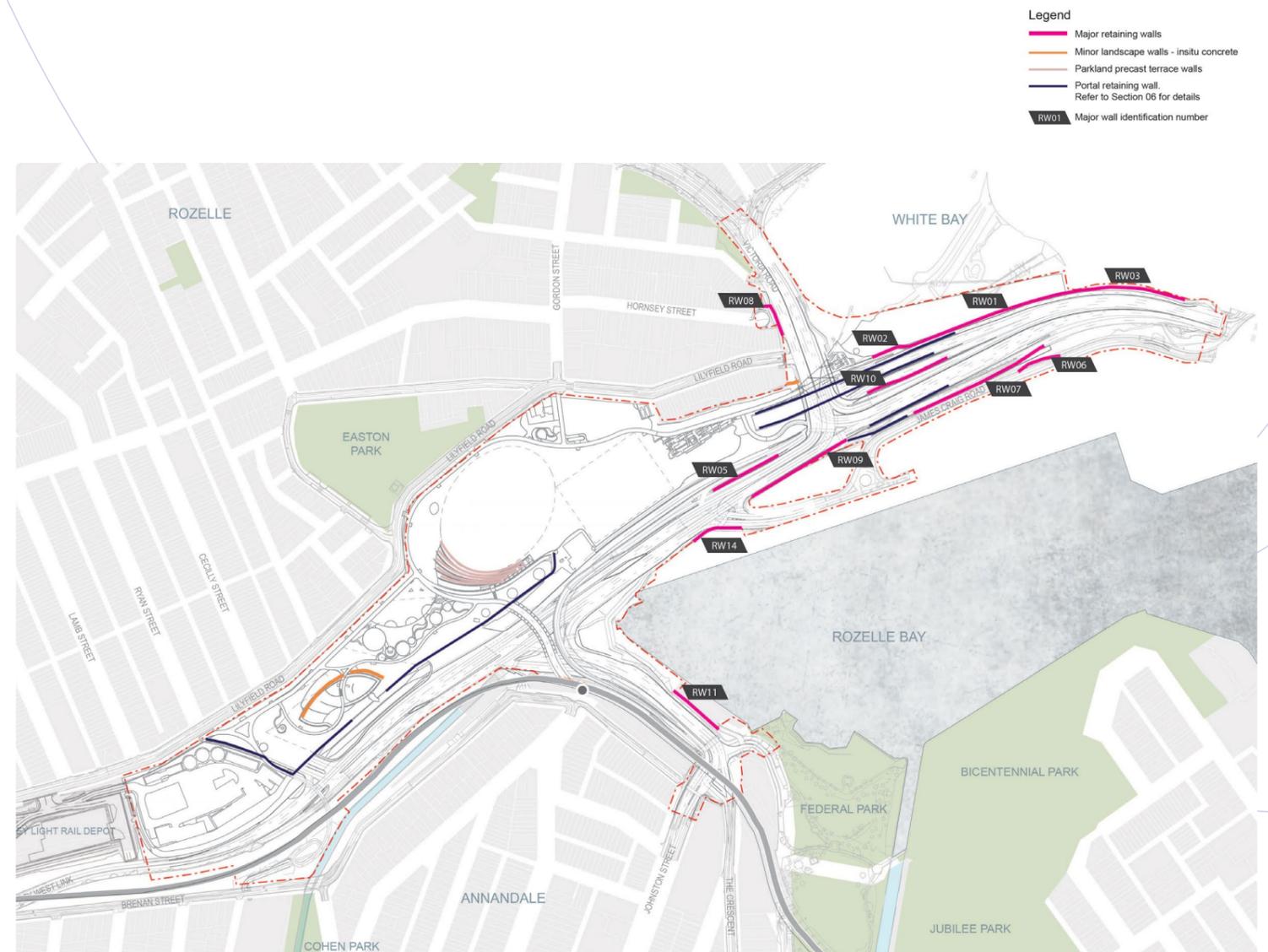


Figure 9-8: Rozelle - Retaining wall locations

9.6 Iron Cove Link wall locations

At Iron Cove Link, a number of retaining walls are required to construct the Project. Consideration has been given to their size, location and finish to compliment the local vernacular of the area.

Retaining wall reference number, location and description of each wall are summarised below, with an overall diagram highlighting locations.

Table 9-15: Iron Cove Link - Retaining walls

No.	Wall Type	Finish	Colour
RW01	Not used	-	-
RW02	In-situ reinforced concrete wall	Plain finish	Natural Grey
RW03	Not used	-	-
RW04	In-situ reinforced concrete wall	Vertical Rebates	Keim '9582'
RW05	Masonry clad retaining wall	Brick clad	-
RW06	Masonry clad retaining wall	Brick clad	-

Legend

- Major retaining walls
- Sandstone block terrace walls
- Portal retaining wall. Refer to Section 06 for details
- RW01 Major wall identification number



Figure 9-9: Iron Cove Link - Retaining wall locations

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