

5.7 St Peters interchange and local street upgrades

5.7.1 St Peters Interchange

The St Peters interchange is located within the Alexandria Landfill site, connecting with the local road network at the intersection of Campbell and Euston Roads. The site is bound by Canal Road in the west, Burrows Road in the south, Princes Highway in the north and Campbell Road in the east. The St Peters interchange is a key connection in the overall Westconnex journey. With the New M5 tunnel entry/exit point at the southern reaches of the St Peters Interchange, connections would be made to the surrounding local road network as well as the future M4-M5 Link and Sydney Gateway. These two future links would provide regional connections to Sydney Airport and western Sydney as well as the remainder of Sydney's orbital road network.

To achieve a lasting and cohesive urban design strategy for the overall interchange, the site requires a design solution that would unify and shape the different stages of the project, including the New M5, and the future Sydney Gateway and M4-M5 link.

The St Peters interchange consists of the motorway control centre, ventilation facility, distribution substation, fire pump rooms and deluge tanks and the interchange road network. The ventilation facility and

associated service buildings are located above the tunnel portals, at the corner of Canal Road and Princes Highway (the St Peters motorway operations complex - MOC4). The facility would be located directly over the exit ramp cut and cover structure along with an electrical distribution facility, fire pump rooms and adjacent deluge tanks. Access to these facilities is provided from Canal Road. The motorway control centre (MOC5) is located at the corner of Burrows Road and Campbell Road.

In developing the design, a strategy has been proposed for the overall interchange, focusing on the following objectives:

- Return surplus lands to the community as public open space.
- Provide an extensive green volume of vegetation to compete with and soften the scale of the proposed multi-level interchange, creating an 'urban forest'
- Promote the use of a tall, established tree canopy cover to not only soften the scale of the proposed infrastructure, but also provide a counterpoint and extension of the green open space of Sydney Park
- Built form designed to enhance the existing street character.

The design allows for future stages of the interchange to adopt similar approaches to materials and detailing to achieve overall project cohesion and an integrated 'whole of project outcome'. The landscape approach in this zone is essentially to create 'green volume' and remediate the former landfill site by creating an 'urban forest', capable of competing with the scale of the proposed interchange.

Large areas of new tree planting would be incorporated on both sides of the New M5 ramps and above the portals to present a continuous green canopy and create a sense of green immersion for the motorist upon entry or exit from the tunnel. Landscape treatments surrounding the Canal Road MOC4 would focus on creating a defined street edge with street tree planting, and feature Fig Tree plantings to offer increased 'green volume' and help define a sense of landscape character for the site. These figs would also provide valuable shade for park users.

5.7.2 Local Streets

The overall design intent is to create a series of tree lined local streets that offer amenity for local residents, create a high quality environment for pedestrians and cyclists, and integrate the local streetscape with adjacent open space and parkland, particularly in the vicinity of Sydney Park.

The design incorporates a series of feature pedestrian and cycleway bridges that would increase connectivity for and allow integration of the open space proposed for the St Peters interchange. Tree and landscape plantings would be designed to match City of Sydney, Botany Bay and Marrickville Council guidelines. Vegetation and tree plantings would be used to create a sense of visual separation for pedestrians and cyclists from the road edge.

The design of wall structures would be refined and elegant, without unnecessary fussiness or embellishment, with landscape treatments used to soften the appearance of retaining walls and other structures.

Proposed pedestrian and cycleway bridges over Campbell Road and the New M5 ramps and Alexandra Canal will become an integral element, creating new connections for the cycle network.

The design of the pedestrian and cycle bridges would feature simple and elegant solutions, with a focus on creating sinuous horizontal alignments that respond to the adjacent landscape environment of Sydney Park and the proposed landscaped earth treatments for St Peters Interchange.

The urban design intent for the following six local street character zones are explored in detail in Appendix B:

- Princes Highway business corridor
- Campbell Road / park extension
- Bourke Road connection / industrial
- Burrows Road / Alexandra Canal / industrial
- Canal Road / park extension
- Brickpit / interchange.



Figure 52 Connectivity



Figure 53 Open space

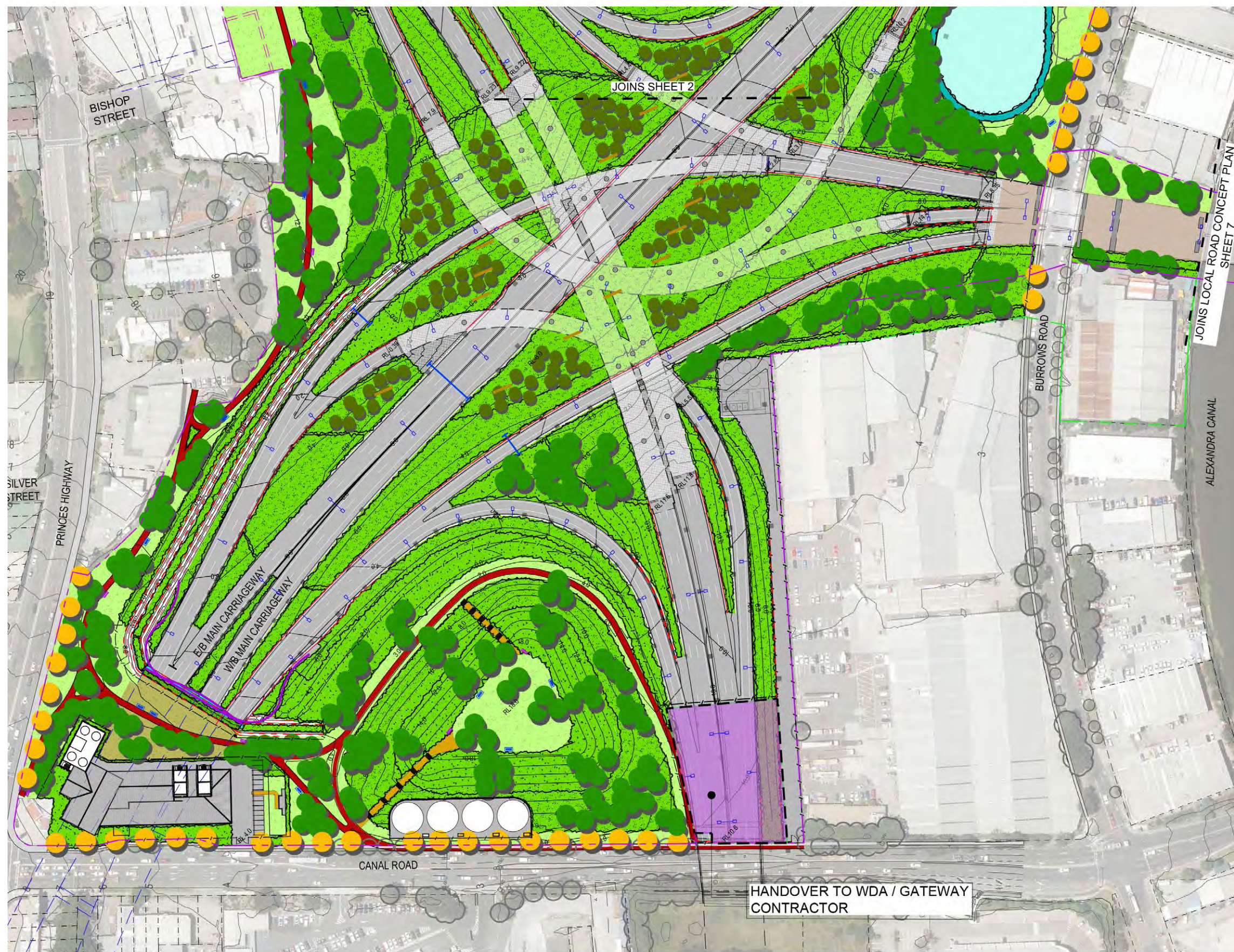


Figure 54 St Peters artisit impression

5.7.3 Master Plan

A 'master plan' solution has been developed for the St Peters interchange that provides an overall design response for the site accommodating road, pedestrian and cycle infrastructure with open space. The master plan provides the opportunity to create six hectares of new open space across the site and continue the design language of landscaped mounds from Sydney Park further south.

The achievement of the complete master plan solution is subject to the future M4-M5 Link and Sydney Gateway projects. Sites within the interchange have been allocated for construction staging of these two projects and the ultimate design of resultant land would be subject to separate planning processes.



LEGEND	
BOUNDARY	
	CADASTRAL BOUNDARY
	PROPOSED SITE BOUNDARY
	FENCE
EXISTING FEATURES	
	CONTOURS (1m INTERVAL)
	EXISTING VEGETATION
	EXISTING PATHWAY
ROAD FORMATION	
	CUT / FILL EMBANKMENT
	TUNNEL
	PORTAL SCREEN
WALLS	
	PROPOSED RETAINING WALL
BRIDGE STRUCTURE	
	PROPOSED VIADUCT PIERS
ROADSIDE FURNITURE	
	PROPOSED SAFETY BARRIER
	SIGNAGES
	SIGN GANTRY
LIGHTING	
	PROPOSED LIGHTING (MAIN CARRIAGE)
	PROPOSED LIGHTING (SHARED PATH)
PARK FURNITURE	
	SEATINGS
	INTERPRETIVE SIGNS
	LANDSCAPE FEATURE WALLS
REVEGETATION AREAS	
	MASSED PLANTING
	MASSED PLANTING ON STRUCTURE
	TURF AREAS
	TURF ON STRUCTURE
	WQCP / BIO RETENTION BASIN PLANTING
TREE PLANTING	
	GENERAL TREE PLANTING
	STREET TREE PLANTING
	PALM GROVE PLANTING
	SMALL TREE GROVE PLANTING
GROUND TREATMENT AREAS	
	PROPOSED FOOTPATH
	BICYCLE LANE / PATH
	SHARED USER PATH
	PROPOSED PATHWAY
	CARPARKS / ROAD PAVEMENT
	GRAVEL PAVING
	SPILL-THROUGH ABUTMENT
DRAINAGE AND WATER QUALITY CONTROL BASINS	
	SEDIMENTATION BASIN
	PROPOSED STORMWATER HEADWALL

Figure 55 St Peters interchange master plan

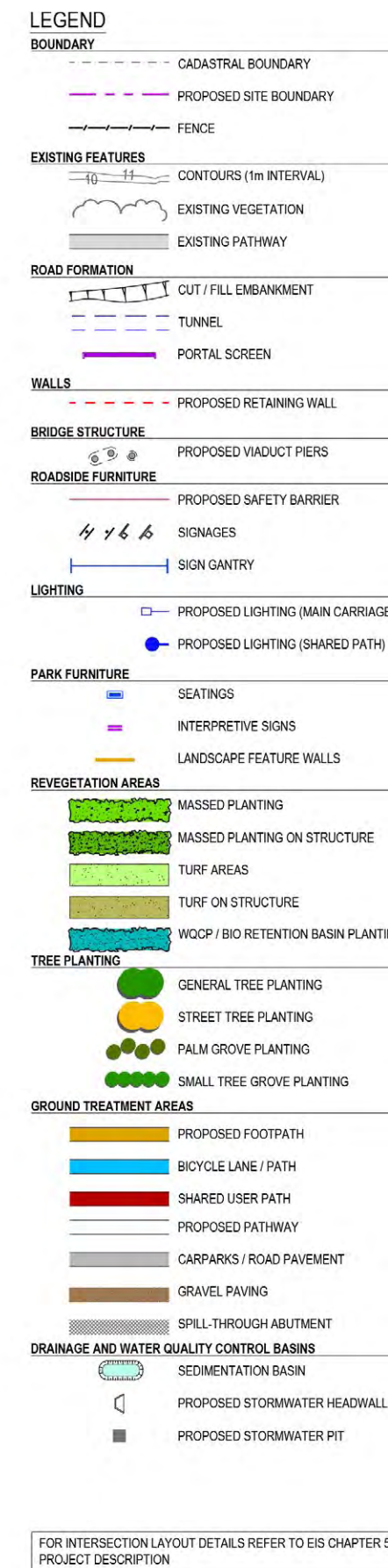


Figure 56 St Peters interchange master plan
Urban Design

5.7.4 Burrows Road Motorway Operations Complex

The Burrows Road Operations Complex (MOC5) would be the central building for all communications and control of the project's operational management control systems (OCMS). The motorway control centre would be staffed 24 hours per day, seven days per week, and would require around 26 full time equivalent staff. Located on the corner of Campbell and Burrows Roads the ground level accommodates an open carpark, bike storage and waste facilities. The carpark is softened by a large landscaped buffer between the kerb and building. Slender concrete columns support the upper level allowing views out from beneath the building and raise it above flood event levels. The upper level houses reception, open plan offices, enclosed offices, breakout space, a lunch room and associated staff amenities.

Design intent

The intent for the design of the motorway control centre is to blend with the surrounding light industrial land use, whilst maintaining the New M5 identity. It is a two level building with an open carpark below the main functional spaces. The main address, vehicle and pedestrian access is from Burrows Road. A substation building is sited to the rear of the main structure.

A long span roof supported from the northern and southern walls provides near limitless flexibility for the interiors. Uninterrupted power supply and electrical equipment rooms are located in a consolidated block to the north of the floor plate.

The horizontal nature of the building is accentuated by the expression of the floor and roof lines on the south elevation to Burrows Road. The floor and roof lines return around the eastern and western ends and fold vertically down the south elevation to meet and form a continuous 'C' shaped loop. A series of vertical louvres punctuate the Burrows Road façade and return to the east to form a screen to the double height entry space.

Materials, colours and finishes

Clad in composite aluminium panels, the southern elevation of the control centre wraps up and over the building to form a 'casing' into which the building is inserted. The motorway control rooms are clad in corten steel panels, emphasising its secure nature. The office and breakout spaces are enclosed with clear glass to provide natural light to the working environments.

The long linear nature of the building is articulated with vertical louvres spaced at different intervals along the Burrows Road façade. The spacing responds to the private or public nature of the spaces within, and provides a shifting rhythm. Egress stairs and plant spaces at the ground level are exposed smooth faced concrete block, expressing their function. The substation to the rear is clad in brick, referencing the sites history and acknowledging the building's more utilitarian purpose.

The following pages contain a site plan, elevations and perspectives of the motorway control centre. These plans would be updated during detailed design of the project.

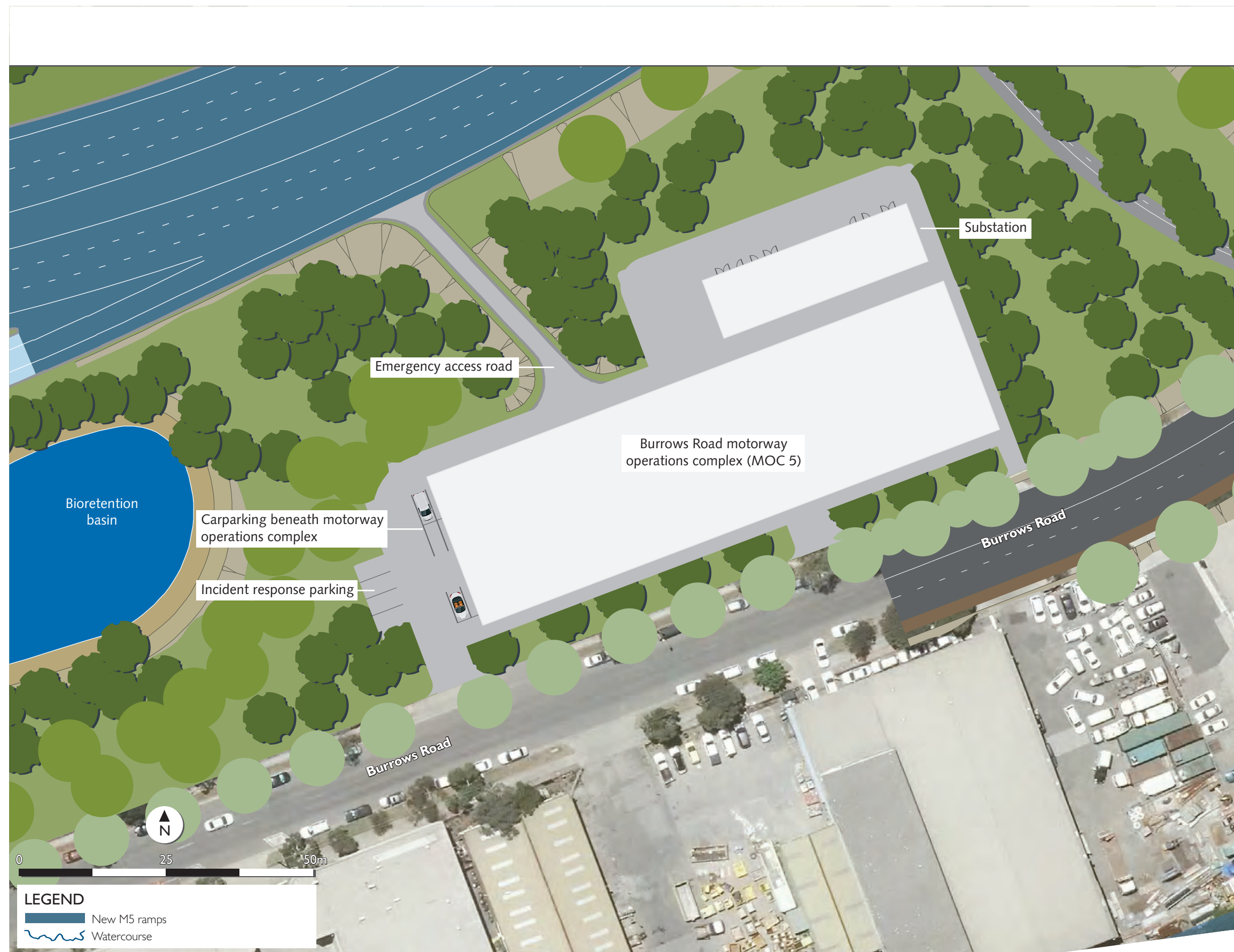


Figure 57 Indicative MOC5 Burrows Road site plan



Figure 58 Indicative MOC5 at Burrows Road elevations



Figure 59 Indicative MOC5 at Burrows Road visualisation



Figure 60 Indicative MOC5 artist impression



Figure 61 Indicative MOC5 artist impression

5.7.5 Canal Road Complex

Design intent

The facility at Canal Road (MOC4), St Peters is conceived as one building articulated through form and material to express the three main functions within. The building is nestled into the sloping site to reduce its apparent height and respond to its context. The lowest section of the building, which fronts Canal Road and wraps around the southern end, houses the distribution substation. Immediately adjacent and slightly higher the exhaust ventilation equipment is placed in a two level section, the lower level being entirely below ground.

Horizontally oriented fans allow for a lower overall building. Horizontally oriented terracotta façade panels emphasise the low nature of the building, with the ventilation facility rising up from the southern end. The vertical structure is visually separated from the horizontal building. The design of the ventilation facility will be finalised in accordance with the methodology outlined in section 5.2.

Materials, colours and finishes

The horizontal portions of the building are clad in horizontally oriented dark and light grey terracotta façade panels – responding to the predominantly masonry construction of the residential houses nearby. Openings providing service access to the plant rooms are grouped into common recesses, exposing the structure – a smooth-faced concrete block (stack bond pattern). Access doors within the block work are painted to match. The lower scale supply building is clad in vertically oriented terracotta panels which reflect its function and verticality whilst acknowledging its moderate scale.

The following pages provide preliminary site plans, elevations and perspectives of MOC4. These plans would be developed during the detailed design of the project.

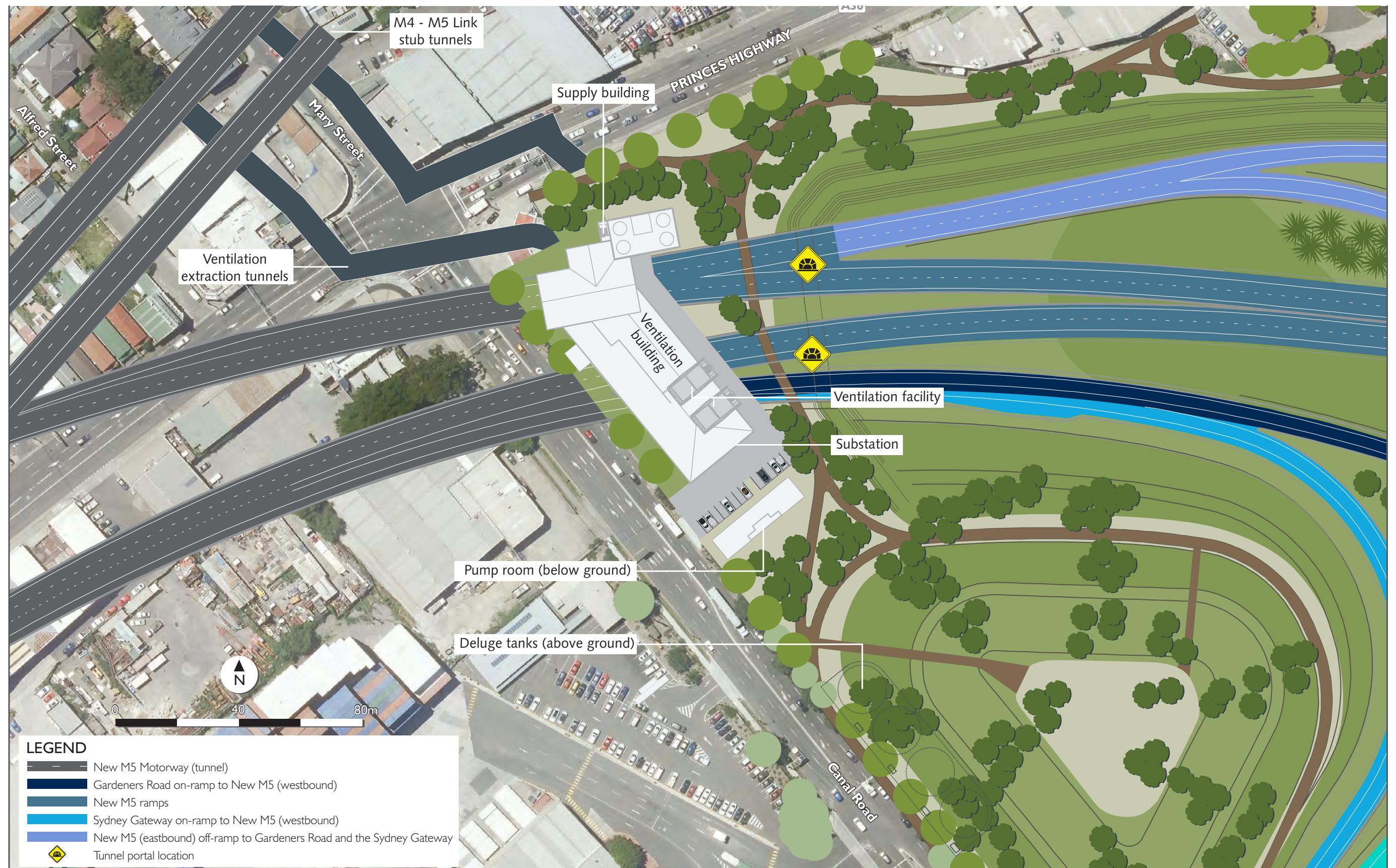


Figure 62 Indicative MOC4 facility at St Peters

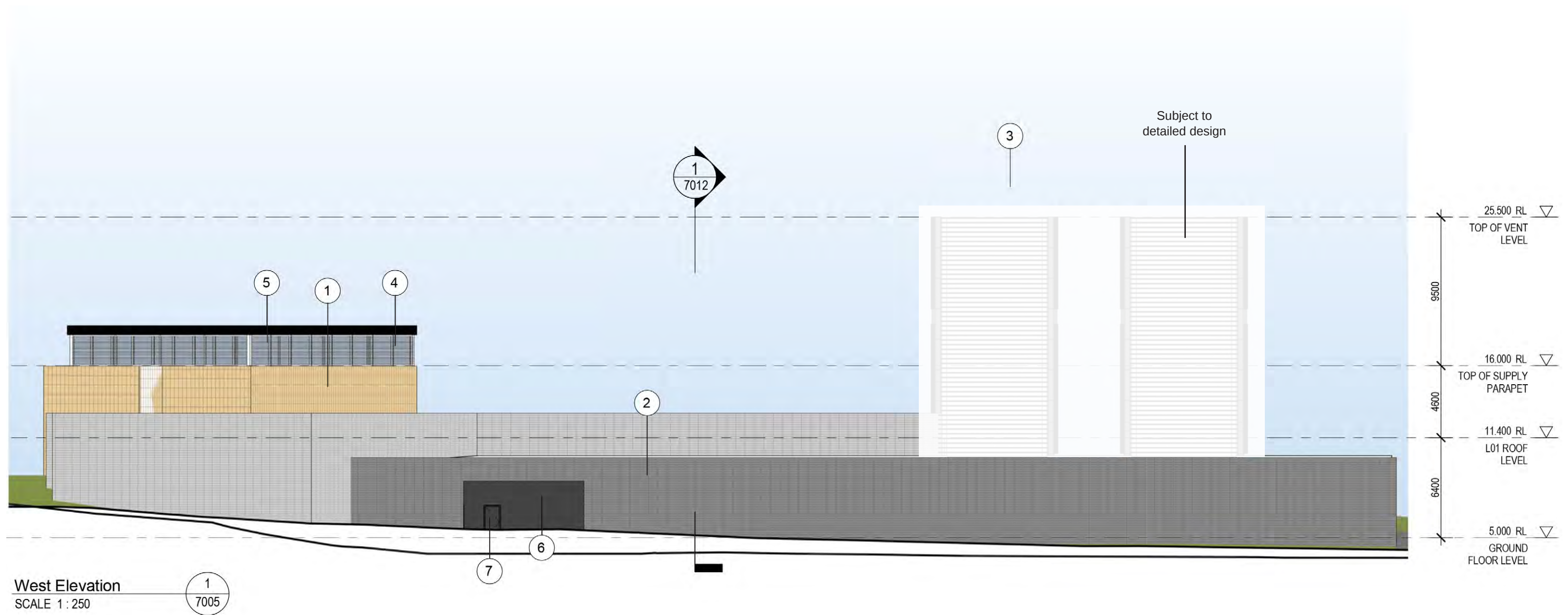
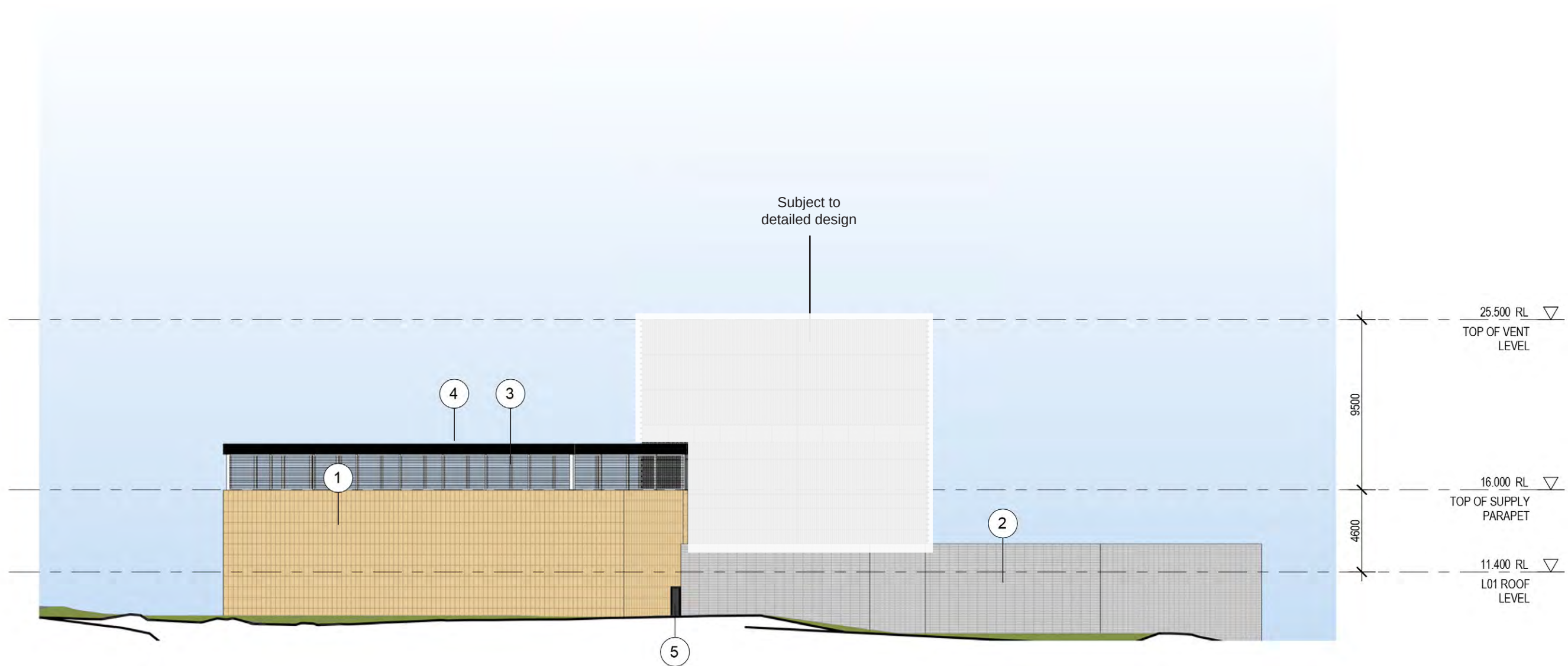


Figure 63 Indicative MOC4 facility at St Peters





North Elevation
SCALE 1 : 250

1
7005

Figure 65 Indicative MOC4 facility at St Peters

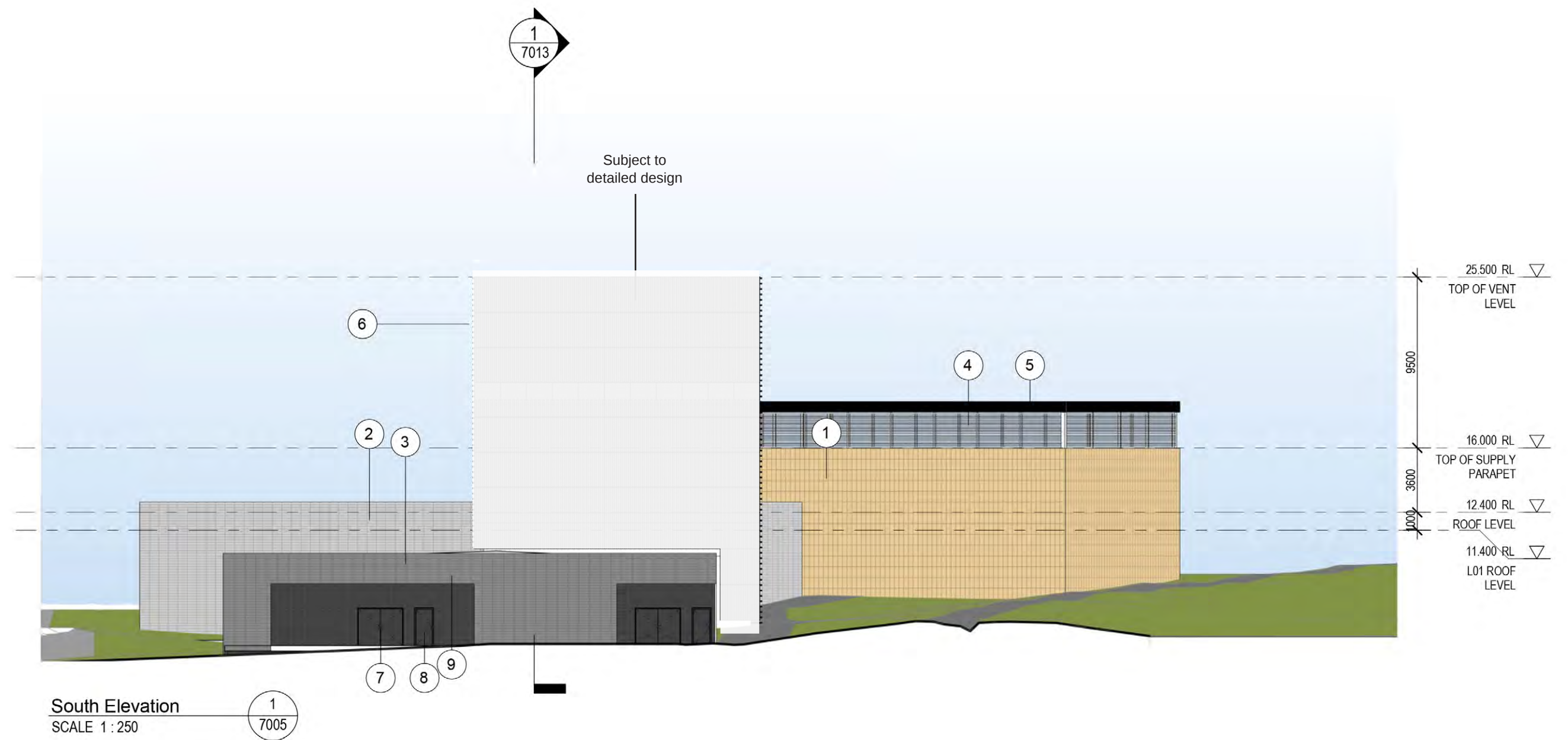


Figure 66 Indicative MOC4 facility at St Peters



Figure 67 Artist's impression - Indicative MOC4 facility at St Peters



Figure 68 Artist's impression - Indicative MOC4 facility at St Peters