4.6 Rise in Storeys

The proposed building design for the new EOCCS encompasses a predominantly 2-storey structure, with entry from Keefers Glen at street level directly to the main Ground Floor level of the School, providing access to the main School administration areas and entries to the southern/eastern Primary School wings, western Secondary School wing and central playground area.

All main learning areas for both Primary and Secondary schools are contained on the Ground Floor and Level 1. Noting the natural topography of the site and fall from the south to the north, this has allowed the opportunity to insert an additional Lower Ground storey for a small portion of the northern extremities of the western and eastern wings. The lower ground areas allow for insertion of non-student facilities including maintenance facilities, storage and waste collection areas. Lift 1 (western wing) and Lift 3 (eastern wing) and Stairs 1 and 5 provide an alternative path of travel for students from the educational learning areas on Ground and Level 1 directly to the Lower Playground area.

Key drivers for the approach to maintain a predominantly two storey facility included the following:

- The two (2) storey presence is in keeping with the current bulk and scale of the residences and buildings on the western side of Keefers Glen, the Brickendon Ave residences on the northern boundary, and existing educational facilities on the adjacent St Peters Catholic College site.
- Multi-storey facilities (above 2 storeys) present a number of operational challenges and increased risk to student safety and security including the following:
    - Safety:
        - Delayed staff response times to challenging student behaviour in the classroom and playground
        - Increased staff transition time to playground duty and required work breaks
        - Increase in the number of students with limited mobility and communication unable to use the stairs during an emergency evacuation
        - Some students will refuse to use the lifts due to a fear of enclosed spaces which increases the transition time and decreases staff time in the classroom supporting learning.
    - Learning:
        - Reduced learning time in the classroom because of delayed:
            - Transition of staff; allied health, teachers, LSA, specialist staff.
            - Transition of students; preferred activity to non-preferred activity.
        - Reduced connection between indoor and outdoor learning and gathering spaces. Disconnect with Connecting with Country principles.
        - Reduced opportunity to develop student independence as students using the lift must do so with staff assistance.
        - Reduced number of available lower-level learning spaces for students with mobility restrictions.
        - Managing disorientated and confused students regarding which school level they are on.
        - Fatigue of students walking multiple flights of stairs or ramps leading to reduced ability to engage with learning tasks in the classroom.
        - Increasing the concentration of students in an area and/or building, across multiple levels will increase noise, resulting in some students responding negatively, putting students and staff at risk of injury.

4.7 Massing

The massing of the building was extensively tested throughout the design development phase (refer *Part 4.4 of this report*) and ultimately informed the final built form. Each massing test was established based on a series of key drivers and design principles including:

- Ensuring the bulk and scale of the new EOCCS responded to the site context and complimented the existing scale of the residential properties near the project site
- Maintaining a maximum two storey building for student learning areas and classrooms as noted in *Part 4.6 Rise in Storeys*
- Minimising the extent of cut and fill on the site which is noted as being impacted by acid sulphate soils (refer *Part 3.10 Constraints and Opportunities and 3.11 Soils)*
- Aligning the main entry and ground floor level to work as close as possible with the existing grade and road levels in Keefers Glen
- Maximising the available ground floor footprint to provide on grade learning areas for students with limited or restricted mobility

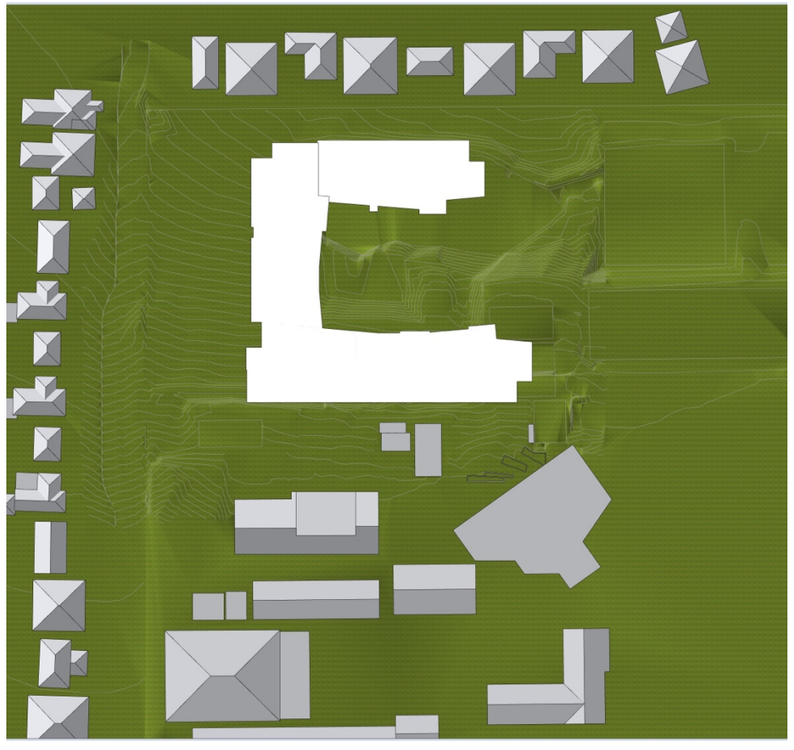
The initial massing tests were established during the Option 1a concept as shown in the following massing images. Option 1a incorporated a two (2) storey, “L” shaped block forming the western and southern Primary School wings. The Ground Floor of the western and eastern wings was established to respond to existing street levels in Keefers Glen, allowing for the main entry to the School to be positioned on the western frontage, and provide an accessible path from street level to the entry.

In response to the terrain across the site falling from south to north, the two (2) storey northern Secondary School wing was set down a storey so the upper storey aligned with the Ground Floor established for the western and eastern wings, creating a Lower Ground level. The Lower Ground level aligned with the existing natural ground levels, further minimising the extent of cut required.

Equally, the site terrain, and levels established for the western wing, allowed for the insertion of additional floor area on the Lower Ground floor at the northern end of the western wing.

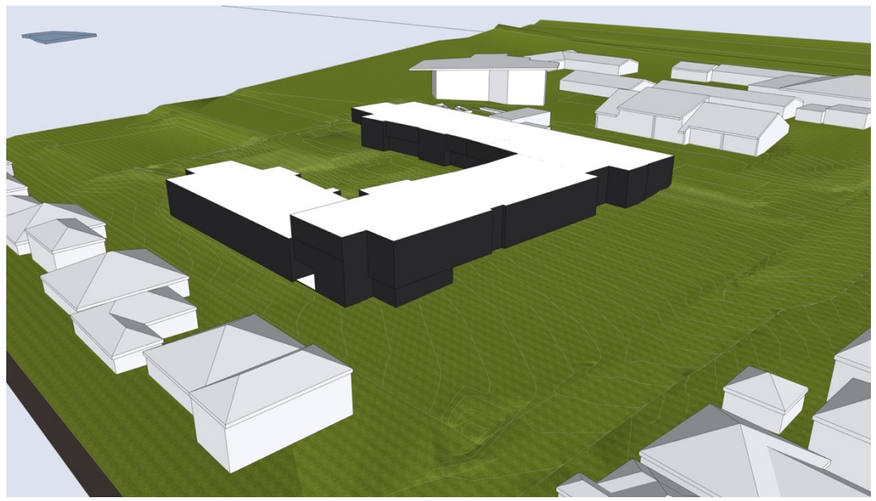
The results of these test successfully demonstrated the opportunity to site the building to meet the above noted objectives, in particular with regards to minimal impact on the extent of cut into the acid sulphate impacted soils. The extent of cut is demonstrated in the below sections and highlighted in red. Potential extent of fill is highlighted in green.

These tests also demonstrated the respectful bulk and scale of the two storey forms in relation to the surrounding neighbouring properties.

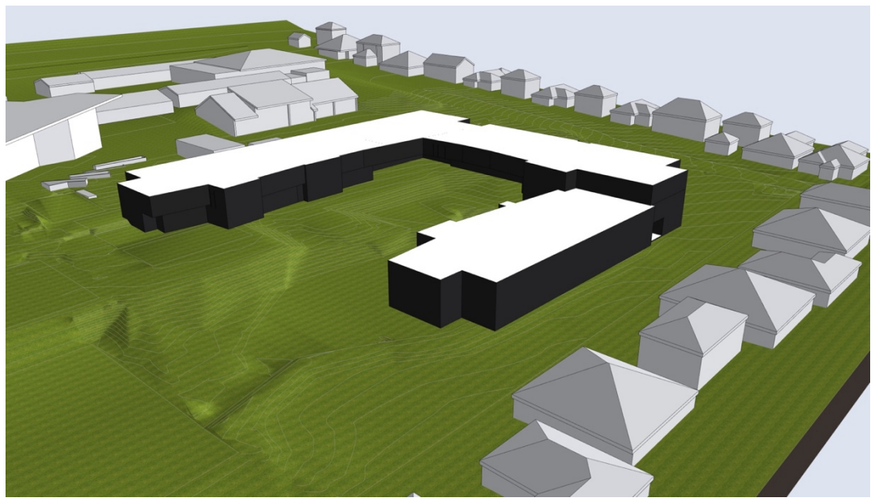


Option 1a – Massing Model – Aerial View

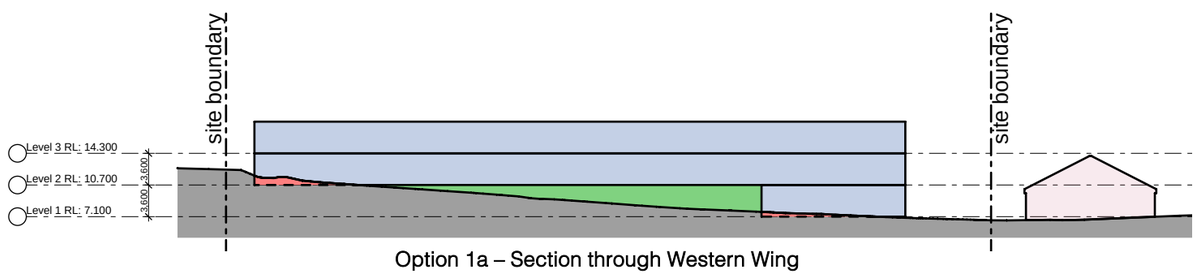
Nominated Architects
SM Evans 7686 DM Bell 11076
ABN 32 002 261 396



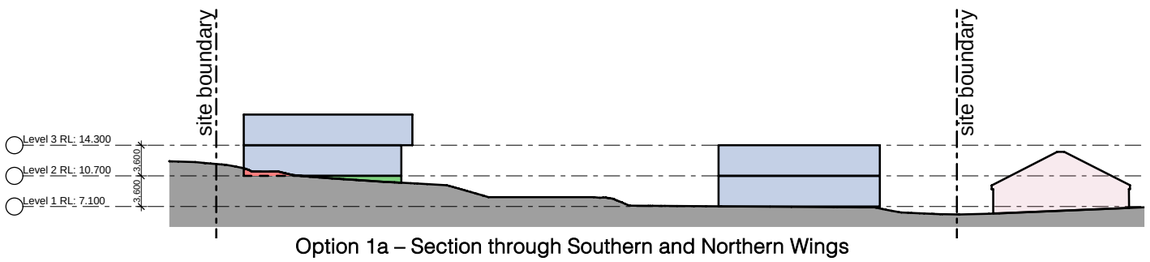
Option 1a – Massing Model View from North-West



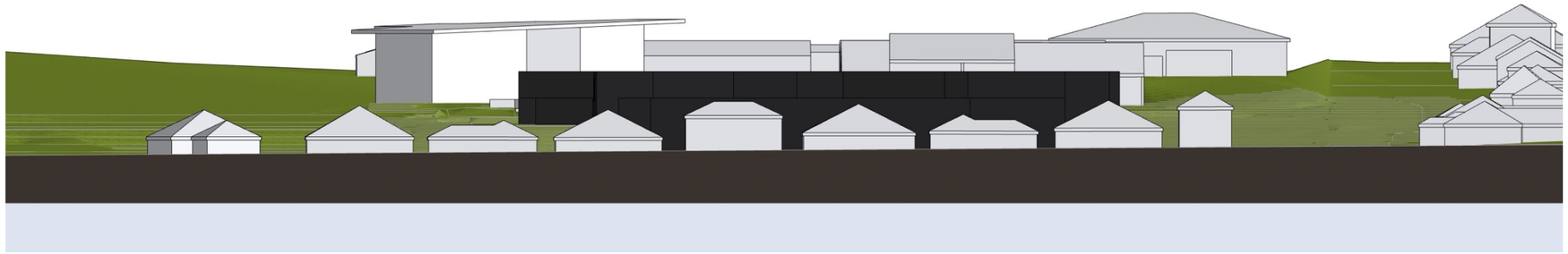
Option 1a – Massing Model View from North-East



Option 1a – Section through Western Wing



Option 1a – Section through Southern and Northern Wings



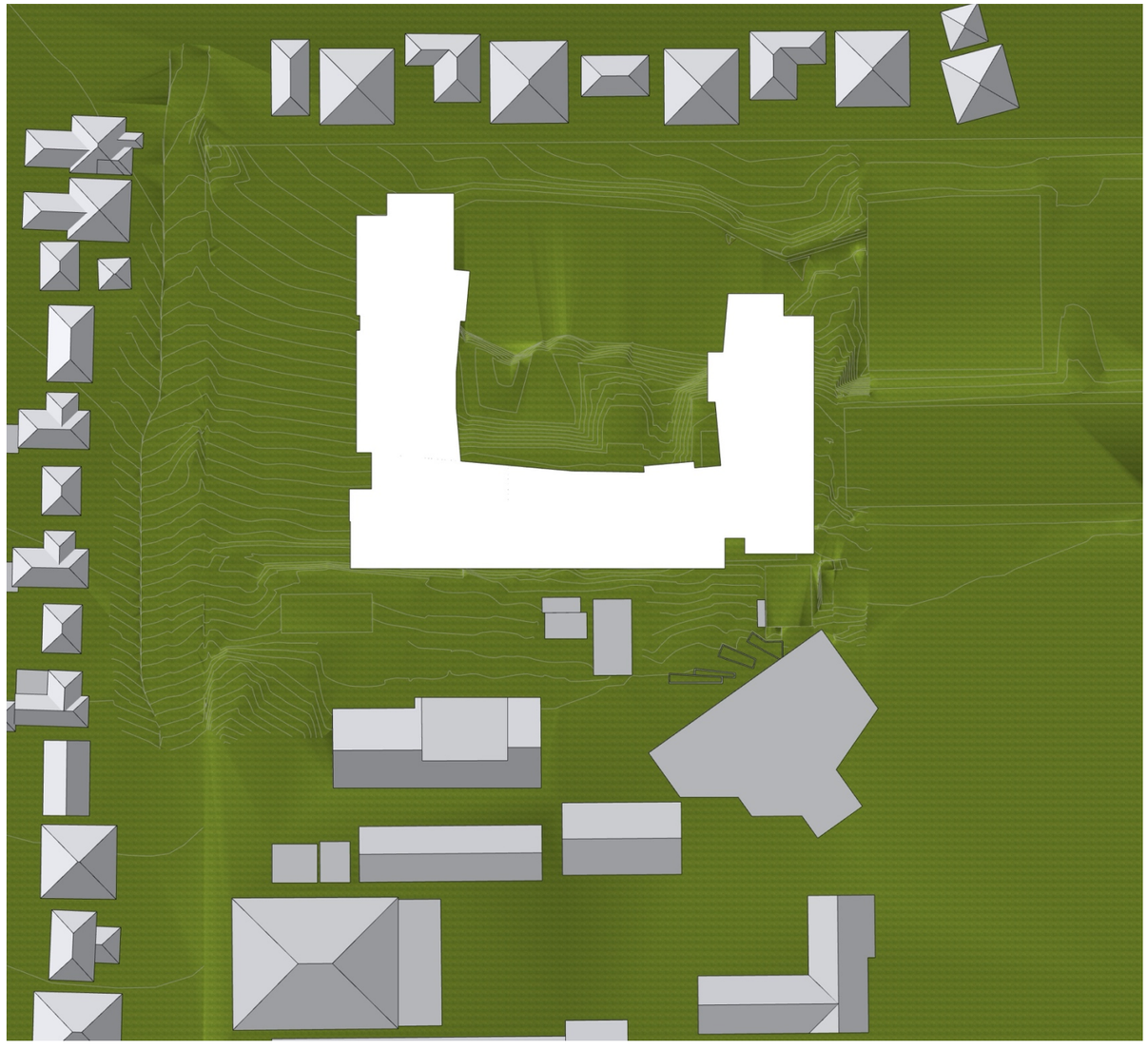
Option 1a – View from North Boundary Looking South

Nominated Architects
SM Evans 7686 DM Bell 11076
ABN 32 002 261 396

As the design development progressed, Option 5 was the first design to test the concept of replacing the northern wing with an eastern wing as demonstrated in the following massing test images.

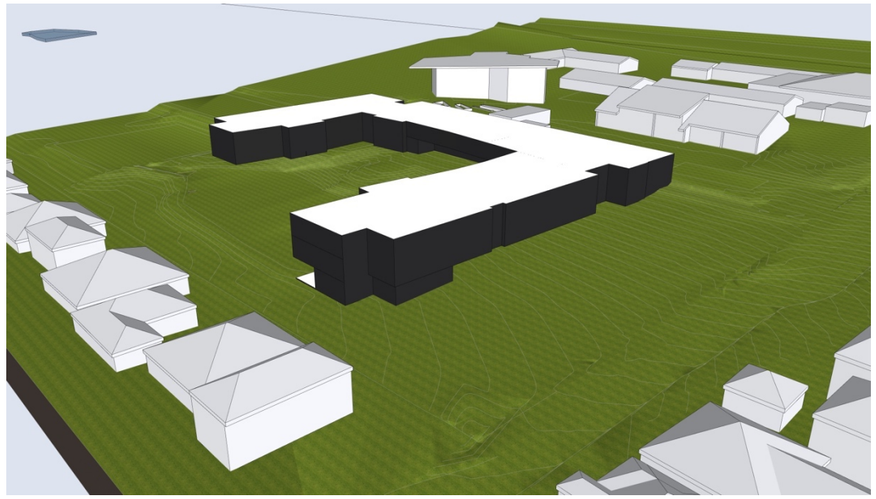
The conclusions of the Option 5 tests matched the results of Option 1a and the principles of these tests carried through to the final modified Option 9h design concept which forms the SSDA submission in that:

- The “U’ shaped form of the building required minimal cut to the site
- The bulk and scale were complimentary and in keeping with the bulk and scale of the surrounding residential developments
- The massing approach and site terrain allowed for additional, non-student areas at the Lower Ground level of the western and eastern wings
- The proposed floor levels complimented the existing levels through Keefers Glen, providing an on-grade, accessible pathway for entry to the new campus

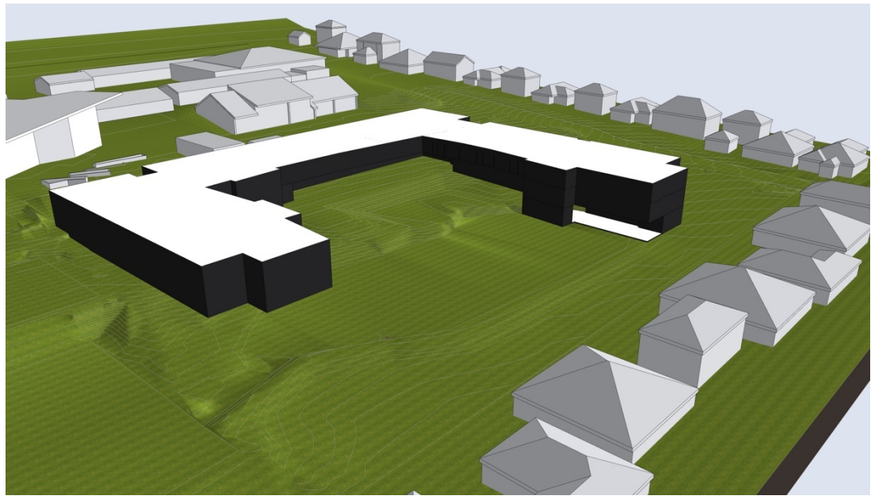


Option 5 – Massing Model – Aerial View

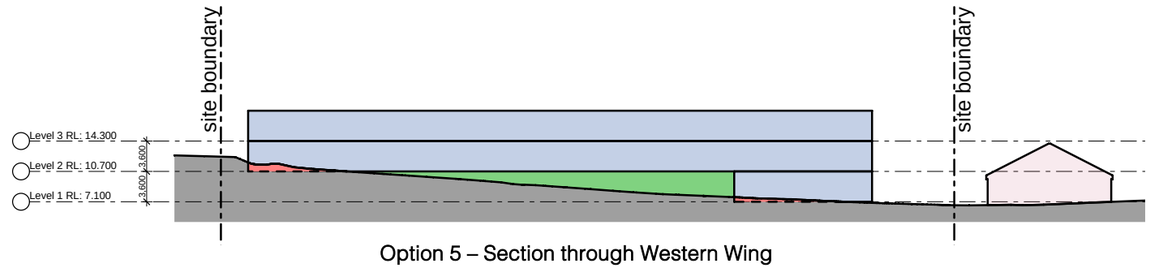
Nominated Architects
SM Evans 7686 DM Bell 11076
ABN 32 002 261 396



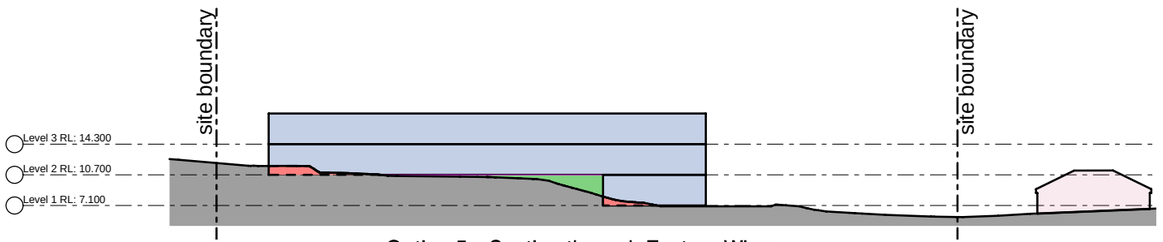
Option 5 – Massing Model View from North-West



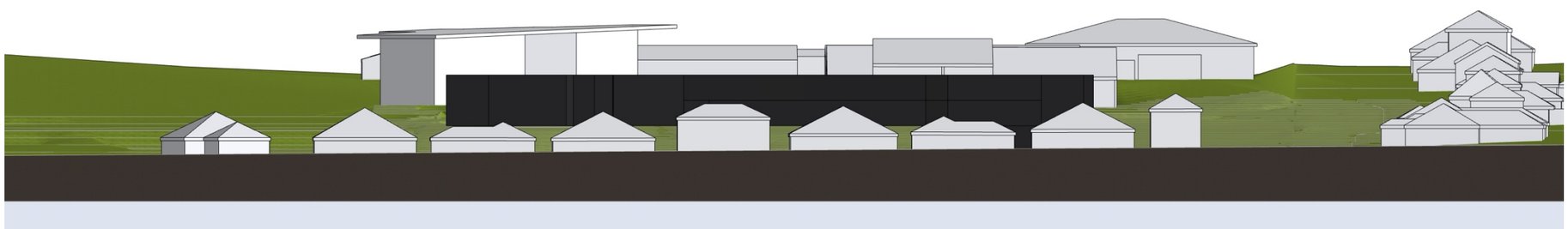
Option 5 – Massing Model View from North-East



Option 5 – Section through Western Wing



Option 5 – Section through Eastern Wing



Option 5 – View from North Boundary Looking South

Nominated Architects
SM Evans 7686 DM Bell 11076
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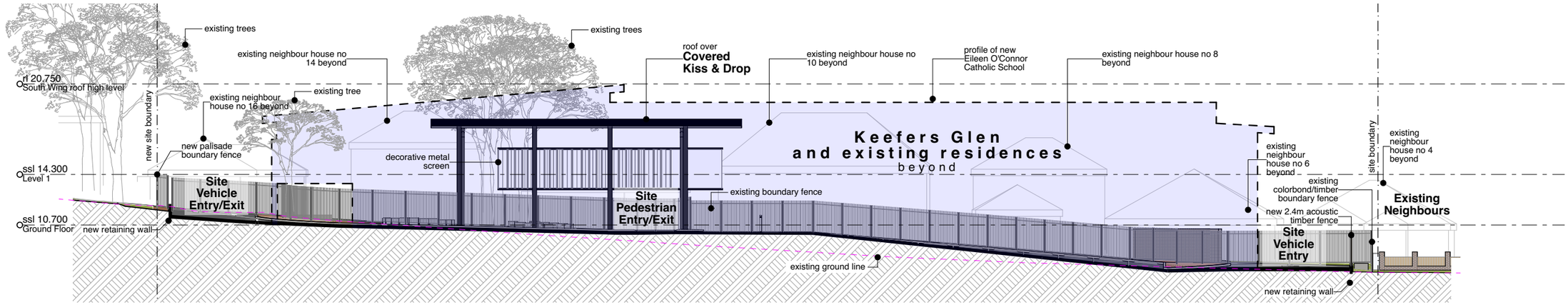
4.8 Height & Scale

As previously noted, there are no nominated height controls for the project site. Additionally, the height and scale of the building has been developed with consideration of the parameters as noted in *Part 4.6 Rise in Storeys* in this report, in particular with respect to the existing bulk and scale of the residential nature of Keefers Glen and the surrounding properties and the functional limitations of multi-storey facilities for students with a disability.

When viewed from Keefers Glen, the new EOCCS, setback 19.2 metres from the western boundary, presents as a predominantly two (2) storey development with the northern end of the western wing, following the natural slope of the terrain to ground the building with a three (3) storey portion encompassing building maintenance and service areas at the lower ground floor. The three (3) storey northern stair (Stair 1), is setback a further 6.1 metres from the western boundary, capped with a lower roof structure, beneath the main roof form to reduce the height and scale of the stair to the northern boundary.

Western Elevation – View from Keefers Glen



View from EOCCS Site to Residences on Western Side of Keefers Glen

The building's roofscape features single-plane roof elements on each wing, sloping from the outer facades to minimise height and scale on the public-facing elevations. Additionally, the roof design takes a strategic approach to operations and safety management by positioning all roof plumbing, including downpipes, on the outer edges of the building in areas not accessible to students, thereby reducing the risk of climbing.

Furthermore, the single, directional roof pitches seek to maximise the solar ingress, natural light and natural ventilation to the internal facades, allowing for high, raking ceilings over the Level 1 open verandahs. The main roof pitches have also accounted for the lift overruns, allowing for the amenity and lift blocks to be tucked back under the main roof form, reducing the bulk and scale of the lift overruns and shielding views of the lift shafts from the public facing elevations to the west, south and east.

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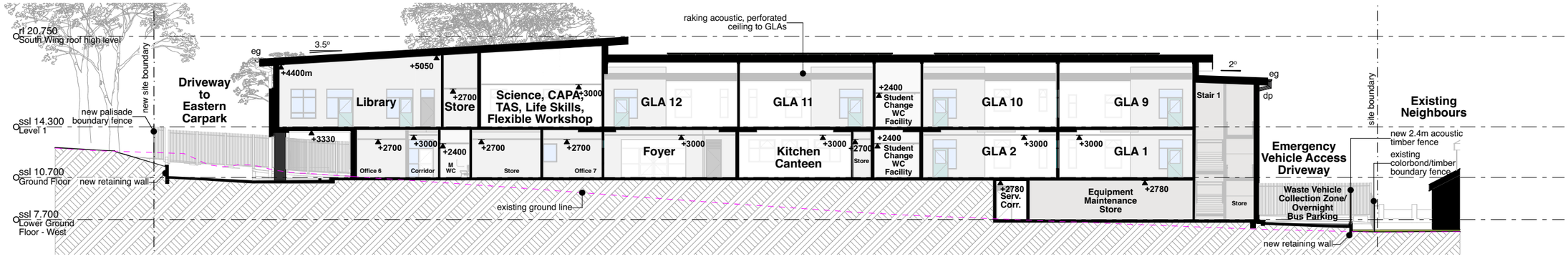
The southern elevation of the new EOCCS maintains a two-storey presence along the shared boundary with St Peters Catholic College. At this point, the ground floor level of the EOCCS is set below the existing natural ground line of the St Peters site to align with the street levels of Keefers Glen. A new retaining wall and fence are proposed along the southern boundary between the two independent school campuses, further reducing the visual height of the EOCCS when viewed from within the St Peters Catholic College site.



Section through Western wing showing setdown of Southern Wing in relation to St Peters Catholic College boundary (left) and three (3) portion to northern boundary (right)

The eastern wing is designed to mirror the western wing in both scale and form, featuring a predominantly two-storey structure with a three-storey section at the northern end. However, the setback from the northern boundary is greater for the eastern wing due to a design strategy that splits the southeastern portion of the building and shifts the structure south, as shown in the Part 4.47 - Phase 6: Option 9a Design Development Concept Plans. This adjustment reduces the visual impact of the three-storey element on the northern neighbors.

Additionally, to further minimize the height and scale of the northern vertical circulation cores (Stairs 1 and 5), which serve all three levels of the northern portions of the western and eastern wings, the cores are capped with a lower roof element. This design helps reduce the overall height and presence of the building along the northern boundary as visible in the below artistic impression.

Aerial view of the new EOCCS from North-East

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4.9 Built Form

The form of the building has been derived from the above design process with the planning layout reflecting the programme and functional relationships of the design brief. The 3-winged building overall comprises between two (2) and three (3) levels, encircling a central, outdoor playground area.

Primary elements in the architectural expression of the siting and design of the new campus include:

- The western wing acting as an anchor point for the new School delivering street presence, identity and a focal point on the approaches from Brickendon Road to the south and Deloraine Ave to the north.
- The design of the south-western corner of the building and porte cochere, along with the carefully integrated streetscape featuring the new Arrival/Meeting Garden and landscaping, enhances the presentation of the main entry to the public frontage, creating a focal point and offering clear, directional guidance.
- Optimizing solar exposure, natural light, and ventilation through the building's northern aspect and "U-shaped" design.
- Creating a cohesive, integrated campus that offers an operational and functional planning solution, enabling the independent operation and management of both Primary and Secondary School facilities.

Floor to floor heights of the building have been designed at 3.6m with consideration of the overall building height and scale within the surrounding context whilst providing sufficient height to achieve the accommodation brief requirements. Ceiling heights are proposed as between 2.7m to 3m generally (or higher where possible) throughout, excluding amenity and/or service areas.

On the internal edge facing the playground, three (3) distinct amenity and lift core blocks are separated from the main building form. These blocks serve each of the three wings, providing access from the lower ground and ground floor COLA/playground areas, as well as the Level 1 verandahs.

View of Playground Looking South

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4.10 Building Articulation

The design of the new EOCCS building is based on four key principles: the ground plane, the external public-facing vertical plane, the internal vertical plane, and the roof plane. These elements have been carefully integrated to create a cohesive and unified composition throughout the building, encompassing both Primary and Secondary facilities. This approach reflects the project's goals of fostering an inclusive and unified community.

To embody these key principles, the design incorporates a range of distinctive elements and strategies, which come together to form the final composition, including:

- Dark, lower ground floor plinth
- Lightweight cladding panels
- “Grasslands” façade
- Façade articulation and expression through built form
- Internal, metal screening
- Lift and amenity blocks

Plinth:
The dark-toned lower ground floor plinth anchors the building to the ground plane. Comprising face brick masonry, the plinth extends across the full height of the lower ground floor at the northern end of both the western and eastern wings. It runs along the base of each wing, gradually tapering in height and ultimately disappearing at the southern ends of the wings as the slope rises.

Lightweight Cladding:
Resting atop the masonry plinth, the ground and Level 1 Primary and Secondary School facilities are clad in pre-finished, lightweight panels. On the public-facing external facades, this cladding creates a recessed backdrop to the “Grasslands” façade, with blue/green tones reflecting the natural waterways and rivers of Darkinjung Country. The blue/green hues wrap the entire building at ground level, extending across both the external public-facing facades and the internal ground floor facades, complementing the dark tones of the plinth and firmly grounding the building in its context.

The light tones of the pre-finished cladding panels on the internal facades surrounding Level 1 are designed to enhance the naturally lit and ventilated atmosphere of the open verandahs, offering views over the playground and treetops.

The cantilevered, boxed section to the Level 1 southern façade, is equally clad in lighter tones, floating above the darkened tones of the ground floor level.

Grasslands Façade:
The “Grasslands” façade concept, described in detail in *Part 4.21 Designing with Country*, has been applied to public facing facades, wrapping the western, southern and eastern facades and reflecting to the broader community, the natural environment and indigenous heritage engrained in the project site.

The natural green and earth tones of the grasslands are set forward of the blue/green lightweight cladding backdrop, adding depth and definition to the facade. The splayed pattern of the grasses is highlighted around the edges of the "grassed" areas, where they fold, splay, spread, and rise to expose larger sections of the "waterway" backdrop. At the main entry, the grasses extend from the ground level, before gradually peeling back to reveal the main entry beneath the porte cochere.

On the western elevation, the grass fronds are further expressed in the third dimensions through the introduction of sunhoods, interspersed along the façade, providing shading and protection from the western sun.

Western façade demonstrating the key principles of: the lower ground plinth, lightweight cladding and “Grasslands” facade

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Façade Articulation and Expression through Built Form:
The site massing and internal planning has developed to allow for definition to the façade, with opportunity to create depth and visual indicators through the built form.

The south-western corner of the building, housing the administration block, is positioned forward from the western wing façade. This design enhances the visibility of the main entry, offering a clear visual cue for pedestrians approaching from Keefers Glen. Additionally, the timber-look, lightweight cladding of the administration block's vertical façade serves as a visual marker for vehicles entering the site via the northern entry driveway (refer image right). The entry presentation along the Keefers Glen frontage is further accentuated by the expressed height of the administration block, which rises above the porte cochere and is capped by the sloped roof of the southern wing, which extends back into the site towards the east. Additionally, the south-western corner of the building is further emphasized by the setback of the Level 1 cantilevered façade, which encompasses the Library.

On the western and eastern facades, the sections of the building containing non-student areas, such as Staff Resource Rooms and bulk storage, are set back from the adjacent GLAs at both ground and Level 1. These areas are finished in dark grey, lightweight cladding, adding further definition and depth to the design and expressing the bulk and form of the GLA pairings to the external façade.

Internal Metal Screening:
The main feature of the internal facades consists of steel-framed screens with mesh infill, located along the outer perimeter of the Level 1 verandahs and ground floor COLAs of the western and eastern wings. These screens echo the grasslands façade on the public-facing elevations and serve as transparent barriers on the internal facades. They allow natural light and ventilation to flow into the building and the GLA's beyond, while also offering views to the north, across the playground area..

Lift and Amenity Blocks:
The lifts and amenities are grouped into three independent blocks, each providing direct service to a specific wing, ensuring that no more than four GLA's are served by a single bank of toilets and a lift. These blocks are separated from the main building and positioned along the outer perimeter of the verandahs/COLA. Each block is topped with a lower roof structure, which reduces its bulk, scale, and visual impact. This effect is further enhanced by the main roof structure, which extends over the blocks.

To aid in visual identification and wayfinding, each lift will be finished in dark-toned masonry, similar to the lower ground plinth whilst the amenity block elements are identifiable by the same timber-look, pre-finished cladding panels, represented at the main entry.

View from Western driveway of Main Entry

View from playground looking West showing internal metal screening to Level 1 and lift/amenity block to Western wing (beyond)

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4.11 Solar Access

The site planning of the new EOCCS building seeks to maximise the advantages presented by the site's northerly aspect, maximising the extent of solar access, natural light and natural ventilation. The form of the building has been generated through the design process described above, with the "U-shaped" configuration of the three (3) distinct wings to the west, south and east, allowing direct solar access into the heart of the campus and into each wing as demonstrated in the accompanying shadow diagrams prepared by Stanton Dahl Architects.

The building setbacks to the northern and western boundaries, combined with the northerly aspect and position of the site, result in no overshadowing of the neighbouring residential properties to the north and west.

Shadows cast by the new EOCCS building fall across the proposed sub-division boundaries (to the south and east) shared with the St Peters Catholic College during the winter months, however, these shadows only extend for a short distance across the boundary and predominantly across open garden and non-playground grassed areas. Shadows are cast onto a small area of the existing St Peters Catholic College basketball courts around 3pm in June. As a result, the overshadowing on the eastern and southern boundaries shared with St Peters Catholic College is considered to be negligible.

Internal overshadowing into the EOCCS playground is minimized due to the open, northerly aspect. Shadows are cast on a small section of the eastern, upper playground area at 9am in June and December, cast by the eastern wing of the building. Conversely, an area of the western edge of the playground is in shadows cast by the western wing at 3pm, predominantly in June.

Aerial View from South-East

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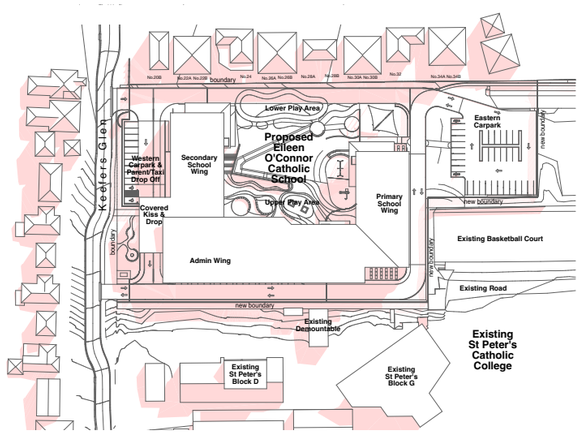
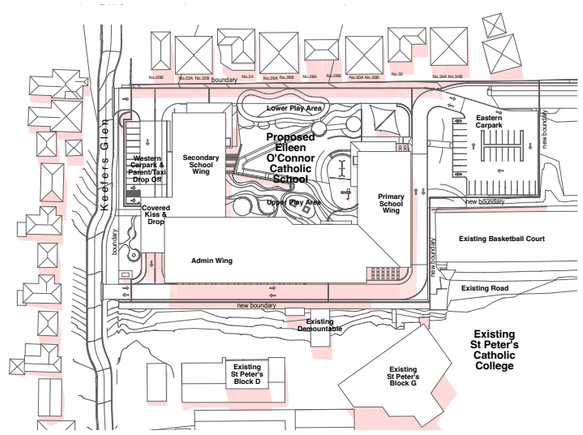
ABN 32 002 261 396

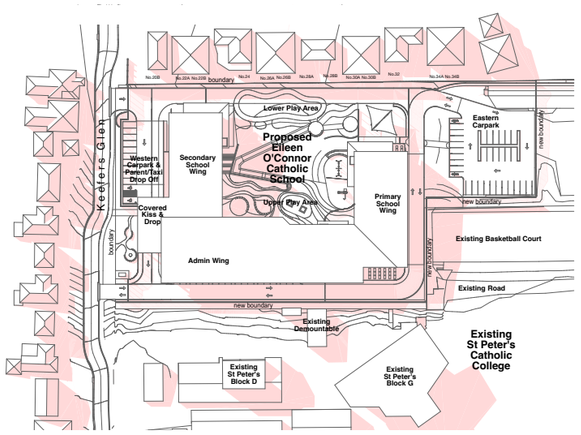
SCALE: 1:1000 @ A1



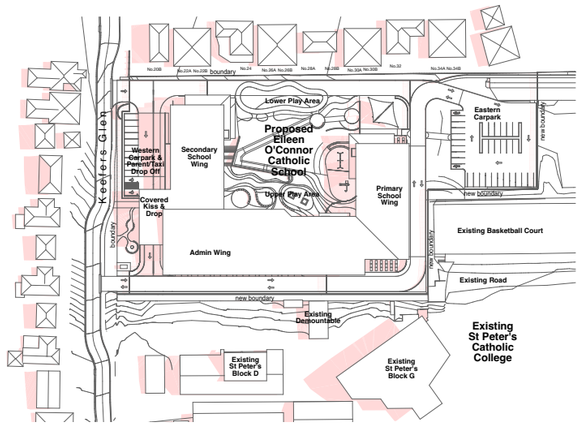
01 Shadows June 9am
1:1000



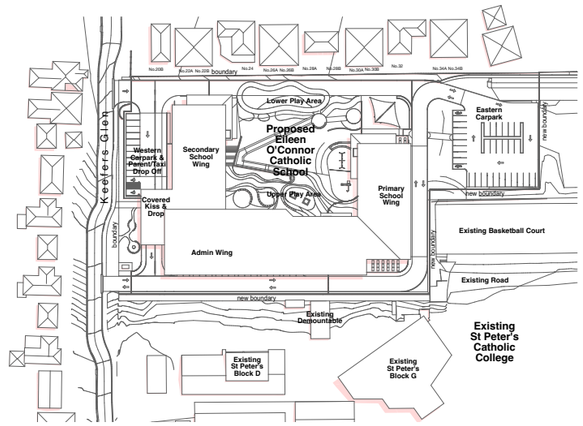
02 Shadows June 12noon
1:1000



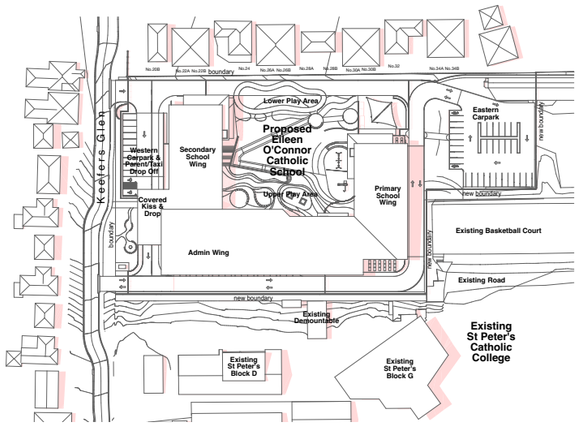
03 Shadows June 3pm
1:1000



04 Shadows December 9am
1:1000



05 Shadows December 12noon
1:1000



06 Shadows December 3pm
1:1000

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Rev	Issue	Date
P1	Issue for Consultant Co-ordination	19/12/24
P2	Issue for EIS Co-ordination & Client Approval	19/03/25

Amendments

Stanton Dahl Architects

Eileen O'Connor Catholic School

CATHOLIC SCHOOLS Broken Bay

RP INFRASTRUCTURE

Eileen O'Connor Catholic School

Catholic Schools Broken Bay (CSBB)
84 Gavenlock Road,
Mardi, NSW 2259

Drawn; RW
Checked; DM
Plot date; 19/3/2025

Scale;1:1000 as noted @ A1

Project No;
2637.20

Drawing No; A0401

Revision#; P2

Shadow Diagrams

4.12 Views

Approaching from the north, the northern entry driveway serves as the primary vehicular access to the site, with a curved entry signage wall guiding visitors to the entry gates. The perimeter fence along the street frontage is set back from the western boundary, creating a landscaped streetscape along Keefers Glen that enhances and improves the sparse planting currently found along the existing frontage. A new concrete footpath offers pedestrian access up the hill to the main entry gates and the Arrival/Meeting Garden at the southern end of the EOCCS site.

Existing View from Residence at No. 6 Keefers Glen

Proposed View from Residence at No.6 Keefers Glen

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Upon entering through the northern entry gates, visitors are welcomed by the warm, soothing tones of the “Grasslands” façade, naturally drawing the eye toward the main entry. Architectural features such as the porte cochere and the stepped façade of the timber-look, lightweight-clad administration block at the top of the hill guide the way. Sightlines to the east offer glimpses of the lower playground and extend towards the bushland in the north-east.

Existing View from North-West Corner of Site Looking South

Proposed View from North-West Corner of Site Looking South

Nominated Architects
SM Evans 7686 DM Bell 11076
ABN 32 002 261 396

Views from the residential properties directly across from the project site show how the bulk and scale of the new EOCCS complement its surroundings, maintaining proportion with the existing St Peters Catholic College buildings and residences on adjacent properties. The proposed landscaping along the western frontage of the new EOCCS, including the Arrival/Meeting Garden, softens the building's form, offers screening, and enhances the streetscape, creating a pleasant and inviting public landscape.

Existing View from Residence at No.10 Keefers Glen

Proposed View from Residence at No.10 Keefers Glen

Nominated Architects
SM Evans 7686 DM Bell 11076
ABN 32 002 261 396

Approaching from the north, visitors are greeted by the public, landscaped Arrival/Meeting Garden, offering filtered views of the main entry beyond. The new concrete pedestrian footpath extends from the southern vehicular driveway, across the frontage of the new EOCCS, and leads to the northern intersection of Keefers Glen and Brickendon Ave. The southern driveway provides staff access to the southern and eastern car parks.

Existing View from Residence at No. 20 Keefers Glen

Proposed View from Residence at No. 20 Keefers Glen

Nominated Architects
SM Evans 7686 DM Bell 11076
ABN 32 002 261 396

From the Upper Playground, views to the north are screened by the landscaped buffer zone and new secondary fence line along the northern boundary, ensuring both visual and acoustic privacy for the northern neighbors as well as students within the playground. Trees in the playground offer shade to the active and passive areas at ground level, while allowing filtered light and views through the treetops when observed from the Level 1 open verandahs.

Existing View Looking North from Within EOCCS Site

Proposed View Looking North from within EOCCS Site (Upper Playground)

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