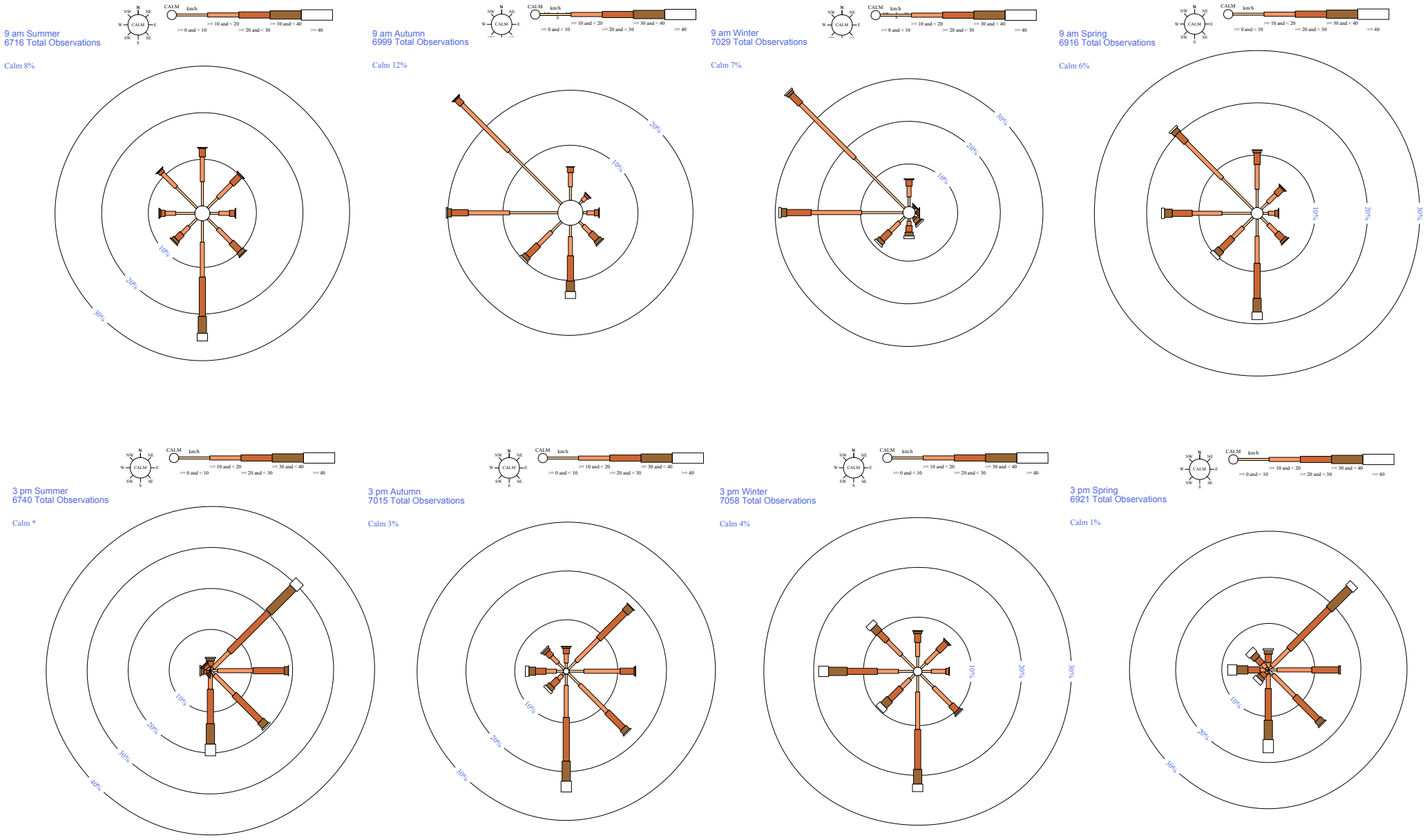


Figure 1.3 Wind rose for the Sydney region for 9am and 3pm by season
Source: BOM Climate

1.2.2 Site Specific Design Challenges

The proposed location for Waitara's new building is in the northwest corner of the existing school yard. This area currently contains existing buildings, an asphalt roofed area and play areas.

A new four level building is proposed, housing teaching spaces and special programs, a new hall with additional student services, and new administration & staff. The existing Hall is proposed to be demolished and a new one with a COLA (Covered Outdoor Learning Area) is to be built.

The new building will be constructed in the north western corner of the school. The capacity of the school is expected to increase from 760 students and 32 teachers to 1,000 students and 42 teachers.

The preferred master plan for Waitara Public School Design:

- Improves the relationship of facilities across the school site by way of physical and visual connections
- Optimally positions the new building for passive ESD design
- Improves security and accessibility and contributes to sustainability of the whole building in the following categories:
  - Energy Efficiency - including solar power generation and insulation
  - Water - including water saving fixtures and water sensitive urban design (WSUD)
  - Materials - uses low polluting and high performance materials
  - Waste - implements a waste management plan to optimise reduction, reuse and recycling of operational waste
  - Daylight - Increases daylight to interior spaces
  - Shading - provides adequate shading to reduce solar heat gain
  - Acoustics - achieves required acoustic levels for learning spaces

The topography of the site is a gentle grade to the north-west corner, where the new building is to be located. The design orientates the building on an east-west axis with the main façade windows facing north and south. Orientation the long axis of the building on an east-west axis minimises glazing area on the eastern and western façades, which are typically difficult to shade against early morning/late afternoon sun.

The school site is heritage listed by Parramatta LEP 2011 and it is listed in the Department of Education's S170 Register and the Former Register of the National Estate.

1.2.3 Environmental Performance Targets

In order to achieve ESD outcomes for the project in line with SEARS and EFSG requirements and guidelines, environmental performance targets were established during concept design phase.

A complete sustainable building strategy includes a multitude of tactics including, but not limited to energy efficiency, air quality, and water use reduction. The strategies employed are often hidden to the occupants of the building. However, in a learning environment, it is particularly important to implement techniques that are expressive and are reinforced throughout the built environment. The design proposes identifying a cohesive sustainability story that illustrates multiple sustainable methods for addressing an important environmental theme.

Sustainable design strategies the project focussed on included:

Sustainable Sites

- Use of native plants
- Integrated storm water management and WSUD practices
- Above ground rain water collection tank and rainwater reuse for toilet flushing and irrigation
- Landscaping to increase ecological value

Water Efficiency

- Low flow fixtures

Material & Resources

- Use of low polluting/high performance material wherever possible

Indoor Environmental Quality

- Use of shading devices on the façades to minimize glare and solar gain
- Use of clerestory windows on the roof to increase daylight in spaces

Energy & Atmosphere

- Solar power generation using photo-voltaic panels
- Purchase power generated from renewable resources (sun, wind)
- Provide immediate feedback on energy use to facilitate student monitoring and learning
- Limiting reliance on mechanical heating/cooling by passive design

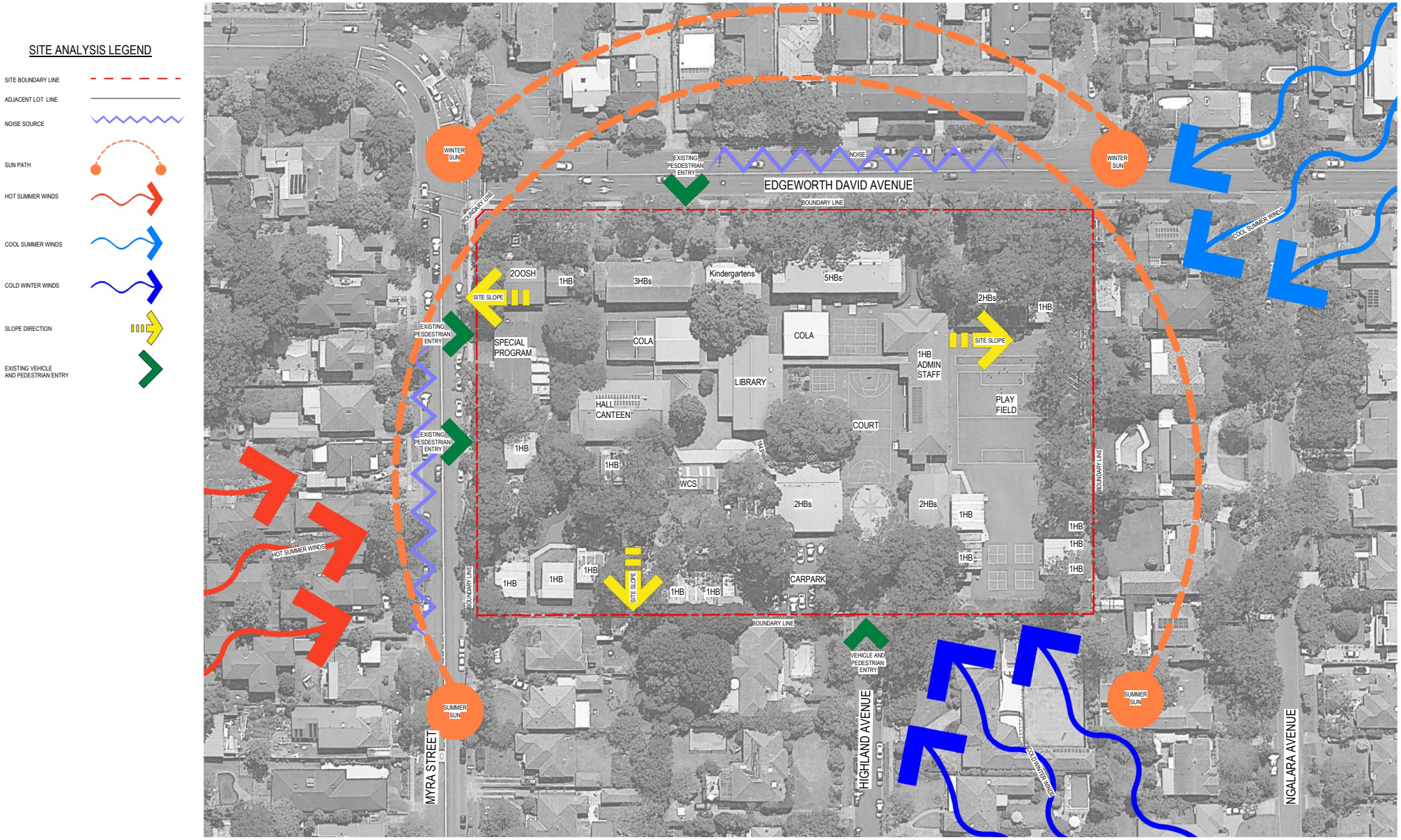


Figure 1.4 Site assessment

02 Indoor Environment Quality

2.1 Passive Design Principles

DG 02.04 Environmental Design Features of Education Facilities

A major objective in the design of Education Facilities is to achieve good indoor environmental quality and comfort conditions with minimum energy consumption. Passive Design principles should be employed wherever possible to achieve this.

'Passive design' is design that takes advantage of the climate to maintain a comfortable temperature ranges. Passive design reduces or eliminates the need for excessive auxiliary heating or cooling, which accounts for about 40% (or much more in some climates) of energy use in the average Australian building. Passive design utilises natural sources of heating and cooling, such as the sun and cooling breezes. It is achieved by appropriately orientating your building on its site and carefully designing the building envelope (roof, walls, windows and floors). Well-designed building envelopes minimise unwanted heat gain and loss[2].

Passive design principles were developed early in the project. This was crucial to guiding design since the project required the design of liveable spaces during all times of the year that are energy efficient and require minimal auxilliary heating and cooling. The following section outlines how these principles have been applied to the design.

[2]*Source: http://www.yourhome.gov.au/passive-design*

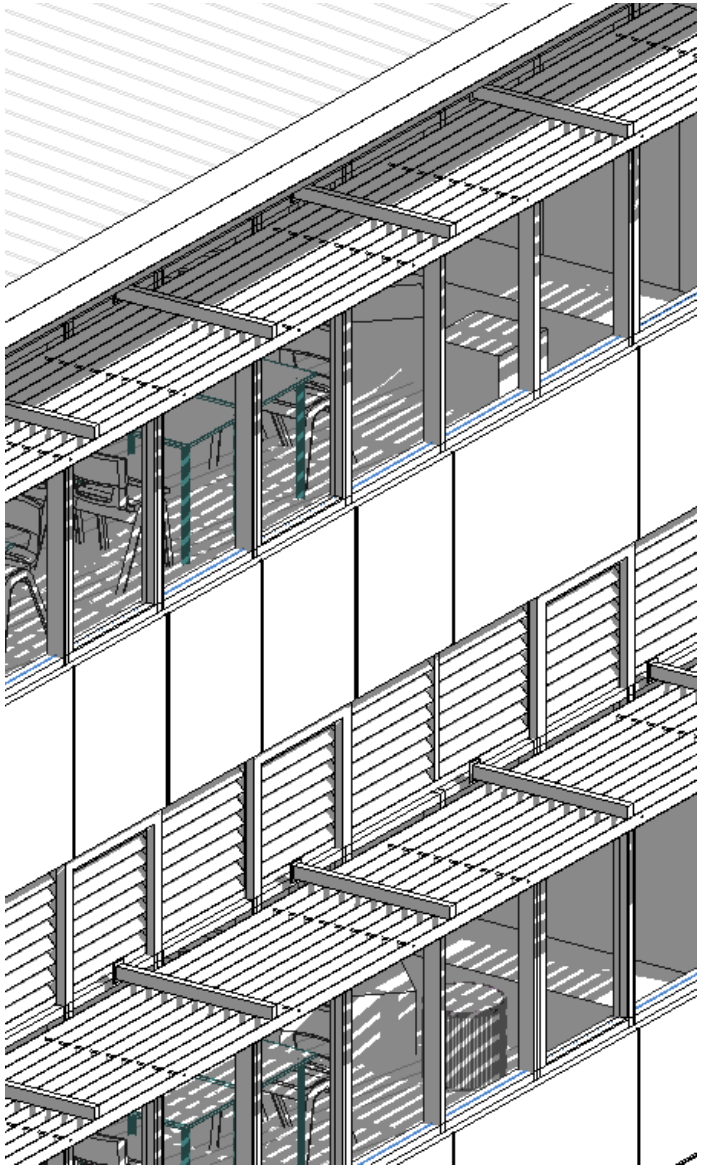


Figure 2.1 Window Shading

2.2 Daylighting and Solar Access

DG 02.04.01 Energy Conservation

Natural Light:

Natural daylight improves the indoor environmental quality of spaces and encourages beneficial learning. Natural daylight is to be provided to all teaching spaces unless identified otherwise.

Natural daylight can be provided via windows, skylights, rooflights and the like. When the space is large, it is recommended that perimeter lighting is adjacent to windows be on a separate zone to make maximum use of daylight.

Sun Shading:

On exposed façades subject to direct sunlight, external window shading should be considered as part of the building design to ensure energy efficiency and thermal comfort.

On exposed façades subject to direct sunlight, external window shading has been incorporated into the building design, to ensure energy efficiency and thermal comfort. The predominant axis of the building is east-west. Orientation the long axis of the building on an east-west axis minimises glazing area on the eastern and western facades, which are typically difficult to shade against early morning/late afternoon sun. This reduced detrimental solar heat gain for the whole building, thus reducing energy consumption required to maintain internal comfort conditions.

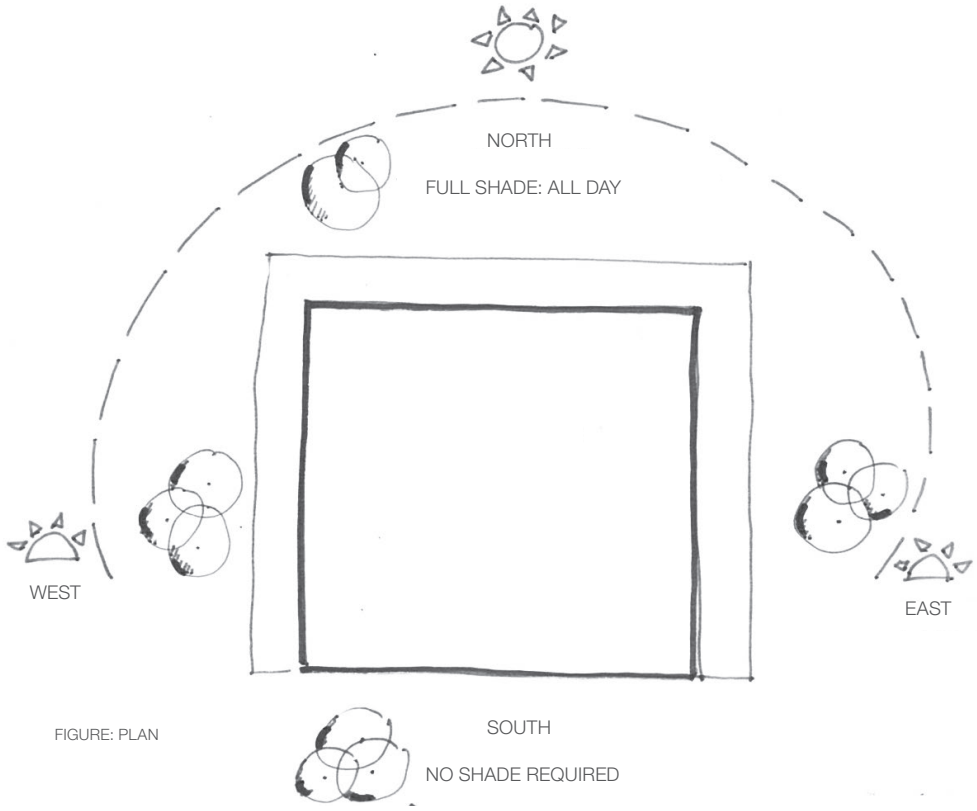


Figure 2.2 Solar exposure

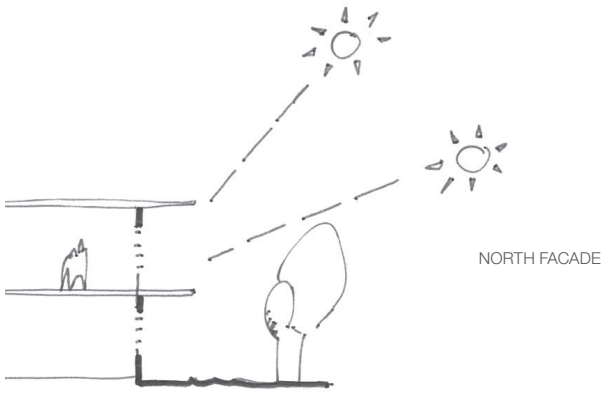


FIGURE: SECTION

Sun Shading Option: Overhanging Eaves

Potential N / E / W Elevations

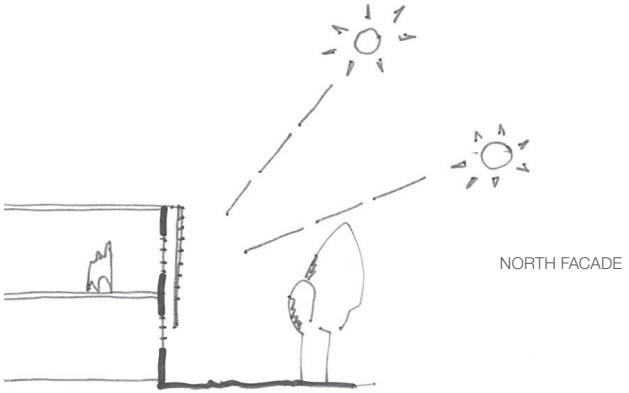


FIGURE: SECTION

Sun Shading Option: Vertical Blinds

Potential E / W Elevations

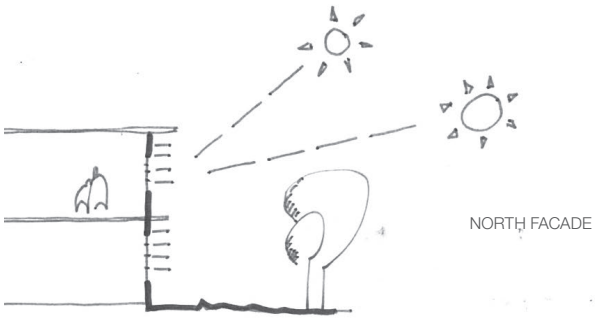


FIGURE: SECTION

Sun Shading Option: Horizontal Blades

Potential E / W Elevations

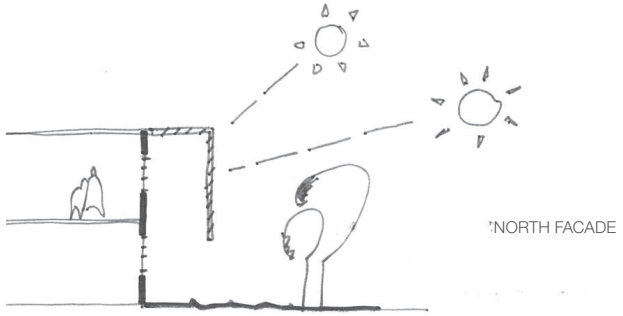
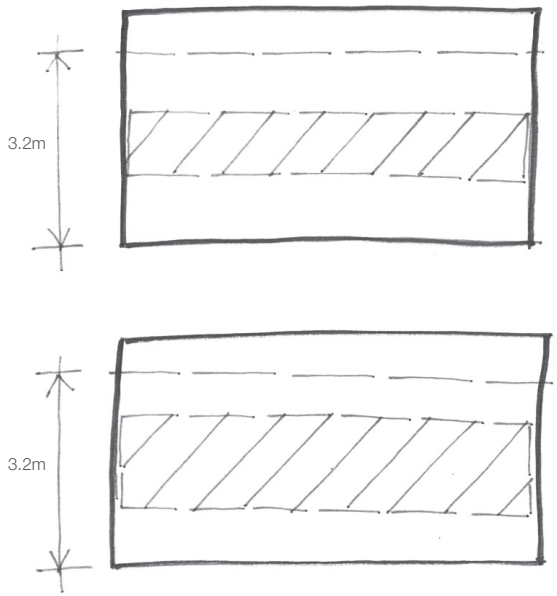


FIGURE: SECTION

Sun Shading Option: Screen

Potential E / W Elevations

Figure 2.3 External glazing shading options

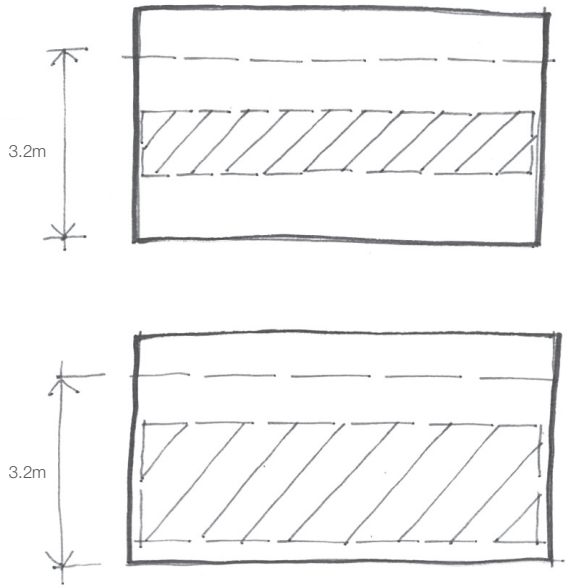


East & West Facade

Minimum 30% *

East & West Facade

Maximum 45% *



North Facade

Minimum 30% *

North Facade

Maximum 60% *

Glass to Facade Ratio

* All glazing assumed to be double glazed

* Subject to part J requirements.

Figure 2.4 Glazing ratios per facade

Ecotect Daylight Analysis

In accordance with *DG 02.04.01 Energy Conservation*, the design endeavours to maximise natural daylight access to teaching spaces, while minimising solar heat gain, compliant with NCC Section J.

The design incorporates internal and external glazing as well as clerestory windows at roof level. These design features are included to maximise the amount of daylight able to penetrate the deep floor plan of the building.

Daylight factor (DF), or the ratio of daylight inside a structure to daylight outside a structure, expressed as a percentage is standard practice method to measure the level of daylight within a space. A daylight factor has been determined through modelling the occupied areas of the building. High levels of daylight are deemed by the GBCA to have daylight factors above 2.0% for all spaces.

The Radiance simulation engine was used within Ecotect. An overcast sky was modelled and readings were taken at finished floor level. The modelling includes the extensive shading on each facade.

As is shown by Figure 2.6, each floor plane in the building achieves 2.0% daylight factor for the areas demonstrated (coloured). This modelling will need to be revisited as the design progresses to detailed design phase.

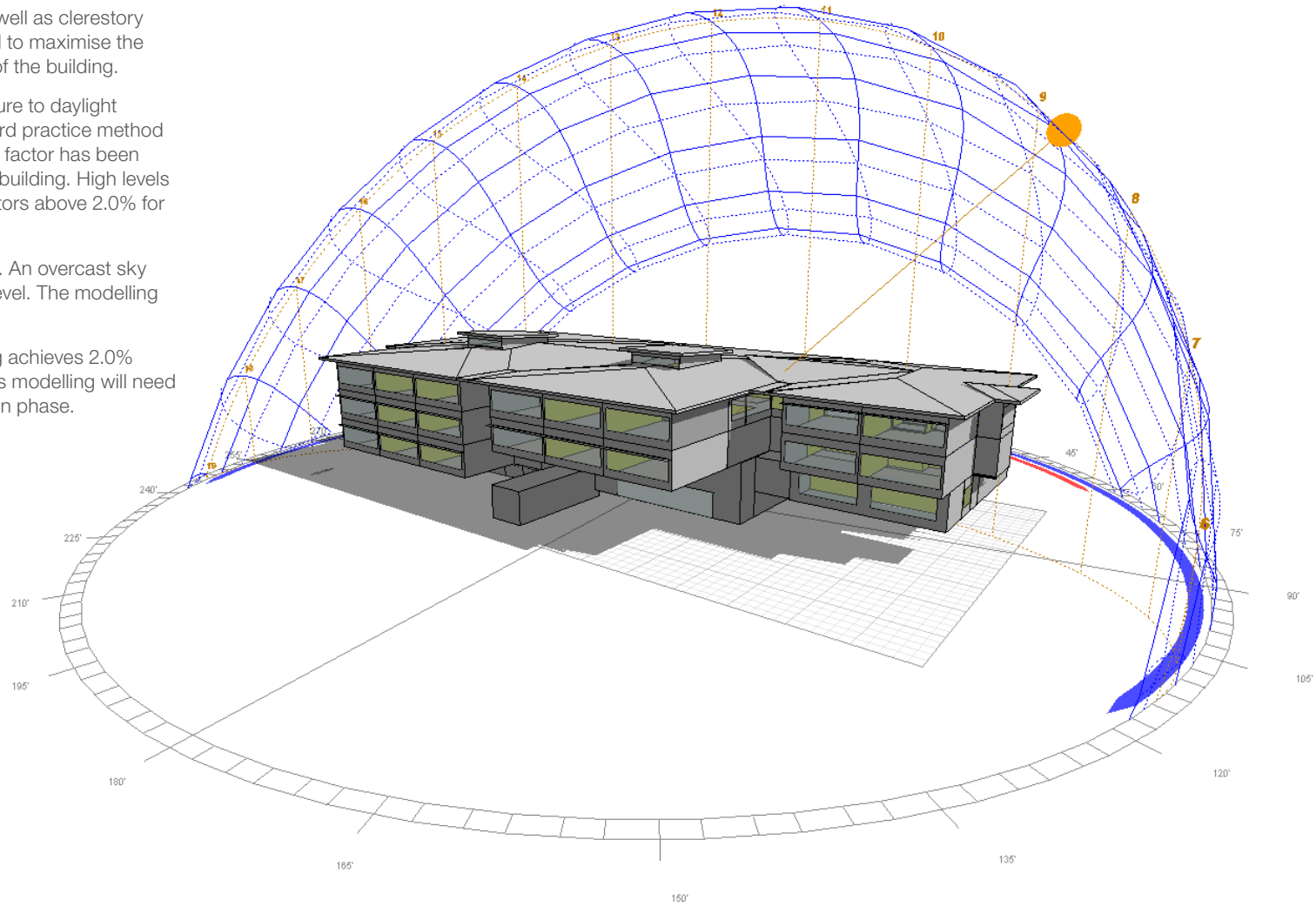


Figure 2.5 Annual sun paths at the site

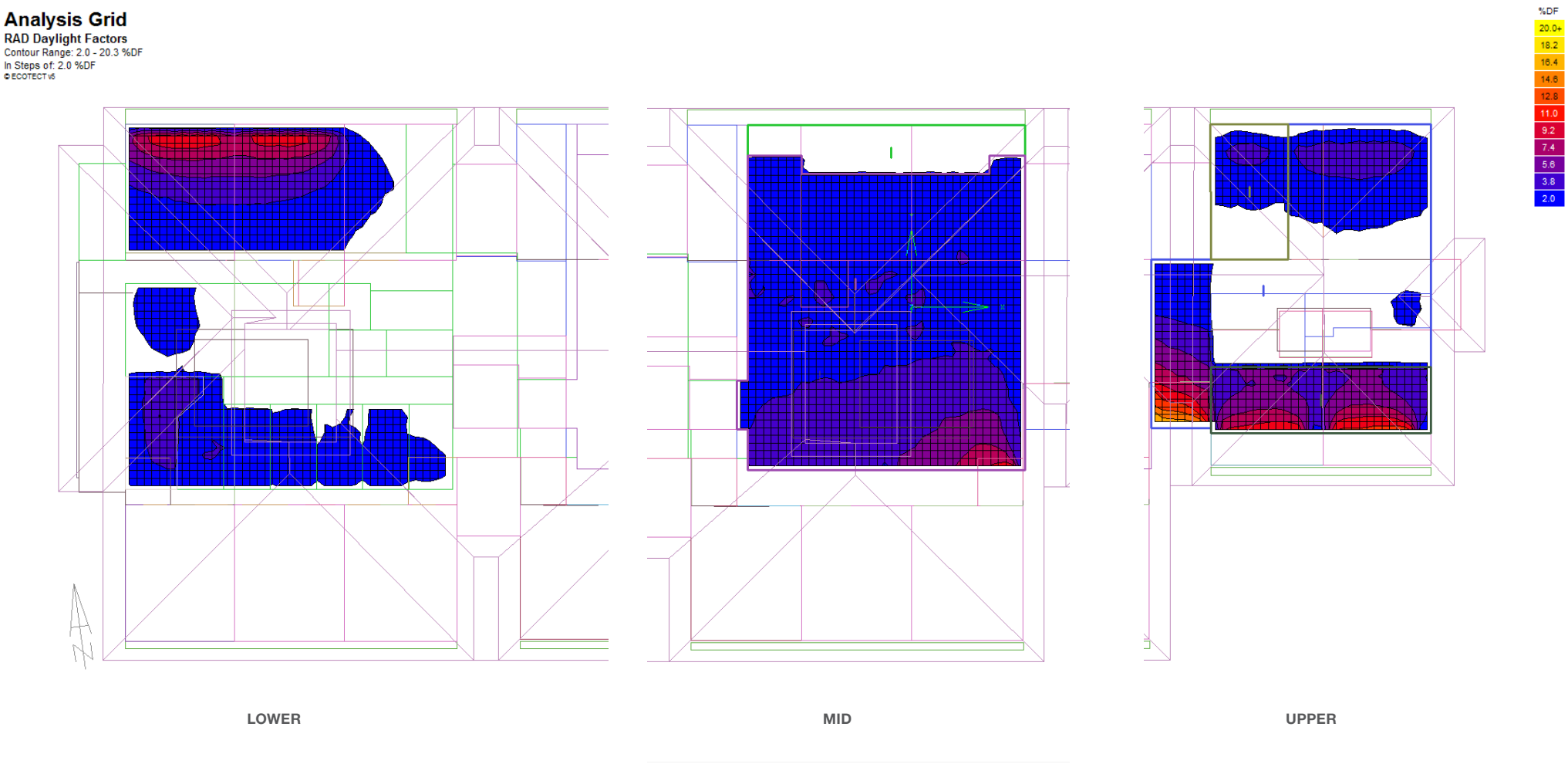


Figure 2.6a Daylight factor results for Level 1 and 2

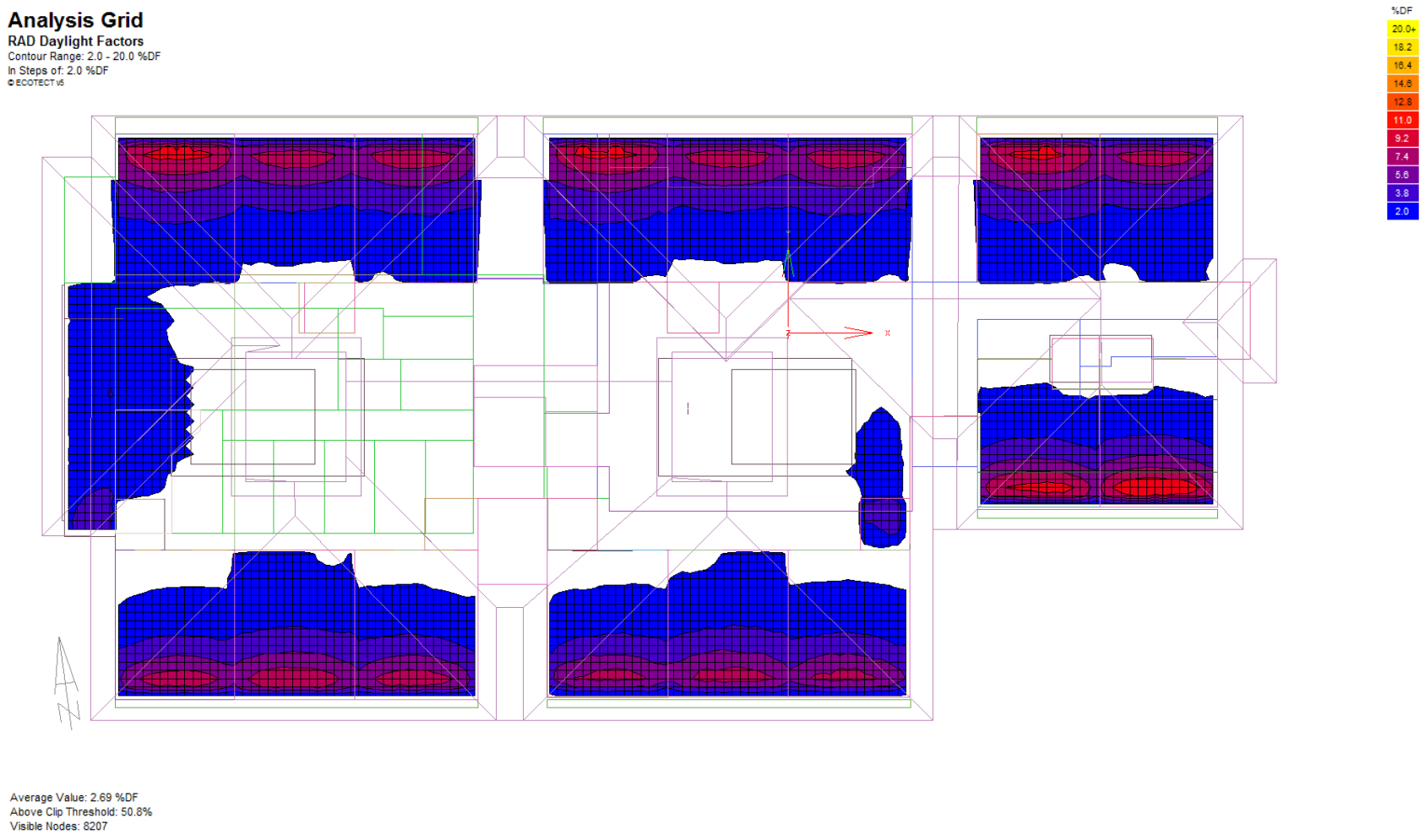


Figure 2.6b Daylight factor results for Level 3

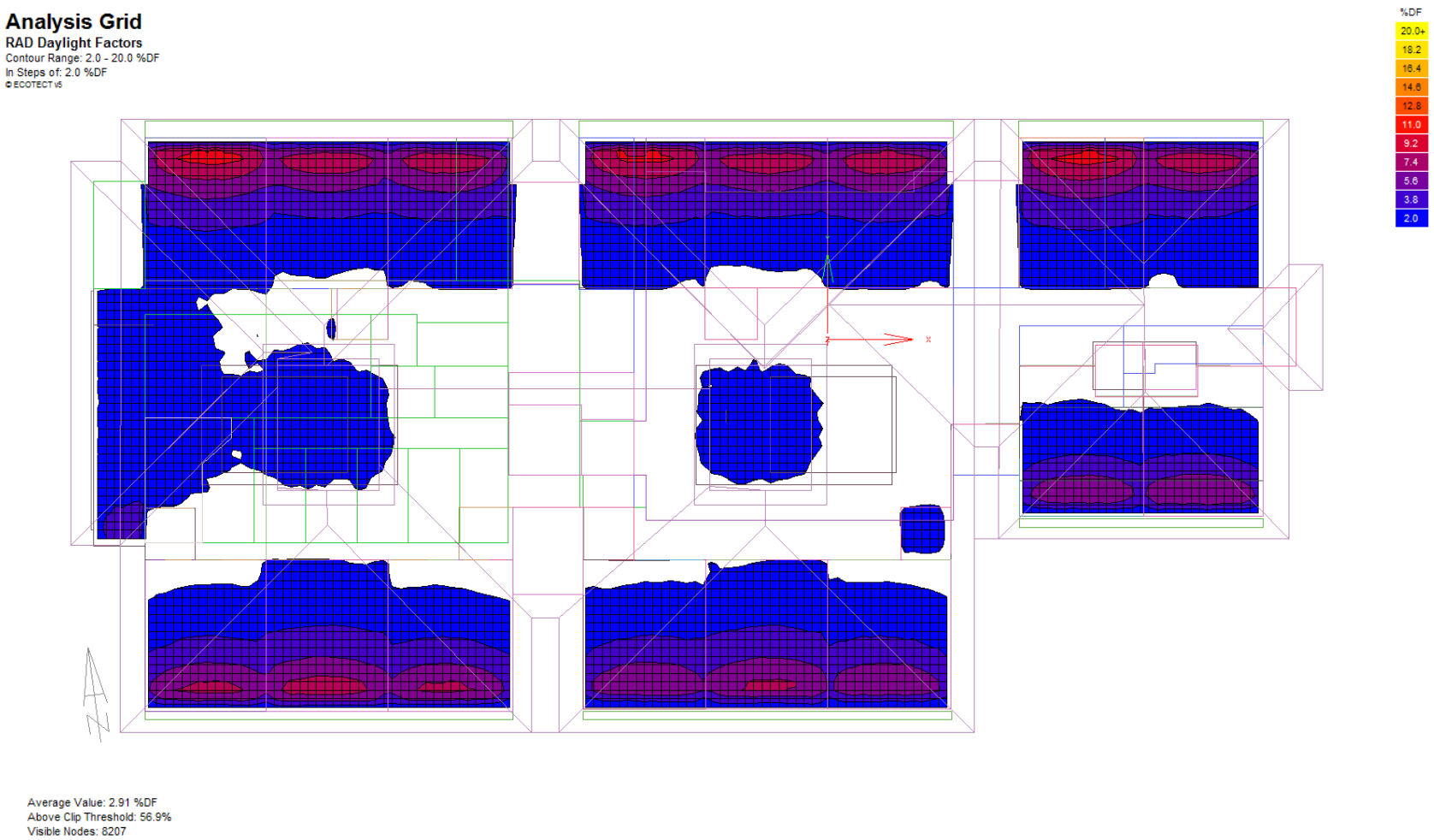


Figure 2.6c Daylight factor results for Level 4

2.3 Thermal Comfort Requirements

Thermal comfort in a building is affected by its:

- orientation
- envelope shape and material composition;
- spatial planning;
- ventilation area; etc.

in response to:

- ambient temperature;
- relative humidity;
- wind speed and direction; etc.

in addition to how the building is used (opening of windows and doors etc.).

Section J of the NCC (ABCB) determines minimum standards for building fabric and sealing, ventilation areas and amount of glazing for a building.

The occupants will discover by trial and error, the ambient (external) conditions that will prove to be beneficial in enhancing the internal comfort conditions. As a rule of thumb, when the ambient is below about 15°C it will probably be too cool to operate the windows for long periods of time; and similarly when the ambient is over about 28°C it will probably be too warm.

2.4 Ventilation

Mechanical Ventilation

Mechanical ventilation has been provided for the school in accordance with AS1668, and was incorporated into the design due to acoustic issues related to the building being sited close to Edgeworth David Avenue. Required acoustic levels for the classrooms were found to not be achievable using natural ventilation.

Mechanical ventilation will maintain temperatures within classrooms to within comfortable ranges for the occupants and will maintain suitable indoor air quality as determined by NCC Part F4. This will ensure internal comfort conditions within the building maintain occupants' health and wellbeing and optimise learning.

The air conditioning system proposed for this option will utilise a centralised direct expansion (DX) plant on the roof to reticulate cold refrigerant to the ceiling mounted fan coil units (FCUs). The proposed fan coil units utilise variable refrigerant volume (VRV) technology that allows for individual control of temperature for each room or zone. This will be achieved by increasing or decreasing the amount of cooled refrigerant pumped to each unit based on the demand of the room. The proposed system will utilise energy recovery ventilators (ERV) which reduce the amount of heat introduced to the room from hot outside air. The use of ERV's reduces the amount of cooling capacity required for the system, which in turn reduces operating energy costs.

The mechanical ventialtion system will include a new master controller (Building Management System [BMS]), which will include an interface accessible by the users of the building. This will allow the building users to investigate how much power the building systems are using and at what time. This will lead to improved ESD proactices by the building occupants, as well as an enriched understanding on the part the built environment plays in environmental sustainability.

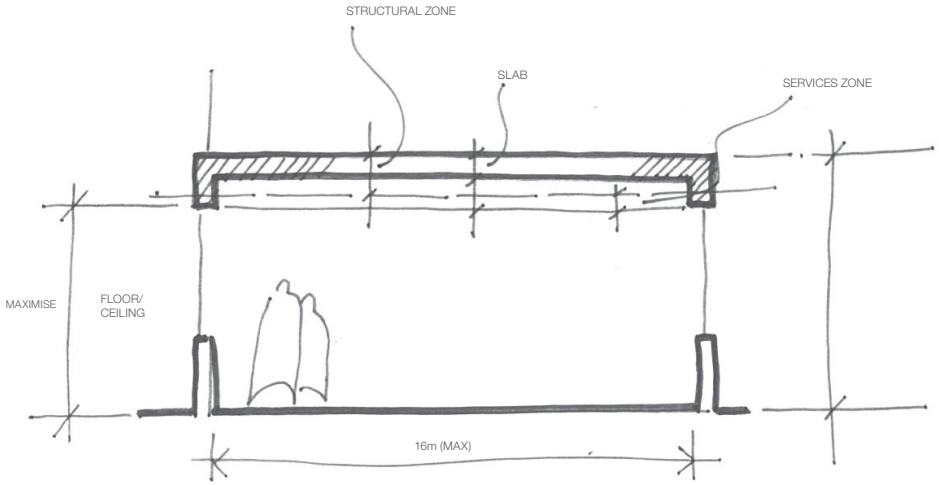


Figure 2.7 Room height provisions for thermal comfort

03 Energy: Demands and Conservation

ESFG 02.04 *A major objective in the design of Education Facilities is to achieve good indoor environmental quality and comfort conditions with minimum energy consumption.*

3.1 Overall Energy Demand

Energy requirement assumptions include:

- Air conditioning will be provided as part of these works
- 1 lift will be required to serve the school at 30kW power demand.

Lighting control will be automatic and comply with the EFSG guidelines including motion sensor and photoelectric cell overrides for external lighting circuits. A CBUS lighting system will be installed to appropriately switch and dim luminaires both external and internal to the building.

3.2 Energy Use Reduction and Generation Methods

Renewable Energy Generation is identified as an environmental design feature of education facilities. Onsite generation of electricity is proposed to supplement base load demand at the school. An 80kW* grid connected solar PV system will be installed on the roof of the new building to offset the energy usage in accordance with EFSG design guidelines. Another 20kW solar PV system is already installed on site. The system will be limited to 100kW across the school site to comply with energy generation regulations and the EFSG.

All luminaires in rooms are to automatically turn off five minutes after the period bell has rung and all students have left the room. Alternatively systems will be included to turn off lights when the room is not in use. A conscious decision is required to turn the lights on again.

The NSW Government Resource Efficiency Policy sets out the minimum standards for new appliances and equipment. All new electrical equipment purchased by DoE where relevant, available and fit for purpose, must have minimum Greenhouse and Energy Minimum Standards (GEMS) star ratings stipulated under target E3 of the Policy.

3.3 Building Performance Monitoring Systems

An interest exists in the department in having better access to energy consumption data at the school. A complete sustainable building strategy includes a multitude of tactics including, but not limited to, energy efficiency, air quality, and water use reduction. The strategies employed are often hidden to the occupants of the building. However, in a learning environment, it is particularly important to implement techniques that are expressive and are reinforced throughout the built environment. The schematic design proposes identifying a cohesive sustainability story that illustrates multiple sustainable methods for addressing an important environmental theme. This story or grouping of strategies should be graphically illustrated in a cohesive way both inside and outside the building.

An interface for the Building Management Systems (BMS) is proposed to allow real-time monitoring of building performance and provides education on the ESD systems of the building. This creates an opportunity for the users to take part in reducing the energy consumption of the building and contributing to its environmentally sustainable goals. In this way the building itself becomes an education tool on the principles of ESD.

* To be confirmed at detailed design phase

04 Water: Demand and Conservation

4.1 Water Systems Overview

The overarching design approach for the water cycle management is to re-use collected rainwater as much as possible and to use recycled water from the authority where it can substitute domestic water.

A standard demand scenario has been developed. Water consumption has been calculated on expected water usage based on:

- Sanitary fixture type and fixture water demand;
- Expected populations (based on Equivalent Persons) of the building taking into account weekends and public holidays;
- 100% occupancy rates during weekdays; and

As there is no alternative recycled water main available for use, a comparison between standard water demand and low flow fixtures in combination with using water from the Authority's domestic Water Main was undertaken. Irrigation services are excluded for this site, rainwater tank is to be used for flushing purposes only.

4.2 Water Use Reduction

As per the EFSG, sanitary fixtures have been specified with minimum Water Efficiency Labelling and Standards Scheme (WELS) star ratings as stipulated under W3 of the NSW Government Resource Efficiency Policy:

Showerheads - 3 stars

Toilets and urinals - 4 stars

Washing machines - 4 star

Dishwashers - 4 stars

Taps and flow controllers - 4.5 stars

4.3 Water Recycling

The site of the proposed building for Waitara only has frontage to a Sydney Water domestic water main and no alternative water sources i.e. recycled water. It is proposed to use the domestic water main to top-up the rainwater re-use system in times of prolonged dry weather. Using

Demand Type	Standard Demand	Proposed Building Demand
Ablutions	16.7 L/EP/Day	13.7 L/EP/Day
Toilet (WC)	25 L/EP/Day	Provided by treated rainwater and recycled water
Leakage and Wash down	2.6 L/EP/Day	2.0 L/EP/Day

Table 4.1 Water Demand (taken from Hydraulic Infrastructure & Services and Water Cycle Management Report)

Test	Unit	Litres	Test Frequency	Justification
Fire Hydrants (all)	L/FH/Test	150	Annual	AS 1851 Table 4.4.3, item 3.2. Allowance to observe water at each hydrant.
Fire Hose Reel	L/FHR/Test	5	6 monthly	AS 1851 Table 9.4.1, item 10.1. Allowance to observe water at each FHR.
Fire Hydrant Flow and Pressure Testing	L/Test	6,000	Annual	AS 1851 Table 4.4.3, item 3.7. Allowance for fire hydrant flow and pressure testing. 10L/s per operational hydrant for 5 minutes.
Fire pump flow test	L/Test	6,000	Monthly	AS 1851 Table 3.4.1, item 3.7. Allowance for pump flow and pressure testing. 10L/s per operational hydrant for 10 minutes.
Fire Brigade Boost Assembly Flow and Pressure Testing	L/Test	21000	5 yearly	AS 1851 Table 4.4.4, item 4.2. Allowance for fire brigade booster assembly boost test. 20L/s Hydrants and 15L/s SPR for 10 minutes.

Table 4.2 Fire System Water Requirement (taken from Hydraulic Infrastructure & Services and Water Cycle Management Report)

domestic water as a top up for rainwater will reduce the demand of domestic water for toilet flushing by 58%.

FIRE SERVICE WATER CONSUMPTION

Table 3.2 details the calculated fire service water usage. The volume of water consumed for the wet fire services is based on the commissioning requirements of AS 2419.1, AS 2118.1 and AS 2118.6 and maintenance testing requirements of AS 1851. The current design allows for test water to be diverted back to the rainwater collection tank for re-use.

RAINWATER

Roof runoff is to be collected in a raintank and an overflow point from the raintank will be provided in the stormwater drainage. Based on the rainfall patterns, the available surface area to capture rainwater and the estimated demands, it is recommended that a 20m^3 storage tank be used in the proposed building. The volume of 20m^3 will provide 58% of water that is required for toilet flushing without excessive capital cost.

It is recommended that grey water and black water treatment systems should not be used as the capital cost, ongoing operational and maintenance cost, occupational health and safety issues, energy consumption and low contribution that these systems make to the overall water efficiency of the building do not justify such systems.

4.4 Stormwater

The design intent with the school is to locate the new buildings in the northwestern corner. Topographically the proposed section of the site slopes to the northwest corner. Therefore, the management of stormwater across the site is facilitated by this general fall through a gravity stormwater system.

4.5 Water Sensitive Urban Design (WSUD)

The principles for surface water management in the context of Water Sensitive Urban Design (WSUD) should aim to retain as much stormwater as possible on site, transport as little stormwater pollutants as possible to receiving waters, 'lose' an appropriate amount of stormwater along the treatment train and slow the transmission of stormwater to receiving waters. Key planning and design objects are generally:

- Integrate stormwater treatment into the landscape by incorporating multiple-use corridors that maximise the visual and recreational amenity of the development.
- Protect water quality draining from the development, providing primary stormwater treatment measures that target litter, gross pollutants and coarse sediments and secondary treatment measures that target fine sediment, nutrients and bacteria.
- Reduce runoff and peak flows from developments by employing local detention measures, minimising impervious areas and maximising re-use.
- Orientate paths and roadways to traverse across contours, providing gentler slopes to promote the provision of above ground conveyance mechanisms, such as vegetated swales, into the paths and streetscape.
- Maintain and re-establish vegetation where possible.
- Manage the quality and quantity of stormwater at or near the source, which could involve a component of public education. Treatment practices such as bioretention/detention facilities, to manage water quality, could be provided downstream or close to the point of discharge from development areas, before discharge from the site.

The project proposes harvesting of rainwater from the buildings for use in toilet flushing and general use around the site. This will be the predominant means to manage the runoff from the new buildings. This stage of the design includes an on-line stormwater detention tank (OSD) situated in the north western corner of the site. The size of the storage required on the basis of this phase of the design is 22m^3. As the design develops, the size of the detention tank may be revised. Stormwater captured from the school site will be discharged to the Hornsby Shire Council network in Myra St.

It is expected that water quality issues associated with the new building will be minimal and no change to the existing. However, to assist in the management of water quality, a gross pollutant trap is to be provided in the northwestern corner of the site, prior to discharge to the Council stormwater network.

05 Waste Management

Green Star recommends the implementation of waste management plans that facilitate the re-use, upcycling, or conversion of waste into energy, and stewardship of items to reduce the quantity of outgoing waste.

5.1 Waste Systems Overview

A Waste Management Plan (GHD, 2017) has been prepared for Waitara Public School Development in order to address key requirements of the SEARS, which is also in accordance with key waste management practices, with regards to construction/demolition waste and operational waste.

Green Star recommends an approach for achieving outcomes in operational waste management, which includes:

- Separation of Waste Streams;
- Dedicated Waste Storage Area; and
- Access to Waste Storage Area.

5.2 Separation of Waste Streams

It has been estimated that the operational wastes would be generated that would require two 660 litre rear lift bins per week, one for waste and one for recyclables. It may also be necessary to have a third bulk bin for bulk cardboard. Some contractors may also provide a separate bin for office paper. In addition, items such as batteries and fluorescent tubes may be separated by staff for recycling. If these bin sizes are insufficient, the area provided of sufficient size to enable larger bins such as 1,100 litres to be used if desired.

5.2 Dedicated Waste Storage Areas

It is expected that the current bin location will be retained. The area is sufficiently sized to fit at least three 660 litre bins, or larger (1,100 litre) bins if desired. For exisitng bin locations, refer to the Waste Management Plan and landscape plans.

5.3 Access to Waste Storage Areas

Ideally the collection point and storage area should be in the same place, avoiding the need to move bins to the collection point in time for servicing.

Bins would be collected more frequently than weekly, which increases the effective capacity of the system. The current access from Highland Avenue looks to be suitable as it is currently used by collection vehicles.

06 Materials

EFSG DG02

Encourages the use of materials and products which:

- Adequately and economically perform their intended functions, and also have lower adverse environmental impacts throughout their life cycle.
- Contain reduced or no hazardous substances (Low VOC)
- Reduce the demand for rare or non-renewable resources
- Are made from or contain recycled materials or can be recycled at the end of their useful life.

To improve the energy efficiency of the building, wall material selection was designed to reduce heat gain and insulate against thermal and noise transmission.

DG 02.07 Pesticides

The school has been designed, to not used chemicals for termite and other pest control, preventive treatments are by physical means.

6.1 Life Cycle Impacts Considerations

The specification of materials on projects has a threefold effect on environmental outcomes:

– The life-cycle of materials used in the structure of the building can pose significant environmental impacts, largely due to the volumes used

– The post-construction/installation toxicity of materials can have implications on the health of the environment, particularly inside a building

– Materials used in the envelope of the building, combined with the quality of the sealing of that envelope, can have a significant impact on the thermal comfort and subsequently the energy efficiency of a building.

6.2 Low Pollutant Materials

Australian key pollutant reduction guidelines (e.g. Green Star) address toxicity by prescribing VOC and formaldehyde limits for common materials used in the interior fit-out of a design (Table 6.1 and 6.2). This project has adopted these prescribed limits, to ensure the interior design of the project meets best practice.

The exterior cladding system will be determined based on a set of criteria that has been generated from the DOE requirements and school/community input.

Exterior cladding systems and materials considered during the Schematic Design Phase included, but were not limited to:

–– Curtain Wall - Stick Built

–– Curtain Wall - Unitized

–– Fritted glass for curtain wall systems and skylights

–– Metal screen panels with custom cut openings

–– Metal panel system, such as Alucobond,

–– Fibre Cement Panel rain screen systems

–– Brick cavity wall

–– Pre-cast concrete panels

The current proposed façade ensemble under consideration consists of light weight cladding and glazing systems, insulated in accordance with NCC Section J.

This project is committed to sourcing responsible construction materials and has made allowances in the structural design of the project to select products based on their ability to reduce life cycle impacts.

Product Category	Max TVOC Content (g/L) of ready to use product
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coating for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

Table 6.1 Maximum TVOC Limits for Paints, Adhesives and Sealants (taken from Green Star Design & As Built V1.2)

Compliance Option	Test Protocol	Limit
ASTM D5116	ASTM D5116 - Total VOC limit*	0.5mg/m2/hr
	ASTM D5116 - 4-PC (4-Phenylcyclohexene)*	0.05mg/m2/hr
ISO 16000 / EN 13419	ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m2/hr
ISO 10580 / ISO/TC 219 (Document N238)	ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m2/hr

Table 6.2 Carpet Test Standards and TVOC Emissions Limits (taken from Green Star Design & As Built V1.2)

Test Protocol	Emission Limit/Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1mg/ L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1mg/ L
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/ L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/ L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/m²hr*
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m²hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m²hr (at 3 days)
ASTM D6007	≤0.12mg/m³**
ASTM E1333	≤0.12mg/m³***
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m³
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m²hr

*mg/m²hr may also be represented as mg/m²/hr.

**The test report must confirm that the conditions of Table 3 comply for the particular wood product type, the final results must be presented in EN 717-1 equivalent (as presented in the table) using the correlation ratio of 0.98.

***The final results must be presented in EN 717-1 equivalent (as presented in the table), using the correlation ratio of 0.98.

Table 6.3 Formaldehyde Emission Limit Values for Engineered Wood Products (taken from Green Star Design & As Built V1.2)

07 Transport

EFSG (PS610.17) recommends encouraging the use of sustainable means of transport to and from the school, and keeping on school site parking to a minimum.

Waitara Public School is located at 68 Edgeworth David Avenue in Wahroonga, NSW. Pedestrian access gates to the school are provided on Edgeworth David Avenue, Myra Street and Highlands Avenue. The vehicle pick up/drop off zone (of approximately 40m) is provided on the eastern kerb of Myra Street, vehicular access to the staff car park is provided from Highlands Avenue and bus stops are provided on Edgeworth David Avenue at the frontage to the school.

The staff car park can accommodate 12 vehicles. It is proposed to maintain this parking supply for the proposed expansion and not provide any additional parking. Based on the current parking provision at Waitara Public School and number of staff can be inferred that up to 20 teachers use active/public transport to access the school, car pool or park on the adjoining road network.

Public bus stops are located on Edgeworth David Avenue on both sides of the road, east of the intersection with Myra Street. The existing vehicle and pedestrian access arrangements at Waitara Public School are Street as displayed below in Figure 7.1

7.1 Public Transport Linkages

Hornsby Town Centre and Hornsby Station are located approximately 1.4km (walking distance) to the west of Waitara Public School, while Waitara Station is located approximately 1km (walking distance) south-west of Waitara Public School. The existing land uses in the vicinity of to the school is predominantly residential.

Waitara Public School is served by a number of school buses operated by Transdev that provide transfers from nearby train stations such as Hornsby Station and Wahroonga Station. School bus services include 596, 8029, 8091 and 8020 operate in the morning peak period between 7:00 am – 9:00 am. Afternoon school services, operating between 3:00 pm – 4:00 pm include bus 9091, 9099 and 596. The nearest bus stops to the school are located at Edgeworth Drive Avenue approximately 85 m east of the intersection with Myra Street, as shown in Figure 7.1.

Waitara Train Station is located approximately 1km (walking distance) to the south of Waitara Public School. The walking route between the school and Waitara Station is along Myra Street and Alexandria parade with a traffic signal controlled pedestrian crossing provided at the intersection of Myra Street and Alexandria Parade. A raised pedestrian crossing is also provided on Alexandria Parade adjacent to the station entrance.

Transport planning principles suggest individuals are typically willing to walk up to 800m to access rail services. Waitara Public School is considered to be outside this acceptable range. However, as the walking distance only slightly exceeds this distance, it can be assumed that some of the existing and future student / teacher populations, may choose to utilise train services as a mode of travel to and from school, particularly as the school bus services operate as feeder

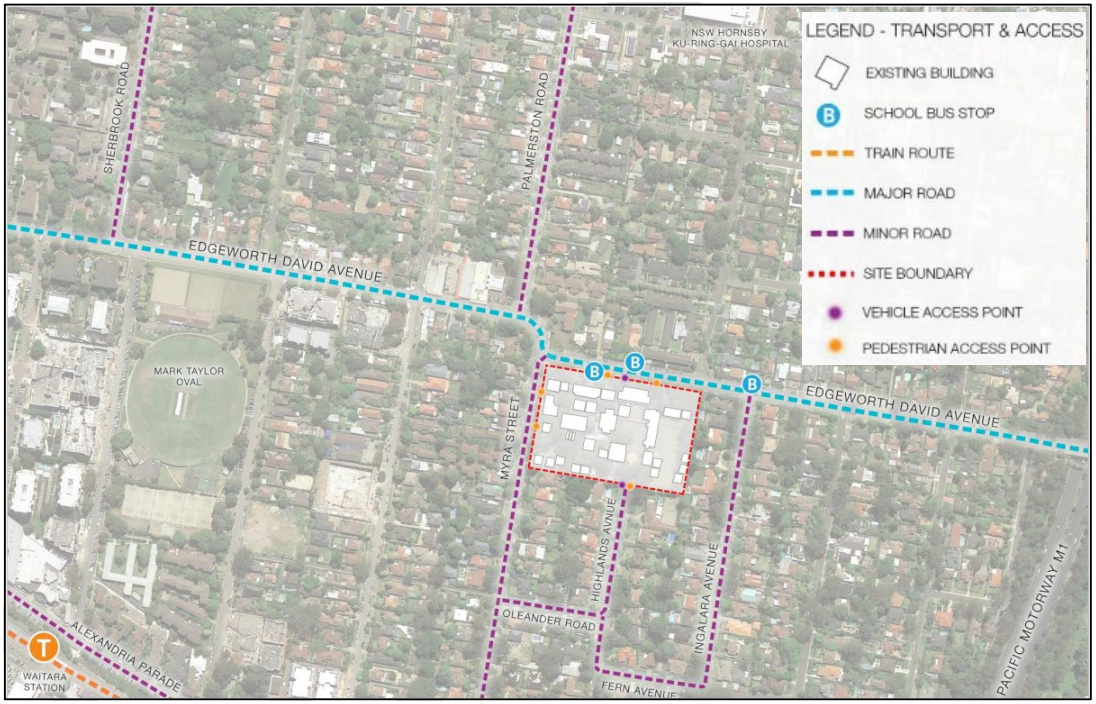


Figure 7.1 Public transport and access

routes. Waitara Train Station is served by the T1 North Shore, Northern and Western Line. During peak periods of operation, trains on the T1 Line operate with 10 to 15 minute frequencies. Waitara Station is also wheelchair accessible and provides bicycle parking facilities.

7.2 Sustainable Transport Infrastructure

The Hornsby DCP specifies that bicycle parking should be provided at the following rates:

- 1 rack per 20 full time staff or part there of:
- 5 racks per class between grades 5 and 12
- End of trip facilities for staff in the form of a shower cubicle and change rooms for every 10

bicycle racks. There are currently 23 bike racks (which can accommodate 46 bikes) within Waitara

Public School. These are located adjacent to the school library. Assuming that upon completion of the expansion 12 of the teaching spaces will be provided for grades 5 and 6, then the following bicycle parking will be required:

- 2 racks for teachers
- 60 bicycle racks for students
- shower facilities for staff within the new four storey building

The results of the online survey questionnaire and the manual travel mode surveys indicate very few students (approximately one percent) currently cycle to school, because of the dangerously busy roads that surround the school, thus the provision of 62 bike racks (which could accommodate 124 bikes) is likely to significantly exceed demand.

124 bicycle parking spaces for 240 new student places would meet Green Star requirements for active transport facilities, which requires secure bicycle parking be provided for 40% of students over grade 4, plus end of trip facilities.

Green Travel Plan

Details of travel demand management (TDM) measures to minimise the impact on general traffic and bus operations and to encourage sustainable travel choices and details programs for implementation. are required as part of the SEARS for Waitara. A key element of TDMs is the development of a School Green Travel Plan (GTP), which is a package of initiatives aimed at reducing car travel, particularly single occupant trips (this is also referred to as a School Travel Management Plan). The implementation of GTP at Waitara Public School has the potential to provide significant utility to teachers, parents and students. GHD Traffic Impact Assessment recommends preparing a GTP for Waitara Public School over four stages:

- Stage 1: Baseline understanding of current behaviors
- Stage 2: Catchment analysis
- Stage 3: Develop plan

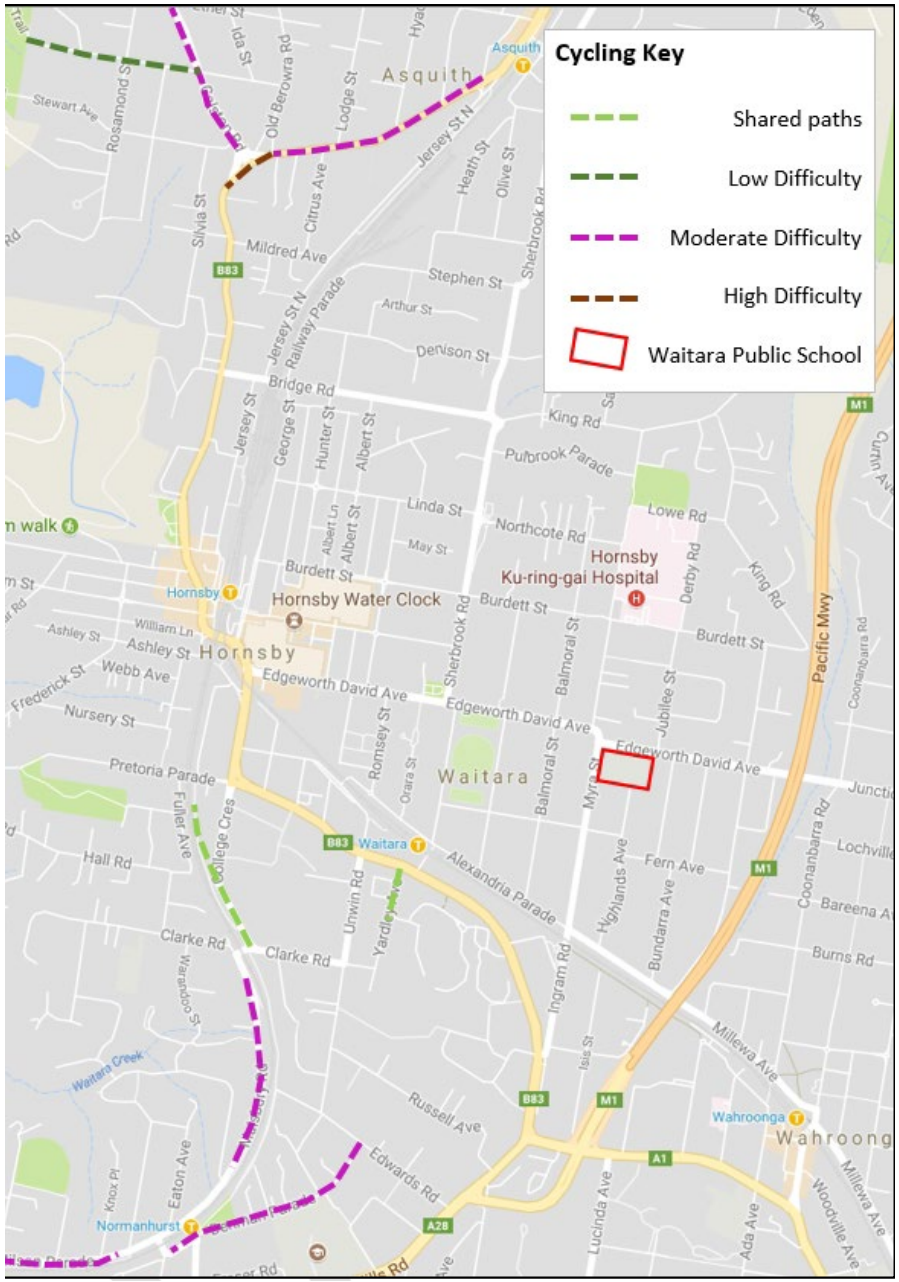


Figure 7.2 Existing cycling infrastructure

08 Ecological Protection and Enhancement

The site contains an agglomeration of significant trees. Site level is predominantly a gentle gradient, however in the north west area, the level gradient is more pronounced.

Arborist report recommends the removal of approximately 23 out of 225 trees on the site, based on the hazards they present.

8.1 Landscape Design Strategy

The following design principles form the foundations of the landscape design for Waitara Public School Design:

- Maintaining and enhancing green links between the school and the surrounding neighbourhood character
- Maximising space to provide additional sporting activities
- Expanding and enhancing the school's outdoor learning environment
- Providing outdoor community activity area for music, entertainment, the arts, culture and exercise
- Maintaining wildlife corridors with canopy trees, and local species of endemic plants for native bird habitats.

The following design objectives will provide the local community with an acclaimed facility and a place the local community will take pride and cherish:

- Increase pedestrian safety and provide a greater sense of arrival through an entry plaza off Myra Street
- Utilise existing trees for providing shade to outdoor activities
- Create a destination for school educational outdoor classrooms to communicate the value of learning through music, heritage, arts and culture
- Provide outdoor lunch break areas with elements of play
- Create native understorey gardens to educate the importance of sustainability and our natural environment

ESD Requirements

Green Star Self-Assessment

A

A Green Star Self-Assessment

A green star self-assessment, using the Green Building Council of Australia's Green Star Design and As Built V1.2, has been performed to address SEARS Item 6:

Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry .

Under the Green Star Self-Assessment (attached) the possible achievable points were estimated to be 44, which if formally assessed is likely to lead to a Green Star rating for the new building at Waitara Public School of 4 Stars (minimum 45 points). Pending more intensive testing of building systems, there is potential for Waitara to be eligible for a 5 Star Rating (minimum 60 points). This is a preliminary Self-Assessment, which will need to be revisited at detailed design phase.

TOTALS	AVAILABLE	SELF-ASSESSMENT
CORE POINTS	100	42.0
CATEGORY PERCENTAGE SCORE		42.0
INNOVATION POINTS	10	2.0
TOTAL SCORE TARGETED		44.0

Green Star - Self Assessment Scorecard

Project: Waitara PS

Targeted Rating:

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED	ASSESSMENT COMMENTS
Management				14		
Green Star Accredited Professional	To recognise the appointment and active involvement of a Green Star Accredited Professional in order to ensure that the rating tool is applied effectively and as intended.	1.0	Accredited Professional	1	1	Paul Whatnell (GSAP Design and As Built and Performance); Michelle Stark (GSAP Design and As Built)
Commissioning and Tuning	To encourage and recognise commissioning, handover and tuning initiatives that ensure all building services operate to their full potential.	2.0	Environmental Performance Targets	-	Complies	*Must commit to set and document performance targets - Design intent report (will the CDR or Schematic Design Report do?)
		2.1	Services and Maintainability Review	1	1	*Must demonstrate a comprehensive services and maintainability review has been conducted - summarised in a report
		2.2	Building Commissioning	1	1	*Contractual tender or construction docs must list commisioning requirements for each system - Commissioning plan must be developed
		2.3	Building Systems Tuning	1	1	*Commit to a tuning process - At a minimum, the commitment must include quarterly adjustments and measurement for the first 12 months after occupation and a review of building system manufacturer warranties.
		2.4	Independent Commissioning Agent	1		*Requires verification by an independent comissioning agent
Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	3.1	Implementation of a Climate Adaptation Plan	2		*Needs report by qualified, environmental scientist/engineer or planner including stakeholder consultation
Building Information	To recognise the development and provision of building information that facilitates understanding of a building's systems, operation and maintenance requirements, and environmental targets to enable the optimised performance.	4.1	Building Information	1	1	*Needs Operations and Maintenance document and the bulding logbook
Commitment to Performance	To recognise practices that encourage building owners, building occupants and facilities management teams to set targets and monitor environmental performance in a collaborative way.	5.1	Environmental Building Performance	1	1	*At least 80% of of GFA (ex carpark) is covered by commitment to set, measure and report env performance, incl; GHG emissions, potable water, operational waste, indoor environmental quality - MODELLING
		5.2	End of Life Waste Performance	1		
Metering and Monitoring	To recognise the implementation of effective energy and water metering and monitoring systems.	6.0	Metering	-	Complies	
		6.1	Monitoring Systems	1	1	*Potentially 3 points tied to this commitment
Responsible Building Practices	To reward projects that use best practice formal environmental management procedures during construction.	7.0	Environmental Management Plan	-	Complies	Yes
		7.1	Formalised Environmental Management System	1	1	*For projects with contract value >$10 million - Formalised EMS used on site must be certified by third party org providing independent verification of system compliance to ISO/AS standards. Monitoring of contractors and subs during construction

		7.2	High Quality Staff Support	1	1	*Could we argue Dept of Education already has measures in place, such as suicude preventiion program? If so we just have to train staff on sustainable practices i.e. the monitoring system
Operational Waste	Prescriptive Pathway	8B	Performance Pathway - Facilities	1	1	
		8B	Prescriptive Pathway - Facilities	1		*Need qualified waste auditor to prepare an Operational Waste Management Plan in accordance with best practices
Total				14	10	

Indoor Environment Quality				17		
Indoor Air Quality	To recognise projects that provide high air quality to occupants.	9.1	Ventilation System Attributes	1	0	THREE COMPONENTS - ONE - For 1 point - system must comply with ASHRAE 62.1:2013 (esp Table 5.5.1) wrt min separation distances between pollution sources and outdoor air intakes (windows, doors, openings, vents, grilles and skylights) - must be modelled taking into account their free area - TWO - Mech vent system must be designerd for ease of maintenance to both sides of all moisture-producing and debris catching componenets (cooling coils, heating coils, humidifiers and filters) - THREE - New and existing ductwork serving the building must have been cleaned in accordance with the recognised std
		9.2	Provision of Outdoor Air	2	0	THREE COMPONENTS - ONE - FOR NATURALLY VENTILATED SPACES (2) points where requirements of AS1668.4-2012 are met under all likely weather conditions - TWO - FOR MECH VENTILATED SPACES (1) point where outdoor air is provided at a rate of 50% greater than min required by AS1668.2:2012 OR CO_2 conc maintained below 800ppm - THREE - FOR MECH VENTILATED SPACES (2) points where outdoor air provided at a rate 100% greater than min required by AS1668.2:2012 OR CO_2 conc maintained below 700ppm - *System must not rely on its operation or adjustment by facilities management to achieve the required performance - Compliance methods apply
		9.3	Exhaust or Elimination of Pollutants	1	1	*One (1) point is awarded where project teams demonstrate that pollutants from printing and photocopying equipment, cooking processes and equipment, and vehicle exhaust, are limited from the nominated area by either: A. Removing the source of pollutants, in accordance with 9.3A; or B. Exhausting the pollutants directly to the outside, in accordance with 9.3B.
Acoustic Comfort	To reward projects that provide appropriate and comfortable acoustic conditions for occupants.	10.1	Internal Noise Levels	1	1	*One (1) point is awarded where project teams demonstrate that internal ambient noise levels in the nominated area are no more than 5dB(A) above the lower figure in the range recommended in Table 1 of AS/NZS2107:2016. - qualified acoustic consultant and in accordance with AS/NZS 2107:2016.
		10.2	Reverberation	1	1	* Dedicated teaching space must have reverberation times in the lower half of the range specified in Table 1 of AS/NZS 2107:2016. Compliance through measurement
		10.3	Acoustic Separation	1	1	*Address noise transmissions between spaces - Ratings to be met
Lighting Comfort	To encourage and recognise well-lit spaces that provide a high degree of comfort to users.	11.0	Minimum Lighting Comfort	-	Complies	*Flicker-free and address perception of colour in space
		11.1	General Illuminance and Glare Reduction	1	1	*Best practice with AS/NZS 1680.2
		11.2	Surface Illuminance	1	1	*Ratings to be met

		11.3	Localised Lighting Control	1	1	*IMMEDIATE ENVIRONMENT lighting control - i.e. a workstation
Visual Comfort	To recognise the delivery of well-lit spaces that provide high levels of visual comfort to building occupants.	12.0	Glare Reduction	-	Complies	Blinds
		12.1	Daylight	2		*Need to demonstrate that a speicifc proportion of nominated area receives a high level of daylight - Manual calcs using GBCA's Green Star Daylight and Views Hand Calculation Guide
		12.2	Views	1	1	*One (1) point is awarded where at least 60% of the nominated area has a clear line of sight to a high quality internal or external view. All floor areas within 8m from a compliant view can be considered to meet this credit criterion.
Indoor Pollutants	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	13.1	Paints, Adhesives, Sealants and Carpets	1	1	*VOC limits need to be met by all paints/carpets specified OR don't use paints and carpets
		13.2	Engineered Wood Products	1	1	Plywood panels
Thermal Comfort	To encourage and recognise projects that achieve high levels of thermal comfort.	14.1	Thermal Comfort	1	1	One (1) point is awarded where project teams demonstrate that, for 95% of the nominated area and 98% of the year, a high degree of thermal comfort is provided. - Naturally ventillated spaces must be within 80% of limits provided (ASHRAE 55-2013)
		14.2	Advanced Thermal Comfort	1	1	One (1) point is awarded where project teams demonstrate that, for 95% of the nominated area and 98% of the year, a high degree of thermal comfort is provided. - Naturally ventillated spaces must be within 80% of limits provided (ASHRAE 55-2013)
Total				17	12	

Energy				22		
		15A.0	Conditional Requirement: Prescriptive Pathway	-	Complies	*Project teams must demonstrate that the minimum Deemed-to-Satisfy performance requirements stipulated within parts J1 and J2 of the NCC have been exceeded by at least 5%
		15A.1	Building Envelope	1	1	*15% increase on the minimum required R-values specified in J1.3, J1.5 and J1.6
		15A.2	Glazing	1	0	*15% better than Section J
		15A.3	Lighting	1	1	*The actual installed aggregate illumination power density is 30% less than the maximum illumination power densities defined in Table J6.2a; Automated lighting control systems, such as occupant detection and daylight adjustment, are provided to 95% of the nominated area; and For Class 5 and 9a buildings only, the size of individually switched lighting zones does not exceed 100m2 for 95% of the nominated area.
		15A.4	Ventilation and Air-conditioning	1	1	MECH VENTILATED SPACES - HVAC system: ONE - Installed fan motor power and pump power at least 15% less than that defined in Table J5.2 and J5.4a - TWO - Thermal efficiency of installed water heaters 15% more more than Table J5.4b - THREE - required min energy efficiency ratio for packaged AC equipment and refrigerant chillers is at least 15% higher than in NCC Tables J5.4d and J5.4e OR MEPS where Sect J does not apply to equipment capacity

Greenhouse Gas Emissions	A. Prescriptive Pathway	15A.5	Domestic Hot Water Systems	1	1	*Natural Gas is in there - 1 Point - FYI Renewable includes electric/gas boost
		15A.6	Accredited GreenPower	5	0	*5 points are awarded where at least five points in this pathway have been achieved, and a supply contract is in place to procure 100% of the building's electricity consumption through accredited GreenPower® products.
		15B.0	Conditional Requirement: NatHERS Pathway	-		
		15B.1	NatHERS Pathway	-		
		15C.0	Conditional Requirement: BASIX Pathway	-		
		15C.1	BASIX Pathway	-		
		15D.0	Conditional Requirement: NABERS Pathway	-		
		15D.1	NABERS Energy Commitment Agreement Pathway	-		
		15E.0	Conditional Requirement: Reference Building Pathway	-		
		15E.1	Comparison to a Reference Building Pathway	-		
Peak Electricity Demand Reduction	Prescriptive Pathway	16A	Prescriptive Pathway - On-site Energy Generation	1	1	*demonstrated that the use of on-site renewable energy or on-site generation sources reduces the peak electricity demand by at least 15%.
		16B	Performance Pathway - Reference Building	-		
Total				11	5	

Transport				10		
Sustainable Transport	Prescriptive Pathway	17A.1	Performance Pathway	0		
		17B.1	Access by Public Transport	3	1	*Based on location (Access by Public Transport Calculator)
		17B.2	Reduced Car Parking Provision	1	1	0 spaces for 1 point - 12 spaces existing on site, 0 additional proposed

		17B.3	Low Emission Vehicle Infrastructure	1	0	*Infrastructure and designated spaces for fuel-efficient and/or electrical
		17B.4	Active Transport Facilities	1	1	*Bicycle parking - secure bicycle parking is provided for 40% of students over grade 4. PLUS end of trip facilities
		17B.5	Walkable Neighbourhoods	1	1	*8 amenities within 400m of project or walk score over 80
Total				7	4	

Water				12		
Potable Water	Prescriptive Pathway	18A.1	Potable Water - Performance Pathway	0		
		18B.1	Sanitary Fixture Efficiency	1	1	Low flow fixtures are specified as per the EFSG
		18B.2	Rainwater Reuse	1	0	*Rainwater reuse is designed for the school, however tank volume is less than 200kL
		18B.3	Heat Rejection	2	2	Two (2) points are awarded where no water is used for heat rejection. To comply, the project must be either naturally ventilated (allowing for the use of ceiling fans or similar) or the HVAC system must not use water for heat rejection.
		18B.4	Landscape Irrigation	1	1	One (1) point is awarded where either drip irrigation with moisture sensor override is installed, or where no potable water is used for irrigation.
		18B.5	Fire System Test Water	1	1	Fire system rest water is reduced and re-used (See Hydraulic Infrastructure & Services and Water Cycle Management Report)
Total				6	5	

Materials				14		
Life Cycle Impacts	Prescriptive Pathway - Life Cycle Impacts	19A.1	Comparative Life Cycle Assessment	0		
		19A.2	Additional Life Cycle Impact Reporting	4		
		19B.1	Concrete	3	1	*Can get points by reducing portland cement content, using less water and reducing aggregate
		19B.2	Steel	1		*Reduce steel framing mass by 5%
		19B.3	Building Reuse	4		*No existing building re-use
	To reward projects that include materials that are responsibly sourced or have a sustainable supply chain.	20.1	Structural and Reinforcing Steel	1		*At least 60% of the fabricated structural steelwork OR reinforcing bar/mesh is supplied by a steel fabricator/steel contractor accredited to the Environmental Sustainability Charter of the Australian Steel Institute (ASI)

Responsible Building Materials		20.2	Timber Products	1	1	*One (1) point is awarded where project teams can demonstrate that, at least 95% (by cost) of all timber used in the building and construction works is either: A. Certified by a forest certification scheme, in accordance with 20.2A; OR B. From a reused source, in accordance with 20.2B.
		20.3	Permanent Formwork, Pipes, Flooring, Blinds and Cables	1		*One (1) point is awarded where project teams can demonstrate that, 90% (by cost) of all permanent formwork, pipes, flooring, blinds and cables in a project either: A. Do not contain PVC and have a recognised product declaration, in accordance with 20.3A; or B. Meet the GBCA's Best Practice Guidelines for PVC, in accordance with 20.3B
Sustainable Products	To encourage sustainability and transparency in product specification.	21.1	Product Transparency and Sustainability	3		*A percentage of eligible products meet nominated initiatives - can we possibly use recycled concrete and get points in 2 places?
Construction and Demolition Waste	Fixed Benchmark	22A	Fixed Benchmark	1		*Less than 10kg/m2 (GFA) of construction waste going to landfill gets you 1 point - extra innovation point if it is reduced to 5kg/m2
		22B	Percentage Benchmark	-		
Total				12	2	

Land Use & Ecology				6		
Ecological Value	To reward projects that improve the ecological value of their site.	23.0	Endangered, Threatened or Vulnerable Species	-	Complies	*Not subject to approval under EPBC Act
		23.1	Ecological Value	3	0	Site improves ecological value through rainwater collection and increased vegetation for Urban heat Island Effect. The site has converted a large amount of hard stand area back to turf and planting. Have not yet tested through ecological value calculator. *Uses ecological value calculator, which requires improvement commitments based on area - Should be easy but requires commitment. Might be best to leave until after detailed design?
Sustainable Sites	To reward projects that choose to develop sites that have limited ecological value, re-use previously developed land and remediate contaminate land.	24.0	Conditional Requirement	-	Complies	Refer to Environmental Impact Statement
		24.1	Reuse of Land	1		
		24.2	Contamination and Hazardous Materials	1		A contamination assessment will be carried out prior to construction of the school, which will result in the site being deemed suitable for the intended use as a school, in terms of meeting the SEPP55 Contamination Requirements.
Heat Island Effect	To encourage and recognise projects that reduce the contribution of the project site to the heat island effect.	25.0	Heat Island Effect Reduction	1	1	*One (1) point is awarded where, when assessed in plan view, at least 75% of the WHOLE SITE AREA comprises of one or a combination of vegetation, green roofs or a prescribed solar reflectance index
Total				6	1	

Emissions				5		
Stormwater	To reward projects that minimise peak stormwater flows and reduce pollutants entering public sewer infrastructure.	26.1	Stormwater Peak Discharge	1	1	*One (1) point is awarded where project teams demonstrate that the post-development peak event stormwater discharge from the site does not exceed the pre-development peak event stormwater discharge, using the Average Recurrence Interval (ARI)
		26.2	Stormwater Pollution Targets	1	1	*Additional point for all stormwater discharged from the site meeting required pollution reduction targets - need to measure against untreated runoff - TESTING - Can ge tmore than 1 point (Innovation) for WSUD etc - TARGETS 80% REDUCTION IN TSS...
Light Pollution	To reward projects that minimise light pollution.	27.0	Light Pollution to Neighbouring Bodies	-	Complies	*demonstrate that all outdoor lighting on the project complies with AS 4282:1997 Control of the obtrusive effects of outdoor lighting
		27.1	Light Pollution to Night Sky	1	1	*One (1) point is awarded where it can be demonstrated that one of the following specified reductions in light pollution has been achieved by the project. A. Control of upward light output ratio (ULOR), in accordance with 27.1A; or B. Control of direct illuminance, in accordance with 27.1B.
Microbial Control	To recognise projects that implement systems to minimise the impacts associated with harmful microbes in building systems.	28.0	Legionella Impacts from Cooling Systems	1	0	One (1) point is awarded where it can be demonstrated that impacts associated with harmful microbes in building cooling systems are minimised through one of the following - ONE - Naturally ventillated OR TWO waterless heat rejection - OR THREE water based heat rejection system built in accordance with AS/NZS3666.1:2011 (plus additional conditions)
Refrigerant Impacts	To encourage operational practices that minimise the environmental impacts of refrigeration equipment.	29.0	Refrigerants Impacts	1	0	(1) Point availiable where ONE - The calculated Total System Direct Environmental Impact (TSDEI) of the refrigerant systems in the building is less than 15 OR - TWO - The calculated TSDEI of the refrigerant systems is between 15 and 35, AND a leak detection system ‖with automated refrigerant recovery is in place OR THREE - All refrigerants in the project have an ozone depletion potential of zero, and a global warming potential of 10 or less OR FOUR - Where there are no refrigerants employed within the building systems
Total				5	3	

Innovation				10		
Innovative Technology or Process	The project meets the aims of an existing credit using a technology or process that is considered innovative in Australia or the world.	30A	Innovative Technology or Process			
Market Transformation	The project has undertaken a sustainability initiative that substantially contributes to the broader market transformation towards sustainable development in Australia or in the world.	30B	Market Transformation		1	Building systems monitoring provided as educational tool

Improving on Green Star Benchmarks	**The project has achieved full points in a Green Star credit and demonstrates a substantial improvement on the benchmark required to achieve full points.**	**30C**	**Improving on Green Star Benchmarks**	**10**		
Innovation Challenge	**Where the project addresses an sustainability issue not included within any of the Credits in the existing Green Star rating tools.**	**30D**	**Innovation Challenge**			
Global Sustainability	**Project teams may adopt an approved credit from a Global Green Building Rating tool that addresses a sustainability issue that is currently outside the scope of**	**30E**	**Global Sustainability**		**1**	**Wells points for interior fitness circulation and activity incentives programs**
Total				**10**	**2**	

TOTALS	AVAILABLE	SELF-ASSESSMENT
CORE POINTS	100	42.0
CATEGORY PERCENTAGE SCORE		42.0
INNOVATION POINTS	10	2.0
TOTAL SCORE TARGETED		44.0

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