

**Department of Education (DoE)**

# New High School for Medowie

## Section J Deemed To Satisfy (DTS) Compliance Report

Reference: ESD-MH-REP-001

REF Rev 3 | 24 January 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 304050-00

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# Document Verification

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		<b>Name</b>	Enda Seyama-Heneghan		
		<b>Signature</b>			
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		<b>Name</b>	Enda Seyama-Heneghan	Alex Rosenthal	Alex Rosenthal
REF	9 January 2025	<b>Filename</b>	Section J Deemed To Satisfy (DTS) Compliance Report		
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		<b>Name</b>	Enda Seyama-Heneghan	Alex Rosenthal	Alex Rosenthal
REF	9 January 2025	<b>Signature</b>			



REF Rev 2	20 January 2025	<b>Filename</b>	Section J Deemed To Satisfy (DTS) Compliance Report		
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			<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
		<b>Name</b>	Enda Seyama-Heneghan	Alex Rosenthal	Alex Rosenthal
		<b>Signature</b>			

REF Rev 3	24 January 2025	<b>Filename</b>	Section J Deemed To Satisfy (DTS) Compliance Report		
		<b>Description</b>	For planning approval/REF. Update to Figure 2 Site Plan.		
			<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
		<b>Name</b>	Enda Seyama-Heneghan	Alex Rosenthal	Alex Rosenthal
		<b>Signature</b>			

Issue Document Verification with Document



## Contents

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<b>1.</b>	<b>Introduction</b>	<b>1</b>
1.1	Site Description	1
1.2	Project Description	2
<b>2.</b>	<b>Inputs and Assumptions</b>	<b>3</b>
2.1	Scope	3
2.2	Geometry	3
2.3	Building Classification	3
2.4	Climate Zone	4
<b>3.</b>	<b>Part J4 Building Fabric</b>	<b>4</b>
3.1	Opaque Constructions	4
3.2	Glazing Constructions	5
<b>4.</b>	<b>Part J5 Building Sealing requirements</b>	<b>6</b>
<b>5.</b>	<b>Summary</b>	<b>6</b>
5.1	Mitigation Measures	7
Table 1 Opaque Construction Compliance Performance Values – Blocks A and B		4
Table 2 Opaque Construction Compliance Performance Values – Block C		4
Table 3 Glazing Construction Performances – Blocks A and B		6
Table 4 Glazing Construction Performances – Block C		6
Table 5 Mitigation Measures		7
Figure 1 Aerial image of the site (Source: Nearmap)		2
Figure 2 Site Plan		3
Figure 3 Example Facade Module from SINSW Patternbook		5
Figure 4 Insulation markup through Mechanical Fixed Louvre		5
<b>Appendices</b>		
A.1	DTS Markup	1
A.2	DTS Calculator	2



# 1. Introduction

This Section J Deemed To Satisfy (DTS) Compliance Report has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as “development permitted without consent” on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The activity will be carried out at 6 Abundance Road, Medowie (the site). The purpose of this report is to present the assessment of the proposed activity against the National Construction Code (NCC) 2022 Section J. The assessment proposes a set of minimum insulation and glazing performance requirements for the building to comply with the J1P1 requirements of Section J via Deemed To Satisfy (DtS) provisions.

## 1.1 Site Description

The site has a street address of 6 Abundance Road, Medowie. It is 6.51ha in area, and comprises 1 allotment, legally described as Lot 3 in DP788451.

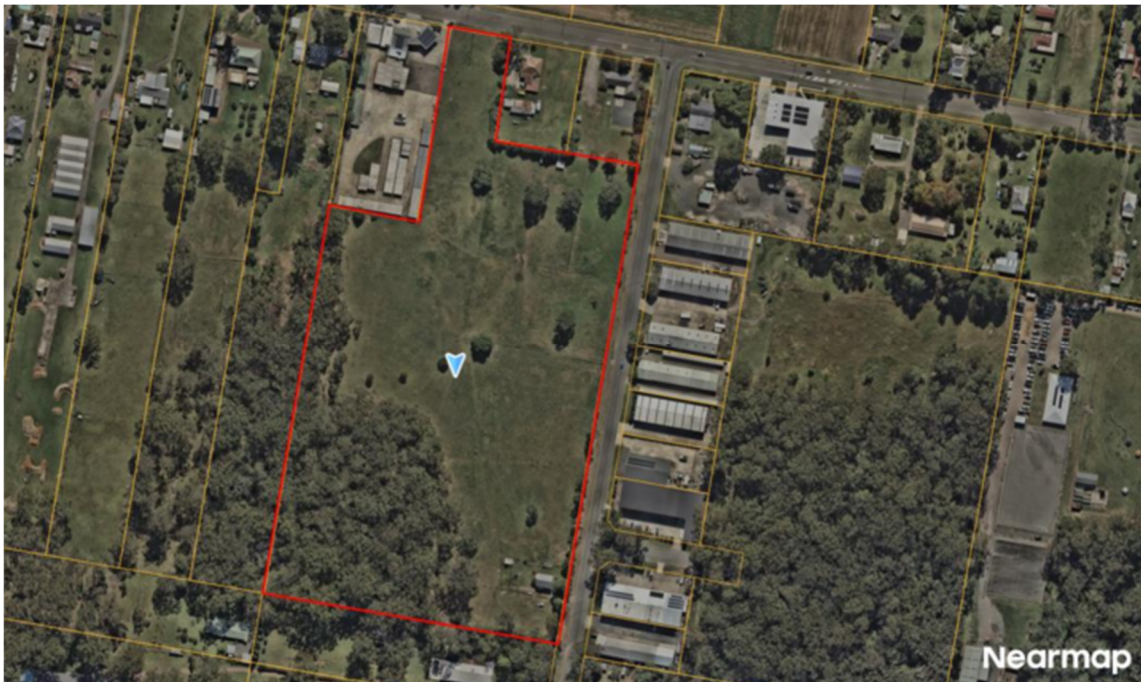
A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the south eastern corner.

The site contains a largely vegetated area to the south west corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the north western boundary is a Shell petrol station and mechanic garage. Adjacent to the north eastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station.





**Figure 1 Aerial image of the site (Source: Nearmap)**

## **1.2 Project Description**

The proposed activity involves the construction of school facilities on the site for the purpose of the New High School for Medowie. The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area.

The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

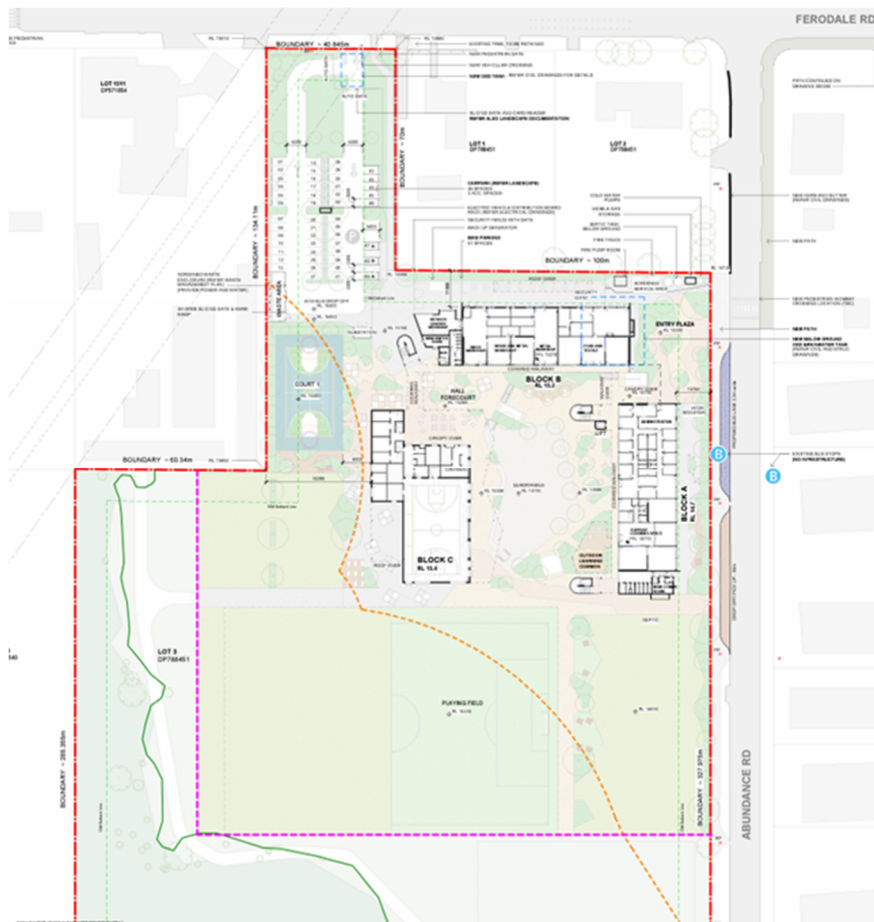
**29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.**

- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces.
- Approximately 70 x bicycle parking spaces.
- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The proposed school development will include the following spaces; general learning spaces, General support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood



and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways).



**Figure 2 Site Plan**

## 2. Inputs and Assumptions

### 2.1 Scope

This report assesses the building envelope of the proposed activity against the requirements of NCC 2022 Section J Part J4 for Building Fabric and J5 for Building Sealing where relevant to the building envelope.

It is assumed in this report that building services comply with the requirements of Sections J5 – J8. This is to be certified by the services consultants.

### 2.2 Geometry

This assessment is based on the frozen architectural drawings set by NBRs, received on October 29<sup>th</sup> 2024 and NBRs plans issued for tender, dated November 15<sup>th</sup> 2024. The REF drawings issued on November 20<sup>th</sup> 2024 are reflective of the drawings used in this assessment.

### 2.3 Building Classification

The building is being assessed as Building Code of Australia (BCA) Class 9b School/Hall and Class 5 Office. The teaching Blocks A and B have been treated as a single united building, and the hall building Block C as a single building. This assessment approach was confirmed by the BCA consultant on October 29<sup>th</sup> 2024.



## 2.4 Climate Zone

The site is located in Medowie, NSW in NCC Climate Zone 5.

# 3. Part J4 Building Fabric

Minimum compliance requirements are presented in this section, with mark up of applicable areas in Appendix A.1. The minimum compliance DTS Calculator results are found in Appendix A.2.

## 3.1 Opaque Constructions

Minimum compliance requirements for the opaque elements of the current building design have been assessed in accordance with NCC 2022 Section J Part J4 DtS provisions.

**Table 1 Opaque Construction Compliance Performance Values – Blocks A and B**

Building element	DtS Compliance
External Opaque (cladded wall, fixed louvre with insulated backing, mechanical fixed louvre)	Min. R-value 1.4
Internal Walls	Min. R-value 1.4
Floor (with in-screed heating)	Floor: Min. R-value 3.25 (downward heat flow direction) Perimeter vertical edge: Not required
Floor (no in-screed heating)	Floor: Min. R-value 2.0 (downward heat flow direction) Perimeter vertical edge: Not required
Roof/Ceiling	Min. R-value 3.7 (downward heat flow direction) Max. Solar Absorptance 0.45

**Table 2 Opaque Construction Compliance Performance Values – Block C**

Building element	DtS Compliance
External Opaque (cladded wall, fixed louvres)	Min. R-value 1.4
Internal Walls	Min. R-value 1.4
Floor (no in-screed heating)	Floor: Min. R-value 2.0 (downward heat flow direction) Perimeter vertical edge: Not required
Roof/Ceiling	Min. R-value 3.7 (downward heat flow direction) Max. Solar Absorptance 0.45

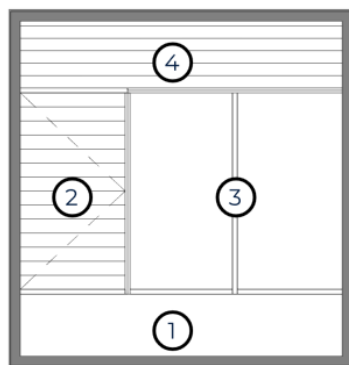
Note that the above specified R-values in Table 1 should account for the total system including any cases of thermal bridging that may occur. For example, a steel stud wall system would need to take account of the thermal bridging impacts of the studs, so to achieve R 1.4 it may require more than R 1.4 insulation to offset thermal bridging, or may need thermal breaks.

### 3.1.1 Façade Louvres

The mechanical fixed louvres (shown as number 4 in Figure 3) is to be backed fully by an insulated surface, to achieve the minimum total system R-value required for external opaque areas. Penetrations as required by mechanical design is to be insulated in accordance with NCC2022 J6D6 and have non-return dampers per NCC J5.

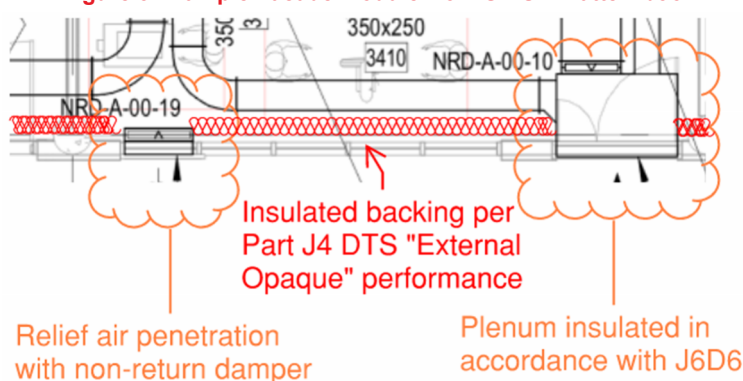


Natural ventilation fixed louvres with insulated doors (shown as number 2 in Figure 3) is to be backed fully by an insulated surface to achieve the minimum total system R-value required for external opaque areas.



1. Cladding
2. Natural ventilation fixed louvre
3. Fixed glazing
4. Mechanical fixed louvre

**Figure 3 Example Facade Module from SINSW Patternbook**



**Figure 4 Insulation markup through Mechanical Fixed Louvre**

### 3.1.2 Floor Construction

The floor of the Block A Level 0 “Adult Change + Shower + Laundry” room is proposed to have an in-screed heating system. The minimum DtS compliant R-value of the floor total system is 3.25 m<sup>2</sup>K/W for a downward direction of heat flow. As the in-screed heating system is used solely in a bathroom/amenity area, no vertical floor edge insulation is required for DtS compliance.

The remaining floor areas forming the envelope do not include in-slab/in-screed heating or cooling system. The minimum DtS compliant R-value of the floor total system is 2.0 m<sup>2</sup>K/W for a downward direction of heat flow.

## 3.2 Glazing Constructions

Minimum compliance requirements for the glazing elements of the current building design have been assessed in accordance with NCC 2022 Section J Part J4 DtS provisions.

For a Class 5 and 9b Building in Climate Zone 5, Section J DtS requires that all façade aspects have an overall wall-glazing solar admittance of no more than 0.13, and a U-value of less than 2.0 W/m<sup>2</sup>K. This is the total system performance including elements such as glass, frame, and opaque walls. The DtS compliant minimum required to meet the overall wall-glazing performance within the project geometry, and in conjunction with wall performance noted in 3.1, are shown below. Specification 37 Method 2 was used to calculate compliance.

A minimum VLT has also been specified in line with the daylight requirements of the project.



Note, for operable glazing elements with bushfire protection mesh, the bushfire protection mesh should be included in the whole of system calculation.

**Table 3 Glazing Construction Performances – Blocks A and B**

DtS Compliant max. Values	
External Glazing (with bushfire protection mesh)	Max. U-value 4.0; Max. SHGC 0.51; Min. 80%
<b>External Glazing (all other envelope glazing)</b>	Max. U-value 4.0; Max. SHGC 0.51; Min. 60%

**Table 4 Glazing Construction Performances – Block C**

DtS Compliant max. Values	
External Glazing	Max. U-value 5.8; Max. SHGC 0.66; Min. 60%

## 4. Part J5 Building Sealing requirements

All buildings of the activity (Block A, Block B, and Block C) are required to comply with Section J Part J5. A summary of key requirements for the envelop is listed below. Refer to NCC 2022 Section J Part J5 for a complete list of requirements. The Contractor shall ensure that the requirements of Part J5 are met through design finalisation.

- Doors and windows to conditioned spaces must be sealed to restrict air infiltration, as per J5D4 and J5D5.
- All entrance doors to conditioned spaces must have an airlock, self-closing door or the like unless the conditioned space has a floor area of less than 50 m<sup>2</sup>. The BCA consultant has confirmed that this requirement is only applicable to Block A and B, and is not applicable to Block C, as Block C is proposed to remove the internal tenability requirements.
- Ceilings, walls, floors and any opening such as a window frame, door frame, roof light frame or the like must be constructed to minimise air leakage in accordance with J5D7.
- Exhaust fans must be fitted with a sealing device such as a self-closing damper or the like when serving a conditioned space.

All façade mechanical fixed louvres and natural ventilation fixed louvres (Figure 3) must have sufficient sealing to minimise air leakage, in accordance with J5D7.

Within the canteen, the project proposes to comply with Section J Part J5D5 (4) by having a 3m deep un-conditioned zone between the shop-front openings and the space heated by radiators. The other door to the canteen must be a self-closing door.

## 5. Summary

This report presents the minimum building fabric performance to comply with the requirements of NCC 2022 Section J via deemed-to-satisfy provisions. The Main Contractor shall ensure that these requirements are met through detailed design of the façade and design finalisation. Should any individual fabric and glazing performances be adjusted through design development stage, the Main Contractor is responsible for demonstrating that the design is capable of achieving compliance through developing their own calculations following either NCC Section J DTS Provisions or Verification Methods J1V2 or J1V3, and provide an updated report and validated performance requirements for design finalisation.



## 5.1 Mitigation Measures

**Table 5 Mitigation Measures**

<b>Mitigation Number/Name</b>	<b>Aspect/Section</b>	<b>Mitigation Measure</b>	<b>Reason for Mitigation Measure</b>
Part J4 Compliance	Prior to commencement of any construction work	Assessment of For Construction building envelope performance for compliance against NCC 2022 Section J Part J4.	Ensure final wall build-ups and glazing selection are code compliant.
Part J5 Compliance	Prior to commencement of any construction work	Assessment of For Construction building sealing for compliance against NCC 2022 Section J Part J5.	Ensure final door and window selections are code compliant.
Design Changes	During design finalisation	Should any individual fabric and glazing performances be adjusted through design development stage, or any spaces have changes in conditioning strategy, the Main Contractor is responsible for demonstrating that all buildings of the activity are capable of achieving compliance through developing their own calculations following either NCC Section J DTS Provisions or Verification Methods J1V2 or J1V3, and provide an updated report and validated performance requirements for design finalisation.	Ensure final building design is code compliant.



# A.1 DTS Markup



20241129 Medowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

External Facade

- External Opaque (cladded wall, fixed louvre with insulated backing, mechanical fixed louvre ): Min. R1.4  
(See also "Facade Louvres" note below)

- External Glazing: Min. U4.0; Max. SHGC 0.51; Min. VLT 60%

Internal Wall: Min. R1.4

Floor (no in-slab heating): Min. R2.0 (downward heat flow direction)

Floor (with in-slab heating): Min. R3.25 (downward heat flow direction)

Ceiling/Roof: Min. R3.7 (downward heat flow direction); Max. Solar Absorptance 0.45

\*Performance values shown above are for total system.

\*\* Above minimum glazing performance requirements are more stringent than the performance included in the Patternbook

Facade Louvres

It is assumed that the mechanical fixed louvres (#4 in example panel type) is backed fully by an insulated surface, but with penetrations as required by the mechanical design (see below markup of mechanical drawing).

1

2

3

4

1. Cladding

2. Natural ventilation fixed louvre

3. Fixed glazing

4. Mechanical fixed louvre

Natural ventilation fixed louvres with insulated doors (#2 in example panel type) are to be insulated per Part J4 DTS "External Opaque" performance.

Fixed louvre with insulated door behind

In addition, all mechanical fixed louvres (#4) and natural ventilation fixed louvre with insulated door (#2) must have sufficient sealing to minimise air leakage, in compliance with J5D7.

The above is to be confirmed by the Architect.

350x250  
3410

NRD-A-00-19

NRD-A-00-10

Insulated backing per Part J4 DTS "External Opaque" performance

Relief air penetration with non-return damper

Plenum insulated in accordance with J6D6

NBRS

KEY PLAN

LEGEND

HS 102 GENERAL LEARNING SPACES (SUPPORT)

HS 201 ADMINISTRATION HUB

HS 202 STAFF HUB

HS 401 STUDENT AMENITIES

HS 402 OTHER STORAGE

HS CIRCULATION

HS SERVICES

PRELIMINARY

Issue		Description	Chkd
No.	Date		
2	20/09/2024	CONCEPT DESIGN ISSUE	NBRS
3	03/10/2024	ISSUED FOR COORDINATION	MK
4	15/10/2024	ISSUED FOR COORDINATION	MK
5	24/10/2024	ISSUED FOR COORDINATION	MK
6	29/10/2024	ISSUED FOR COORDINATION	MK

Changes to this Revision

NBRS

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Nominated Architects:  
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Jonathan West NSW 9899  
NBRS & Partners Pty Ltd VIC 51197

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ABN 16 002 247 565

Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318

Drawing Title  
BLOCK A - HS500 - L0 PLAN

Date	29/10/2024 4:01:56 PM	Revision <div>6</div>
Scale	1 : 100 @ A1	
NBRS Project #	24135	
Drawing Reference	MHS-NBRS-B00A-L0-DR-A-11000	

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20241129 Medowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

External Facade

- External Opaque (cladded wall, fixed louvre with insulated backing, mechanical fixed louvre ): Min. R1.4  
(See also "Facade Louvres" note p.1)

- External Glazing: Min. U4.0; Max. SHGC 0.51; Min. VLT 60%

Internal Wall: Min. R1.4

Floor (no in-slab heating): Min. R2.0 (downward heat flow direction)

Floor (with in-slab heating): Min. R3.25 (downward heat flow direction)

Ceiling/Roof: Min. R3.7 (downward heat flow direction); Max. Solar Absorptance 0.45

\*Performance values shown above are for total system.

\*\* Above minimum glazing performance requirements are more stringent than the performance included in the Patternbook

NBRS

KEY PLAN

LEGEND

- HS 101 GENERAL LEARNING SPACES
- HS 204 LIBRARY HUB
- HS 401 STUDENT AMENITIES
- HS 402 OTHER STORAGE
- HS CIRCULATION
- HS SERVICES

PRELIMINARY

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Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318

Drawing Title  
BLOCK A - HS500 - L1 PLAN

Date	29/10/2024 4:05:54 PM	
Scale	1 : 100 @ A1	
NBRS Project #	24135	
Drawing Reference		
MHS-NBRS-B00A-L1-DR-A-11001	6	Revision

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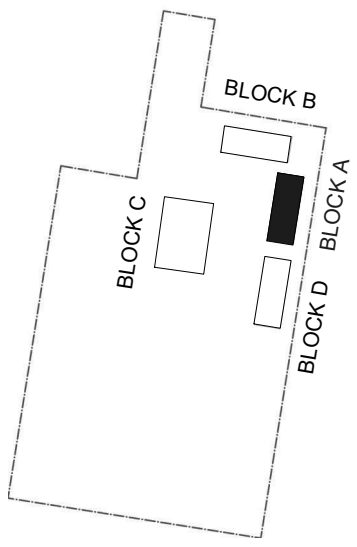
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\*Performance values shown above are for total system.  
\*\* Above minimum glazing performance requirements are more stringent than the performance included in the Patternbook



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KEY PLAN

LEGEND

- HS 101 GENERAL LEARNING SPACES
- HS 305 HEALTH/PE LEARNING HUB
- HS 306 PERFORMING ARTS LEARNING HUB
- HS 401 STUDENT AMENITIES
- HS 402 OTHER STORAGE
- HS CIRCULATION
- HS SERVICES

PRELIMINARY

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3	03/10/2024	ISSUED FOR COORDINATION	MK
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6	29/10/2024	ISSUED FOR COORDINATION	MK

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NBRS & Partners Pty Ltd VIC 51197  
nbrs.com.au  
ABN 16 002 247 565

Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318



Drawing Title  
BLOCK A - HS500 - L2 PLAN

Date 29/10/2024 4:08:52 PM

Scale 1 : 100 @ A1

NBRS Project # 24135

Drawing Reference

MHS-NBRS-B00A-L2-DR-A-11002

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20241129 Meadowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

External Facade

- External Opaque (cladded wall, fixed louvre with insulated backing, mechanical fixed louvre ): Min. R1.4  
(See also "Facade Louvres" note p.1)

- External Glazing: Min. U4.0; Max. SHGC 0.51; Min. VLT 60%

Internal Wall: Min. R1.4

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Ceiling/Roof: Min. R3.7 (downward heat flow direction); Max. Solar Absorptance 0.45

\*Performance values shown above are for total system.

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The main roof plan drawing shows a rectangular building footprint with a grid of vertical lines labeled A-3 through A-9. Horizontal dimensions are marked at the top: 7500 between A-3 and A-4, 7500 between A-4 and A-5, 6000 between A-5 and A-6, 7500 between A-6 and A-7, 7500 between A-7 and A-8, and 7500 between A-8 and A-9. On the left, vertical dimensions are marked: 9000 between A-C and A-B, and 9000 between A-B and A-A. The drawing includes details for gutters, downpipes (DP), and a 'LIFT ROOF' section at the bottom left. A 'Roof ladder access' is indicated on the right side. Arrows indicate a 4.00° slope in several areas.

FOR CONTINUATION REFER TO DRWG:  
MHS-NBRS-B00B-LX-DR-A-21000

FOR CONTINUATION REFER TO DRWG:  
MHS-NBRS-B00D-LX-DR-A-41000

A small site plan labeled 'KEY PLAN' showing the layout of the school. It includes 'BLOCK A', 'BLOCK B', 'BLOCK C', and 'BLOCK D'. Block A is highlighted in black.

KEY PLAN

PRELIMINARY

Issue		Description	Chkd
No.	Date		
2	20/09/2024	CONCEPT DESIGN ISSUE	NBRS
3	03/10/2024	ISSUED FOR COORDINATION	MK
4	15/10/2024	ISSUED FOR COORDINATION	MK
5	24/10/2024	ISSUED FOR COORDINATION	MK
6	29/10/2024	ISSUED FOR COORDINATION	MK

Changes to this Revision

+61 2 9922 2344  
Nominated Architects:  
Andrew Duffin NSW 5602  
Jonathan West NSW 9899  
NBRS & Partners Pty Ltd VIC 51197

nbrs.com.au  
ABN 16 002 247 565

Project  
24135 - MEADOWIE HIGH SCHOOL

at  
6 Abundance Rd, Meadowie NSW 2318

Drawing Title  
BLOCK A - HS500 - ROOF PLAN

Date 29/10/2024 4:10:12 PM

Scale 1 : 100 @ A1

NBRS Project # 24135

Drawing Reference

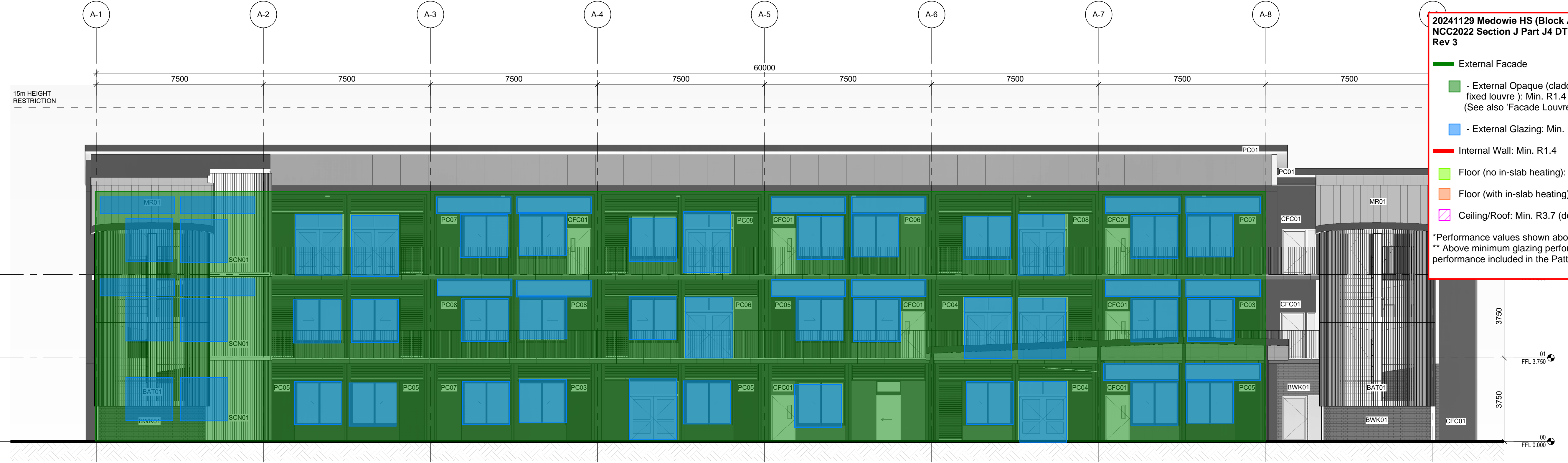
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20241129 Medowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

External Facade

- External Opaque (cladded wall, fixed louvre with insulated backing, mechanical fixed louvre ): Min. R1.4  
(See also "Facade Louvres" note p.1)

- External Glazing: Min. U4.0; Max. SHGC 0.51; Min. VLT 60%

Internal Wall: Min. R1.4

Floor (no in-slab heating): Min. R2.0 (downward heat flow direction)

Floor (with in-slab heating): Min. R3.25 (downward heat flow direction)

Ceiling/Roof: Min. R3.7 (downward heat flow direction); Max. Solar Absorptance 0.45

\*Performance values shown above are for total system.  
\*\* Above minimum glazing performance requirements are more stringent than the performance included in the Patternbook

1 BLOCK A - HS500 - WEST ELEVATION  
1 : 100



2 BLOCK A - STAGE 1 - EAST ELEVATION  
1 : 100

SCHEMATIC WIP

Issue		Description	Chkd
No.	Date		
2	20/09/2024	CONCEPT DESIGN ISSUE	NBRS
3	03/10/2024	ISSUED FOR COORDINATION	MK
4	24/10/2024	ISSUED FOR COORDINATION	MK
5	01/11/2024	ISSUED FOR REVIEW	MK
T1	15/11/2024	ISSUED FOR TENDER	MK

Changes to this Revision



20241129 Meadowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

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1 BLOCK A - STAGE 1 - NORTH ELEVATION  
1 : 100

2 BLOCK A - STAGE 1 - SOUTH ELEVATION  
1 : 100

NBRS

KEY PLAN

SCHEMATIC WIP

Issue No.	Date	Description	Chkd
1	06/09/2024	ISSUED FOR REVISION	NBRS
2	03/10/2024	ISSUED FOR COORDINATION	MK
3	24/10/2024	ISSUED FOR COORDINATION	MK
4	01/11/2024	ISSUED FOR REVIEW	MK
T1	15/11/2024	ISSUED FOR TENDER	MK

Changes to this Revision

NBRS

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Nominated Architects:  
Andrew Duffin NSW 5602  
Jonathan West NSW 9899  
NBRS & Partners Pty Ltd VIC 51197  
nbrs.com.au  
ABN 16 002 247 565

Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Meadowie NSW 2318

Drawing Title  
BLOCK A - STAGE 1 - ELEVATIONS 02

Date 15/11/2024 2:14:23 PM  
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NBRS Project # 24135  
Drawing Reference  
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Revision  
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NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

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KEY PLAN

LEGEND

HS 303 WOOD + METAL TECHNOLOGY LEARNING HUB

HS 304 FOOD + TEXTILES LEARNING HUB

HS 401 STUDENT AMENITIES

HS 402 OTHER STORAGE

HS CIRCULATION

HS SERVICES

PRELIMINARY

Issue No.	Date	Description	Chkd
2	20/09/2024	CONCEPT DESIGN ISSUE	NBRS
3	03/10/2024	ISSUED FOR COORDINATION	MK
4	15/10/2024	ISSUED FOR COORDINATION	MK
5	24/10/2024	ISSUED FOR COORDINATION	MK
6	29/10/2024	ISSUED FOR COORDINATION	MK

Changes to this Revision

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Nominated Architects:  
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Jonathan West NSW 9899  
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Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318

Drawing Title  
BLOCK B - HS500 - L0 PLAN

Date 29/10/2024 3:44:28 PM

Scale 1 : 100 @ A1

NBRS Project # 24135

Drawing Reference

MHS-NBRS-B00B-L0-DR-A-21000

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FOR CCFOR STAIRCASE REFER DRWG:  
TYPICAL STAIRCASE  
DESIGN

FOR CONTINUATION REFER TO DRWG:  
MHS-NBRS-B00A-LX-DR-A-110xx

WALKWAY ABOVE

Revision

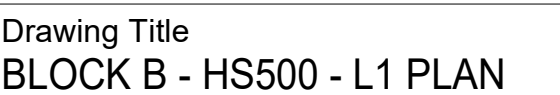


## LEGEND

- # PRELIMINARY

## Changes to this Revision

at  
6 Abundance Rd, Medowie NSW 2318



sion

6

FOR STAIRCASE REFER DRWG:  
TYPICAL STAIRCASE  
DESIGN

1:3

FULL HEIGHT RAILING NEAR  
CORNER FACING STREET







20241129 Meadowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

External Facade

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NBRS

KEY PLAN

PRELIMINARY

Issue			
No.	Date	Description	Chkd
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4	15/10/2024	ISSUED FOR COORDINATION	MK
5	24/10/2024	ISSUED FOR COORDINATION	MK
6	29/10/2024	ISSUED FOR COORDINATION	MK

Changes to this Revision

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Project  
24135 - MEADOWIE HIGH SCHOOL

at  
6 Abundance Rd, Meadowie NSW 2318

Drawing Title  
BLOCK B - HS500 - ROOF PLAN

Date 29/10/2024 3:51:15 PM

Scale 1 : 100 @ A1

NBRS Project # 24135

Drawing Reference

MHS-NBRS-B00B-LR-DR-A-21003

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FOR CCFOR STAIRCASE REFER DRWG:  
TYPICAL STAIRCASE  
DESIGN

FOR CONTINUATION REFER TO DRWG:  
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20241129 Medowie HS (Block A+B single united building assessment)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

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KEY PLAN

FULL HEIGHT RAILING NEAR CORNER FACING STREET

1 BLOCK B - HS500 - SOUTH ELEVATION  
1 : 100

2 BLOCK B - HS500 - EAST ELEVATION  
1 : 100

SCHEMATIC WIP

Issue			
No.	Date	Description	Chkd
2	20/09/2024	CONCEPT DESIGN ISSUE	NBRS
3	03/10/2024	ISSUED FOR COORDINATION	MK
4	24/10/2024	ISSUED FOR COORDINATION	MK
5	01/11/2024	ISSUED FOR REVIEW	MK
T1	15/11/2024	ISSUED FOR TENDER	MK

Changes to this Revision

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Nominated Architects:  
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Jonathan West NSW 9899  
NBRS & Partners Pty Ltd VIC 51197  
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ABN 16 002 247 565

Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318

Drawing Title  
BLOCK B - STAGE 1 - ELEVATIONS 01

Date 15/11/2024 2:19:28 PM  
Scale 1 : 100 @ A1  
NBRS Project # 24135  
Drawing Reference  
MHS-NBRS-B00B-ZZ-DR-A-23000  
Revision  
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NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

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Internal Wall: Min. R1.4

Floor (no in-slab heating): Min. R2.0 (downward heat flow direction)

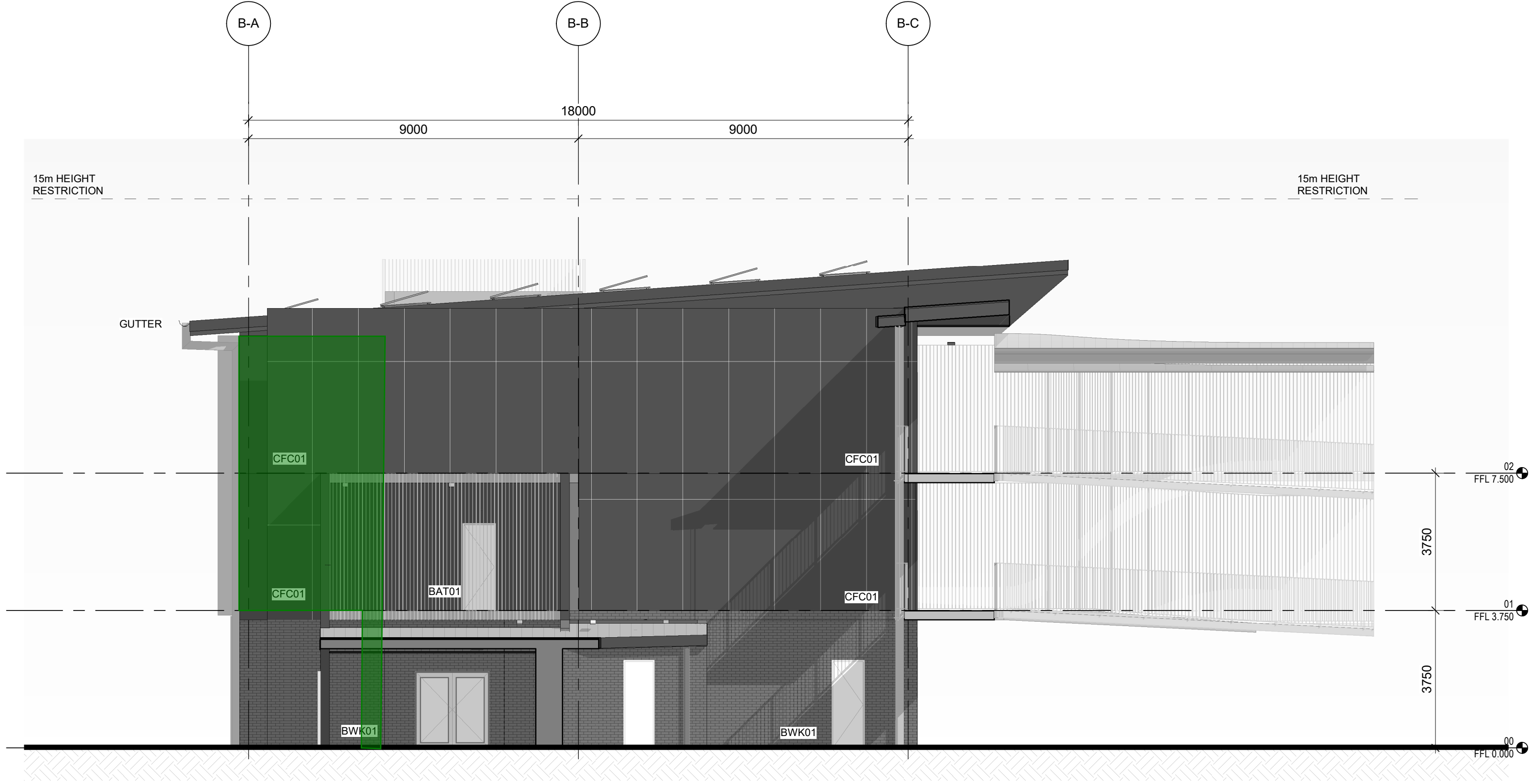
Floor (with in-slab heating): Min. R3.25 (downward heat flow direction)

Ceiling/Roof: Min. R3.7 (downward heat flow direction); Max. Solar Absorptance 0.45

\*Performance values shown above are for total system.  
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1 BLOCK B - HS500 - NORTH ELEVATION  
1 : 100



2 BLOCK B - HS500 - WEST ELEVATION  
1 : 100

SCHEMATIC WIP

Issue		Description	Chkd
No.	Date		
1	06/09/2024	ISSUED FOR INFORMATION	NBRS
2	03/10/2024	ISSUED FOR COORDINATION	MK
3	24/10/2024	ISSUED FOR COORDINATION	MK
4	01/11/2024	ISSUED FOR REVIEW	MK
T1	15/11/2024	ISSUED FOR TENDER	MK

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Project  
24135 - MEDOWIE HIGH SCHOOL

at  
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Drawing Title  
BLOCK B - STAGE 1 - ELEVATIONS 02

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Drawing Reference	MHS-NBRS-B00B-ZZ-DR-A-23001		
			T1

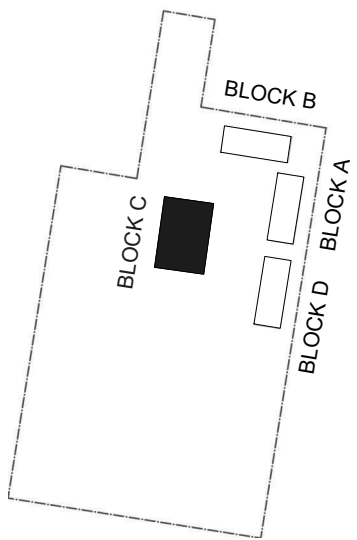
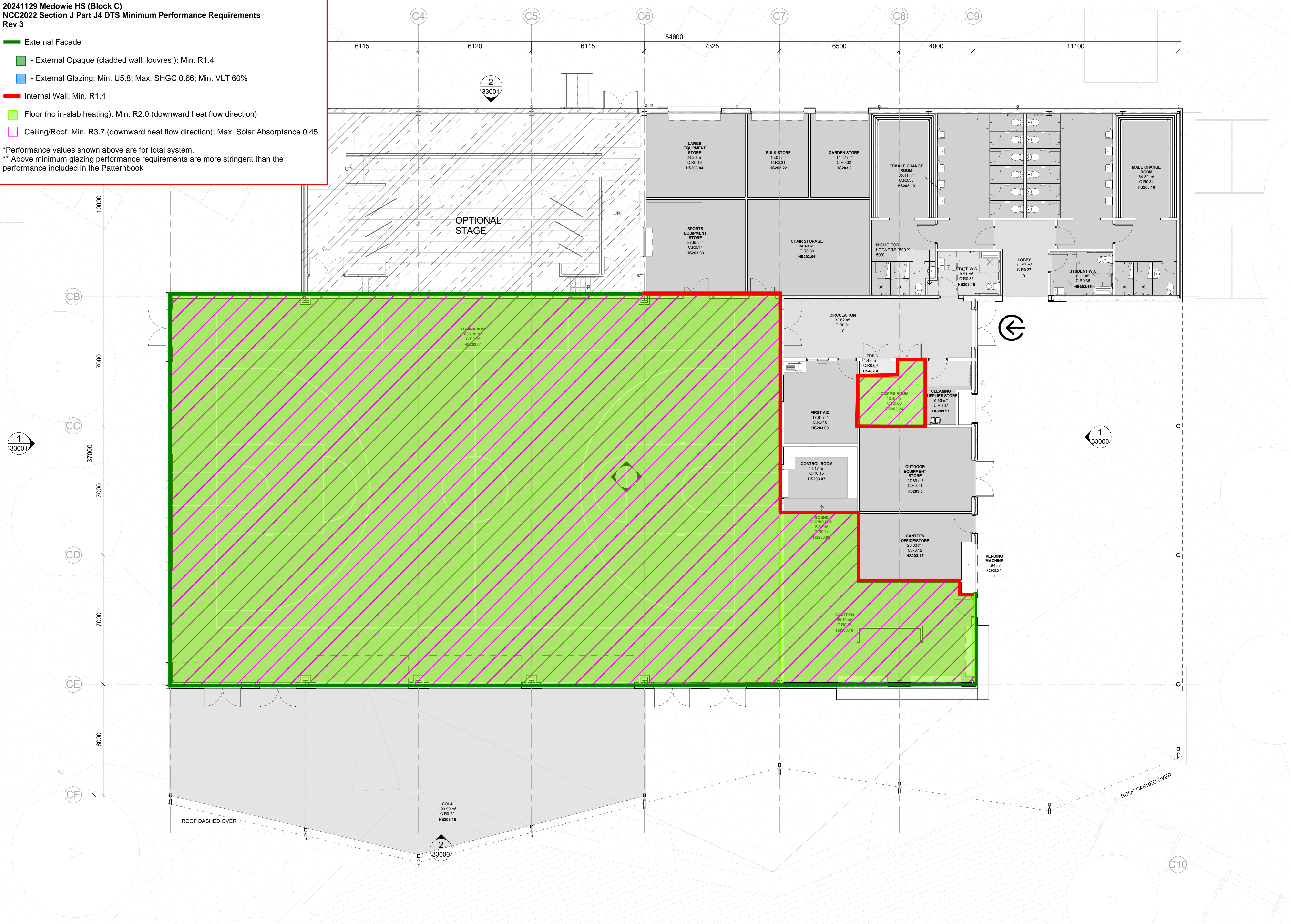
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- External Facade
- External Opaque (cladded wall, louvres ): Min. R1.4
  - External Glazing: Min. U5.8; Max. SHGC 0.66; Min. VLT 60%
- Internal Wall: Min. R1.4
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- Ceiling/Roof: Min. R3.7 (downward heat flow direction); Max. Solar Absorptance 0.45

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KEY PLAN

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Issue No.	Date	Description	Chkd
1	06/09/2024	ISSUED FOR INFORMATION	NBRS
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3	24/10/2024	ISSUED FOR COORDINATION	MK
4	01/11/2024	ISSUED FOR REVIEW	MK
T1	15/11/2024	ISSUED FOR TENDER	MK

Changes to this Revision

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Nominated Architects:  
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Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318



Drawing Title  
BLOCK C - STAGE 1 - FLOOR PLAN

Date 15/11/2024 2:38:33 PM

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NBRS Project # 24135

Drawing Reference

MHS-NBRS-B00C-L0-DR-A-31000

Revision

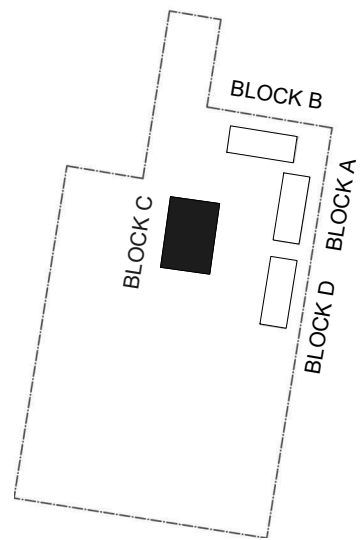
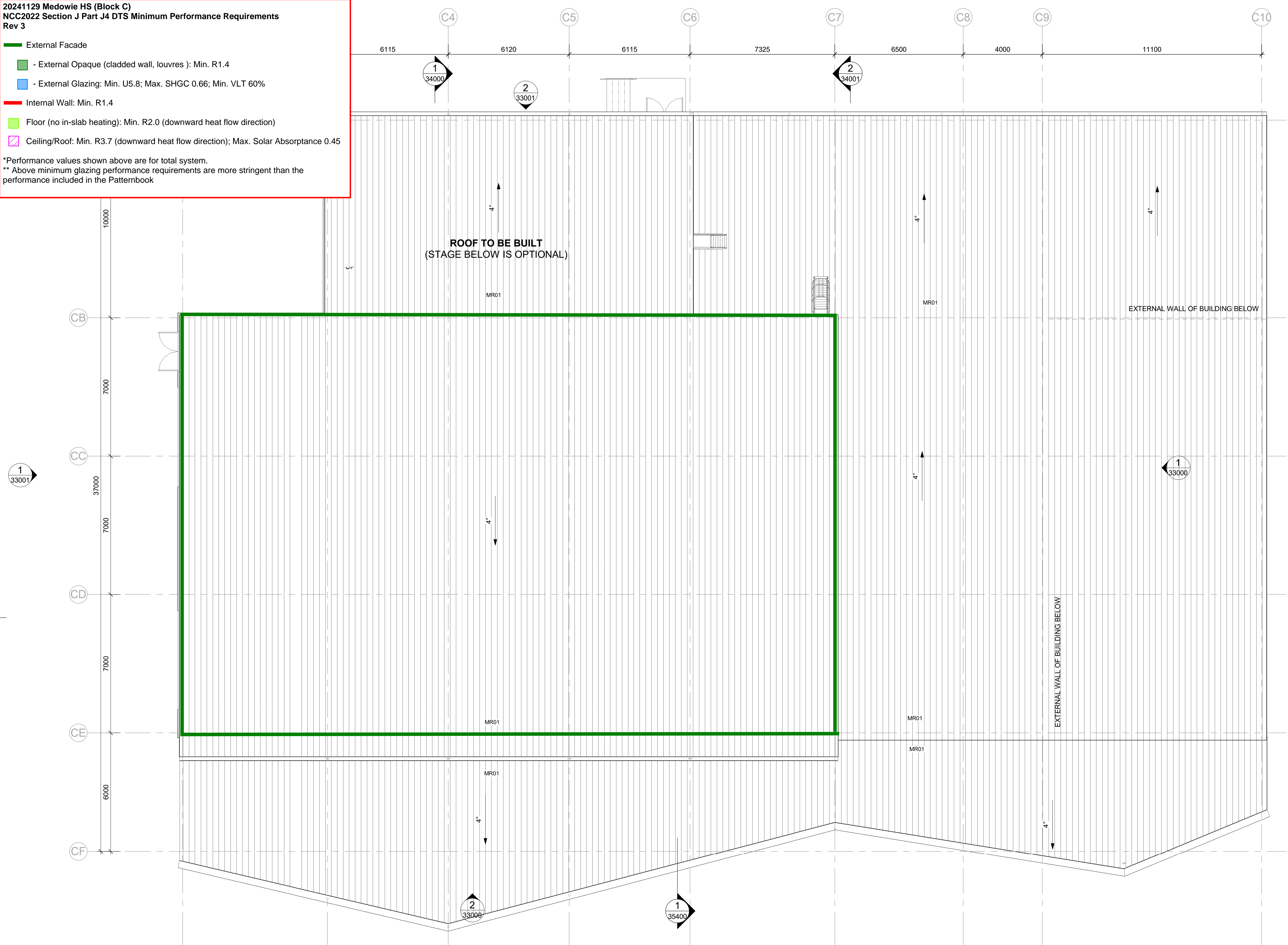
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  - External Opaque (cladded wall, louvres ): Min. R1.4
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Issue No.	Date	Description	Chkd
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3	24/10/2024	ISSUED FOR COORDINATION	MK
4	01/11/2024	ISSUED FOR REVIEW	MK
T1	15/11/2024	ISSUED FOR TENDER	MK

Changes to this Revision

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Nominated Architects:  
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NBRS & Partners Pty Ltd VIC 51197  
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ABN 16 002 247 565

Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318



Drawing Title  
BLOCK C - STAGE 1 - ROOF PLAN

Date 15/11/2024 2:43:55 PM

Scale 1 : 100 @ A1

NBRS Project # 24135

Drawing Reference

MHS-NBRS-B00C-LR-DR-A-31001

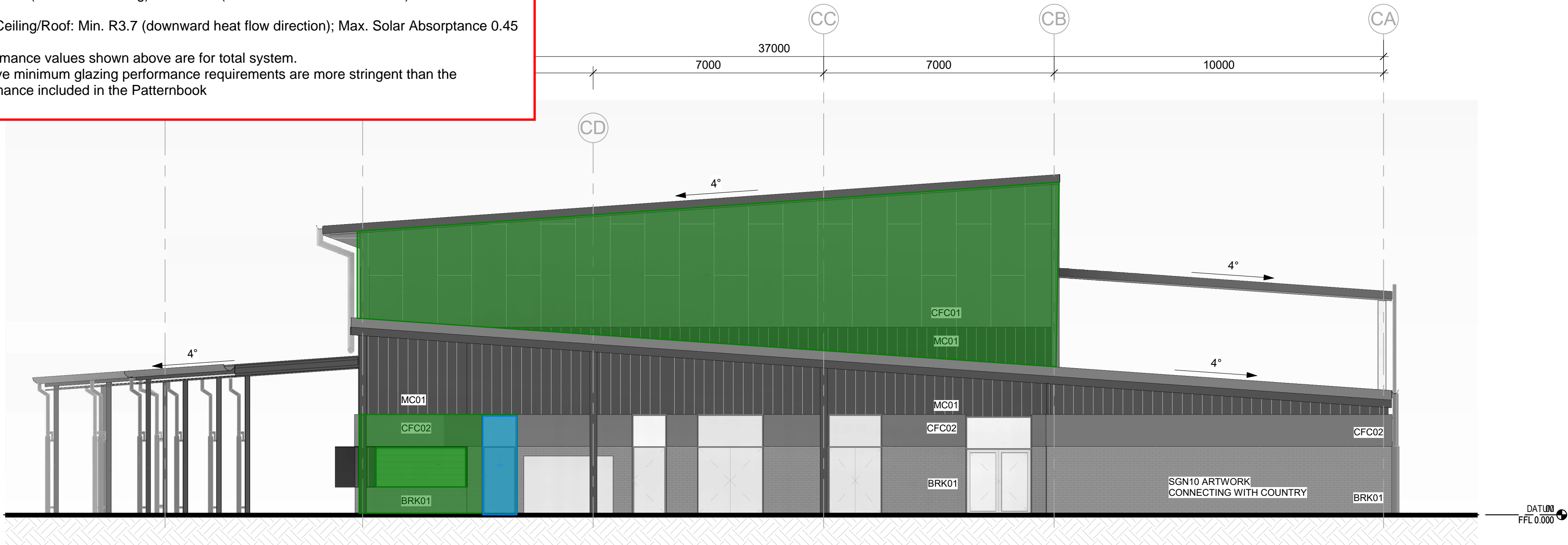
Revision  
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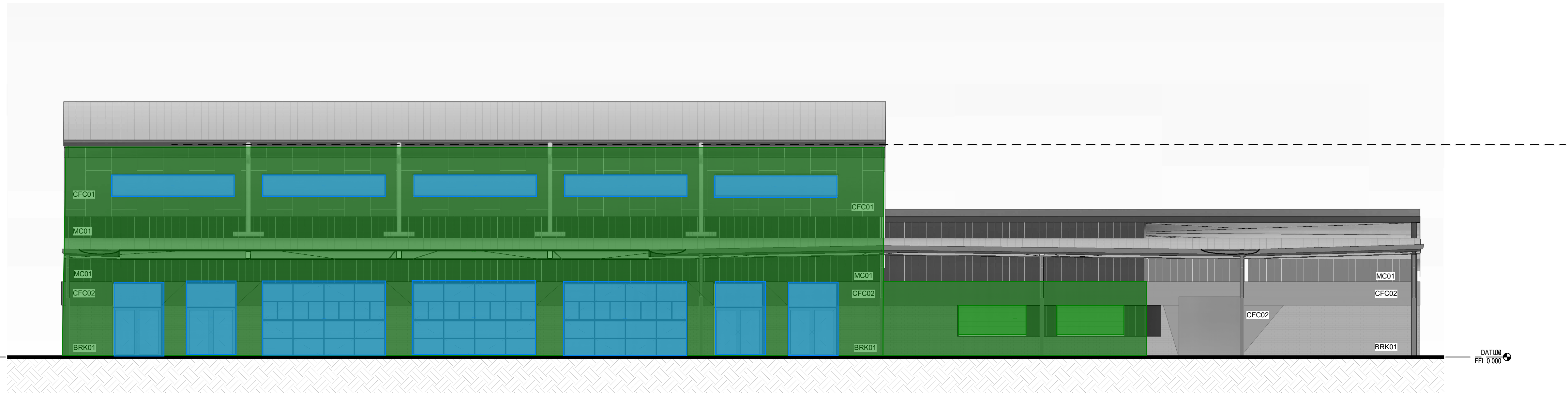


- External Facade
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  - Internal Wall: Min. R1.4
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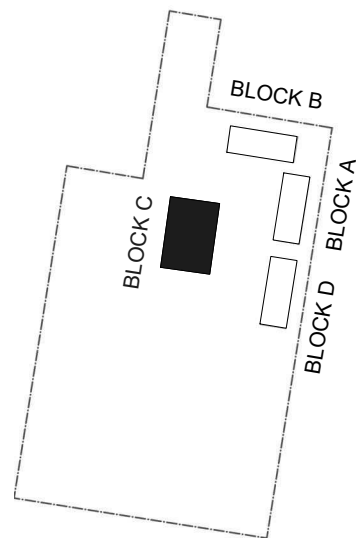
\*Performance values shown above are for total system.  
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1 BLOCK C - NORTH ELEVATION  
1 : 100



2 BLOCK C - EAST ELEVATION  
1 : 100



KEY PLAN

## SCHEMATIC WIP

Issue No.	Date	Description	Chkd
1	06/09/2024	ISSUED FOR INFORMATION	NBRS
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Changes to this Revision

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Nominated Architects:  
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Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318



Drawing Title  
BLOCK C - STAGE 1 - HALL ELEVATIONS  
01

Date 15/11/2024 2:47:59 PM  
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NBRS Project # 24135  
Drawing Reference  
MHS-NBRS-B00C-ZZ-DR-A-33000  
Revision  
T1

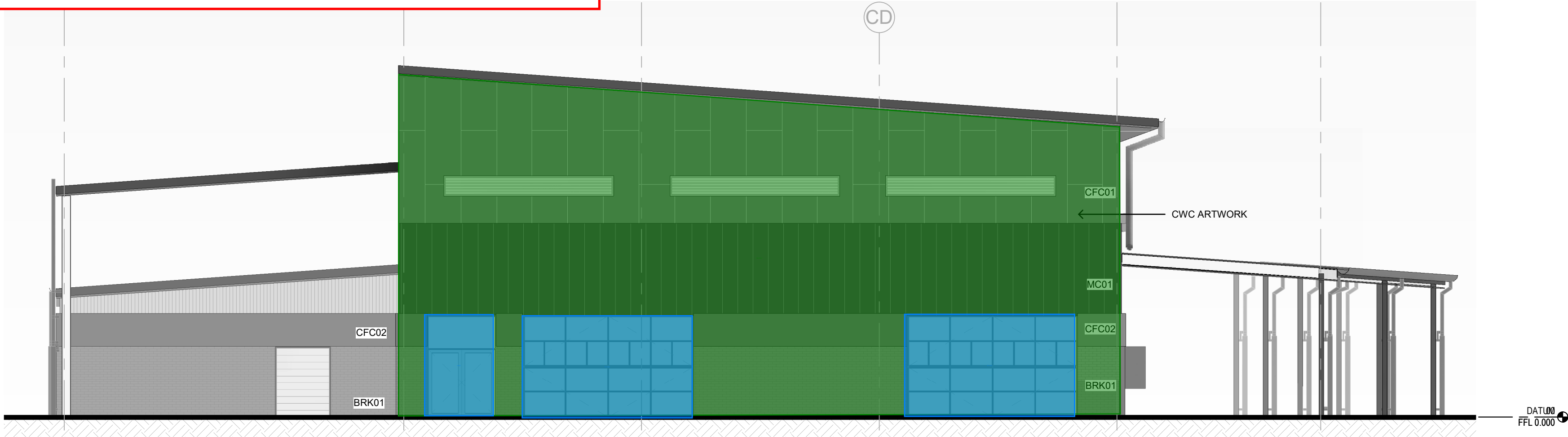
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20241129 Medowie HS (Block C)  
NCC2022 Section J Part J4 DTS Minimum Performance Requirements  
Rev 3

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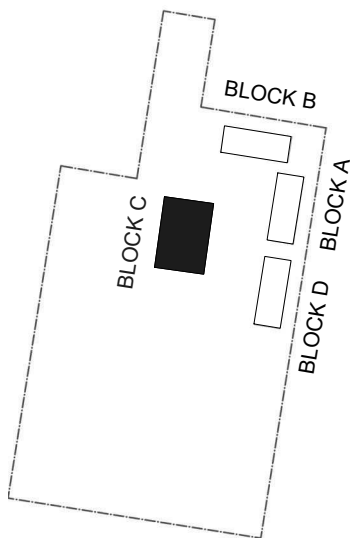


1 BLOCK C - SOUTH ELEVATION  
1 : 100



2 BLOCK C - WEST ELEVATION  
1 : 100

NBRS



KEY PLAN

## SCHEMATIC WIP

Issue No.	Date	Description	Chkd
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T1	15/11/2024	ISSUED FOR TENDER	MK

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ABN 16 002 247 565

Project  
24135 - MEDOWIE HIGH SCHOOL

at  
6 Abundance Rd, Medowie NSW 2318



Drawing Title  
BLOCK C - STAGE 1 - HALL ELEVATIONS  
02

Date 15/11/2024 3:00:22 PM  
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NBRS Project # 24135  
Drawing Reference  
MHS-NBRS-B00C-ZZ-DR-A-33001  
Revision  
T1

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# A.2 DTS Calculator





Project Summary

Date  
27/11/2024

Name  
Meadowie HS

Company  
Arup

Position  
Consultant

Building Name / Address  
Blocks A and B  
0

Building State  
  
NSW

Climate Zone  
Climate Zone 5 - Warm  
temperate

Building Classification  
  
Class 9b - schools

Storeys Above Ground  
5

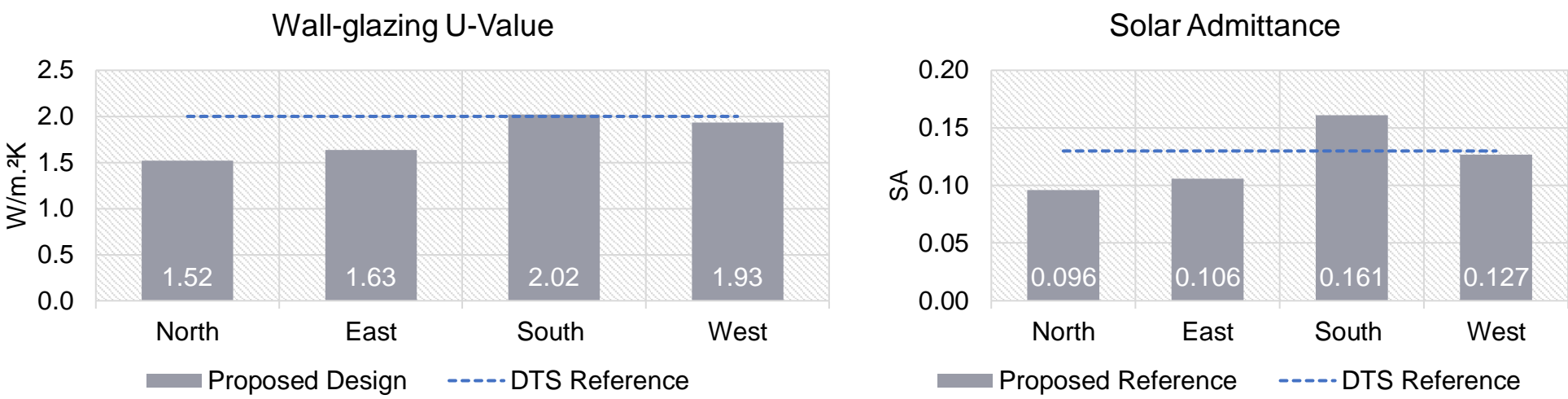
Tool Version  
1.2 (June 2020)

The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

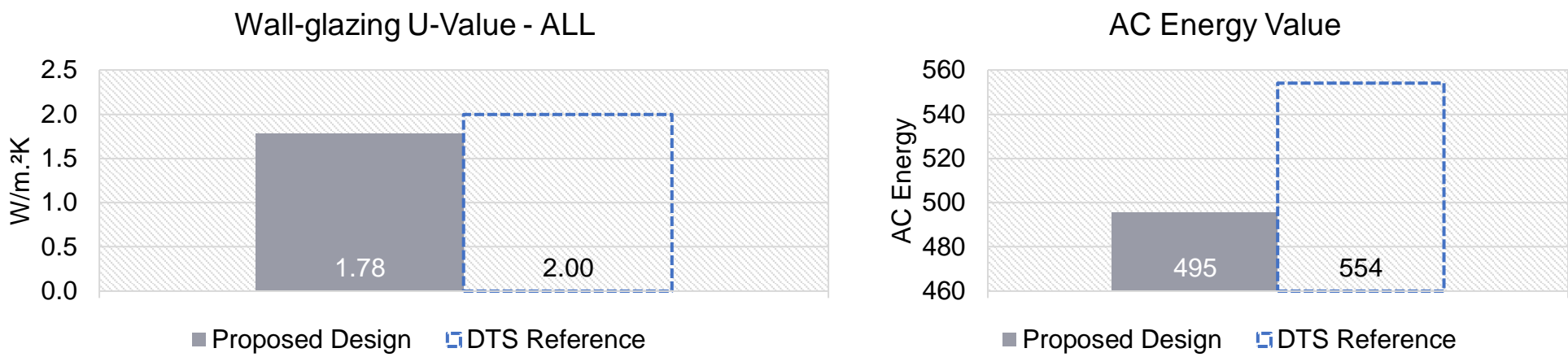
Compliant Solution =    
Non-Compliant Solution =  

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	1.52	1.63	2.02	1.93	1.78
Solar Admittance	0.10	0.11	0.16	0.13	
AC Energy Value					495

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	148.8	190	249.3	230.7
Glazing to Façade Ratio	25%	28%	40%	37%
Glazing References	DTS U4.0 SHGC0.51_1 DTS U4.0 SHGC0.51_2 DTS U4.0 SHGC0.51_3 DTS U4.0 SHGC0.51_4 DTS U4.0 SHGC0.51_5	DTS U4.0 SHGC0.51_1 DTS U4.0 SHGC0.51_2	DTS U4.0 SHGC0.51_1 DTS U4.0 SHGC0.51_2	DTS U4.0 SHGC0.51_1 DTS U4.0 SHGC0.51_2
Glazing System Types	0	0	0	0
Glass Types	0	0	0	0
Frame Types	0	0	0	0
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.51	0.51	0.51	0.51
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	456.35	488.5	377.5	391.8
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	DTS Wall	DTS Wall	DTS Wall	DTS Wall
Wall Thickness	0	0	0	0
Average Wall R-value (m².K/W)	1.40	1.40	1.40	1.40
Solar Absorptance				





Project Summary

Date  
27/11/2024

Name  
Meadowie HS

Company  
Arup

Position  
Consultant

Building Name / Address  
Block C  
0

Building State

NSW

Climate Zone  
Climate Zone 5 - Warm  
temperate

Building Classification

Class 9b - schools

Storeys Above Ground  
5

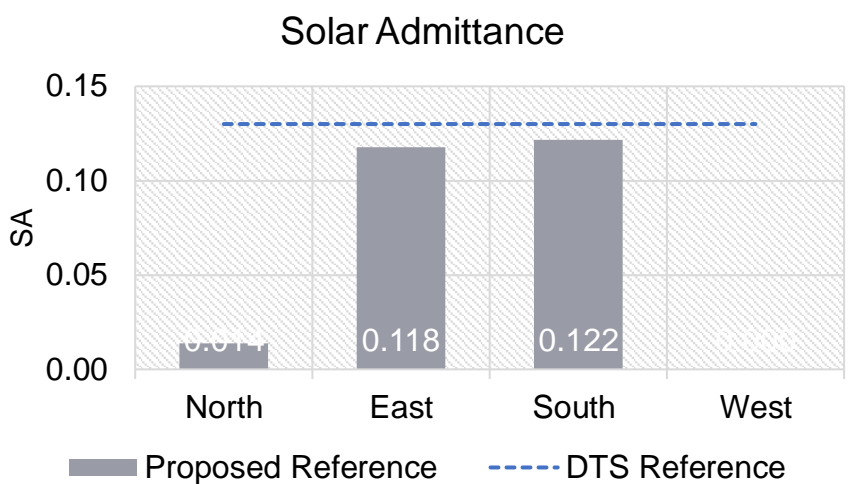
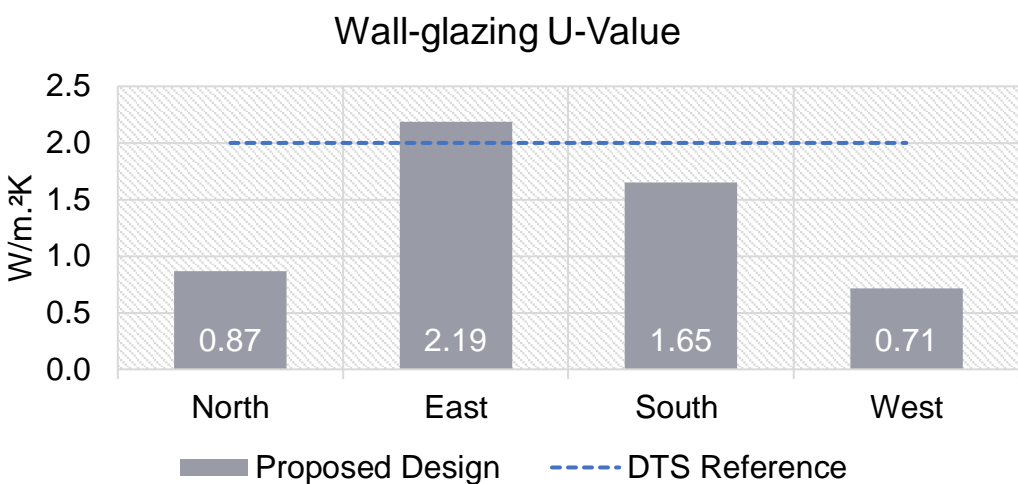
Tool Version  
1.2 (June 2020)

The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

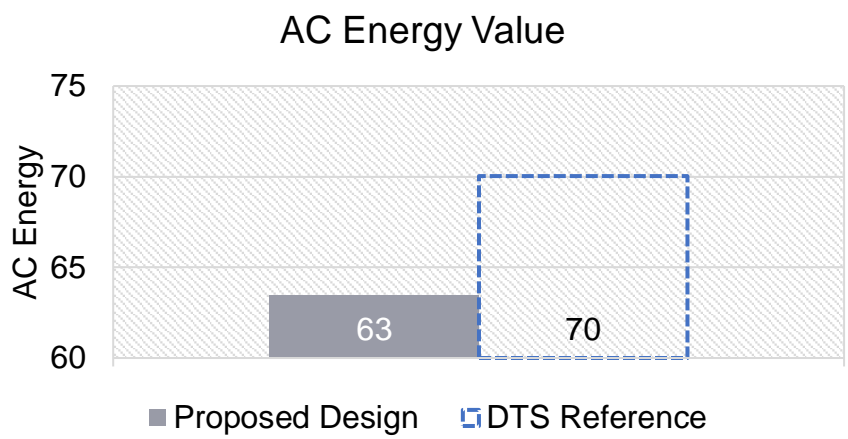
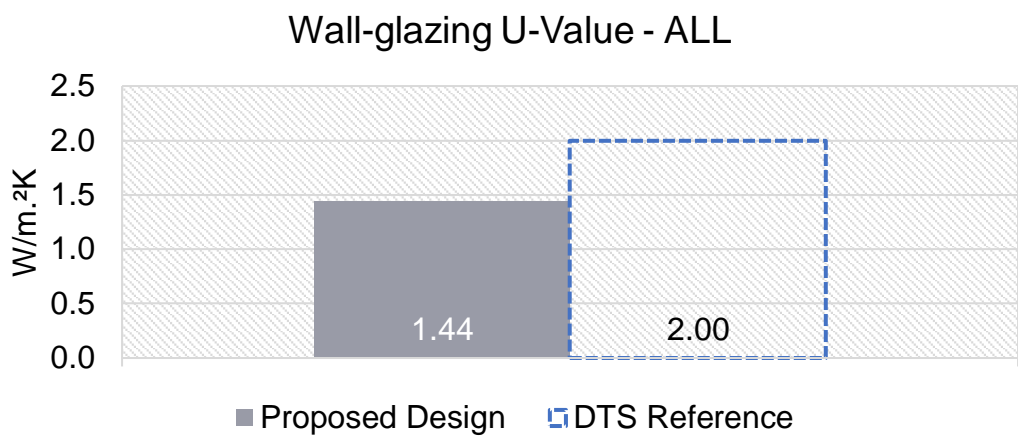
Compliant Solution =    
Non-Compliant Solution =  

	North	East	Method 1 South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	0.87	2.19	1.65	0.71	1.44
Solar Admittance	0.01	0.12	0.12		
AC Energy Value					63

Method 1



Method 2



Project Details

	North	East	South	West
Glazing Area (m²)	3.1	90.8	36.2	0
Glazing to Façade Ratio	3%	29%	18%	0%
Glazing References	DTS U5.8 SHGC.66_1	DTS U5.8 SHGC.66_1 DTS U5.8 SHGC.66_2	DTS U5.8 SHGC.66_1	
Glazing System Types	0	0	0	
Glass Types	0	0	0	
Frame Types	0	0	0	0
Average Glazing U-Value (W/m².K)	5.80	5.80	5.80	
Average Glazing SHGC	0.66	0.66	0.66	0.00
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	99.1	222.5	160.2	300.9
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	DTS Wall	DTS Wall	DTS Wall	DTS Wall
Wall Thickness	0	0	0	0
Average Wall R-value (m².K/W)	1.40	1.40	1.40	1.40
Solar Absorptance				