



ABN 48 612 666 172

Sydney | Brisbane | Melbourne

Level 23, 101 Miller St
North Sydney NSW 2060

PO Box 3
North Sydney NSW 2059
Ph (02) 94371000

21 July 2022

EPM Projects
Site 7.02, 67 Albert Avenue
Chatswood NSW 2067

Attention: **R. Aitken**

Dear Ryan,

NCC 2019 Section J Part J1 Statement of Compliance

SUBJECT PREMISE: Oxford Falls Grammar School Field of Dreams | 1078 Oxford Falls Rd, Oxford Falls NSW 2100

This NCC 2019 Section J Part J1 statement has been prepared to demonstrate design compliance of the proposed development of Oxford Falls Grammar School Field of Dreams located at, 1078 Oxford Falls Rd Oxford Falls, NSW 2100 against the requirements of the National Construction Code 2019 Volume One Amendment 1 Section J Part J1 Building Fabric.

Building Area Description	NCC Classification	Verification Method
Assembly Building	9b	JV3
Carpark	7a	N/A
Storage	7b	N/A

NCC Climate Zone: Zone 5

Architectural Drawings: Allen Jack + Cottier
Project No. : 18025 | Issue: 21.07.2022

Title	Drawing No	Revision
Ground Level Plan	REF201	5
Level 1 Plan	REF202	5
Roof Plan	REF203	5
Elevations – Sheet 1	REF311	5
Elevations – Sheet 2	REF312	5
Sections	REF321	5

As per the JV3 Verification Method Provisions of NCC 2019 Volume One Amendment 1, compliance with Part J1 can be met subject to the following specifications:

Building Fabric

Elements	Total Construction R-value
Roof/Exposed Ceiling Envelope	R3.7 (Downwards, Solar Absorptance no more than 0.80)
Envelope Walls	R1.4
Envelope Floors	No Requirement

Note: The impacts of the thermal bridge must be included in the total construction R-value calculations. The contractors must provide Total R-value Breakdown Calculations following AS/NZS 4859.2:2018, with thermal bridging allowance using NZS 4214:2006, confirming the as-built has met Section J requirements.

JV3 modelling results demonstrating compliance are attached as Attachment A. The tabulated PMV results demonstrating design compliance to the performance criteria are attached as Attachment B. Building fabric requirement markups showing insulation locations are attached as Attachment C.

Glazed Elements

Location	Window Assembly (Glass & Frame)		Description
	Total U-value	Total SHGC	
All external vertical glazing	6.0	0.60	Single Glazed Clear or the like

Note: contractor must also provide the Compliance Certificate or Performance Label in accordance with AS 2047:2014 from the glazing supplier confirming the thermal performance (Total U-value and Total SHGC) of all installed glazing has met Section J requirements.

JV3 modelling results demonstrating compliance are attached as Attachment A. The tabulated PMV results demonstrating design compliance to the performance criteria are attached as Attachment B.

JHA recommends any design changes to be reviewed and approved before documentation.

Additional Section J Compliance Notes

JHA recommend the following general construction requirements from Section J of the NCC2019 to be included to the architectural specification and drawings to ensure compliance.

Part J1 – Building Fabric

- J1.2 (a-e) Thermal Construction – general installation requirements for insulations



Full Name of Designer: Tarun Sebastian Thottungal
Qualifications: B.Arch, M.Arch Sci.
JHA
Address of Designer: Level 23, 101 Miller Street,
NORTH SYDNEY NSW 2060
Business Telephone No: (02) 9437 1000
Name of Employer: JHA

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Tarun Sebastian Thottungal'.

Tarun Sebastian Thottungal
Graduate Sustainability Consultant

* This report is prepared for the nominated recipient only and relates to the specific scope of work and agreement between JHA and the client (the recipient). It is not to be used or relied upon by any third party for any purpose.

Attachment A – JV3 Modelling Results:

Thermal modelling was undertaken using the modelling software, IES VE, to demonstrate compliance with the Performance Requirement for JP1, Section J NCC 2019, Volume One, Amendment 1. Energy simulation was conducted in accordance with NCC 2019, Volume One JV3 requirements and the calculation method of the ABCB Protocol.

Annual Greenhouse Gas Emission	(kgCO ₂ -e/m ² .annum)
Reference Building	92.68
Proposed Building JV3(a)(ii)	91.59

The Annual Greenhouse Gas Emission of the Proposed Building is less than the Annual Greenhouse Gas Emission of the Reference Building.

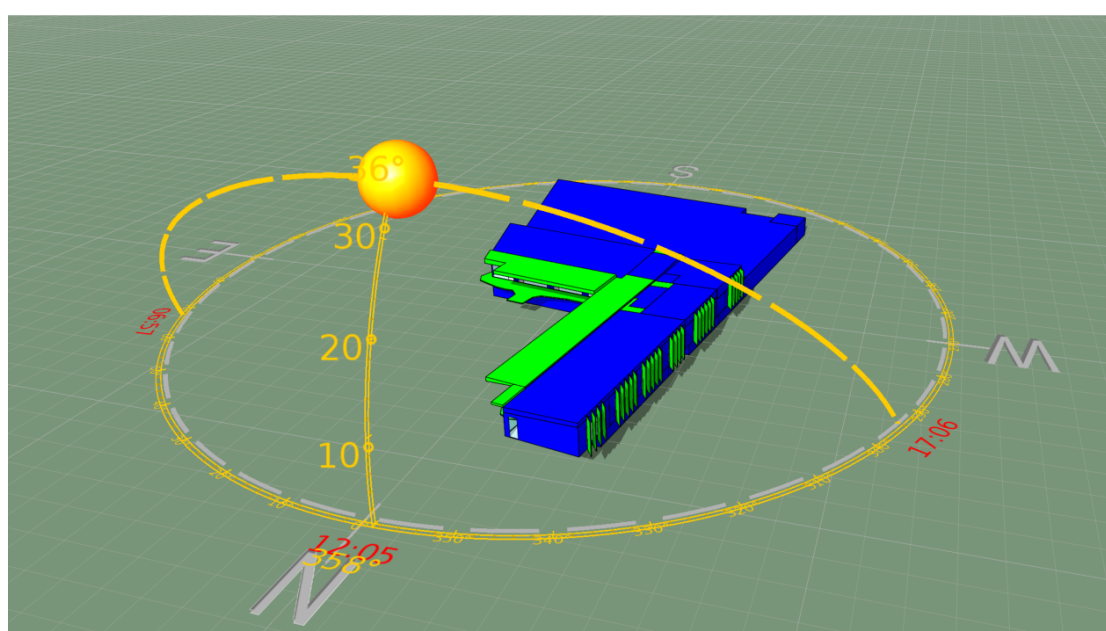
JV3 (a) (ii) requires that in the proposed building, a thermal comfort level of between a Predicted Mean Vote (PMV) of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building. The average percentage of occupied hours where a PMV of +/- 1 for each proposed block is shown below:

- Oxford Falls Grammar School Field of Dreams [Assembly Building] – 99.79 % of the occupied hours

The PMV modelling results demonstrate that the proposed blocks meet the above thermal comfort level requirement for 98% of occupied hours for individual zones.

Therefore, the Building Fabric and Glazing of the Proposed Buildings are compliant with JP1.

IES Models for Energy Simulation



MODELLING INPUTS

Elements (Total R-value)	Reference Building	Proposed Building
Roof/Exposed Ceiling Envelope	R3.7 (SA=0.45)	R3.7 (SA=0.80)
Envelope Walls	R1.4	R1.4
Envelope Floors	R2.0	No Requirement

GLAZING INPUTS

Level	Orientation	Reference Building		Proposed Building	
		Total U-value	Total SHGC	Total U-value	Total SHGC
Level 1	N	1.0	0.62	6.0	0.60
	E	1.0	0.62	6.0	0.60
	S	1.0	0.67	6.0	0.60
	W	1.0	0.66	6.0	0.60

PMV SPACE CONDITIONING SET POINTS

Summer

Period	Space	Set Point
December to February	Oxford Falls Grammar School Field of Dreams [Assembly Building]	24.0°C

Autumn

Period	Space	Set Point
March to May	Oxford Falls Grammar School Field of Dreams [Assembly Building]	22.5°C

Winter

Period	Space	Set Point
June to August	Oxford Falls Grammar School Field of Dreams [Assembly Building]	21.0°C

Spring

Period	Space	Set Point
September to November	Oxford Falls Grammar School Field of Dreams [Assembly Building]	22.5°C

PMV INPUT COMFORT PARAMETERS

Summer

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 0.67	Light clothing
Activity Level (MET)	MET – 1.2	Light work, standing, sitting, writing/typing, talking
Nominal Air Velocity (m/s)	As per ASHRAE Standard 55-2017	

Autumn

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 0.97	Medium clothing
Activity Level (MET)	MET – 1.2	Light work, standing, sitting, writing/typing, talking
Nominal Air Velocity (m/s)	As per ASHRAE Standard 55-2017	

Winter

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 1.27	Warm clothing
Activity Level (MET)	MET – 1.2	Light work, standing, sitting, writing/typing, talking
Nominal Air Velocity (m/s)	As per ASHRAE Standard 55-2017	

Spring

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 0.97	Medium clothing
Activity Level (MET)	MET – 1.2	Light work, standing, sitting, writing/typing, talking
Nominal Air Velocity (m/s)	As per ASHRAE Standard 55-2017	

Please note: All comfort parameters suffice "ASHRAE Standard 55-2017.

JV3 MODELLING RESULTS

Component	Calculated Annual Energy Consumption	
	Reference Building with DTS reference building fabric and services	JV3 (a)(ii) Building with proposed fabric and reference building services
Heating Energy	1.79 MWh	5.73 MWh
Cooling Energy	14.79 MWh	9.64 MWh
Lighting Energy	42.06 MWh	42.06 MWh
Equipment Energy	44.84 MWh	44.84 MWh
Total Energy	372.62 GJ	368.82 GJ
Total Conditioned Area	1029.18 m ²	
Greenhouse Gas Emission Factor	256 kgCO ₂ -e/GJ	
Annual Greenhouse Gas Emission	92.68 kgCO ₂ -e/m ² .annum	91.59 kgCO ₂ -e/m ² .annum

PMV MODELLING RESULTS

The tabulated PMV results demonstrating design compliance to the performance criteria are attached as Attachment B.

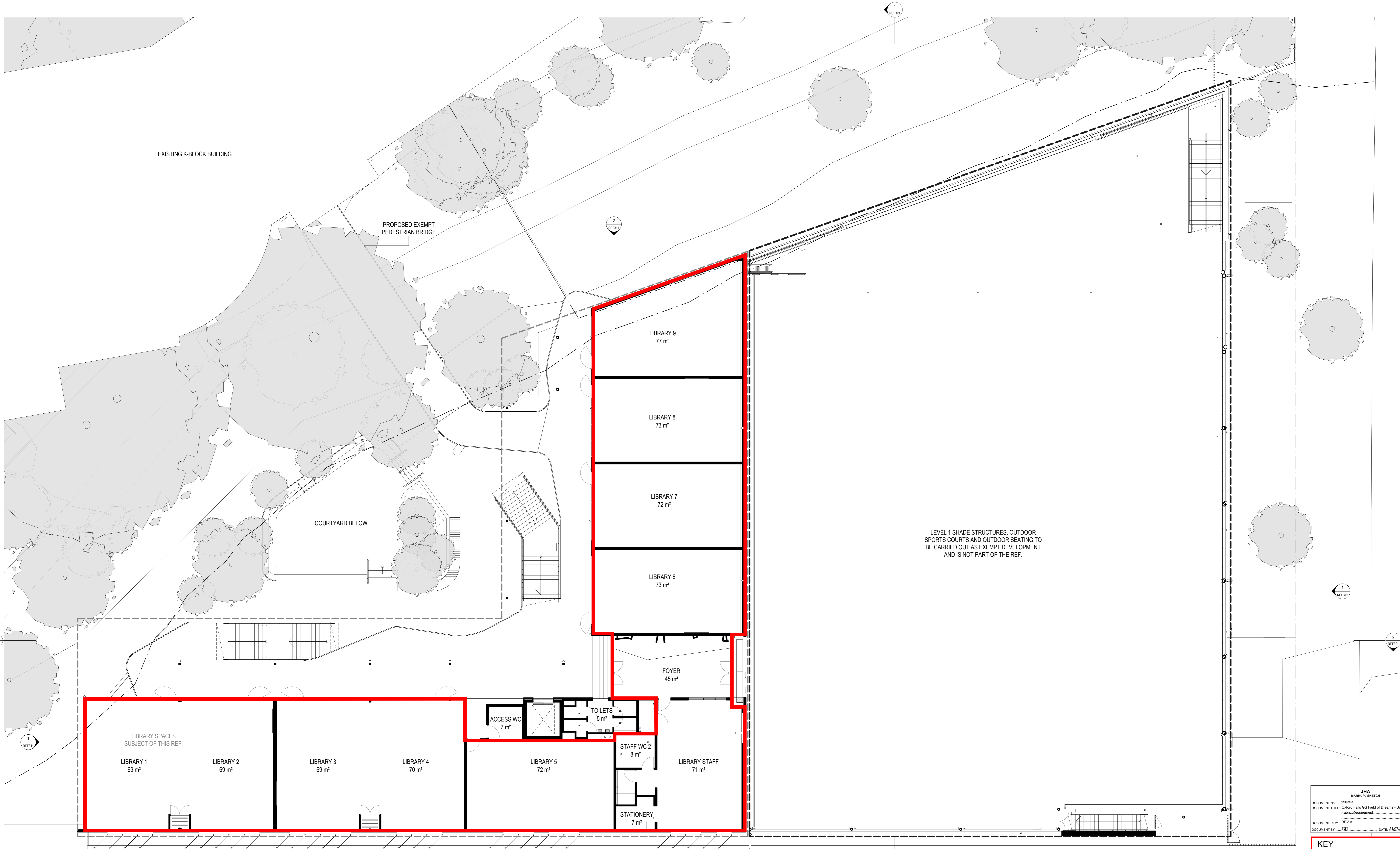


Attachment B – PMV Results

Predicted Mean Vote (% hours in range) - 190353 Oxford Falls GS Field of Dreams												
Period	Dec-Feb			Mar-May			Jun-Aug			Sep-Nov		
Location	< -1.0	-1.0 ≤ & ≥1.0	> 1.0	< -1.0	-1.0 ≤ & ≥1.0	> 1.0	< -1.0	-1.0 ≤ & ≥1.0	> 1.0	< -1.0	-1.0 ≤ & ≥1.0	> 1.0
CLO	0.67			0.97			1.27			0.97		
MET	70			70			70			70		
Air Speed	0.15			0.15			0.15			0.15		
Temp	24.0C			22.5C			21.0C			22.5C		
GF_Conditioned_Air Lock	0	100	0	0	100	0	0.2	99.8	0	0	100	0
GF_Conditioned_Cleaner	0	100	0	0	100	0	0.2	99.8	0	0	100	0
GF_Conditioned_Male Change	0	100	0	0	100	0	0	100	0	0	100	0
GF_Conditioned_Air Lock	0	100	0	0	100	0	0.7	99.3	0	0	100	0
GF_Conditioned_Female Change	0	100	0	0	100	0	1.2	98.8	0	0	100	0
Level 1_Conditioned_Staff WC 2	0	100	0	0	100	0	0	100	0	0	100	0
Level 1_Conditioned_Staff WC 1	0	100	0	0	100	0	0	100	0	0	100	0
Level 1_Conditioned_Library Staff	0	100	0	0	100	0	0.4	99.6	0	0	100	0
Level 1_Conditioned_Stationary	0	100	0	0	100	0	0.3	99.7	0	0	100	0
Level 1_Conditioned_Foyer	0	100	0	0	100	0	1.8	98.2	0	0	100	0
Level 1_Conditioned_Library 6	0	100	0	0	100	0	0.4	99.6	0	0	100	0
Level 1_Conditioned_Library 7	0	100	0	0	100	0	0.1	99.9	0	0	100	0
Level 1_Conditioned_Library 9	0	100	0	0	100	0	0.4	99.6	0	0	100	0
Level 1_Conditioned_Library 8	0	100	0	0	100	0	0.1	99.9	0	0	100	0
Level 1_Conditioned_Library 2	0	100	0	0	100	0	1	99	0	0	100	0
Level 1_Conditioned_Library 1	0	100	0	0	100	0	6.6	93.4	0	0	100	0
Level 1_Conditioned_Library 4	0	100	0	0	100	0	0.9	99.1	0	0	100	0
Level 1_Conditioned_Library 3	0	100	0	0	100	0	0.4	99.6	0	0	100	0
Level 1_Conditioned_Library 5	0	100	0	0	100	0	1.1	98.9	0	0	100	0
Average	0.00	100.00	0.00	0.00	100.00	0.00	0.83	99.17	0.00	0.00	100.00	0.00



Attachment C – Building Fabric Requirement Markups



JHA	
MARKUP / SKETCH	
DOCUMENT No.:	190393
DOCUMENT TITLE:	Oxford Falls GS Field of Dreams - Building Fabric Requirement
DOCUMENT REV:	REV A
DOCUMENT BY:	TST
DATE:	21/07/2022

KEY

ROOF/ EXPOSED CEILING ENVELOPE - R3.7 (DOWNWARDS, SOLAR ABSORPTANCE NO MORE THAN 0.80)

ENVELOPE WALLS - R1.4

Note: The above construction are only to be applied to the non-glazed portions of the envelope. glazing must be installed as per the architectural layouts with its thermal performances pursuant to the respective glazing specifications stated in the Section J report (Total Systems U-Value, and Total Systems SHGC value).

Revisions	No.	Date	Description	Checked	Approved
3	02.03.21		REVISED REF SIGN ISSUED FOR APPROVAL		
4	29.06.22		REVISED REF ISSUED FOR APPROVAL		
5	21.07.22		REF DRAWINGS UPDATED		



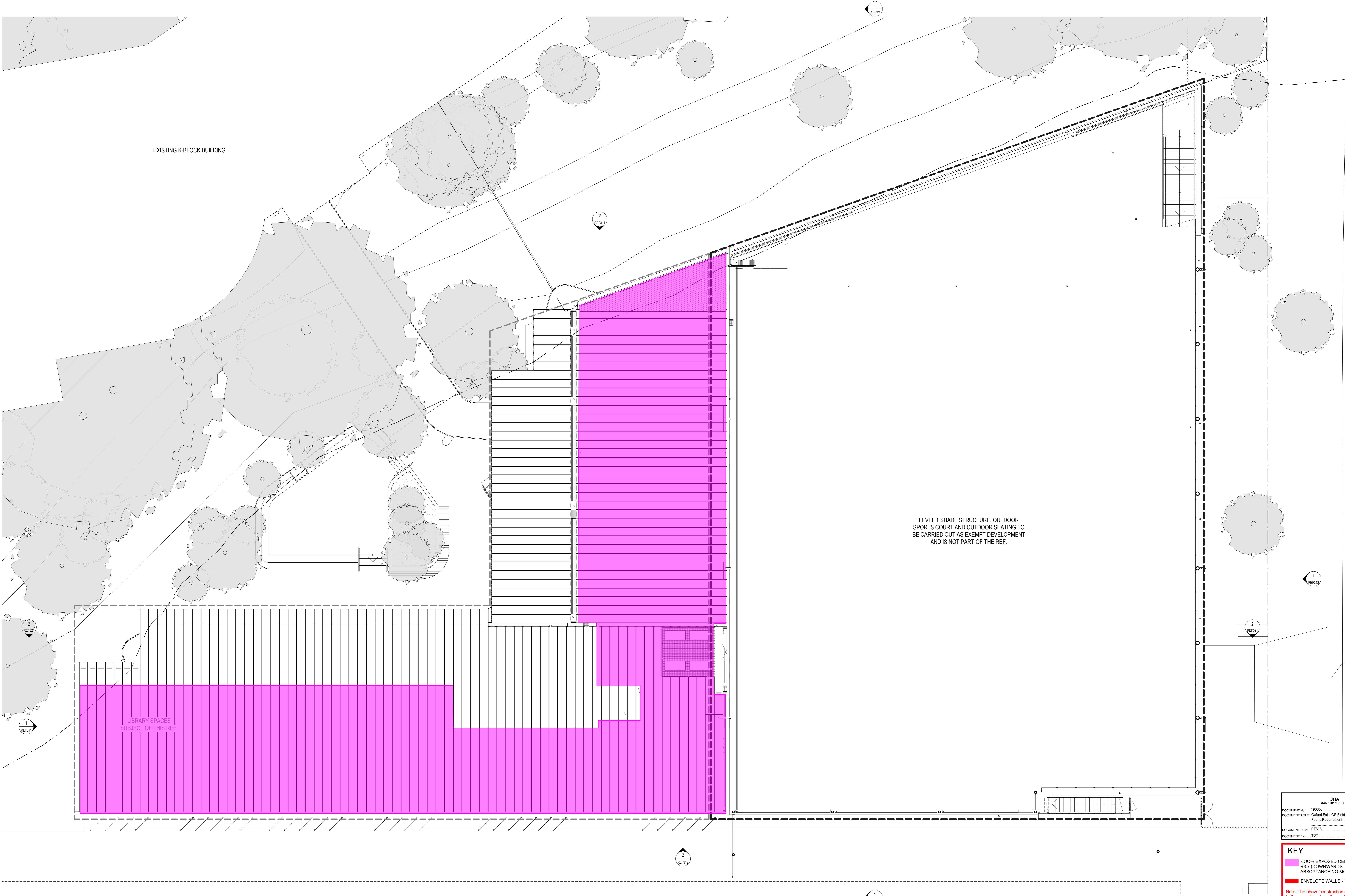
AJ+C
ALLIN JACK+COTTER
79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 6511 8222 fr +61 2 9311 8200
ABN 53 063 732 250

Project:
OFGS - CARPARK
1078 OXFORD FALLS ROAD
OXFORD FALLS, NSW 2100
Proj. No. 18025

Drawing Title:
LEVEL 1 PLAN
FOR REF

Scale:
1 : 100 @A0 REF202

Issue:
5



JHA
MARKUP / SKETCH

JHA

DOCUMENT No.: 190353

DOCUMENT TITLE: Oxford Falls GS Field of Dreams - Building Fabric Requirement

DOCUMENT REV: REV A

DOCUMENT BY: TST DATE: 21/07/2022

KEY

ROOF/ EXPOSED CEILING ENVELOPE - R3.7 (DOWNWARDS, SOLAR ABSORPTANCE NO MORE THAN 0.80)

ENVELOPE WALLS - R1.4

Note: The above construction are only to be applied to the non-glazed portions of the envelope; glazing must be installed as per the architectural layouts with its thermal performances pursuant to the respective glazing specifications stated in the Section J report (Total Systems U-value, and Total Systems SHGC value).