JHA

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6 January 2021

Pact PM
Level 2 41 McLaren Street
North Sydney NSW 2060

Attention: B. Williams

Dear Byron,

NCC 2019 Section J Part J1 Statement of Compliance

SUBJECT PREMISE: Opal RACF, St Clair | 94-100 Explorers Way, St Clair NSW 2759

This NCC 2019 Section J Part J1 statement has been prepared to demonstrate design compliance of the proposed Opal RACF, St Clair development located at 94-100 Explorers Way, St Clair NSW 2759 against the requirements of the National Construction Code 2019 Volume One, Amendment 1 Section J Part J1 Building Fabric.

NCC Climate Zone	Zone 6
NCC Building Classification & Use	Class 9c
Architectural Drawings	Custance Project No. 3362 A2000 [A] General Arrangement Plan – Ground Level A2010 [A] General Arrangement Plan – Level 1 A2020 [A] General Arrangement Plan – Roof Plan Revit Model received on 23/11/2020

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	R3.2 (Downwards, Solar absorptance no more than 0.70)
External envelope walls	R2.8
Internal envelope walls	R2.8
Envelope floors	R2.0 (Downwards)

Note: The impacts of thermal bridge must be included in the total construction R-value calculations.

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	3.4	0.30	Double Glazed Neutral/Tinted or the like

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:	Gary Tang
Qualifications:	B.Eng, M.Eng.Sc
Address of Designer:	JHA Level 23, 101 Miller Street, NORTH SYDNEY NSW 2060
Business Telephone No:	(02) 9437 1000
Name of Employer:	JHA

Yours sincerely,

Gary Tang
Sustainability Engineer

* 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 the 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, Amendment 1, JV3 requirements and the calculation method of the ABCB Protocol.

Annual Greenhouse Gas Emission	(kgCO2-e/m2.annum)
Reference Building	107.293
Proposed Building JV3(a)(ii)	107.290

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

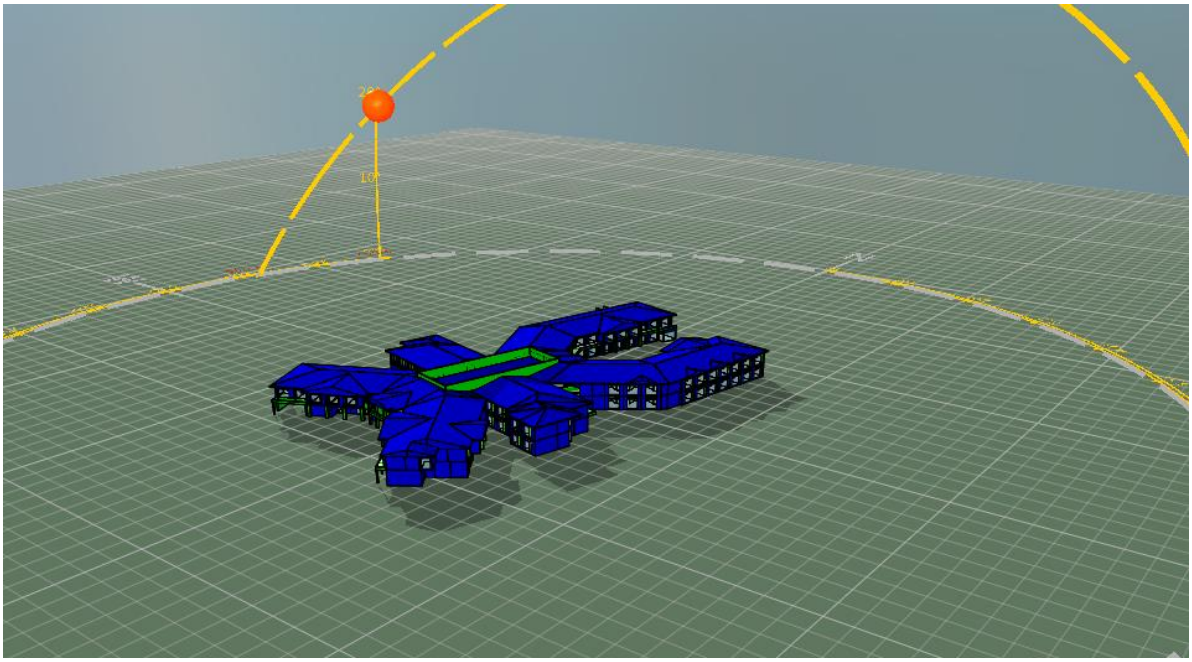
JV3 (a) (ii) requires that in the proposed building, a thermal comfort level of between a Predicted Mean Vote (PMV) of -1 to +1 is achieved across not less than 95% of the floor area of all occupied zones for not less than 98% of the annual hours of operation of the building. The average percentage of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

- Opal RACF, St Clair – **99.47 %** 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 Building is compliant with JP1.

IES Models for Energy Simulation



MODELLING INPUTS

Elements (Total R-value)	Reference Building	Proposed Building
Roof/exposed ceiling envelope	R3.2 (SA=0.45)	R3.2 (SA=0.70)
External envelope walls	R2.8	R2.8
Internal envelope walls	R2.8	R2.8
Envelope floors	R2.0	R2.0

GLAZING INPUTS

Elements	Orientation	Reference Building		Proposed Building
		Total U-value	Total SHGC	
External vertical glazing	N	3.0	0.23	All External Vertical Glazing U-value=3.4 & SHGC=0.30
	E	2.3	0.35	
	S	3.2	0.10	
	W	2.8	0.40	

PMV SPACE CONDITIONING SET POINTS

Summer

Period	Conditioned Spaces	Set Point
Dec to Feb	Opal RACF, St Clair	23.0°C

Autumn

Period	Learning Spaces	Set Point
Mar to May	Opal RACF, St Clair	22.0°C

Winter

Period	Learning Spaces	Set Point
Jun to Aug	Opal RACF, St Clair	21.0°C

Spring

Period	Learning Spaces	Set Point
Sep to Nov	Opal RACF, St Clair	22.0°C

PMV INPUT COMFORT PARAMETERS

Summer

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 0.67	Light clothing
Activity Level (MET)	MET – 1.1	Seated, reading, relaxed
Nominal Air Velocity (m/s)	0.15 (m/s)	-

Autumn

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 0.97	Warm clothing
Activity Level (MET)	MET – 1.1	Seated, reading, relaxed
Nominal Air Velocity (m/s)	0.15 (m/s)	-

Winter

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 1.27	Winter clothing
Activity Level (MET)	MET – 1.1	Seated, reading, relaxed
Nominal Air Velocity (m/s)	0.15 (m/s)	-

Spring

Comfort Parameters	Input Values	Description
Clothing Level (CLO)	CLO – 0.97	Warm clothing
Activity Level (MET)	MET – 1.1	Seated, reading, relaxed
Nominal Air Velocity (m/s)	0.15 (m/s)	-

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	2.22 MWh	3.31 MWh
Cooling Energy	97.34 MWh	96.23 MWh
Lighting Energy	97.63 MWh	97.63 MWh
Equipment Energy	646.32 MWh	646.32 MWh
Total Energy	3036.65 GJ	3036.56 GJ
Total Conditioned Area	7245.39 m2	
Greenhouse Gas Emission Factor	256 kgCO2-e/GJ	
Annual Greenhouse Gas Emission	107.293 kgCO2-e/m2.annum	107.290 kgCO2-e/m2.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) - 200098 Opal RACF St Clair												
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	60			60			60			60		
Air Speed	0.15			0.15			0.15			0.15		
Temp	23.0C			22.0C			21.0C			22.0C		
ACC.WC	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3
ACC.WC	0	99.1	0.9	0	99.7	0.3	0	100	0	0	99.5	0.5
Activities	0	98.2	1.8	0	99.5	0.5	0	100	0	0	99	1
Activities	0	100	0	0	100	0	0	100	0	0	100	0
Activities	0	99.9	0.1	0	100	0	0	100	0	0	99.9	0.1
Activities	0	98.6	1.4	0	100	0	0	100	0	0	99.2	0.8
Activities	0	99.6	0.4	0	100	0	0	100	0	0	99.9	0.1
Air Lock	0	100	0	0	100	0	0	100	0	0	100	0
Air Lock	0	100	0	0	100	0	0	100	0	0	100	0
Air Lock	0	100	0	0	100	0	0	100	0	0	100	0
Air Lock	0.2	88.3	11.5	0	96.7	3.3	0	100	0	0.3	95.5	4.3
AMB.WC	0	100	0	0	100	0	0	100	0	0	100	0
AMB.WC	0	100	0	0	100	0	0	100	0	0	100	0
AMB.WC	0	100	0	0	100	0	0	100	0	0	100	0
AMB.WC	0	100	0	0	100	0	0	100	0	0	100	0
AMB.WC	0	100	0	0	100	0	0	100	0	0	100	0
Archives	0	100	0	0	100	0	0	100	0	0	100	0
Audio	0	100	0	0	100	0	0	100	0	0	100	0
Audio	0	98.1	1.9	0	99.8	0.2	0	100	0	0	98.9	1.1
Audio	0	100	0	0	100	0	0	100	0	0	100	0
Audio	0	100	0	0	100	0	0	100	0	0	100	0
Audio WA	0	82.1	17.9	0	91.6	8.4	0	99.9	0.1	0	91.1	8.9
Bed	0	98.2	1.8	0	99.7	0.3	0	100	0	0	98.8	1.2
Bed	0	98.2	1.8	0	99.7	0.3	0	100	0	0	98.8	1.2
Bed	0	98.7	1.3	0	99.9	0.1	0	100	0	0	99.2	0.8
Bed	0	99.3	0.7	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.7	0.3	0	100	0	0	100	0	0	99.7	0.3
Bed	0	99.7	0.3	0	100	0	0	100	0	0	99.6	0.4
Bed	0	96.8	3.2	0	99.3	0.7	0	100	0	0	98.6	1.4
Bed	0	98.6	1.4	0	99.9	0.1	0	100	0	0	99.1	0.9
Bed	0	93.9	6.1	0	98.7	1.3	0	100	0	0	98.3	1.7
Bed	0	93.9	6.1	0	98.8	1.2	0	100	0	0	98.2	1.8
Bed	0	94	6	0	98.7	1.3	0	100	0	0	98.2	1.8
Bed	0	94.6	5.4	0	98.9	1.1	0	100	0	0	98.5	1.5
Bed	0	93.9	6.1	0	98.6	1.4	0	100	0	0	98.3	1.7
Bed	0	94.5	5.5	0	98.8	1.2	0	100	0	0	98.5	1.5
Bed	0	96.8	3.2	0	99.3	0.7	0	100	0	0	98.9	1.1
Bed	0	94.7	5.3	0	98.9	1.1	0	100	0	0	98.5	1.5
Bed	0	93.8	6.2	0	98.5	1.5	0	100	0	0	98.2	1.8
Bed	0	95.8	4.2	0	99.2	0.8	0	100	0	0	98.8	1.2
Bed	0	91.9	8.1	0	97.7	2.3	0	100	0	0	97.7	2.3
Bed	0	94.7	5.3	0	98.9	1.1	0	100	0	0	98.5	1.5
Bed	0	94.1	5.9	0	98.8	1.2	0	100	0	0	98.3	1.7
Bed	0	95.1	4.9	0	99	1	0	100	0	0	98.4	1.6
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.6	0.4
Bed	0	96.1	3.9	0	99.3	0.7	0	100	0	0	98.8	1.2
Bed	0	98.4	1.6	0	99.9	0.1	0	100	0	0	99	1
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.1	0.9	0	100	0	0	100	0	0	99.3	0.7
Bed	0	96.3	3.7	0	99.2	0.8	0	100	0	0	98.6	1.4
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.7	0.3	0	100	0	0	100	0	0	99.6	0.4
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.6	0.4
Bed	0	96.6	3.4	0	99.3	0.7	0	100	0	0	98.9	1.1
Bed	0	96.3	3.7	0	99.3	0.7	0	100	0	0	98.8	1.2
Bed	0	96.1	3.9	0	99.2	0.8	0	100	0	0	98.6	1.4
Bed	0	93.2	6.8	0	98.4	1.6	0	100	0	0	97.9	2.1
Bed	0	94.1	5.9	0	98.8	1.2	0	100	0	0	98.2	1.8
Bed	0	94.9	5.1	0	99	1	0	100	0	0	98.3	1.7
Bed	0	97.6	2.4	0	99.5	0.5	0	100	0	0	98.9	1.1
Bed	0	97.2	2.8	0	99.4	0.6	0	100	0	0	98.9	1.1
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
Bed	0	99.9	0.1	0	100	0	0	100	0	0	99.9	0.1
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.3	0.7
Bed	0	98.2	1.8	0	99.7	0.3	0	100	0	0	98.8	1.2
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.9	0.1
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.9	0.1
Bed	0	94	6	0	98.8	1.2	0	100	0	0	98.3	1.7
Bed	0	94.4	5.6	0	98.6	1.4	0	100	0	0	98.3	1.7
Bed	0	96	4	0	99.2	0.8	0	100	0	0	98.8	1.2
Bed	0	96.3	3.7	0	99.3	0.7	0	100	0	0	98.8	1.2
Bed	0	96.1	3.9	0	99.2	0.8	0	100	0	0	98.8	1.2
Bed	0	95.2	4.8	0	98.9	1.1	0	100	0	0	98.4	1.6
Bed	0	95.4	4.6	0	98.9	1.1	0	100	0	0	98.4	1.6
Bed	0	93.1	6.9	0	98.5	1.5	0	100	0	0	98.2	1.8
Bed	0	92.6	7.4	0	98.2	1.8	0	100	0	0	98	2
Bed	0	92.5	7.5	0	98.1	1.9	0	100	0	0	98	2
Bed	0	92.5	7.5	0	98.1	1.9	0	100	0	0	98	2
Bed	0	92.4	7.6	0	98	2	0	100	0	0	98	2
Bed	0	92.5	7.5	0	98	2	0	100	0	0	98	2
Bed	0	98.2	1.8	0	99.7	0.3	0	100	0	0	98.8	1.2
Bed	0	94.8	5.2	0	99	1	0	100	0	0	98.6	1.4

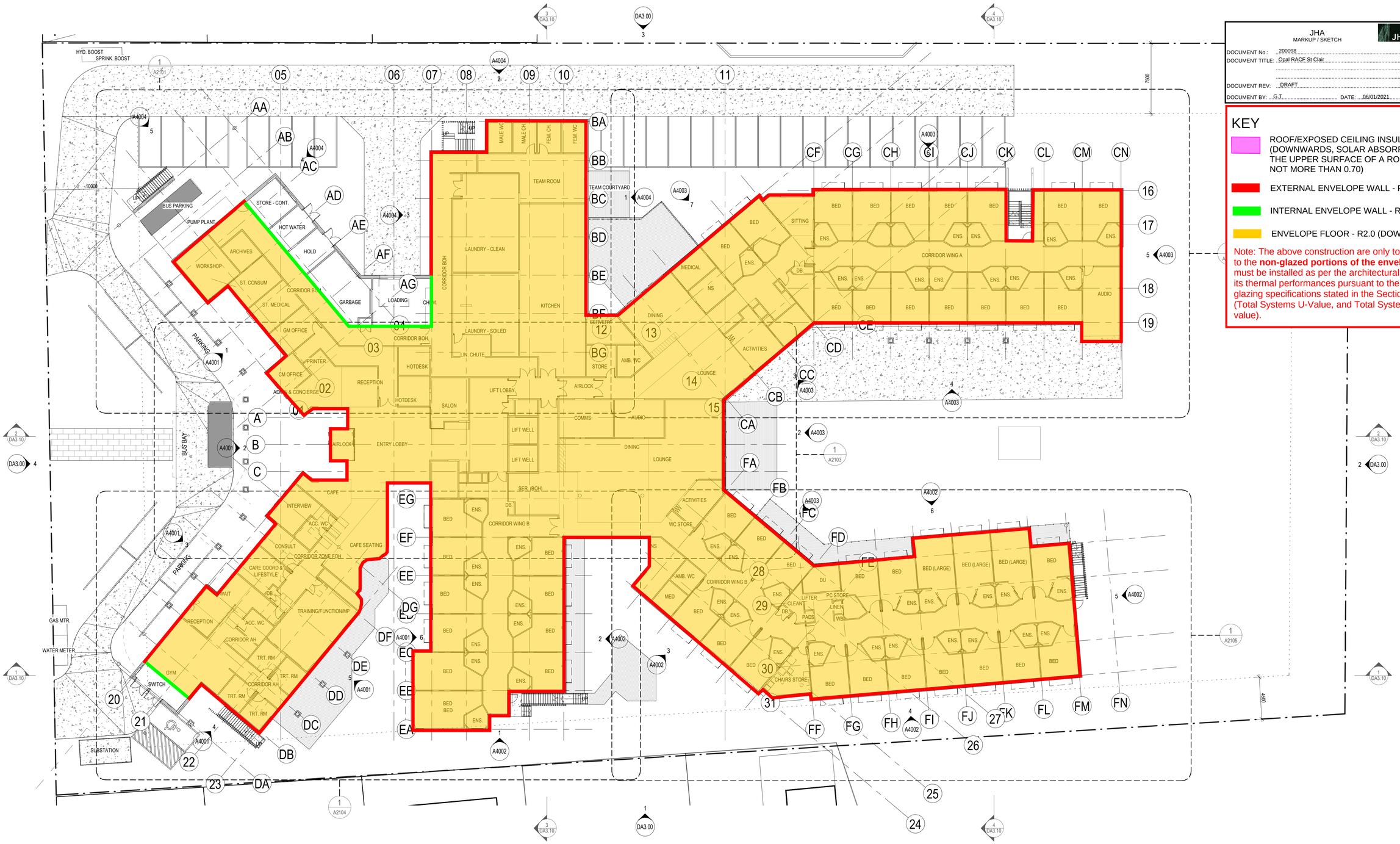
Bed	0	93.6	6.4	0	98.8	1.2	0	100	0	0	98.4	1.6
Bed	0	95.8	4.2	0	99.4	0.6	0	100	0	0	98.7	1.3
Bed	0	95.3	4.7	0	98.9	1.1	0	100	0	0	98.4	1.6
Bed	0	98.6	1.4	0	99.9	0.1	0	100	0	0	99.2	0.8
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.4	0.6
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.4	0.6
Bed	0	94.8	5.2	0	98.8	1.2	0	100	0	0	98.6	1.4
Bed	0	99.9	0.1	0	100	0	0	100	0	0	100	0
Bed	0	95.1	4.9	0	98.9	1.1	0	100	0	0	98.4	1.6
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.4	0.6
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.6	0.4
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
Bed	0	97.4	2.6	0	98.4	1.6	0	100	0	0	98.5	1.5
Bed	0	98.7	1.3	0	99.1	0.9	0	100	0	0	99	1
Bed	0	98.3	1.7	0	99.1	0.9	0	100	0	0	98.9	1.1
Bed	0	98.1	1.9	0	99	1	0	100	0	0	98.9	1.1
Bed	0	98.4	1.6	0	99.4	0.6	0	100	0	0	99	1
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.3	0.7
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.4	0.6
Bed	0	99.2	0.8	0	100	0	0	100	0	0	99.4	0.6
Bed	0	98.9	1.1	0	99.9	0.1	0	100	0	0	99.3	0.7
Bed	0	99.3	0.7	0	100	0	0	100	0	0	99.5	0.5
Bed	0	98.2	1.8	0	99.7	0.3	0	100	0	0	99	1
Bed	0	98.1	1.9	0	99.6	0.4	0	100	0	0	99	1
Bed	0	99.3	0.7	0	100	0	0	100	0	0	99.5	0.5
Bed	0	96.8	3.2	0	99.4	0.6	0	100	0	0	98.8	1.2
Bed	0	93.2	6.8	0	98.6	1.4	0.2	99.8	0	0	98.2	1.8
Bed	0	96.8	3.2	0	97.1	2.9	0	99.9	0.1	0	98.6	1.4
Bed	0	92.7	7.3	0	94.7	5.3	0	99.5	0.5	0	97	3
Bed	0	99.1	0.9	0	99.3	0.7	0	100	0	0	99.3	0.7
Bed	0	99.3	0.7	0	99.3	0.7	0	100	0	0	99.5	0.5
Bed	0	99.3	0.7	0	99.3	0.7	0	100	0	0	99.5	0.5
Bed	0	99.5	0.5	0	99.6	0.4	0	100	0	0	99.5	0.5
Bed	0	99.8	0.2	0	100	0	0	100	0	0	99.9	0.1
Bed	0	99.7	0.3	0	100	0	0	100	0	0	99.9	0.1
Bed	0	99.8	0.2	0	100	0	0	100	0	0	99.9	0.1
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.9	0.1	0	100	0	0	100	0	0	99.9	0.1
Bed	0	99.6	0.4	0	99.9	0.1	0	100	0	0	99.9	0.1
Bed	0	99.3	0.7	0	99.2	0.8	0	100	0	0	99.4	0.6
Bed	0	99.2	0.8	0	98.8	1.2	0	100	0	0	99.3	0.7
Bed	0	99.2	0.8	0	98.6	1.4	0	100	0	0	99.3	0.7
Bed	0	99.3	0.7	0	99.8	0.2	0	100	0	0	99.5	0.5
Bed	0	99.2	0.8	0	98.5	1.5	0	100	0	0	99.1	0.9
Bed	0	99.2	0.8	0	98.8	1.2	0	100	0	0	99.2	0.8
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.5	0.5
Bed	0	99.4	0.6	0	100	0	0	100	0	0	99.4	0.6
Bed	0	98.9	1.1	0	99.8	0.2	0	100	0	0	99.3	0.7
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3
Bed	0	98	2	0	99.6	0.4	0	100	0	0	98.8	1.2
Bed	0	98.1	1.9	0	99.7	0.3	0	100	0	0	98.8	1.2
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3
Bed	0	99.6	0.4	0	100	0	0	100	0	0	99.5	0.5
Bed	0	98.7	1.3	0	99.8	0.2	0	100	0	0	99	1
Bed	0	92.3	7.7	0	97.4	2.6	0	100	0	0	97.7	2.3
Cafe	0	93.7	6.3	0	98.7	1.3	0	100	0	0	97.8	2.2
Cafe Seating	0	91.9	8.1	0	97.7	2.3	0	100	0	0	97.2	2.8
Cafe Seating	0	100	0	0	100	0	0	100	0	0	100	0
Care Coord & Lifestyle	0	95	5	0	98.9	1.1	0	100	0	0	98.5	1.5
Chairs Store	0	100	0	0	100	0	0	100	0	0	100	0
Chairs Store	0	99.2	0.8	0	99.8	0.2	0	100	0	0	99.5	0.5
Clean	0	100	0	0	100	0	0	100	0	0	100	0
Clean	0	100	0	0	100	0	0	100	0	0	100	0
Clean	0	99.9	0.1	0	100	0	0	100	0	0	100	0
Clean	0	100	0	0	100	0	0	100	0	0	100	0
CM Office	0	95	5	0	99	1	0	100	0	0	98.3	1.7
Comms	0	100	0	0	100	0	0	100	0	0	100	0
Comms	0	100	0	0	100	0	0	100	0	0	100	0
Consult	0	95.5	4.5	0	99	1	0	100	0	0	98.6	1.4
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor	0	100	0	0	100	0	0	100	0	0	100	0
Corridor AH	0	96.2	3.8	0	99.2	0.8	0	100	0	0	98.8	1.2
Corridor AH	0	90.6	9.4	0	97.1	2.9	0	100	0	0	97.2	2.8
Corridor BOH	0	100	0	0	100	0	0	100	0	0	100	0
Corridor BOH	0	100	0	0	100	0	0	100	0	0	100	0
Corridor BOH	0	100	0	0	100	0	0	100	0	0	100	0
Corridor FOH	0	99.2	0.8	0	99.8	0.2	0	100	0	0	99.5	0.5
Corridor Wing A	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing A	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Wing B	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Zone K	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Zone K	0	100	0	0	100	0	0	100	0	0	100	0
[illegible]	0	100	0	0	100	0	0	100	0	0	100	0

Corridor Zone K	0	100	0	0	100	0	0	100	0	0	100	0
Corridor Zone K	0	100	0	0	100	0	0	100	0	0	100	0
DB.	0	100	0	0	100	0	0	100	0	0	100	0
Dining	0	99.8	0.2	0	100	0	0	100	0	0	99.9	0.1
Dining	0	100	0	0	100	0	0	100	0	0	100	0
Dining	0	100	0	0	100	0	0	100	0	0	100	0
Dining	0	99.8	0.2	0	100	0	0	100	0	0	99.9	0.1
Dining	0	97.1	2.9	0	99.4	0.6	0	100	0	0	98.9	1.1
DU	0	100	0	0	100	0	0	100	0	0	100	0
DU	0	100	0	0	100	0	0	100	0	0	100	0
DU	0	100	0	0	100	0	0	100	0	0	100	0
DU	0	99.9	0.1	0	100	0	0	100	0	0	100	0
DU	0	100	0	0	100	0	0	100	0	0	100	0
DU	0	99.9	0.1	0	100	0	0	100	0	0	100	0
DU	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.7	0.3	0	99.9	0.1	0	100	0	0	99.9	0.1
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	97.1	2.9	0	99.3	0.7	0	100	0	0	99	1
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.1	0.9	0	99.7	0.3	0	100	0	0	99.4	0.6
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.5	0.5	0	100	0	0	100	0	0	99.6	0.4
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	99.8	0.2	0	100	0	0	100	0	0	99.7	0.3
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0

ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	99.9	0.1
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	99.9	0.1	0	100	0	0	100	0	0	100	0
ENS.	0	100	0	0	100	0	0	100	0	0	100	0
Entry Lobby	0	100	0	0	100	0	0	100	0	0	100	0
GM Office	0	99.9	0.1	0	100	0	0	100	0	0	100	0
GYM	0	90.7	9.3	0	97.6	2.4	0	100	0	0	97.5	2.5
Hot Desk	0	100	0	0	100	0	0	100	0	0	100	0
Hot Desk	0	100	0	0	100	0	0	100	0	0	100	0
Interview	0	94.6	5.4	0	99	1	0	100	0	0	98.2	1.8
Kitchen	0	99.2	0.8	0	99.6	0.4	0	100	0	0	99.4	0.6
Laundry - Clean	0	100	0	0	100	0	0	100	0	0	100	0
Laundry - Soiled	0	100	0	0	100	0	0	100	0	0	100	0
Lift Lobby	0	100	0	0	100	0	0	100	0	0	100	0
Lift Lobby	0	100	0	0	100	0	0	100	0	0	100	0
Lift Well	0	100	0	0	100	0	0	100	0	0	100	0
Lift Well	0	100	0	0	100	0	0	100	0	0	100	0
Lounge	0	100	0	0	100	0	0	100	0	0	100	0
Lounge	0	100	0	0	100	0	0	100	0	0	100	0
Lounge	0	100	0	0	100	0	0	100	0	0	100	0
Lounge	0	100	0	0	100	0	0	100	0	0	100	0
Lounge	0	96.8	3.2	0	99.2	0.8	0	100	0	0	98.5	1.5
Medical	0	100	0	0	100	0	0	100	0	0	100	0
Medical	0	99.2	0.8	0	99.8	0.2	0	100	0	0	99.6	0.4
Medical	0	100	0	0	100	0	0	100	0	0	100	0
Medical	0	99.6	0.4	0	100	0	0	100	0	0	99.8	0.2
Medical	0	100	0	0	100	0	0	100	0	0	100	0
NS	0	99.9	0.1	0	100	0	0	100	0	0	100	0
NS	0	100	0	0	100	0	0	100	0	0	100	0
NS	0	100	0	0	100	0	0	100	0	0	100	0
NS	0	99.9	0.1	0	100	0	0	100	0	0	100	0
NS	0	100	0	0	100	0	0	100	0	0	100	0
Reception	0	98.2	1.8	0	99.6	0.4	0	100	0	0	99	1
Reception	0	88.1	11.9	0	96.2	3.8	0	100	0	0	96	4
Riser	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3
Riser	0	100	0	0	100	0	0	100	0	0	100	0
Salon	0	100	0	0	100	0	0	100	0	0	100	0
SER. (BOH)	0	100	0	0	100	0	0	100	0	0	100	0
SER. (BOH)	0	100	0	0	100	0	0	100	0	0	100	0
SER. (BOH)	0	100	0	0	100	0	0	100	0	0	100	0
SER. (BOH)	0	100	0	0	100	0	0	100	0	0	100	0
Servery	0	98.3	1.7	0	99.5	0.5	0	100	0	0	99.3	0.7
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	96.8	3.2	0	99.2	0.8	0	100	0	0	98.9	1.1
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	99.8	0.2	0	100	0	0	100	0	0	99.9	0.1
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services	0	100	0	0	100	0	0	100	0	0	100	0
Services Riser	0	100	0	0	100	0	0	100	0	0	100	0
Sevices	0	100	0	0	100	0	0	100	0	0	100	0
Sitting	0	95.6	4.4	0	99.1	0.9	0	100	0	0	98.8	1.2
ST. Consult	0	98.8	1.2	0	99.8	0.2	0	100	0	0	99.2	0.8

ST. Medical	0	99.2	0.8	0	100	0	0	100	0	0	99.5	0.5	
Store	0	100	0	0	100	0	0	100	0	0	100	0	
Team Room	0	97.5	2.5	0	99	1	0	100	0	0	99	1	
Training/Function/MP	0	92.9	7.1	0	97.7	2.3	0	100	0	0	97.7	2.3	
TRT.RM	0	96.3	3.7	0	99.1	0.9	0	100	0	0	98.8	1.2	
TRT.RM	0	87.1	12.9	0	95	5	0	100	0	0	95	5	
TRT.RM	0	96.5	3.5	0	99.2	0.8	0	100	0	0	98.8	1.2	
TRT.RM	0	91.7	8.3	0	97.5	2.5	0	100	0	0	97.5	2.5	
Wait	0	89.5	10.5	0	97	3	0	100	0	0	96.4	3.6	
WC Store	0	100	0	0	100	0	0	100	0	0	100	0	
WC Store	0	100	0	0	100	0	0	100	0	0	100	0	
Workshop	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3	
Male Change	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3	
Male WC	0	99.6	0.4	0	100	0	0	100	0	0	99.7	0.3	
Female WC	0	97.5	2.5	0	99	1	0	100	0	0	99.1	0.9	
Female Change	0	99.6	0.4	0	99.8	0.2	0	100	0	0	99.6	0.4	AVG
Average	0.00	98.72	1.28	0.00	99.66	0.34	0.00	100.00	0.00	0.00	99.51	0.49	99.47

Attachment C – Building Fabric Requirement Markups



JHA
MARKUP / SKETCH

DOCUMENT No.: 200098
DOCUMENT TITLE: Opal RACF St Clair
DOCUMENT REV: DRAFT
DOCUMENT BY: G.T DATE: 06/01/2021

KEY

- ROOF/EXPOSED CEILING INSULATION - R3.2 (DOWNWARDS, SOLAR ABSORPTANCE OF THE UPPER SURFACE OF A ROOF MUST BE NOT MORE THAN 0.70)
- EXTERNAL ENVELOPE WALL - R2.8
- INTERNAL ENVELOPE WALL - R2.8
- ENVELOPE FLOOR - R2.0 (DOWNWARDS)

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).

20/11/2020 4:08:20 PM

Revision	Description	Date
A	For Coordination	20/11/2020

REFER TO GENERAL NOTES ON A.0000 SERIES AND SCHEDULES ON A.5000 SERIES DRAWINGS

THIS DRAWING IS TO BE PRINTED IN COLOUR

To be read in conjunction with;
Statement of Environmental Effects [BBC Cnsulting Planners]
Section J Report [Acor Consultants]
Landscape Report [Taylor Brammer]
Acoustic Report [Acoustic Logic]
Civil + Stormwater Plans [Henry & Hymas]
BCA Compliance + Accessibility Report [Formiga 1]
Parking and Traffic Report [TPPA]

Consultants

PROJECT MANAGER
PACT PM

LANDSCAPE ARCHITECT
TAYLOR BRAMMER
www.taylorbrammer.com

Client

Opal
specialist aged care

SYDNEY
27/135 King Street,
Sydney, NSW 2000
Australia

PH. (02) 8241 1600
www.opalagedcare.com.au

Architect

CUSTANCE
Strategy
Urban Design
Architecture
Interior Design

SYDNEY
Level 2, 228 Pitt Street
Sydney, NSW 2000
Australia

PH. (02) 9051 0177
www.custance.com.au
Nominated Architect: Craig Shelsher (NSW #8259)

PRELIMINARY
WORK-IN-PROGRESS

NORTH 76.4°
SCALE @ A1
1:100
0 2.5 5M

Drawn: PJ
Checked: RW
Scale: 1 : 200 @ A1

Project: OPAL ST CLAIR RACF
Project Address: 94-100 EXPLORERS WAY, ST CLAIR NSW
Sheet Title: GENERAL ARRANGEMENT PLAN - GROUND LEVEL
Project No.: 3362
Sheet No.: A2000
Revision: A

JHA
MARKUP / SKETCH

DOCUMENT No.: 200098
DOCUMENT TITLE: Opal RACF St Clair
DOCUMENT REV: DRAFT
DOCUMENT BY: G.T DATE: 06/01/2021

KEY

- ROOF/EXPOSED CEILING INSULATION - R3.2 (DOWNWARDS, SOLAR ABSORPTANCE OF THE UPPER SURFACE OF A ROOF MUST BE NOT MORE THAN 0.70)
- EXTERNAL ENVELOPE WALL - R2.8
- INTERNAL ENVELOPE WALL - R2.8
- ENVELOPE FLOOR - R2.0 (DOWNWARDS)

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).

20/11/2020 4:08:30 PM

Revision	Description	Date
A	For Coordination	20/11/2020

REFER TO GENERAL NOTES ON A.0000 SERIES AND SCHEDULES ON A.5000 SERIES DRAWINGS

THIS DRAWING IS TO BE PRINTED IN COLOUR

To be read in conjunction with;
Statement of Environmental Effects [BBC Cnsulting Planners]
Section J Report [Acor Consultants]
Landscape Report [Taylor Brammer]
Acoustic Report [Acoustic Logic]
Civil + Stormwater Plans [Henry & Hymas]
BCA Compliance + Accessibility Report [Formiga 1]
Parking and Traffic Report [TPPA]

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www.custance.com.au
Nominated Architect: Craig Shelsher (NSW #8259)

PRELIMINARY
WORK-IN-PROGRESS

NORTH
SCALE @ A1
1:100
0 2.5 5M

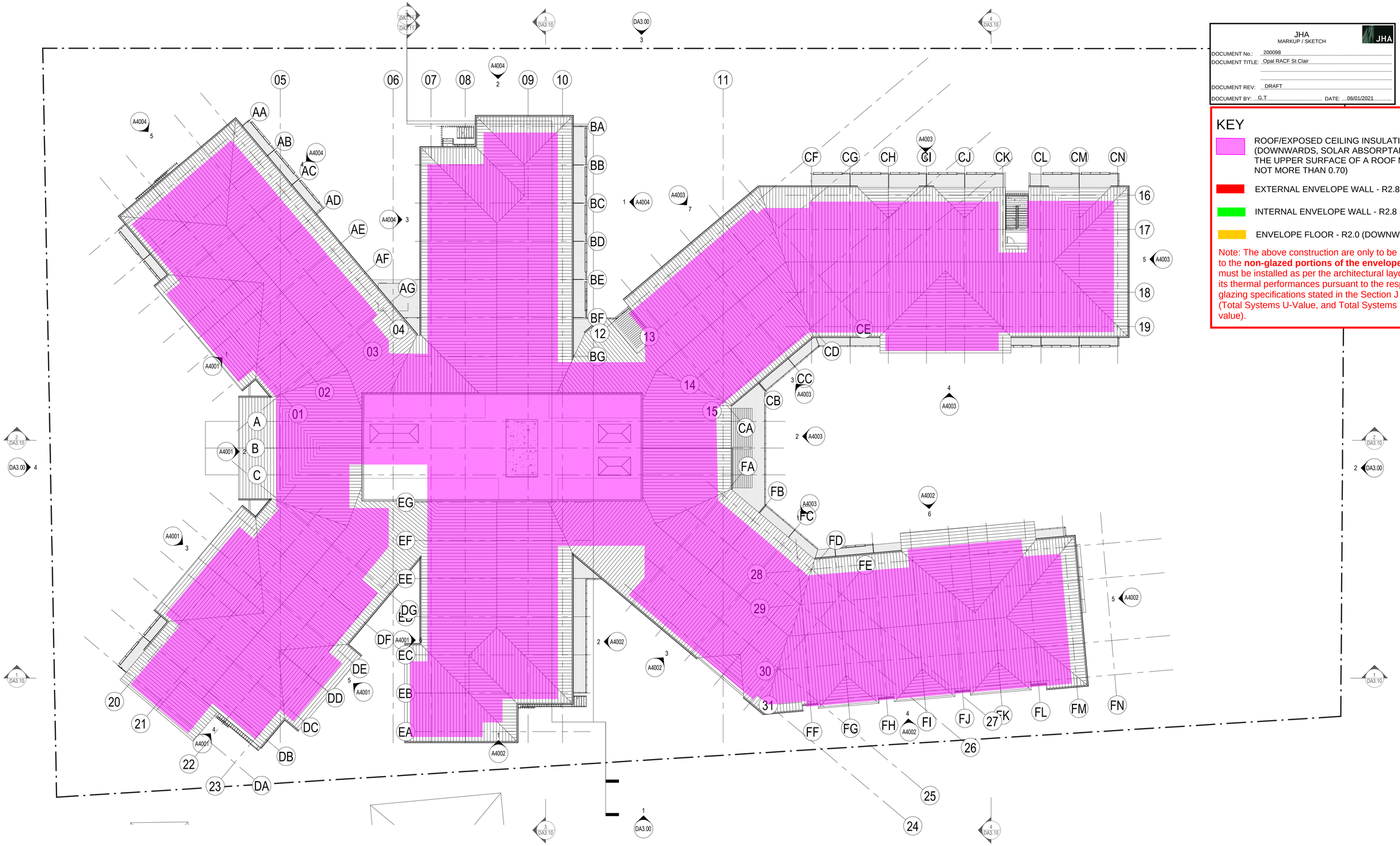
Drawn: PJ
Checked: RW
Scale: 1 : 200 @ A1

Project
OPAL ST CLAIR RACF

Project Address
94-100 EXPLORERS WAY, ST CLAIR NSW

Sheet Title
GENERAL ARRANGEMENT PLAN - LEVEL 1

Project No. 3362
Sheet No. A2010
Revision A



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20/11/2020 4:08:34 PM

Revision	Description	Date
A	For Coordination	20/11/2020

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WORK-IN-PROGRESS

NORTH

SCALE @ A1
1:100
0 2.5 5M

Drawn	Checked	Scale
PJ	RW	1 : 200 @ A1

Project
OPAL ST CLAIR RACF

Project Address
94-100 EXPLORERS WAY, ST CLAIR NSW

Sheet Title
GENERAL ARRANGEMENT PLAN - ROOF PLAN

Project No.	Sheet No.	Revision
3362	A2020	A