

SECTION J PART J4 PERFORMANCE-BASED DESIGN BRIEF (PBDB)

OPAL BAYVIEW GARDENS RACF

ESD SERVICES

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DOCUMENT CONTROL SHEET

Project Number	240516
Project Name	Opal Bayview RACF
Description	Section J Part J4 Performance-Based Design Brief (PBDB)
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Revision History

Issued To	Revision and Date							
Harry Bate	REV	DRAFT						
	DATE	27/05/2025						
	REV	A						
	DATE	07/08/2025						
	REV							
	DATE							

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1 INTRODUCTION

This Section J Part J4 performance-based design brief (PBDB), prepared by JHA Consulting Engineers, identifies and summarises the performance solution process to assess and validate the proposed development against the performance requirements of NCC 2022 Volume One Section J Energy Efficiency Part J4 Building Fabric.

The purpose of a PBDB is to record fundamental activities and outcomes of the performance-based design process, as agreed during key stakeholder negotiations.

When the PBDB is finalised, all critical activities and outcomes would have been identified.

Consequently, the design process can commence with confidence that the proposed design will be approved provided the process of the PBDB are followed.

During the Development Application phase, this PBDB is a live document that is circulated to the client, project manager, architect, certifier and all other stakeholders for discussion and comments. After all such feedback is received, an "agreed framework" will be adopted and subsequently serve as the basis for design development and validation.

This PBDB also includes a preliminary Part J4 assessment of the proposed development based on the deemed-to-satisfy (DTS) provisions of Part J4 to identify the constraints and opportunities particular to this project, as well as preliminary recommendations/options to achieve compliance with Part J4.

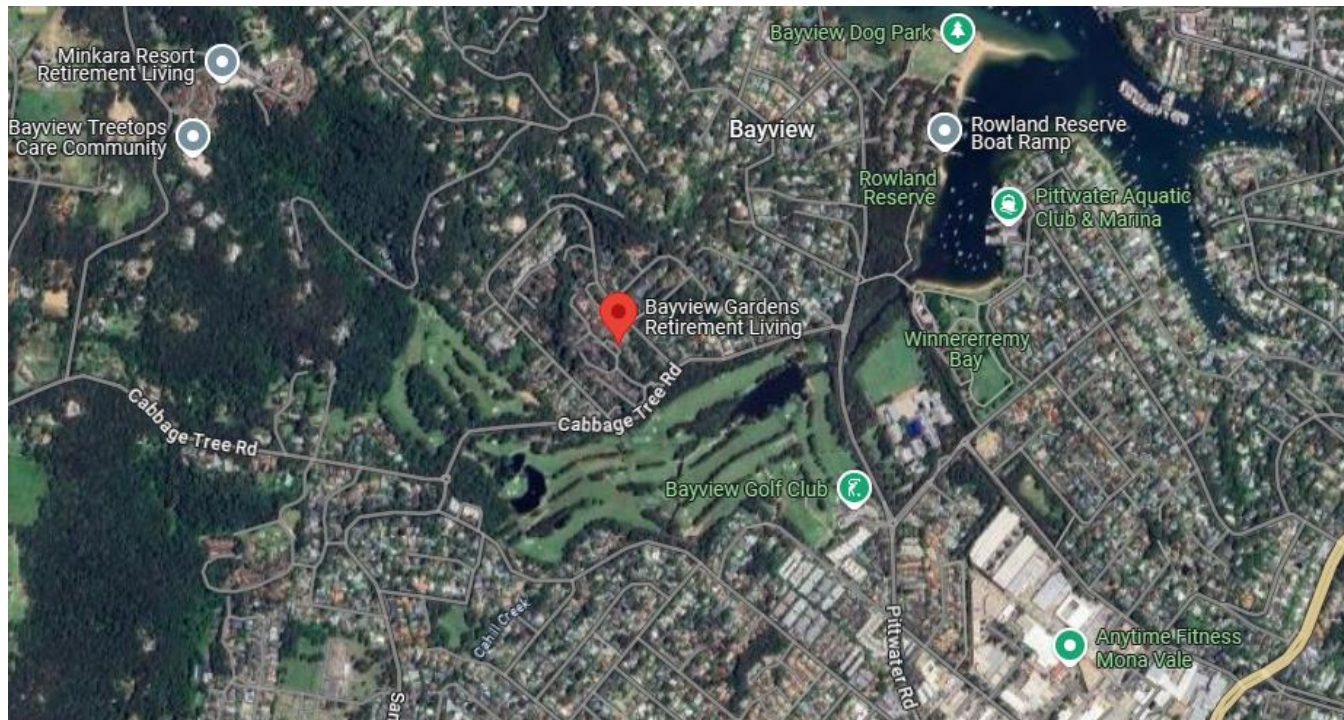
2 PROJECT INFORMATION

2.1 PROJECT DESCRIPTION

The proposed development for the Opal Bayview Gardens, a residential aged care facility located in Bayview, Sydney, will involve the demolition and renovation of the existing structures on the site. This redevelopment will improve the facility's ability to provide care services while integrating into the surrounding residential area. The site is located near landmarks such as Bayview Golf Club and Pittwater, providing easy access to local amenities and transport links.

Building type and function: Class 9c Office

NCC Climate Zone: Climate Zone 5



Aerial photo of site

2.2 STAKEHOLDERS

The stakeholders consulted as a part of the PBDB development process are listed below:

Stakeholders	Role
Opal Healthcare Tyron Nicholson	Client Representative
Bloompark Corey Taylor, Harry Bate	Project Manager
Calder Flower Architecture Lara Calder, Bradley Wahl, Polly Jankov	Architect
Beam Planning Chris Forrester, Emily Batten	Town Planner
Taylor Brammer Aaron Lakeman, Vanessa Hoang	Landscape Architect
Birzulis Michael Grogan, Chris Mundy, John Walujono	Structural & Civil Consultant
JHA Consulting Engineers Mathew MacIntyre, Robert Wright	Electrical Consultant
JHA Consulting Engineers Fazi Saberi	Hydraulic Consultant
JHA Consulting Engineers Grace Guo	Fire Consultant
JHA Consulting Engineers Sean Matthews	Acoustic Consultant
Osborne & Smith William Willis, AJ Rens	Mechanical Consultant
JHA Consulting Engineers Lawrence Yu, Jasmin Bayocot	ESD Consultant

3 SECTION J PART J4 BUILDING FABRIC

3.1 NOMINATED APPLICABLE PERFORMANCE REQUIREMENT(S)

This PBDB addresses the following performance requirements of NCC 2022 Volume One:

- Section J Energy Efficiency JP1 Energy Use
 - Part J4 Building Fabric

3.1.1 OTHER PARTS OF SECTION J & SPECIFICATION 33

Compliance with other parts of Section J, namely:

- Part J5 Building Sealing;
- Part J6 Air-conditioning and ventilation System;
- Part J7 Artificial Lighting and Power;
- Part J8 Heated Water Supply and Swimming Pool and Spa Pool Plant;
- Part J9 Facilities for Energy Monitoring; &
- Specification 33 Additional requirements

remains the responsibility of the relevant services consultant / architect.

It is the responsibility of the contractor to ensure the construction of the proposed development comply with the requirements of J4D3 Thermal Construction – General (1) – (5). If the floor has an in-slab or in-screed heating or cooling system, it is the responsibility of the contractor to comply with slab edge insulation requirements J4D7(3) and J4D7(4).

3.2 APPLICABLE AREAS

The provisions of Part J4 apply to building elements forming the *envelope* of a building.

3.2.1 ENVELOPE

For the purposes of Section J in Volume One, Envelope means the parts of a building's fabric that separate a *conditioned space* from:

- the exterior of the building; or
- a non-conditioned space including—
 - the floor of a rooftop plant room, lift-machine room or the like; and
 - the floor above a carpark or warehouse; and
 - the common wall with a car park, warehouse or the like.

3.2.2 CONDITIONED SPACE

For the purposes of Volume One, Conditioned Space means a space within a building, including a ceiling or under-floor supply air plenum or return air plenum, where the environment is likely, by the intended use of the space, to have its temperature controlled by air-conditioning.

See Appendix A – Prelim Part J4 Building Fabric Markups for the agreed envelope for this development.

3.3 APPLICABLE ASSESSMENT PROCESS

The proposed performance solution to the performance requirement specified in section 3.1 above is *Verification Method J1V3 - Verification using a Reference Building*.

J1V3 is applicable for Class 3, 5, 6, 7, 8 or 9 building.

Reference building, for the purposes of this PBDB, means a hypothetical Part J4 DTS compliant building. This is used to calculate the maximum allowable annual greenhouse gas emissions for the proposed building.

As per J1V3(2)(a), the annual greenhouse gas emissions of the proposed building can be offset by renewable energy that is generated and used on site.

In addition to the above, the proposed building must demonstrate 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 calculation method used for determining the annual greenhouse gas emissions and thermal comfort level of the building will be in accordance with ANSI/ASHRAE Standard 140, Specification 34 Modelling Parameters and Specification 35 Modelling Profiles.

As noted in section 3.1 above, it is the responsibility of the contractor, relevant services consultant and the architect to ensure the building complies with the additional requirements in Specification 33.

3.4 DEEMED-TO-SATISFY (DTS) DEPARTURES

The purpose of this performance solution is to address the following DTS departures:

- J4D4 Roof and ceiling construction – The solar absorptance of the upper surface of a roof, and total R-value
- J4D6 Walls and glazing – The Total System U-Value of wall-glazing construction
- J4D7 Floors – The Total R-Value

3.5 AGREED ACCEPTANCE CRITERIA

3.5.1 PERFORMANCE SOLUTION CRITERIA

Under J1V3, compliance with JP1 is verified when it is determined that the annual greenhouse gas emissions of the proposed building are not more than the annual greenhouse gas emissions of a *reference building*. More specifically, J4 is verified when it is determined that the annual greenhouse gas emissions of the proposed building are not more than the annual greenhouse gas emissions of a reference building when the proposed building is modelled with the same services as the reference building as per J1V3(a)(i)(B).

3.5.2 CONSTRUCTION CERTIFICATE STAGE

For Construction Certificate, the agreed acceptable documentation is a J1V3 Report containing as a minimum the following:

- General
 - Property title / address
 - Building Class and use
 - Verification Method used
 - NCC Climate Zone
 - Details of reference documentations (architectural drawings etc.)
 - Name and version and software use in analysis
 - Name and qualifications of the person responsible for the analysis
- Proposed Building Fabric and Glazing thermal specifications

- Total R-value, direction (upwards, downwards etc.) and solar absorptance values as applicable for opaque elements
- Total U-value and Total SHGC as applicable for transparent/translucent elements
- Minimum onsite renewable energy system type and peak capacity (if required)
- Modelling Inputs
 - Reference building and proposed building thermal specifications
 - Confirmation Specification 34 Modelling Parameters and Specification 35 Modelling Profiles are followed
 - For PMV: temperature setpoints, clothing value, activity level and air velocity in accordance with ANSI/ASHRAE Standard 55
 - Peak capacity and type of onsite renewable energy system (if any)
- Modelling Outputs
 - Annual greenhouse gas emissions of proposed building and reference building
 - Percentage of operational hours the PMV is within the range of -1 to +1 for all “conditioned” spaces
 - 3D Image of the energy model
- Building Fabric Markups showing the extent of total R-value required

3.5.3 OCCUPATION CERTIFICATE STAGE

For Occupation Certificate, the agreed acceptable evidence for signoff is as follow:

- Letter of Confirmation from Contractor(s) that construction of the building fabric has been undertaken in accordance with this design brief and the most up-to-date revision of J1V3 Report, including supporting evidence in the form of datasheets, calculations and purchase receipts to confirm performance of building fabric/glazing or as required by the certifier.

3.5.3.1 Trade/Supplier Certificates

Typically, a range of trade/supplier certificates will be required as part of the sign-off process at the OC stage. These may include, work involved in insulation/thermal breaks, glazing, etc. JHA recommends the requirement for a Section J certificate from relevant trades (or suppliers) should be set out in the terms of engagement of the trade/supplier. These certificates should be obtained immediately after the work is done rather than at the end of construction.

Each relevant trade/supplier certificate must:

1. Clearly identify the person giving the certificate
 - a. Full Name,
 - b. Job Title,
 - c. Company Details/Letterhead, &
 - d. Qualifications and Experience
2. State the relevant Section J clause(s)/requirement(s) being certified and that they comply
3. Signed and Dated

4 PRELIMINARY BUILDING FABRIC ASSESSMENT

A preliminary Section J DTS assessment has been carried out for the proposed development to identify the constraints and opportunities particular to this project and to ensure compliance is achievable. Note these are not the proposed thermal specifications for the project; J1V3 assessment will be undertaken to further refine and optimise the thermal specifications in accordance with the objectives of this project during detail design.

The building fabric requirement under the DTS pathway are provided below:

Elements	Indicative Requirements	Comments/Recommendation
Roof/Exposed Ceiling Envelope	Total R-Value of 3.7, downwards (Solar absorptance of the upper surface of a roof must be not more than 0.45)	Potential to relax light roof colour requirement via J1V3 modelling
External Envelope Walls	Total R-Value of 1.4	Should be readily achievable
Internal Envelope Walls	Total R-Value of 1.4	Should be readily achievable
Envelope Floors	Total R-value of 2.0	A slab-on-ground that does not have an in-slab heating or cooling system is considered to achieve a Total R-value of R2.0
External Glazing	Total U-value 5.2 Total SHGC 0.37 Single Glazed Tinted Low E or the like	Potential to relax glazing requirements via J1V3 modelling

See Appendix A – Prelim Part J4 Building Fabric Markups for the indicative locations of where insulation is required.

5 APPENDIX A – PRELIM PART J4 BUILDING FABRIC MARKUPS

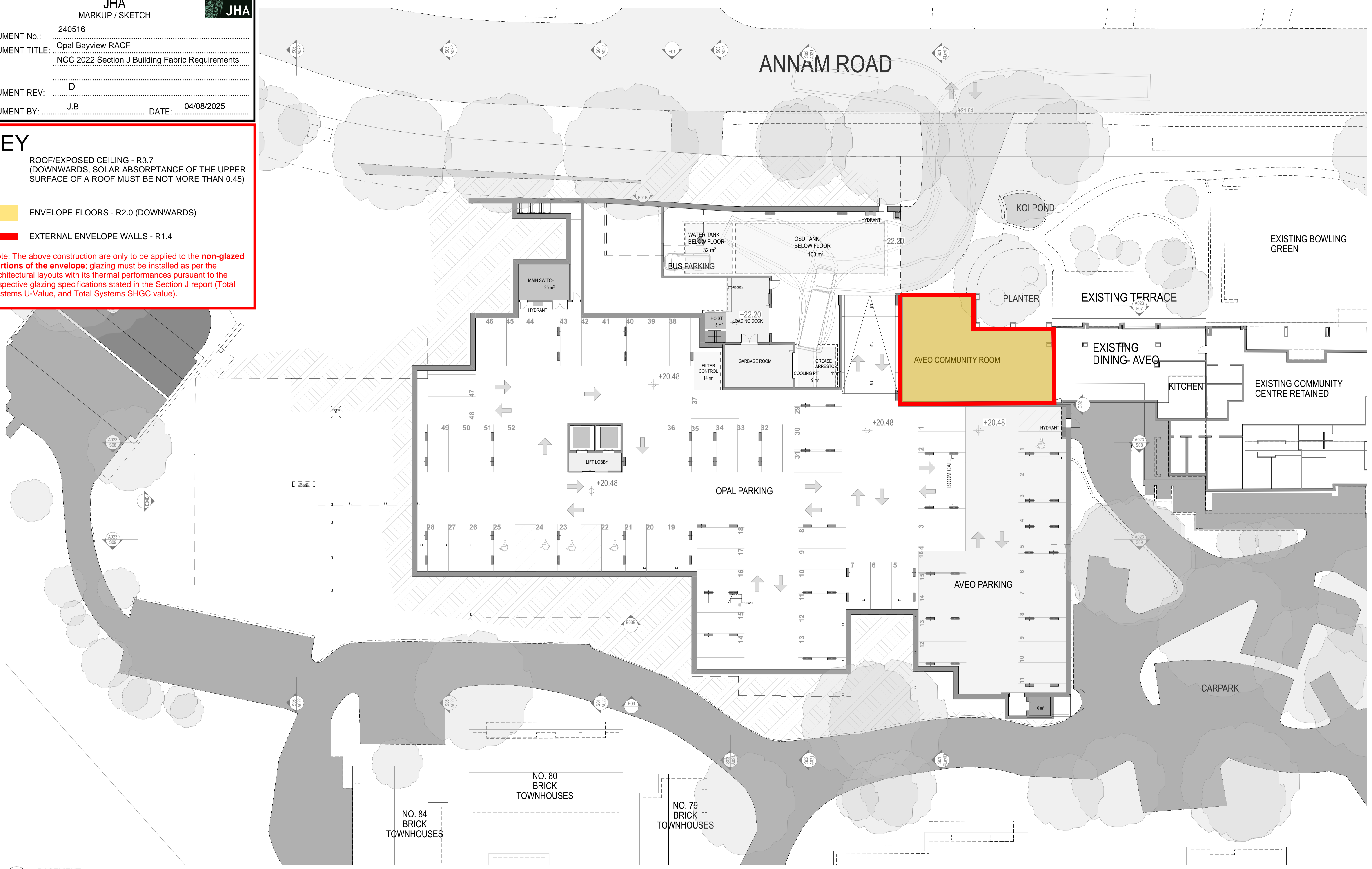


JHA
MARKUP / SKETCH

DOCUMENT No.: 240516
DOCUMENT TITLE: Opal Bayview RACF
NCC 2022 Section J Building Fabric Requirements
DOCUMENT REV: D
DOCUMENT BY: J.B DATE: 04/08/2025

KEY
ROOF/EXPOSED CEILING - R3.7
(DOWNWARDS, SOLAR ABSORPTANCE OF THE UPPER SURFACE OF A ROOF MUST BE NOT MORE THAN 0.45)
ENVELOPE FLOORS - R2.0 (DOWNWARDS)
EXTERNAL 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).

ANNAM ROAD



A100 BASEMENT
SCALE: 1:200
0 5.0M 10.0M

ARCHITECT:
CALDERFLOWER
architecture

CLIENT:
Opal
HealthCare
OPAL HEALTHCARE
LEVEL 11/420 GEORGE STREET SYDNEY NSW 2000

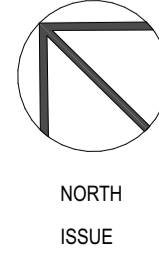


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DRAWING TITLE:
FLOOR PLAN- BASEMENT

SCALE: REFER DRAWING TITLES
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DOCUMENT BY: J.B DATE: 04/08/2025

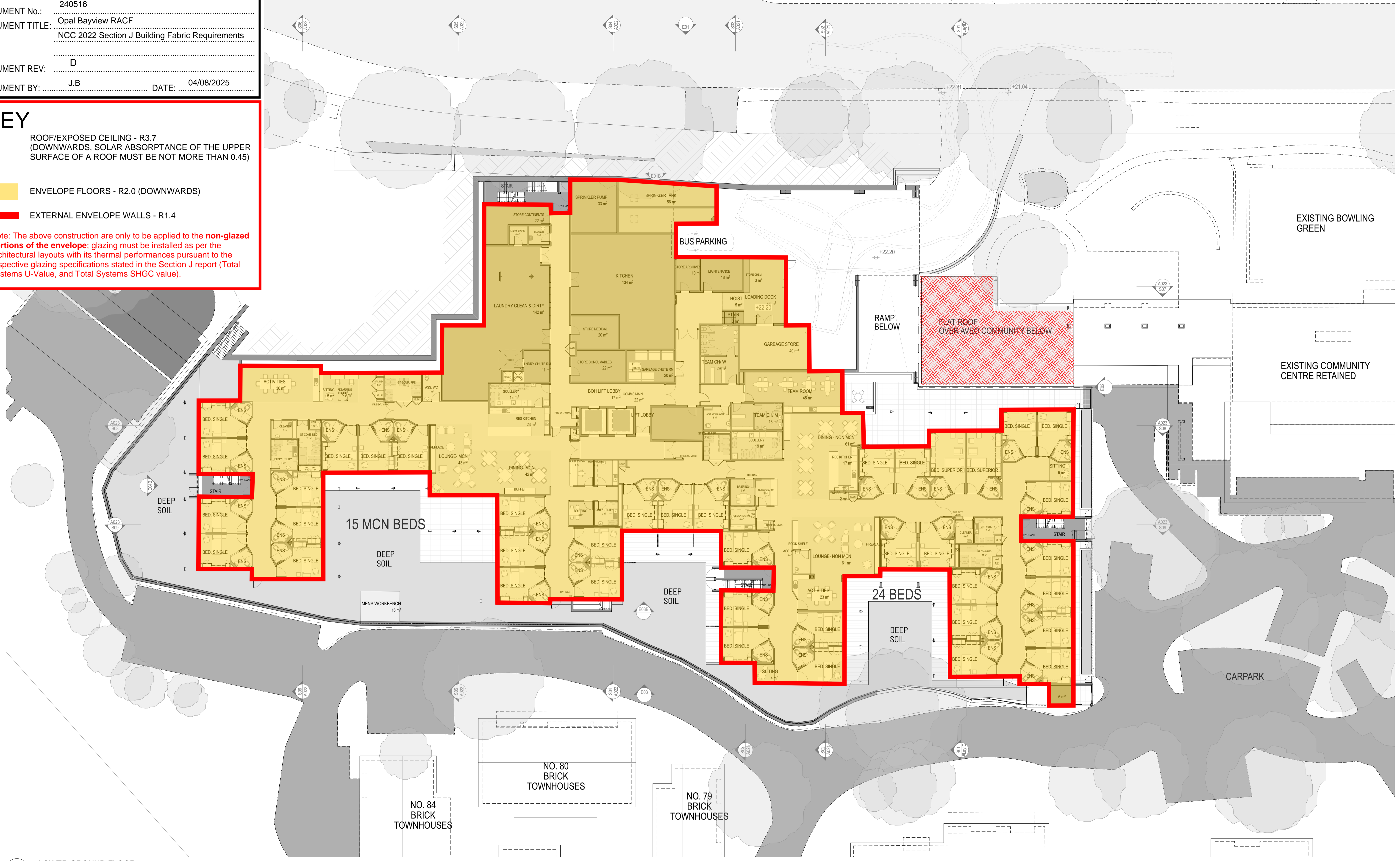
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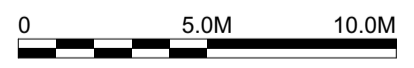
ENVELOPE FLOORS - R2.0 (DOWNWARDS)

EXTERNAL ENVELOPE WALLS - R1.4

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A101 LOWER GROUND FLOOR
SCALE: 1:200



ARCHITECT:
CALDERFLOWER
architecture

CLIENT:



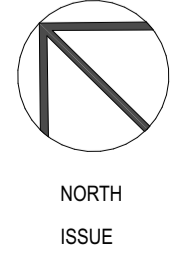
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FLOOR PLAN-LOWER GROUND FLOOR

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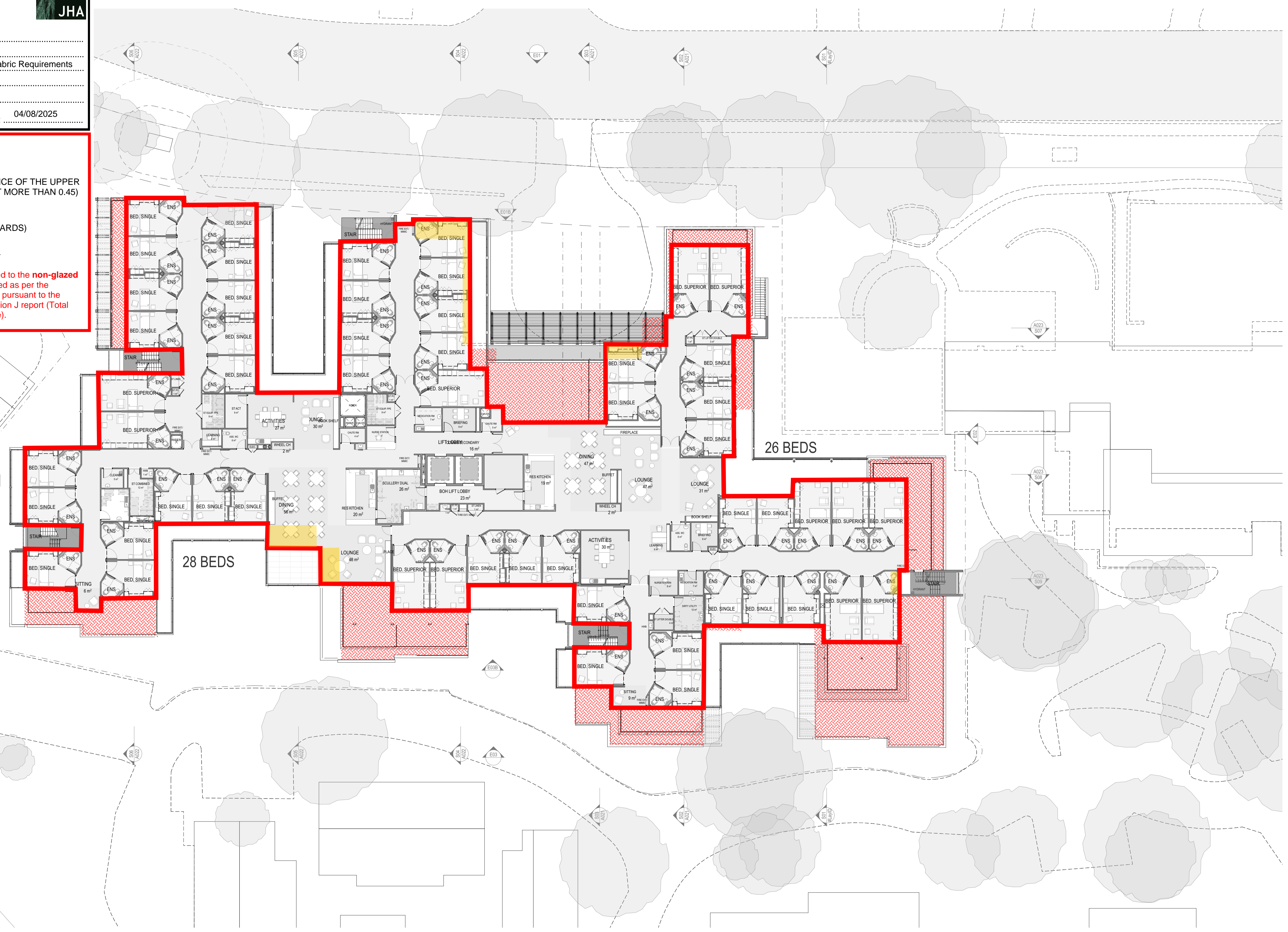
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ENVELOPE FLOORS - R2.0 (DOWNWARDS)

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A103 LEVEL 1
SCALE: 1:200
0 5.0M 10.0M

ARCHITECT:
CALDERFLOWER
architecture

CLIENT:
Opal
HealthCare

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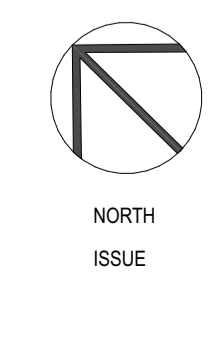
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FLOOR PLAN-LEVEL 1

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PROJECT NO.: 24110
DATE PRINTED: 24/7/2025
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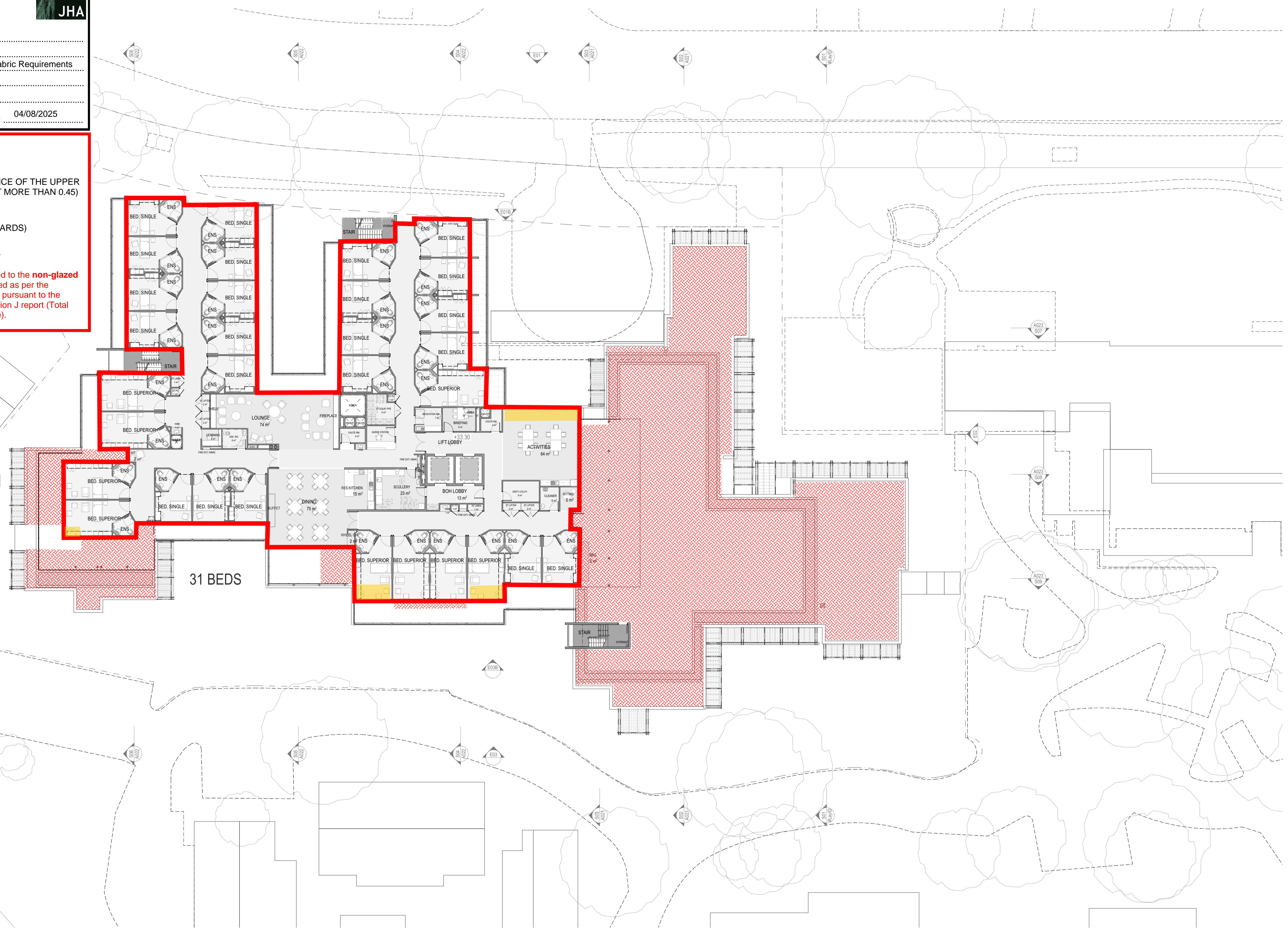
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31 BEDS

A104 LEVEL 2
SCALE: 1:200
0 5.0M 10.0M

ARCHITECT:
CALDERFLOWER
architecture

CLIENT:
Opal
HealthCare
OPAL HEALTHCARE
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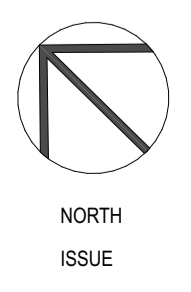


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ANNAM ROAD BAYVIEW, NSW 2104
DRAWING TITLE:
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SCALE: REFER DRAWING TITLES
PROJECT NO. 24110
DATE PRINTED: 24/7/2025
ORIGINAL PAPER SIZE: A1
DRAWING NO.
A104



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