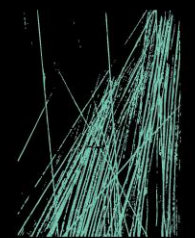


SECTION J PART J4 & J8 PERFORMANCE-BASED DESIGN BRIEF (PBDB)

UNITING CHARLESTOWN – BUILDING B SWIMMING POOL

ESD SERVICES



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DOCUMENT CONTROL SHEET

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1 INTRODUCTION

This Section J Part J4 & J8 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 and Part J8 Heated Water Supply and Swimming Pool and Spa Pool Plant.

The purpose of this PBDB is to define the scope of work for a performance solution, the technical basis for analysis and the criteria for acceptance as agreed by the stakeholders.

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.

In addition, this PBDB includes a Part J8 assessment to ensure compliance with the relevant energy efficiency provisions for Heated Water Supply and Swimming Pool and Spa Pool Plant, identifying performance requirements, applicable DTS provisions, and opportunities for achieving compliance through performance solutions where required.

2 PROJECT INFORMATION

2.1 PROJECT DESCRIPTION

The proposed development for the Uniting Charlestown – Building B Swimming Pool located at 27 Tiral Street, Charlestown NSW 2290 will result in the construction of a single-storeyed building with a swimming pool.

Building type and function: Class 9b Sporting Facility

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
Uniting	Client
TSA Riley	Project Manager
Plus Architecture	Architect
JHA Consulting Engineers	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
 - Part J8D4(2)(a) Pool Cover

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 (except J8D4(2)(a))
- 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
- J4D6 Walls and glazing – The Total System U-Value of wall-glazing construction
- J4D7 Floors – The Total R-Value
- J8D4(2)(a) Pool cover – The provision of a pool cover with a minimum R-Value of 0.05

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(1)(a)(ii). Similarly, J8D4(2)(a) 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 proposed services as per J1V3(1)(a)(i).

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
Roofs & Ceilings	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
Envelope Walls	Total R-Value of 1.4	Should be readily achievable
Envelope Floors	Total R-value of 2.0	Potential to relax/remove floor insulation requirement via J1V3 modelling
External Vertical Glazing	Total U-value 2.4 Total SHGC 0.26	Potential to relax glazing requirements via J1V3 modelling
Pool Cover	≥ Total R-value of 0.05	Potential to remove pool cover requirement 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

DRAWING TO BE READ IN CONJUNCTION WITH PLA-AR-001 LEGEND, RELEVANT SCHEDULES AND PROJECT SPECIFICATION.

NCC 2022 Section J4 & J8 Performance-Based Design Brief requirements
Building Fabric Required total system R-Values

Roof & Ceiling	- R1 3.7 (DOWNWARDS, SOLAR ABSORPTANCE OF THE UPPER SURFACE OF A ROOF MUST NOT BE MORE THAN 0.45)
Walls	- R1 1.4
Floors (including Slab on Ground)	- R1 2.0

Note:
 1) The R-value is a total system performance value and NOT insulation.
 2) The above construction are only to be applied to non-glazed portions of the envelope and spandrel panels; 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.
 3) For Climate Zone 5, a slab-on-ground floor that does not have an in-slab heating or cooling system is considered to achieve a total R-value of R12.0.

DTS Glazing (Glass + Frame) requirements:
 All Windows - U-value: 2.4, SHGC: 0.26 (Double Glazed Thermally Broken Tinted or the like)

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 MARKUP / SKETCH

DOCUMENT No.: 210296
 DOCUMENT TITLE: **Uniting Charlestown Building B - Swimming Pool**

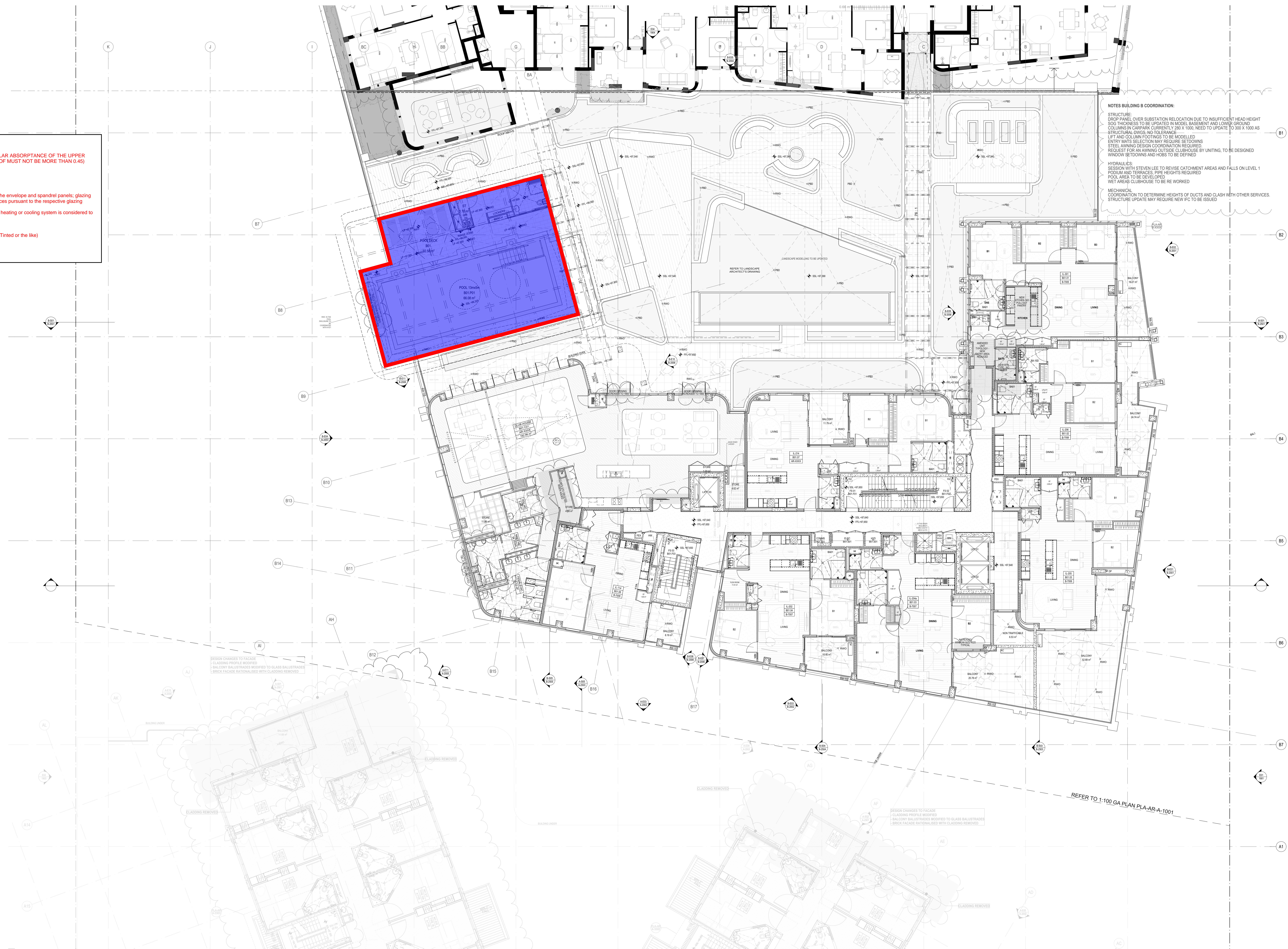
DOCUMENT REV: A
 DOCUMENT BY: FG DATE: 06/01/2026

NOTES BUILDING B COORDINATION:

STRUCTURE:
 DROP PANEL OVER SUBSTATION RELOCATION DUE TO INSUFFICIENT HEAD HEIGHT SOG THICKNESS TO BE UPDATED IN MODEL BASEMENT AND LOWER GROUND COLUMNS IN CARPARK CURRENTLY 200 X 1000, NEED TO UPDATE TO 300 X 1000 AS STRUCTURAL DWGS. NO TOLERANCE.
 LIFT AND COLUMN FOOTINGS TO BE MODELLED.
 ENTRY MATS SELECTION MAY REQUIRE SETDOWNS.
 STEEL AWING DESIGN COORDINATION REQUIRED.
 REQUEST FOR AN AWING OUTSIDE CLUBHOUSE BY UNTING, TO BE DESIGNED WINDOW SETDOWNS AND HOBS TO BE DEFINED.

HYDRAULICS:
 DESIGN WITH STEVEN LEE TO REVISE CATCHMENT AREAS AND FALLS ON LEVEL 1 POOL AND TERRACES. PIPE HEIGHTS REQUIRED.
 POOL AREA TO BE DEVELOPED.
 WET AREAS CLUBHOUSE TO BE REWORKED.

MECHANICAL:
 COORDINATION TO DETERMINE HEIGHTS OF DUCTS AND CLASH WITH OTHER SERVICES. STRUCTURE UPDATE MAY REQUIRE NEW IFC TO BE ISSUED.



DESIGN CHANGES TO FACADE
 CLADDING PROFILE MODIFIED
 BALCONY BALUSTRADES MODIFIED TO GLASS BALUSTRADES
 BRICK FACADE RATIONALISED WITH CLADDING REMOVED

DESIGN CHANGES TO FACADE
 CLADDING PROFILE MODIFIED
 BALCONY BALUSTRADES MODIFIED TO GLASS BALUSTRADES
 BRICK FACADE RATIONALISED WITH CLADDING REMOVED

REFER TO 1:100 GA PLAN PLA-AR-A-1001

ISSUE FOR COORDINATION

DATE	REVISION	BY	CHK	NO.
21/03/2024	ISSUE FOR INFORMATION	MA	MA	01
27/03/2024	ISSUE FOR INFORMATION	DHNK	MA/FT	02
11/04/2024	ISSUE FOR 30% COORDINATION	DHNK	MA/FT	03
3/05/2024	ISSUE FOR 40% COORDINATION	DHNK	MA/FT	04
23/05/2024	ISSUE FOR 50% COORDINATION	DHNK	MA/FT	05
18/06/2024	FOR COORDINATION	DHNK	MA/FT	06
11/11/2024	ISSUE FOR COORDINATION	DHNK	MA/FT	07
23/06/2025	AMENDED 50% FOR VE CHANGES	DHNK	MA/FT	08
14/07/2025	FOR TENDER 50% PRELIMINARY ISSUE	DHNK	MA/FT	09
9/09/2025	ISSUE FOR COORDINATION	DHNK	MA/FT	10

DATE	REVISION	BY	CHK	NO.

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PROJECT: **27 TIRAL STREET, CHARLESTOWN**

DRAWING TITLE: **BUILDING B - LEVEL 01 FLOOR PLAN**

SCALE: 1:100 @A0	PLOT DATE: 10/09/2025	REVISION: 10
DRAWN: DHNK	CHECKED: MA/FT	
JOB NO.: 20456	DRAWING NO.: PLA-AR-B-1001	

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