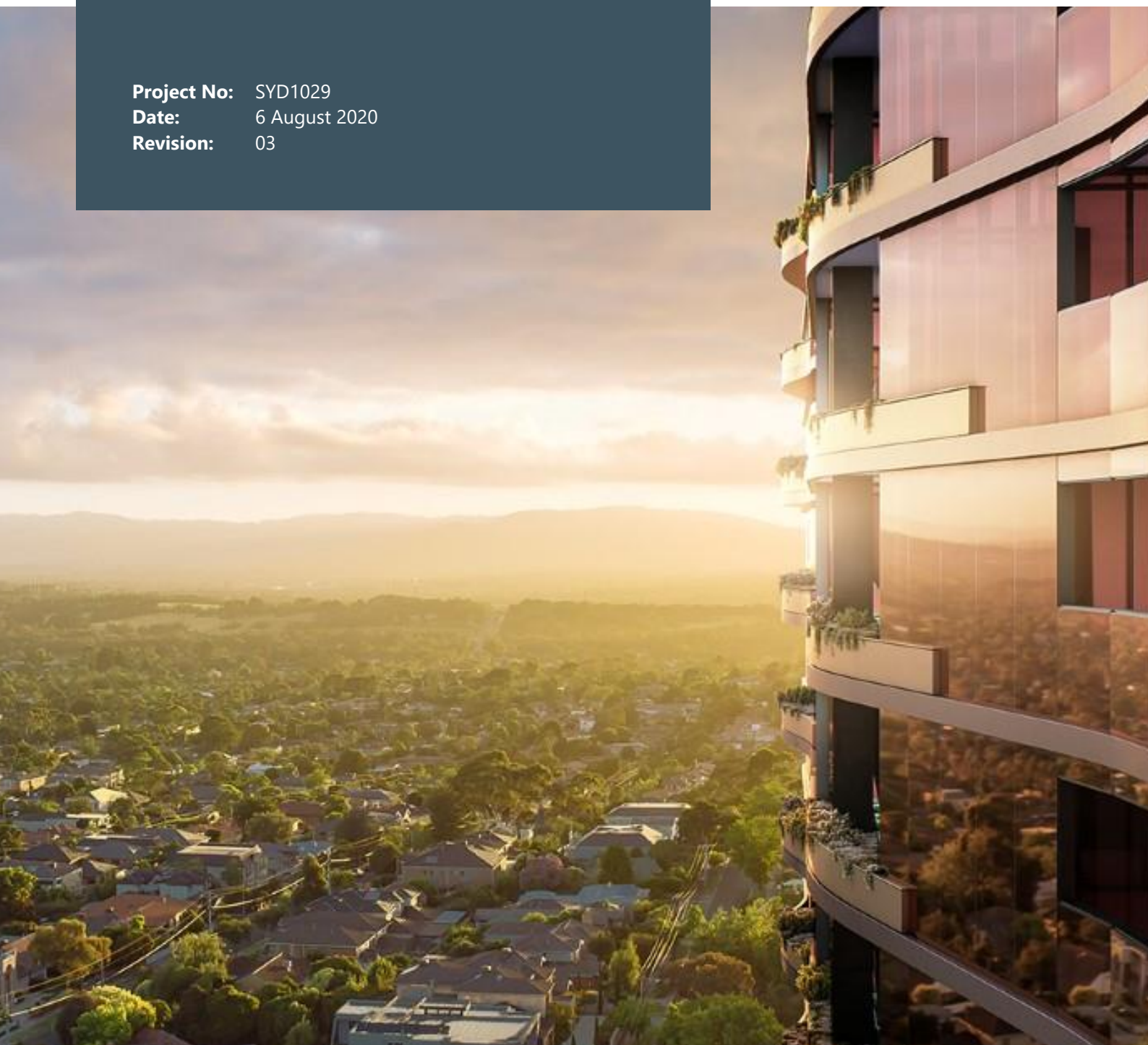
SummitCare Randwick

NCC 2019 Section J
Compliance Report

Project No: SYD1029
Date: 6 August 2020
Revision: 03



ADP Consulting : Engineering

Creating great environments with great people

Project:	SummitCare Randwick
Location:	11-19 Frenchmans Road Randwick, NSW, 2031
Prepared by:	ADP Consulting Pty Ltd Level 3, 8 Spring Street Sydney NSW 2000
Project No:	SYD1029
Revision:	03
Date:	6 August 2020

Rev	Date	Comment	Author	Signature	Technical Review	Signature	Authorisation	Signature
01	05/12/19	Draft Issue for Information	AK		ZN		PP	
02	10/12/19	DA Issue	AK		ZN		PP	
03	06/08/20	Updated Issue	ZN		RR		PP	

Architect	Boffa Robertson Group

Contents

Executive Summary

ADP Consulting has been engaged to undertake a Section J Deemed-to-Satisfy (DTS) assessment for the proposed SummitCare development to be located at 11-19 Frenchmans Road, Randwick, NSW.

This Section J report has been prepared to support the DA submission as a legislative requirement in accordance with NCC Section J 2019 provisions and has been provided to advise on the minimum Part J1 & J3 (Building Fabric) requirements needed for compliance.

Based on a review of the proposed Architectural drawings and the calculations carried out in this report the following minimum Part J1 performance requirements have been provided.

Fabric insulation to be provided as follows:

Envelope Construction	Total System R-Value (m^2K/W)
J1.3 Roof and ceiling construction	≥ 3.70
J1.4 Roof lights	N/A
J1.5a Total System external wall construction (all facades)	≥ 2.39
J1.5b Total System internal wall construction (between conditioned & unconditioned areas)	≥ 1.00
J1.6a Floor construction (above an unconditioned zone)	≥ 2.00
J1.6b Floor construction (concrete slab on ground)	No insulation required

Glazing performance has been assessed as per the Section J wall-glazing calculator. The following performance is to be provided for the relevant orientations outlined below:

Glazing – Frame Construction (Non-uniform solution)	Orientation	Total System U-Value (W/m^2K)	Total System SHGC
J1.5c Ground Floor to Level 3	North	≤ 4.00	≤ 0.31
J1.5c Ground Floor to Level 3	East	≤ 4.00	≤ 0.41
J1.5c Ground Floor to Level 3	South	≤ 4.00	≤ 0.32
J1.5c Ground Floor to Level 3	West	≤ 4.00	≤ 0.29

We understand that the above may not be a desirable solution for the project due to the varying SHGC's, and as such we have explored options to provide a uniform glazing solution for the project. The following glazing performance solution has been identified as compliant for all windows across all orientations.

Glazing – Frame Construction (Uniform solution)	Orientation	Total System U-Value (W/m^2K)	Total System SHGC
J1.5c Total Window Frame construction	All facades	≤ 4.00	≤ 0.29

***Please Note**: the above window frame construction values are AFRC total system values and include both the glazing and frame.*

Please note the following:

- The above window construction values are total system values and include both the glazing and frame
- The maximum solar admittance allowed for the above constructions must not exceed 0.13
- It assumed that all other NCC Section J requirements (J5to J8) will be designed to meet the minimum Deem-to-Satisfy (DTS) requirements
- Compliance is subject to confirmation from the D&C contractor that all as-installed details pertaining to the thermal performance are within the performance requirements as detailed in this report. It is the responsibility of the D&C contractor, architect and building surveyor to ensure all final construction selections are compliant.
- Any changes to the architecture; plans may result in a change to the wall-glazing performance specifications detailed in this report.

1. Introduction

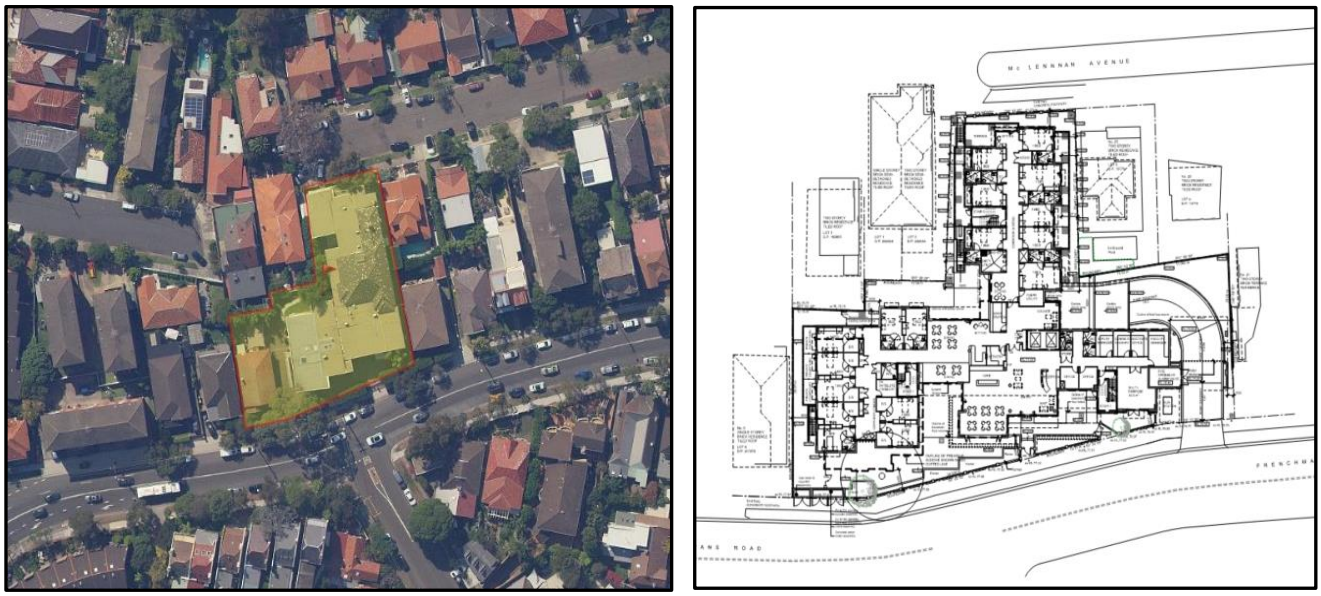
ADP Consulting has been engaged to undertake the following Section J report detailing the Deemed-to-Satisfy (DTS) building envelope construction requirements for the proposed development to be located at 11-19 Frenchmans Road, Randwick, NSW.

The purpose of this report is to demonstrate that all construction elements meet the minimum DTS requirements outline in the NCC 2019 Section J, Part J1 & J3 provisions.

1.1 Project Context

The new development comprises of a 4-storey building proposed to be developed in the suburb of Randwick, south-east of Sydney. The development is situated to the south of McLennan Avenue and Astolat Street and to the north of the Frenchmans road.

Figure 1 Proposed Development Site



The development contains carparking facilities for residents/visitors, communal landscaped common areas, common dining area, healthcare, fitness facility and residential rooms (Class 9c). Each Individual room has been designed with one or two single beds, storage area, private amenities and balconies or courtyard for private use.

1.2 Assessment Assumptions and References

This Section J Report has been based on the following documents:

- Provided by Boffa Robertson Group Architects:
  - Preliminary Issue (Rev 01) – 20/11/2019
  - Preliminary Issue for Coordination (Rev 09) -07/08/2020
  - Updated Architectural Issue – 03/12/2019
  - 3D Architectural model - 07/08/2020
- Provided by BCA Logic:
  - BCA Report – 24/07/2020

This report should be read in conjunction with the **ADP Noise Impact Assessment Report (Rev 01),** all relevant plans and specifications, and any supplementary regulatory information as nominated further within the body of this report.

2. Section J DTS Compliance

2.1 Overview

Section J of the NCC was introduced to set minimum energy efficiency measures for the various classifications of building types while still maintaining acceptable internal environmental conditions for occupants. The measures were designed to reduce the use of artificial heating and cooling, improve the energy performance of lighting, conditioning, and ventilation, and reduce energy loss through air leakage.

These reductions are achieved by setting specific prescriptive design criteria for the building fabric (section J1 & J3) and the building services (section J4 to J8). Compliance is the achieved when these minimum prescriptive requirements are met.

2.2 Terminology

2.2.1 Thermal Performance of a Wall-Glazing Construction

When determining an appropriate wall-glazing construction for a building project, the buildings thermal envelope will be required to comply with certain performance values for energy efficiency and occupant thermal comfort. The two heat transfer mechanisms that determine the performance of a wall-glazing construction include conduction and solar heat gain.

In order to comply with the Section J provisions, the wall-glazing system must achieve a specified U-value and Solar Heat Gain coefficient (SHGC). It is important to note, that these values are to be read as "total system values" and are inclusive of both the frame and glazing[1].

2.2.2 U-Value

U-value is the measure of a wall-glazing constructions ability to conduct heat. The lower the U-value, the greater the insulation properties of the construction. In all cases regardless of climate zone, a façade construction with high performance insulation properties will assist with improving a buildings occupant thermal comfort and energy efficiency. It is also to be noted that the conductive U-value is equal to the inverse of insulative R-value (U = 1/R).

2.2.3 R-Value

R-value is the measure of a wall-glazing constructions resistance to heat flow. The higher the R-value, the higher the level of insulation and thermal performance. It is also to be noted that the insulative R-value is equal to the inverse of the conductive U-value (R = 1/U).

2.2.4 Solar Heat Gain Coefficient (SHGC)

Solar Heat Gain Coefficient (SHGC) is the fraction of incident solar radiation admitted through a window. In a warm climate, windows which have a low SHGC allow less solar radiation to pass through. This reduces the buildings heat load and need for active cooling[2].

[1] Thermal Performance values are available for all aluminium window and door products as part of their WERS rating (http://www.wers.net/wers-home).

[2] Further information on glazing performance can be found at (https://www.yourhome.gov.au/passive-design/glazing

3. Part J1 Building Fabric

3.1 Responsible Designer

For the purposes of Part J1 – Building Fabric compliance, the responsible designers are identified as the project Architect and Façade Engineer (where applicable). The minimum insulation and glazing recommendations outlined in this report must be addressed for construction.

It assumed that all other NCC Section J requirements (J5 to J8) will be designed to meet the minimum Deem-to-Satisfy (DTS) requirements and will be the responsibility of the D&C contractor, services sub-contractors and building surveyor to ensure the final construction incorporates a compliant solution.

3.2 Summary of Requirements

Part J1 establishes minimum construction and performance provisions required for the projects specific climate zone and building classification. This will apply to the following Part J1 criteria:

- J1.2 Thermal Construction Installations
- J1.3 Roof and ceiling construction
- J1.4 Roof lights
- J1.5 Combined Wall & Glazing System
- J1.6 Floor Constriction

Insulation and glazing performance requirements have been provided to meet the minimum compliance measures for the above areas.

3.3 J1.1 Application of Part

Section J 2019, Part J1 is applicable to the scope of the design and construction works identified for the project. For the purposes of this project the proposed works consist of the development of a new 4-storey aged care facility.

This report is intended to provide an analysis of the proposed building envelope as required under Part J1 and will demonstrate compliance using the NCC 2019 Wall-Glazing calculator shown in (Figure 2).

3.4 J1.2 Thermal Construction Installations

All insulation installed for the project must comply with section J1.2 of the BCA. Please note that for the purpose of this report, the following provisions only apply to new constructions. All Installed insulation must adhere to the following requirements:

- Form a continuous barrier with ceilings, walls bulkheads, floors or similar that inherently contribute to the building's thermal envelope
- Abut or overlaps all adjoining insulation other than insulation located at supporting members such as studs, noggings, furring channels or similar
- It is important that the insulation provided must not hinder the safe or effective operation of any service or fittings
- All insulation must comply with AS4859.1.

Specific installation requirements further referring to bulk or reflective insulation are outlined in Part J1.2 of the NCC 2019 Section J provisions.

3.5 J1.3 Roof & Ceiling Constructions

Roofs or ceilings must achieve a minimum total R-value greater than or equal to R3.7 for a downward direction of heat flow. The solar absorptance of the upper surface of the roof must not be more than 0.45.

3.6 J1.4 Roof lights

No roof lights have been identified on the Architectural drawings. It is assumed that no roof light or sky light will be provided for the project.

3.7 J1.5 Wall-Glazing Construction System

Part J1.5 establishes the minimum external wall and window construction performance required for the proposed building. This is assessed against the projects climate zone as per the Australian Building Codes Board (ABCB) Climate Zone Map (Figure 3).

The development is situated in climate zone 5 – warm temperate.

Compliance for each wall orientation is identified as the Total System U-Value of the wall-glazing construction and is determined through the use of the NCC Section J 2019 Wall-Glazing Calculator (Figure 2).

Figure 2 NCC 2019 Wall-Glazing Calculator

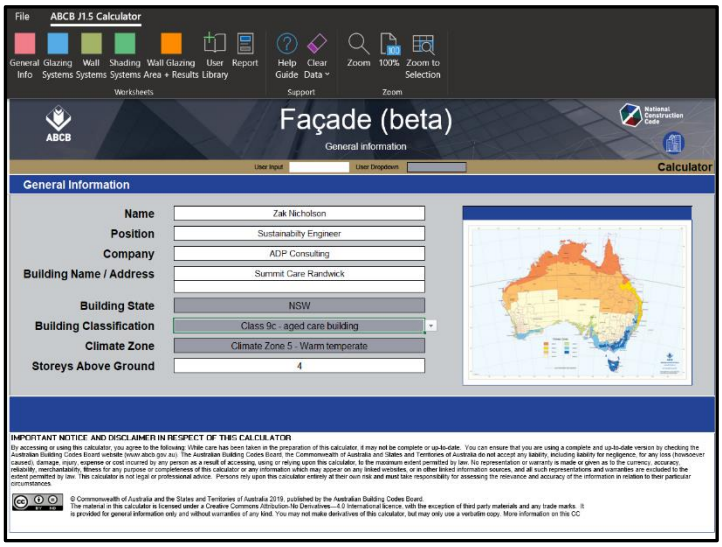
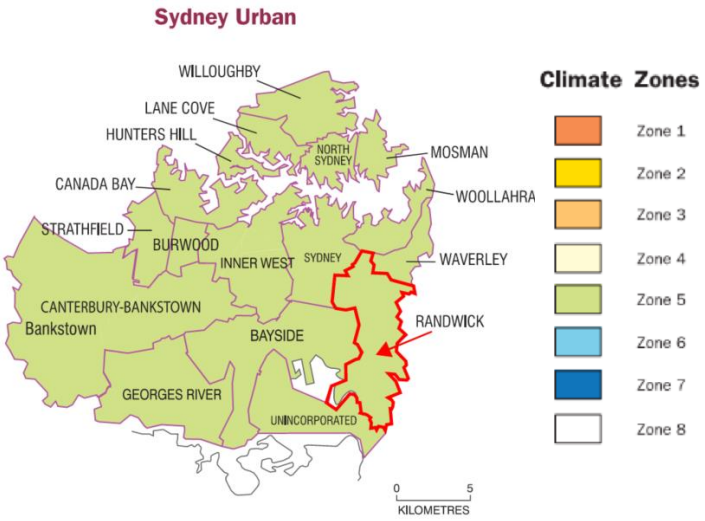


Figure 3 ABCB Climate Zone



Based on a review of the proposed Architectural drawings, the following minimum Part J1 performance requirements have been provided.

Fabric insulation to be provided as follows:

Envelope Construction	Total System R-Value (m^2K/W)
J1.5a Total System external wall construction (all facades)	≥ 2.39
J1.5b Total System internal wall construction (between conditioned & unconditioned areas)	≥ 1.00

Glazing performance has been assessed as per the Section J wall-glazing calculator. The following performance is to be provided for the relevant orientations outlined below:

Glazing – Frame Construction (Non-uniform solution)	Orientation	Total System U-Value (W/m^2K)	Total System SHGC
J1.5c Ground Floor to Level 3	North	≤ 4.00	≤ 0.31
J1.5c Ground Floor to Level 3	East	≤ 4.00	≤ 0.41
J1.5c Ground Floor to Level 3	South	≤ 4.00	≤ 0.32
J1.5c Ground Floor to Level 3	West	≤ 4.00	≤ 0.29

We understand that the above may not be a desirable solution for the project due to the varying SHGC's, and as such we have explored options to provide a uniform glazing solution for the project. The following glazing performance solution has been identified as compliant for all windows across all orientations.

Glazing – Frame Construction (Uniform solution)	Orientation	Total System U-Value (W/m^2K)	Total System SHGC
J1.5c Total Window Frame construction	All facades	≤ 4.00	≤ 0.29

***Please Note**: the above window frame construction values are AFRC total system values and include both the glazing and frame.*

The maximum solar admittance for the above solution is calculated as a percentage of incident solar irradiance allowed on a wall-glazing construction. Part J1.5b stipulates that the solar admittance for each façade aspect must not exceed a maximum value of 0.10.

3.8 J1.6 Floors

Floors must achieve the minimum total R-values specified in the table below:

Envelope Construction	Total System R-Value (m^2K/W)
J1.6a Floor construction (above an unconditioned zone)	≥ 2.00 (downwards heat flow.
J1.6b Floor construction (concrete slab on ground)	No insulation required

4. Part J3 Building Sealing

4.1 Building Fabric

The building sealing requirements are as follows:

> Seals must be fitted to each edge of a door, operable window or the like

> An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like.

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 when forming part of the building envelop

> enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or:

> sealed at junctions and penetrations with close fitting architrave, skirting or cornice; or expanding foam, rubber compressible strip, caulking or the like.

5. Conclusions & Recommendations

Based on a full review of the Architectural drawings provided by Boffa Robertson Group and the calculations carried out in this report the following minimum Part J1 performance requirements have been provided.

Fabric insulation to be provided as follows:

Envelope Construction	Total System R-Value (m^2K/W)
J1.3 Roof and ceiling construction	≥ 3.70
J1.4 Roof lights	N/A
J1.5a Total System external wall construction (all facades)	≥ 2.39
J1.5b Total System internal wall construction (between conditioned & unconditioned areas)	≥ 1.00
J1.6a Floor construction (above an unconditioned zone)	≥ 2.00
J1.6b Floor construction (concrete slab on ground)	No insulation required

The project has the option to pursue either a glazing solution that has been optimised for each façade orientation, or a uniform glazing solution for the entire development. This option can be seen in the table below.

Glazing – Frame Construction (Uniform solution)	Orientation	Total System U-Value (W/m^2K)	Total System SHGC
J1.5c Total Window Frame construction	All facades	≤ 4.00	≤ 0.29

***Please Note**: the above window frame construction values are AFRC total system values and include both the glazing and frame.*

If the above uniform glazing solution is deemed unsuitable, the project has the opportunity to undertake the JV3 alternative verification method. This is a performance compliance methodology that will allow flexibility in glazing performance and selection.

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Appendix A
DTS Façade-Glazing Report: Non-Uniform Solution

SummitCare Randwick - Ground Floor

Façade
Report
Calculator

Project Summary

Date
6/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

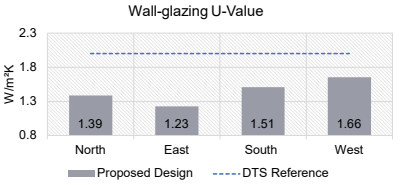
Storeys Above Ground
4

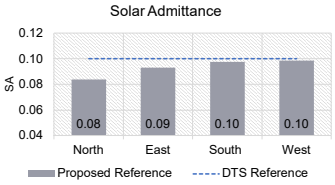
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.39	1.23	1.51	1.66	1.45
Solar Admittance	0.08	0.09	0.10	0.10	
AC Energy Value					119

Method 1





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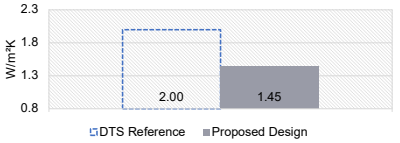
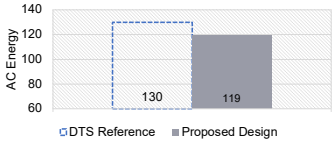




Project Details

	North	East	South	West
Glazing Area (m²)	70	42	79	64
Glazing to Façade Ratio	27%	23%	31%	35%
Glazing References	W-01 +	W-02 +	W-03 +	W-04 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.31	0.41	0.32	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	189	143	180	121
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

SummitCare Randwick - First Floor

Façade
Report
Calculator

Project Summary

Date
6/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

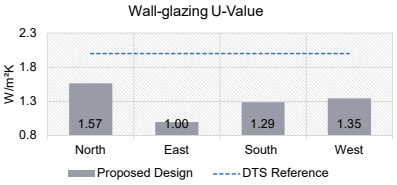
Storeys Above Ground
4

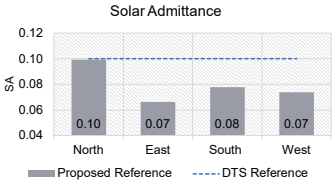
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.57	1.00	1.29	1.35	1.32
Solar Admittance	0.10	0.07	0.08	0.07	
AC Energy Value					89

Method 1





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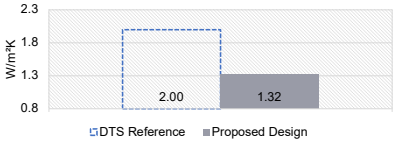
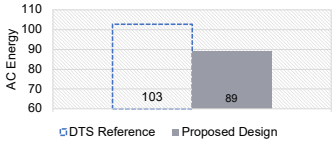




Project Details

	North	East	South	West
Glazing Area (m²)	83	30	63	48
Glazing to Façade Ratio	32%	16%	24%	26%
Glazing References	W-01 +	W-02 +	W-03 +	W-04 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.31	0.41	0.32	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	176	155	196	137
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

SummitCare Randwick - Second Floor

Façade
Report
Calculator

Project Summary

Date
6/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

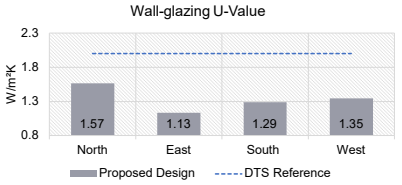
Storeys Above Ground
4

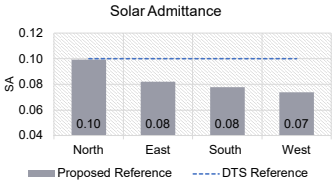
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

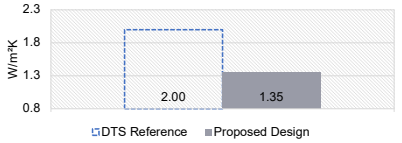
	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.57	1.13	1.29	1.35	1.35
Solar Admittance	0.10	0.08	0.08	0.07	
AC Energy Value					112

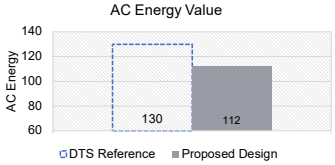
Method 1





Method 2





Project Details

	North	East	South	West
Glazing Area (m²)	83	37	63	48
Glazing to Façade Ratio	32%	20%	24%	26%
Glazing References	W-01 +	W-02 +	W-03 +	W-04 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.31	0.41	0.32	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	176	148	196	137
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

SummitCare Randwick - Third Floor

Façade

Report

Calculator

Project Summary

Date
6/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

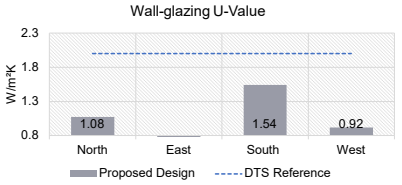
Storeys Above Ground
4

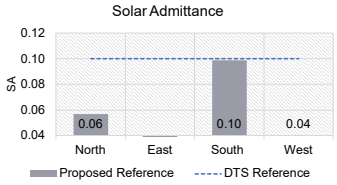
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.08	0.55	1.54	0.92	1.02
Solar Admittance	0.06	0.02	0.10	0.04	
AC Energy Value					9

Method 1





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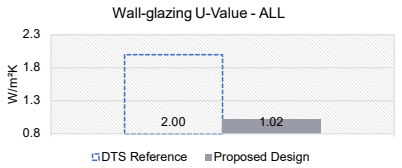
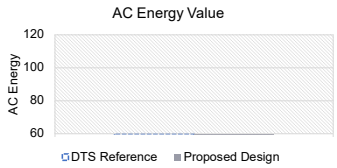




Project Details

	North	East	South	West
Glazing Area (m²)	17	3.5	29	13
Glazing to Façade Ratio	18%	4%	31%	14%
Glazing References	W-01 +	W-02 +	W-03 +	W-04 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.31	0.41	0.32	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	75.5	88.5	63.5	79.5
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

ADP
Consulting : Engineering

Appendix B
DTS Façade-Glazing Report: Uniform Solution

SummitCare Randwick - Ground Floor

Façade

Report

Calculator

Project Summary

Date
6/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

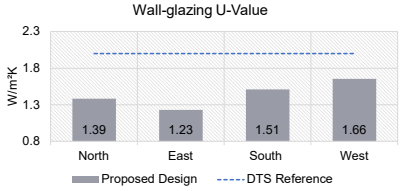
Storeys Above Ground
4

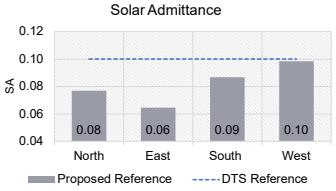
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

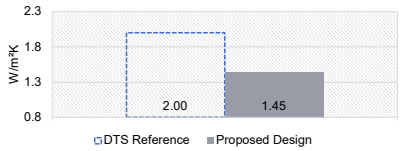
	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.39	1.23	1.51	1.66	1.45
Solar Admittance	0.08	0.06	0.09	0.10	
AC Energy Value					105

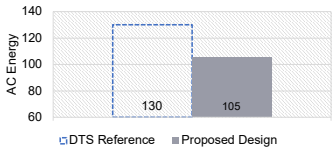
Method 1





Method 2





Project Details

	North	East	South	West
Glazing Area (m²)	70	42	79	64
Glazing to Façade Ratio	27%	23%	31%	35%
Glazing References	W-01 +	W-01 +	W-01 +	W-01 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.29	0.29	0.29	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	189	143	180	121
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

SummitCare Randwick - First Floor

Façade

Report

Calculator

Project Summary

Date
5/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

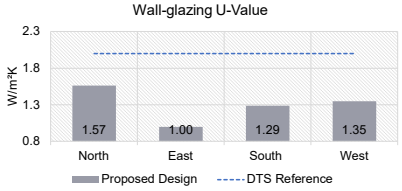
Storeys Above Ground
4

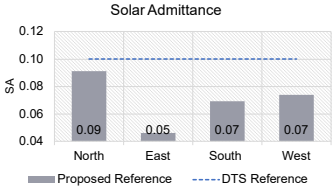
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

	Method 1 North	Method 1 East	Method 1 South	Method 1 West	Method 2 All
Wall-glazing U-Value (W/m².K)	1.57	1.00	1.29	1.35	1.32
Solar Admittance	0.09	0.05	0.07	0.07	
AC Energy Value					83

Method 1





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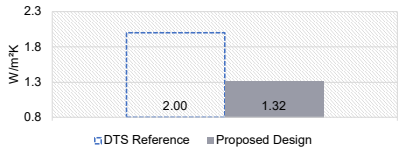
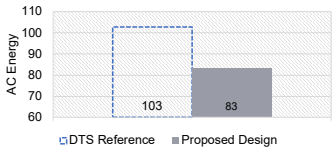




Project Details

	North	East	South	West
Glazing Area (m²)	83	30	63	48
Glazing to Façade Ratio	32%	16%	24%	26%
Glazing References	W-01 +	W-01 +	W-01 +	W-01 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.29	0.29	0.29	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	176	155	196	137
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

SummitCare Randwick - Second Floor

Façade

Report

Calculator

Project Summary

Date
5/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

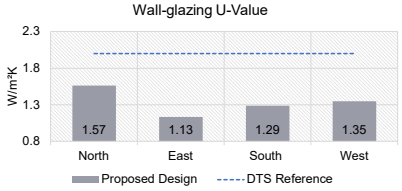
Storeys Above Ground
4

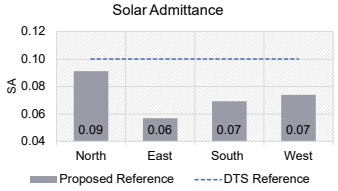
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

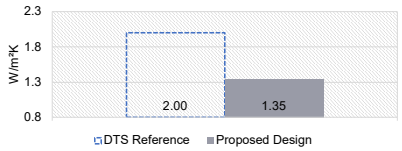
	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.57	1.13	1.29	1.35	1.35
Solar Admittance	0.09	0.06	0.07	0.07	
AC Energy Value					99

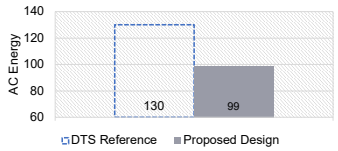
Method 1





Method 2





Project Details

	North	East	South	West
Glazing Area (m²)	83	37	63	48
Glazing to Façade Ratio	32%	20%	24%	26%
Glazing References	W-01 +	W-01 +	W-01 +	W-01 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.29	0.29	0.29	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	176	148	196	137
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

SummitCare Randwick - Third Floor

Façade

Report

Calculator

Project Summary

Date
5/08/2020

Name
Zak Nicholson

Company
ADP Consulting

Position
Sustainabilty Engineer

Building Name / Address
Summit Care Randwick
0

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9c - aged care building

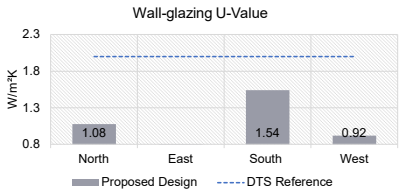
Storeys Above Ground
4

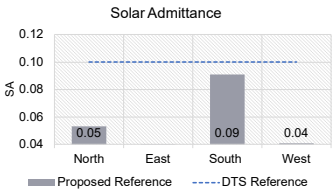
The summary below provides an overview of where compliance has been achieved for Specification J1.5a - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Apects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.08	0.55	1.54	0.92	1.02
Solar Admittance	0.05	0.01	0.09	0.04	
AC Energy Value					8

Method 1





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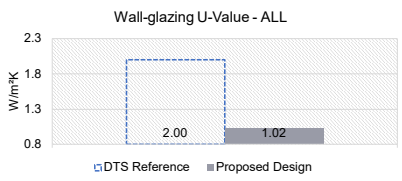
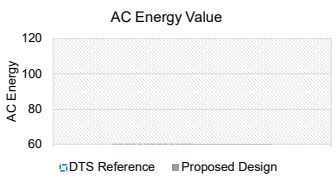




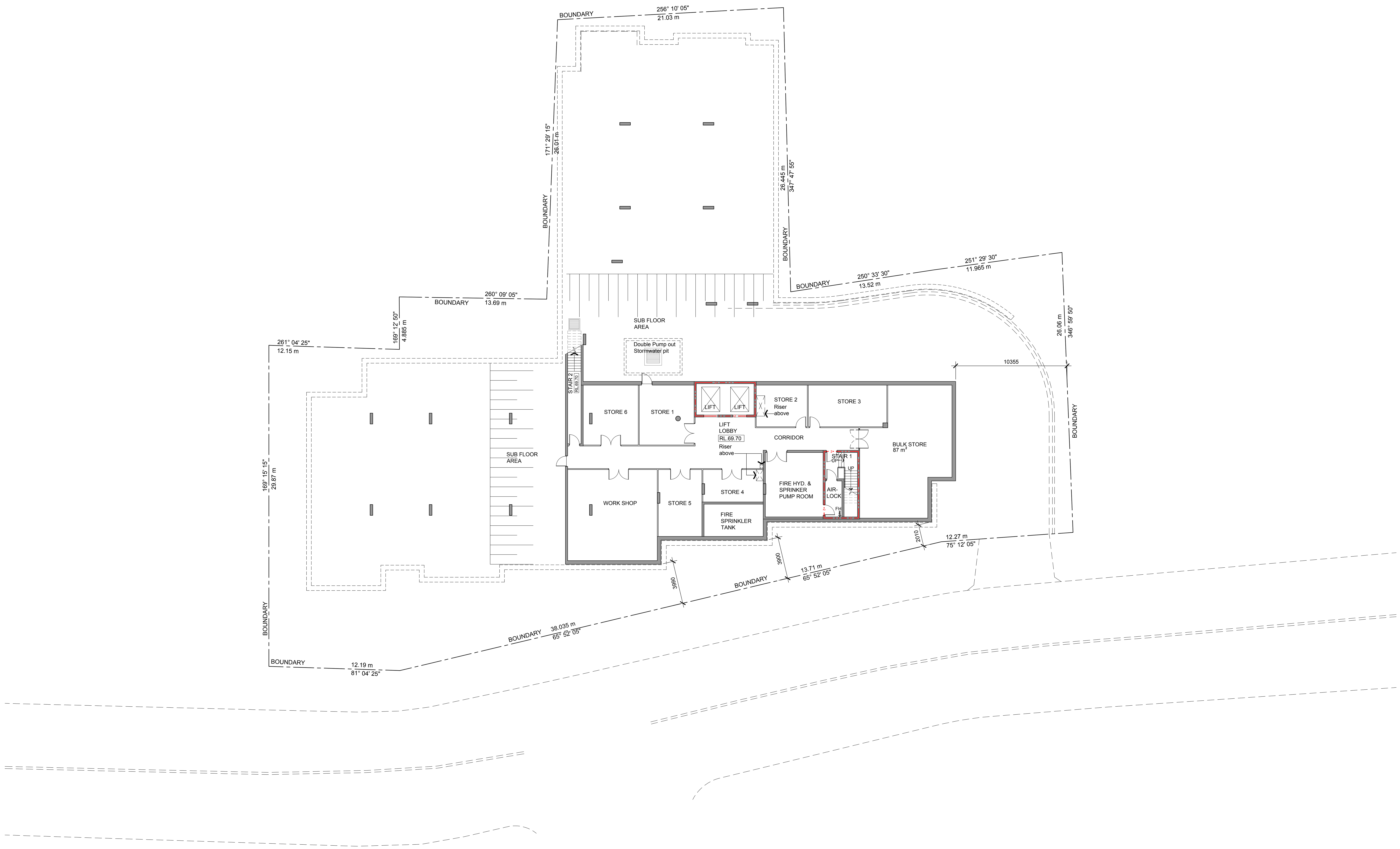
Project Details

	North	East	South	West
Glazing Area (m²)	17	3.5	29	13
Glazing to Façade Ratio	18%	4%	31%	14%
Glazing References	W-01 +	W-01 +	W-01 +	W-01 +
Glazing System Types	Fixed +	Fixed +	Fixed +	Fixed +
Glass Types	Single glazing +	Single glazing +	Single glazing +	Single glazing +
Frame Types	Aluminium +	Aluminium +	Aluminium +	Aluminium +
Methodology	AFRC (True module size)			
Average Glazing U-Value (W/m².K)	4.00	4.00	4.00	4.00
Average Glazing SHGC	0.29	0.29	0.29	0.29
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	75.5	88.5	63.5	79.5
Wall Types	Wall +	Wall +	Wall +	Wall +
Methodology	NCC Specification J1.5b			
Wall Construction	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +	Masonry (90mm glass wool + timber studs) +
Wall Thickness	200 +	200 +	200 +	200 +
Average Wall R-value (m²K/W)	2.39	2.39	2.39	2.39
Solar Absorptance	0.4	0.4	0.4	0.4

DTS Construction Values

ADP
Consulting : Engineering

Appendix C
Insulation Mark-up



LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL.00.00	EXISTING LEVELS
RL.00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
X CD-00	ELEVATION TAG
X CD-00	SECTION / ELEVATION TAG

0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
6	Preliminary Issue for coordination	08.07.2020
5	Preliminary Issue for review & comment	06.07.2020
4	Development Application Issue	19.12.19
3	Preliminary Issue	03.12.19
2	Preliminary Issue	06.11.19
1	Preliminary Issue	18.09.19

Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
LOWER BASEMENT FLOOR PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

boffa robertson group
architecture, health and aged care planning, project management
Suite 7, Level 1 Epica, 9 Railway Street
Chatswood NSW 2067
AUSTRALIA
Tel. (02) 9406 7000
Fax. (02) 9406 7099
Email : brgroup@brgr.net

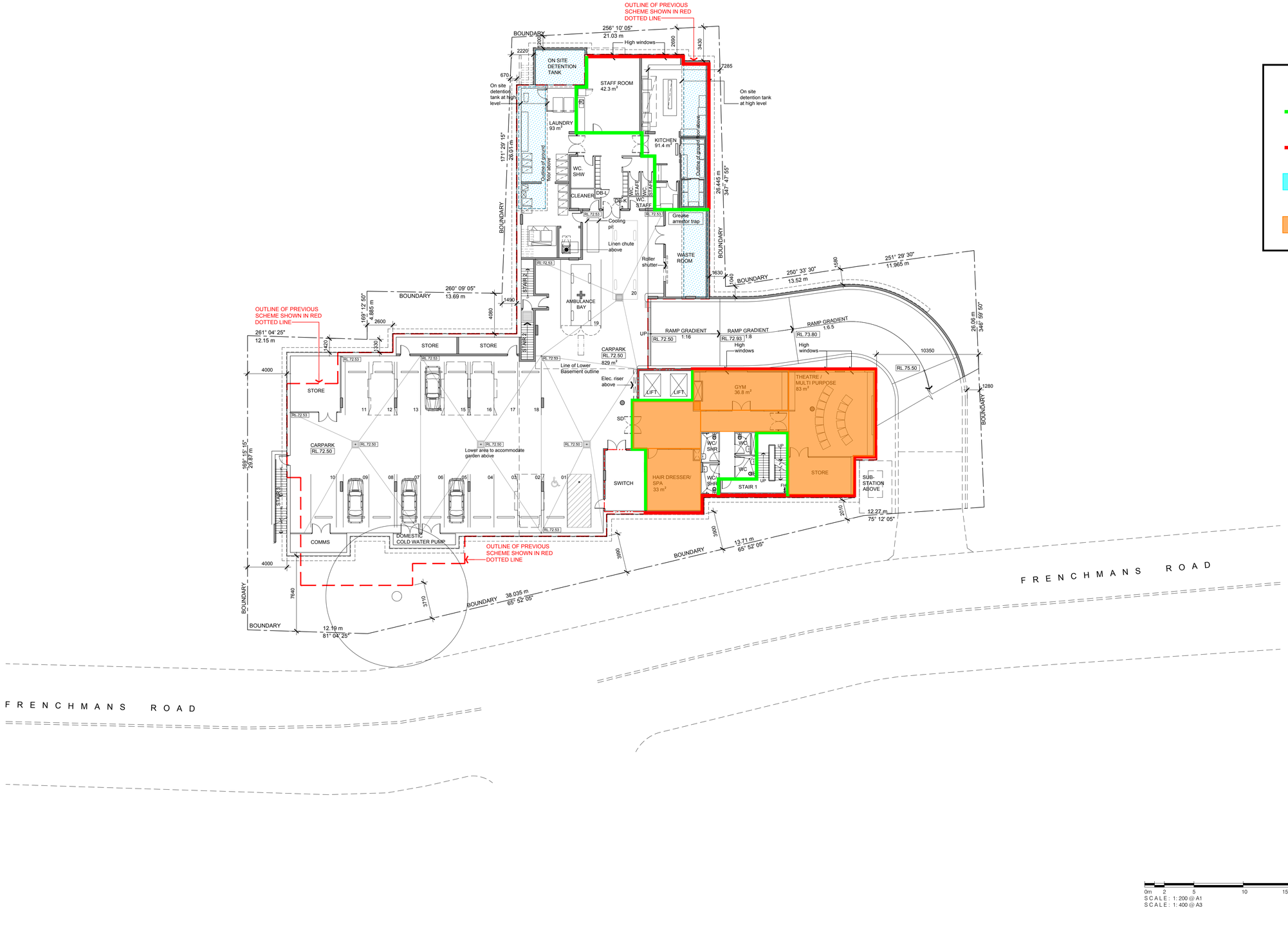
Date	JAN 2019	Job No. : Drawing
Scale	AS SHOWN	1912 / DA03
Drawn	SS / WW	
Amendment	6	

LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL 00.00	EXISTING LEVELS
RL 00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
	ELEVATION TAG
	SECTION / ELEVATION TAG

Insulation Legend

- Internal Wall Insulation Total R1.0
- External Wall Insulation Total R2.39
- Roof Insulation Total R3.7
- Floor Insulation Total R2.0



0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
7	Preliminary Issue for coordination	08.07.2020
6	Preliminary Issue for review & comment	06.07.2020
5	building outline modifed following changes on the upper level	27.04.20
4	Development Application Issue	19.12.19
3	Preliminary Issue	03.12.19
2	Preliminary Issue	06.11.19
1	Preliminary Issue	18.09.19

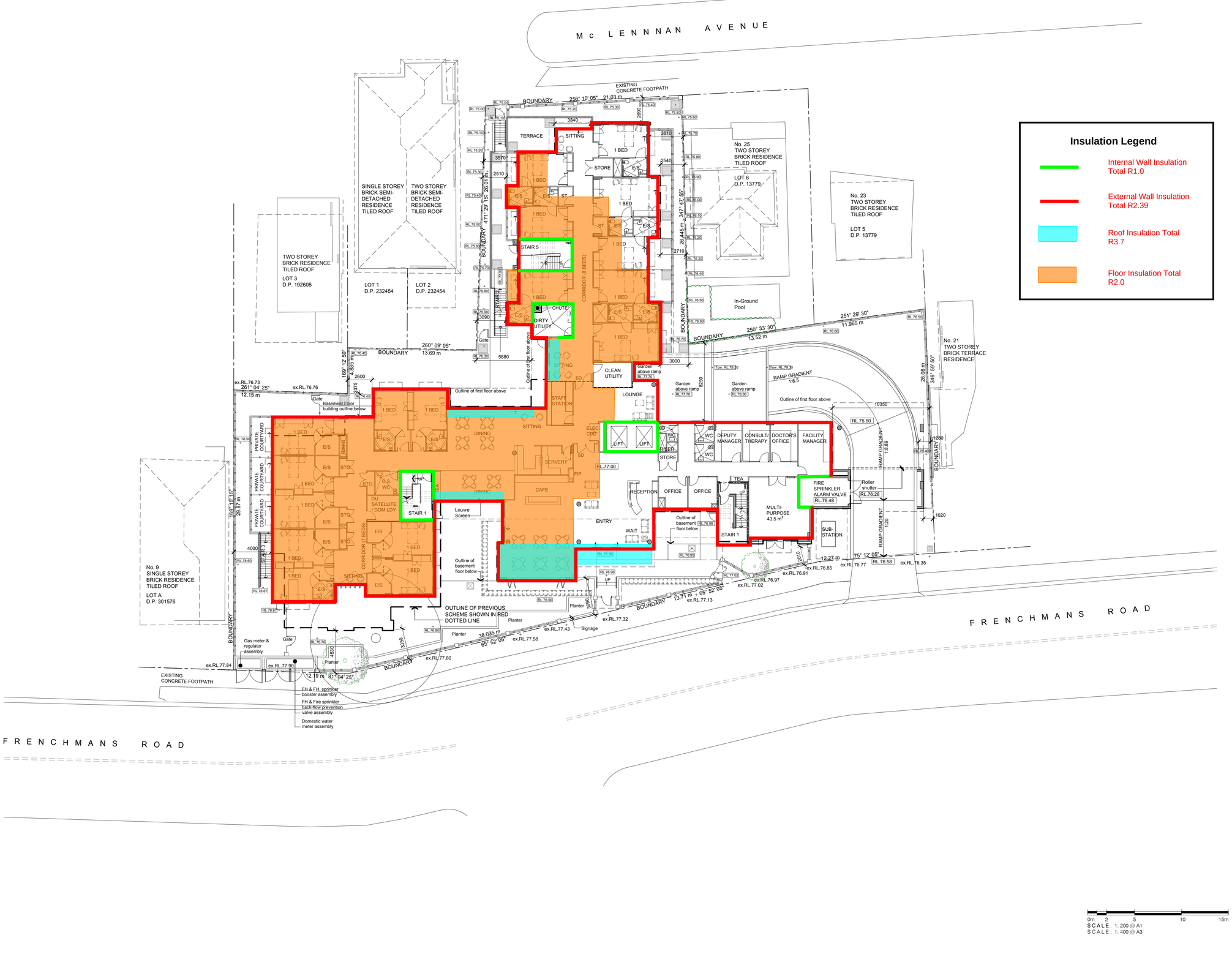
Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
BASEMENT FLOOR PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

boffa robertson group
architecture, health and aged care planning, project management
Suite 7, Level 1 Epica, 9 Railway Street
Chatswood NSW 2067
AUSTRALIA
Tel. (02) 9406 7000
Fax. (02) 9406 7099
Email : brgroup@brgr.net

Date	JAN 2019	Job No. : Drawing	
Scale	AS SHOWN	2017 /	DA04
Drawn	SS / WW		
Amendment	7		



Insulation Legend

- Internal Wall Insulation Total R1.0
- External Wall Insulation Total R2.39
- Roof Insulation Total R3.7
- Floor Insulation Total R2.0

LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL.00.00	EXISTING LEVELS
RL 00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
	ELEVATION TAG
	SECTION / ELEVATION TAG

DEVELOPMENT STATISTIC

SITE AREA	2,709.7 m²

	BCA FLOOR AREA	SEPP 2004 GROSS FLOOR AREA (VERTICAL VILLAGE)
LOWER BASEMENT.FL.	522 m²	-
BASEMENT.FL.	1,557 m²	-
GROUND FL.	1,340 m²	906 m²
FIRST FL.	1,392 m²	1280 m²
SECOND FL.	1,337 m²	1230 m²
THIRD FL.	382 m²	354 m²
TOTAL	6,530 m²	3,770 m²
FSR		1.391 : 1

CARPARKING / AMBULANCE	19+1= 20 spaces
LANDSCAPE AREA	
LANDSCAPE AREA PER BED	

RESIDENT ACCOMMODATION

	1 BED	2 BED	TOTAL
GROUND FL.	17	0	17
FIRST FL.	24	4 x 2	32
SECOND FL.	22	4 x 2	30
THIRD FL.	7	0	7

TOTAL NUMBER OF THIRD FL. ILUs	= 2
TOTAL NUMBER OF BEDS	= 86
TOTAL NUMBER OF ROOMS	78 + 2 = **80**

0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
9	Preliminary Issue for coordination	08.07.2020
8	Preliminary Issue for review & comment	06.07.2020
7	Changes required to avoid removing tree	27.04.20
6	Development Application Issue	19.12.19
5	Preliminary Issue	03.12.19
4	Preliminary Issue	06.11.19

Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
GROUND FLOOR PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

boffa robertson group
architecture, health and aged care planning, project management
Suite 7, Level 1 Epica, 9 Railway Street
Chatswood NSW 2067
AUSTRALIA
Tel. (02) 9406 7000
Fax. (02) 9406 7099
Email : brgroup@brgr.net

Date	JAN 2019	Job No. : Drawing	
Scale	AS SHOWN	2017 / DA05	
Drawn	SS		
Amendment	9		

LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL. 00.00	EXISTING LEVELS
RL.00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
	ELEVATION TAG
	SECTION / ELEVATION TAG

Insulation Legend

- Internal Wall Insulation Total R1.0
- External Wall Insulation Total R2.39
- Roof Insulation Total R3.7
- Floor Insulation Total R2.0

0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
9	Preliminary Issue for coordination	08.07.2020
8	Preliminary Issue for review & comment	06.07.2020
7	Changes required to avoid removing tree	27.04.20
6	Development Application Issue	19.12.19
5	Preliminary Issue	03.12.19
4	Preliminary Issue	06.11.19

Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
FIRST FLOOR PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

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AUSTRALIA
Tel. (02) 9406 7000
Fax. (02) 9406 7099
Email : brgroup@brgr.net

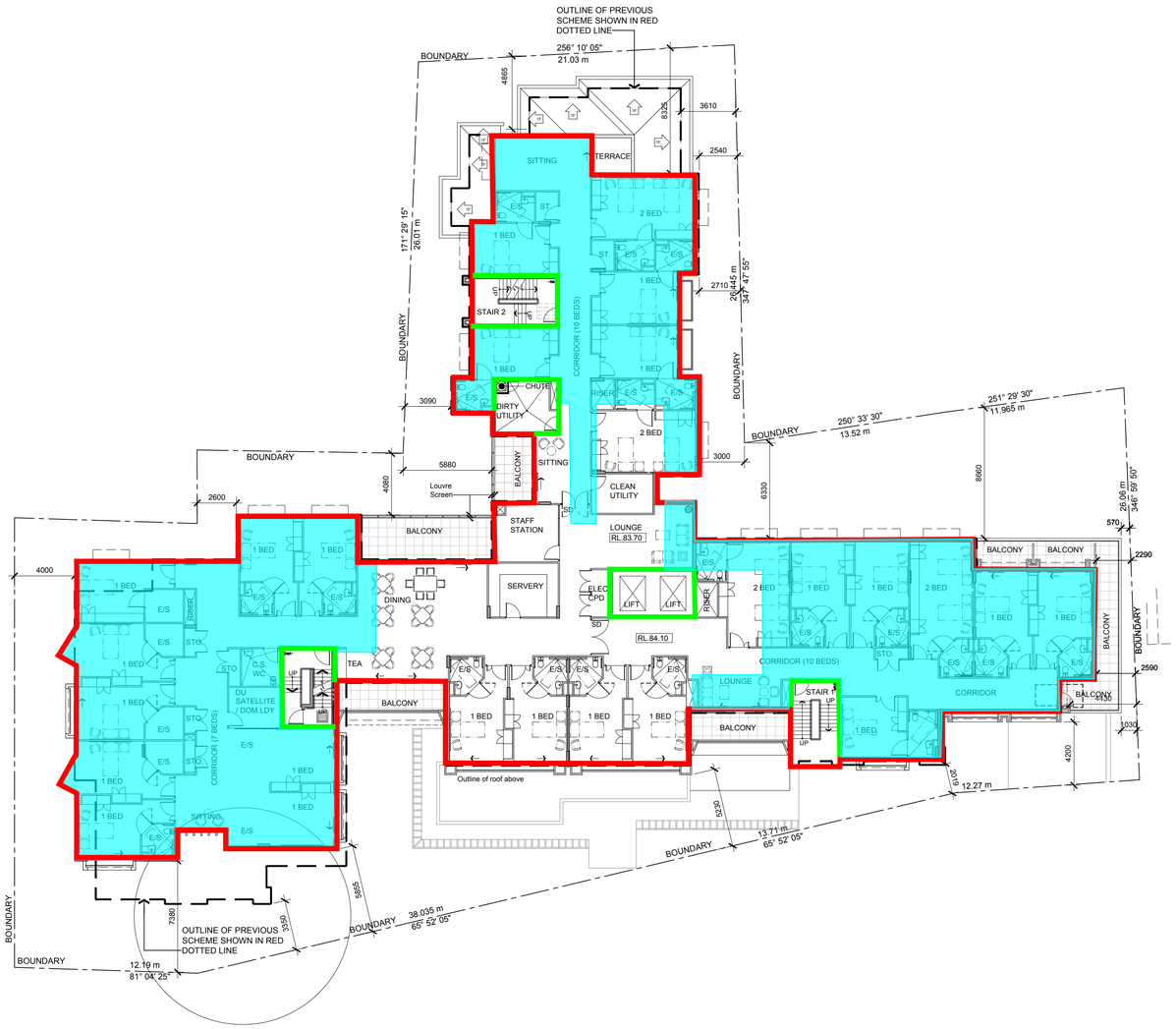
Date	JAN 2019	Job No. : Drawing	
Scale	AS SHOWN	2017 / DA06	
Drawn	SS		
Amendment	9		

LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL. 00.00	EXISTING LEVELS
RL.00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
	ELEVATION TAG
	SECTION / ELEVATION TAG

Insulation Legend

- Internal Wall Insulation Total R1.0
- External Wall Insulation Total R2.39
- Roof Insulation Total R3.7
- Floor Insulation Total R2.0



0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
9	Preliminary Issue for coordination	08.07.2020
8	Preliminary Issue for review & comment	06.07.2020
7	Changes required to avoid removing tree, Northern wing pulled back from boundary, Dwelling units to eastern wing converted to 8 bedrooms (10 beds)	27.04.20
6	Development Application Issue	19.12.19
5	Preliminary Issue	03.12.19
4	Preliminary Issue	06.11.19
3	Preliminary Issue	18.09.19

Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
SECOND FLOOR PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

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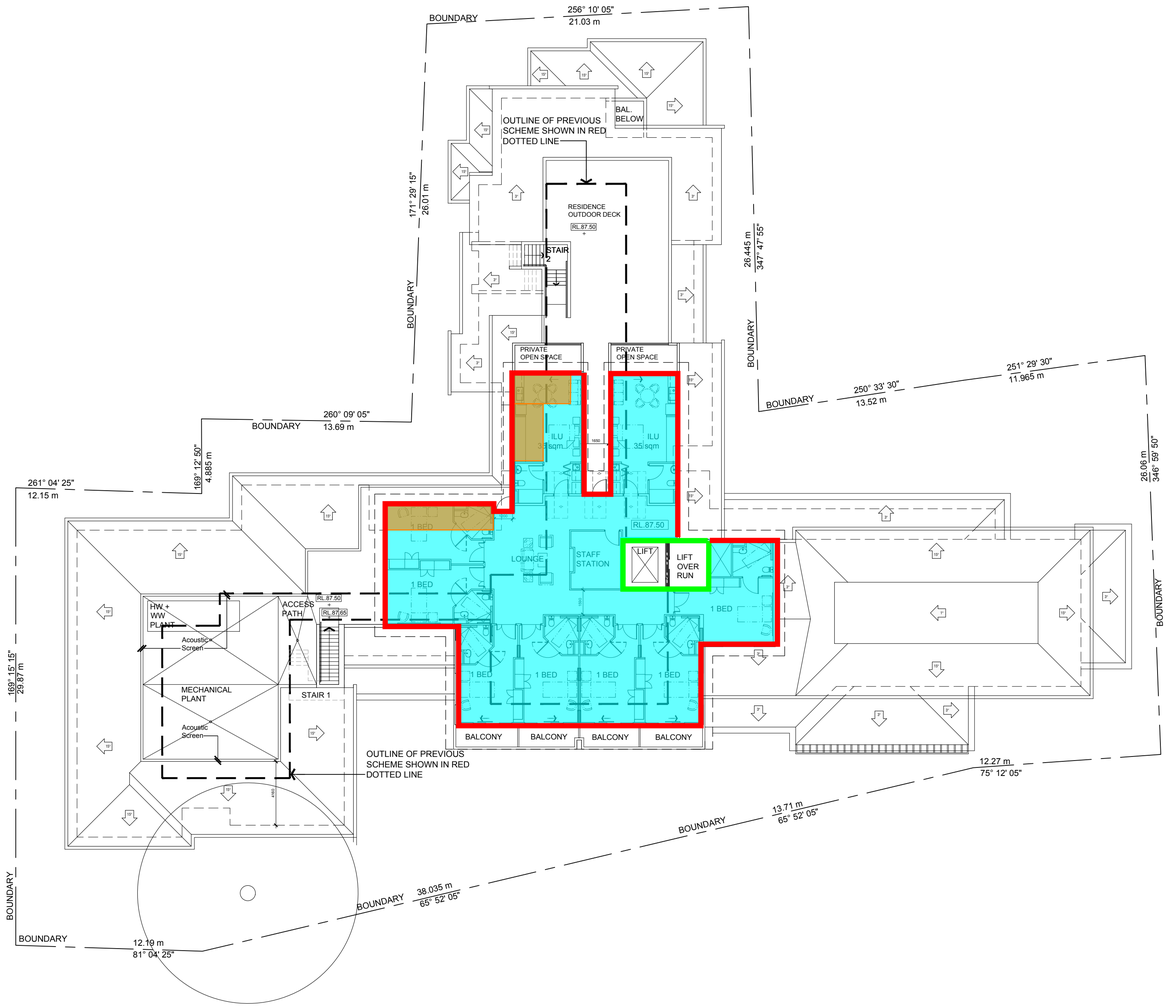
Date	JAN 2019	Job No. : Drawing	
Scale	1:200@A1	2017 / DA07	
Drawn	SS		
Amendment	9		

LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL 00.00	EXISTING LEVELS
RL 00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
	ELEVATION TAG
	SECTION / ELEVATION TAG

Insulation Legend

- Internal Wall Insulation Total R1.0
- External Wall Insulation Total R2.39
- Roof Insulation Total R3.7
- Floor Insulation Total R2.0



0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
9	Preliminary Issue for coordination	08.07.2020
8	Preliminary Issue for review & comment	06.07.2020
7	Meeting with PM	22.06.2020
6	2 x Dwelling Suite added and Plant ares modified.	21.05.2020
5	2 x Dwelling Suite added and Plant ares modified.	27.04.20
4	Development Application Issue	19.12.19
3	Preliminary Issue	03.12.19
2	Preliminary Issue	06.11.19
1	Preliminary Issue	27.08.19

Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
THIRD FLOOR PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

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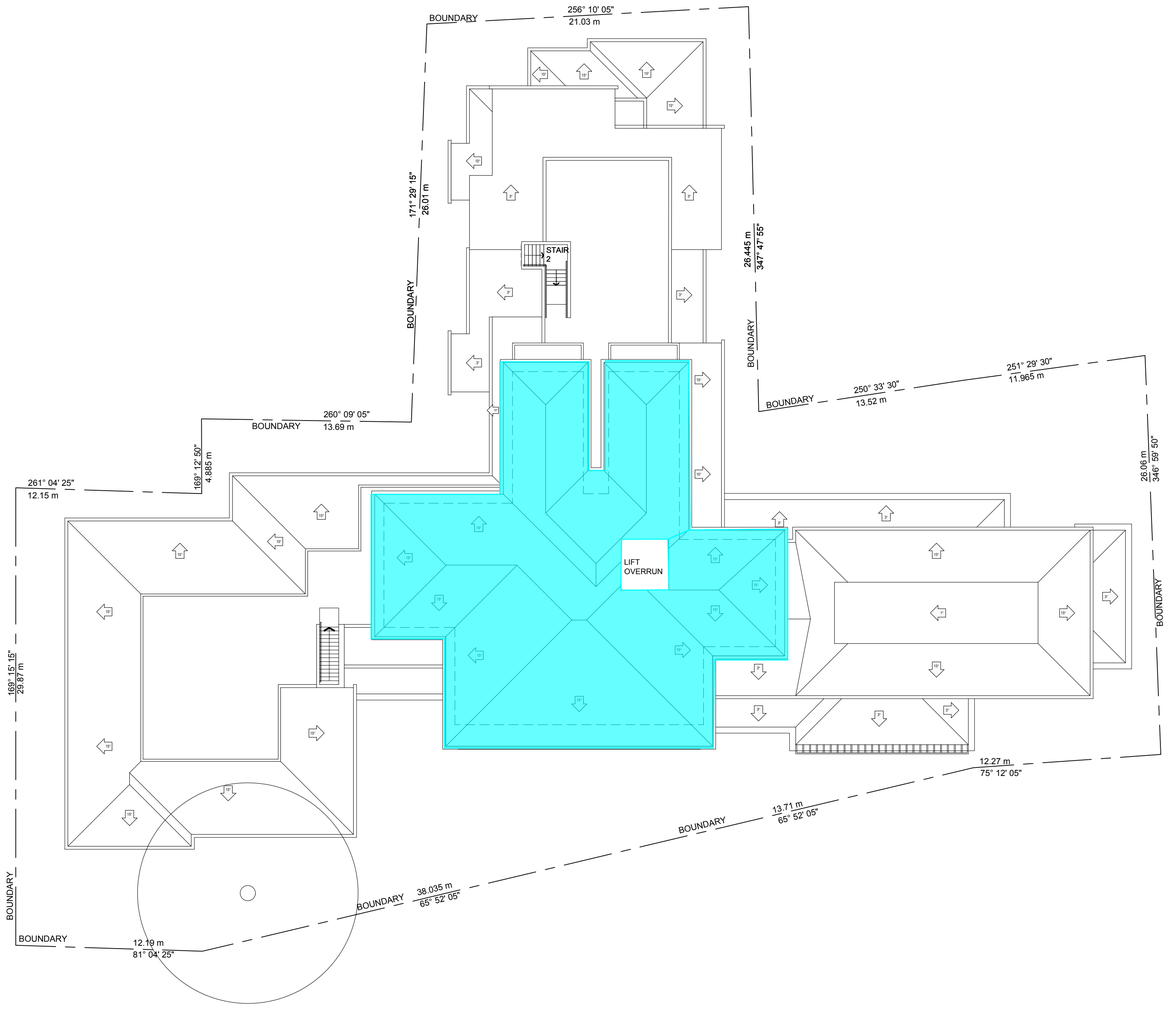
Date	JAN 2019	Job No. : Drawing	
Scale	AS SHOWN	2017 /	DA08
Drawn	SS / WW		
Amendment	9		

LEGEND

	BOUNDARY
	MASONRY WALL
	STUD WALL
	OUTLINE OF WALL ABOVE / BELOW
	ROOF OUTLINE
	NEW FENCE
+ ex.RL 00.00	EXISTING LEVELS
RL 00.00	PROPOSED LEVELS
	PROPOSED DOOR
	PROPOSED WINDOW
	ELEVATION TAG
	SECTION / ELEVATION TAG

Insulation Legend

- Internal Wall Insulation Total R1.0
- External Wall Insulation Total R2.39
- Roof Insulation Total R3.7
- Floor Insulation Total R2.0



0m 2 5 10 15m
SCALE: 1: 200 @ A1
SCALE: 1: 400 @ A3

PRELIMINARY

No.	Amendment	Date
9	Preliminary Issue for coordination	08.07.2020
8	Preliminary Issue for review & comment	06.07.2020
7	Meeting with PM	22.06.2020
6	2 x Dwelling Suite added and Plant ares modified.	21.05.2020
5	2 x Dwelling Suite added and Plant ares modified.	27.04.20
4	Development Application Issue	19.12.19
3	Preliminary Issue	03.12.19
2	Preliminary Issue	06.11.19
1	Preliminary Issue	27.08.19

Project
SUMMIT CARE
11-19 Frenchmans Road, Randwick

Drawing
ROOF PLAN

SUMMITCARE
WARMTH WORTH WELLBEING

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Date	JAN 2019	Job No. : Drawing	
Scale	AS SHOWN	2017 /	DA08
Drawn	SS / WW		
Amendment	9		

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