

BCA SECTION J DTS ASSESSMENT REPORT

Mid Coast Council New Workspace

2 Biripi Way, Taree, NSW

Date: November 2019

Issue: 03

Reference: SYD14782

Status: For
Information

Prepared by: Cam Wang

Date: 01/11/19

DOCUMENT CONTROL

Issue	Date	Status	HPF Author (Date/Initials)	HPF Approval (Date/Initials)	Notes
01	14/10/19	For info	10/10/19_CW	14/10/19_SB	For information
02	16/10/19	For info	15/10/19_CW	16/10/19_SB	For information
03	01/11/19	For info	01/11/19_CW	01/11/19_SB	For information

Contents

1.0	EXECUTIVE SUMMARY	2
2.0	INTRODUCTION.....	3
3.0	ASSESSMENT INPUT DATA	4
4.0	J1 BUILDING FABRIC	5
4.1	J1.2 Thermal Construction – General.....	5
4.2	J1.3 Roof & Ceiling Construction.....	7
4.3	J1.4 Roof Lights	8
4.4	J1.5 Walls and glazing.....	9
4.5	J1.6 Floors	11
5.0	J3 BUILDING SEALING	12
6.0	J5 AIR CONDITIONING AND VENTILATION SYSTEMS	13
7.0	J6 ARTIFICIAL LIGHTING AND POWER	14
8.0	J7 HEATED WATER SUPPLY AND SWIMMING POOL & SPA POOL PLANT	15
9.0	J8 FACILITIES FOR ENERGY MONITORING.....	16
APPENDIX A	FABRIC INSULATION MARKUP	17
APPENDIX B	FAÇADE CALCULATOR	19

1.0 EXECUTIVE SUMMARY

The proposed building is to comply with the Deemed-to-Satisfy provisions of the National Construction Code Series Volume 1 – Building Code of Australia (BCA) 2019 Edition and shall incorporate State variations where applicable. The required building material properties for compliance are outlined in this report.

2.0 INTRODUCTION

- 01 MidCoast Council intend to relocate to a new consolidated head office. An existing bulky goods building previously occupied by Masters is to be converted into the new Head Office for the Council. The conversion will accommodate general office areas, enclosed meeting rooms, toilets, etc.
- 02 The purpose of this report is to assess the new workspace occupied by the council(excluding future fit-out area) for Section J compliance with the Deemed-to-Satisfy provisions of the National Construction Code Series Volume 1 - Building Code of Australia (BCA) 2019 Edition and shall incorporate State variations where applicable.
- 03 The report shall cover the following areas within Section J of the NCC and provides commentary on the status of compliance with the DTS requirements:
- J1 Building Fabric
 - J2 *****
 - J3 Building Sealing
 - J4 *****
 - J5 Air Conditioning and Ventilation Systems
 - J6 Artificial Lighting and Power
 - J7 Heated Water Supply and Swimming Pool and Spa Pool Plant
 - J8 Facilities for Monitoring

3.0 ASSESSMENT INPUT DATA

01 The NCC Section J assessment for the building has been based on the following:

NCC Year	2019
Climate Zone	5
JV3, DTS or Performance Solution	Deemed-to-Satisfy
BCA Classification	5

02 Reference architectural drawings

- Mid coast council new workspace

Architectural drawings referenced in this report are from GSA dated 08/10/2019 with status defined as "Issued for info-QS"

The architectural drawing (DA-2011) referenced in this report is from GSA dated 18/10/2019 with status defined as "Issued for Development Application"

4.0 J1 BUILDING FABRIC

4.1 J1.2 Thermal Construction – General

Requirements	Assessment / Remarks
<p>a) Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it –</p> <ul style="list-style-type: none"> i. abuts or overlaps adjoining insulation other than at supporting members such as studs, noggins, joists, furring channels and the like where the insulation must be against the member; and ii. forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and iii. does not affect the safe or effective operation of a service or fitting 	To Comply
<p>b) Where required, reflective insulation must be installed with –</p> <ul style="list-style-type: none"> i. the necessary airspace to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and ii. the reflective insulation closely fitted against any penetration, door or window opening; and iii. the reflective insulation adequately supported by framing members; and iv. each adjoining sheet of roll membrane being - <ul style="list-style-type: none"> (A) overlapped not less than 50 mm; or (B) taped together 	To Comply
<p>c) Where required, bulk insulation must be installed so that -</p> <ul style="list-style-type: none"> i. it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like; and ii. in a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50 mm. 	To Comply
<p>d) Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in Specification J1.2.</p>	To Comply
<p>e) The required Total R-Value and Total System U-Value, including</p>	To Comply

<p>allowance for thermal bridging, must be- –</p> <ul style="list-style-type: none">i. calculated in accordance with AS/NZS 4859.2 for a roof or floor; orii. determined in accordance with Specification J 1.5a for wall glazing construction; oriii. determined in accordance with Specification J1.6 floor Section 3.5 of SIBSE Guide A for soil or sub-floor spaces.	
--	--

4.2 J1.3 Roof & Ceiling Construction

Requirements	Assessment / Remarks
a) A roof or ceiling must achieve a total R value greater than or equal to– <ul style="list-style-type: none"> i. In climate zones 1,2,3,4 and 5, R3.7 for a downward direction of heat flow; and ii. This Clause is not applicable iii. This Clause is not applicable iv. This Clause is not applicable b) In climate zones 1,2,3,4,5,6 and 7, the solar absorptance of the upper surface of roof must be not more than 0.45.	R value to be minimum of 3.7 ;
	Solar Absorptance to be not more than 0.45

Note: Further details on roof insulation can be found in Appendix A.

4.3 J1.4 Roof Lights

Requirements	Assessment / Remarks
<p>Roof Lights must have-</p> <ul style="list-style-type: none"> a) A total area of not more than 5% of the floor area of the room or space served; and b) Transparent and translucent elements including any imperforate ceiling diffuser, with a combined performance of <ul style="list-style-type: none"> i. For total system of SHGC, in accordance with Table J1.4; and ii. For total system U-value, not more than U3.9 	Total System U-Value to be not more than 3.9

4.3.1 Table J1.4 Roof Lights-Total system SHGC

Requirements			Assessment / Remarks
Roof light shaft index	Total area of roof lights up to 3.5% of the floor area of the room area space	Total area of roof lights more than 3.5% and up to 5% of the floor area of the room area space	Total System SHGC-Value to be not more than 0.45
<1.0	≤0.45	≤0.29	
≥1.0 to <2.5	≤0.51	≤0.33	
≥2.5	≤0.76	≤0.49	

4.4 J1.5 Walls and glazing

Requirements		Assessment / Remarks
a) The Total System U-Value of wall-glazing construction must not be greater than- <ul style="list-style-type: none"> i. For a class 2 common area, a class 5,6,7,8 or 9b building or a class 9a building other than a ward area, U2.0; and ii. This Clause is not applicable b) This Clause is not applicable c) The Total System U-Value of wall-glazing construction must be calculated in accordance with Specification J1.5a. d) Wall components of a wall glazing construction must achieve a minimum total R-Value of – <ul style="list-style-type: none"> i. Where the wall is less than 80% of the area of the wall-glazing construction, R1.0; or ii. Where the wall is 80% or more of the area of the wall-glazing construction, the value specified in table J1.5a. e) The solar admittance of externally facing wall-glazing construction must not be greater than- <ul style="list-style-type: none"> i. For a Class 2 common area, a class 5,6,7,8 or 9b building or a class 9a building other than a ward area, the values specified in Table J1.5b; and ii. This Clause is not applicable f) The solar admittance of a wall-glazing construction must be calculated in accordance with Specification J1.5a. g) This Clause is not applicable		Refer to Appendix A

4.4.1 Table J1.5a Minimum wall Total R-Value- Wall area 80% or more of wall-glazing construction area.

Requirements		Assessment / Remarks
Climate zone	Class 2 common area, class 5,6,7,8 or 9b building or a class 9a building other than a ward area	Refer to Appendix A
5	1.4	

Note: Further details on insulation of wall components of Wall-Glazing construction can be found in Appendix A

4.4.2 Table J1.5b Maximum wall-glazing construction solar admittance-class 2 common area, class 5, 6,7,8 or 9b building or Class 9a building other than a ward area

Requirements					Assessment / Remarks
Climate zone	Eastern aspect Solar admittance	Northern aspect Solar admittance	Southern aspect Solar admittance	Western aspect Solar admittance	Refer To Appendix B
5	0.13	0.13	0.13	0.13	

Note: Further details on Glazing calculations can be found in Appendix B.

4.5 J1.6 Floors

Requirements	Assessment / Remarks
a) A floor must achieve the Total R-Value specified in Table J1.6. b) This Clause is not applicable c) This Clause is not applicable	To Comply

4.5.1 Table J1.6 Floors-Minimum Total R-Value

Requirements		Assessment / Remarks
Location	Climate zones 4,5,6 and 7-downwards heat flow	Total R-Value of 2.0 is achieved by the soil for floors that are in direct contact with the ground.
A floor without an in-slab heating or cooling system	2.0	

Note to Table J1.6: For the purpose of calculating the Total R-Value of a floor, the sub-floor and soil R-Value must be calculated in accordance with Specification J1.6 or Section 3.5 of CIBSE Guide A.

5.0 J3 BUILDING SEALING

01 Elements forming the envelope shall comply with this section.

6.0 J5 AIR CONDITIONING AND VENTILATION SYSTEMS

01 The Air Conditioning and Ventilation services shall comply with this section.

7.0 J6 ARTIFICIAL LIGHTING AND POWER

01 The Artificial Lighting and Power services shall comply with this section.

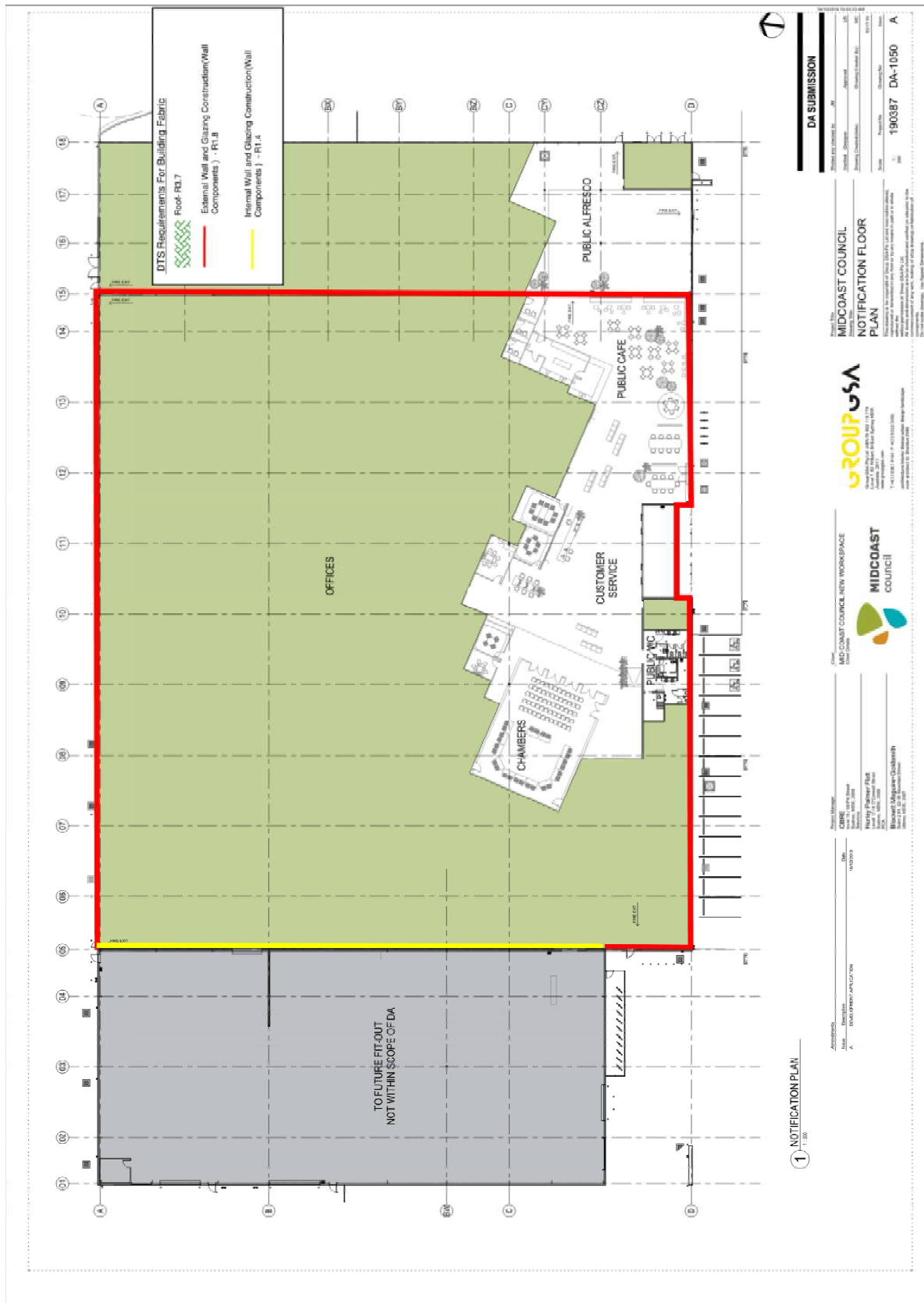
8.0 J7 HEATED WATER SUPPLY AND SWIMMING POOL & SPA POOL PLANT

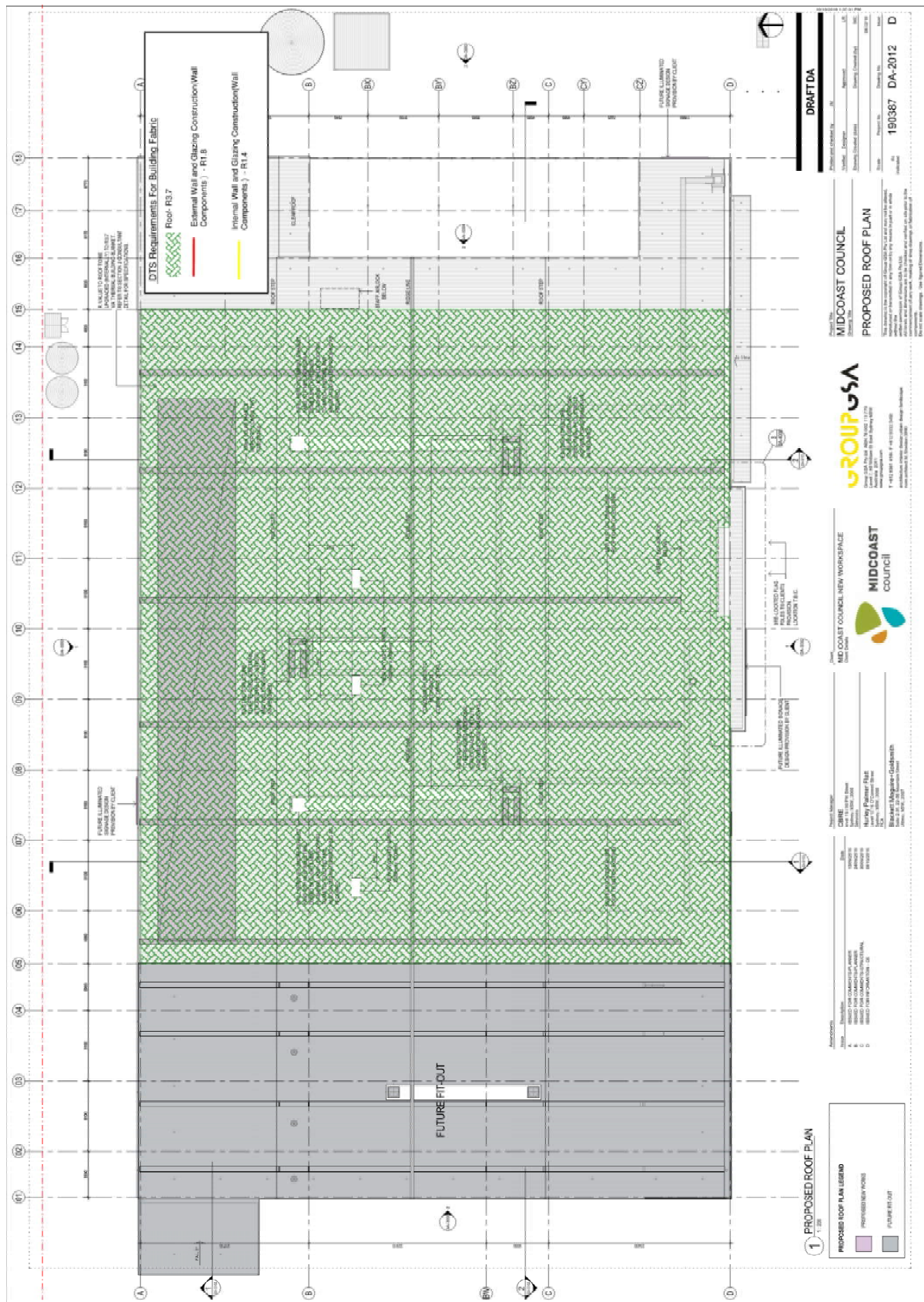
- 01 The Heated Water Supply and Swimming Pool & SPA Pool Plant services shall comply with this section.

9.0 J8 FACILITIES FOR ENERGY MONITORING

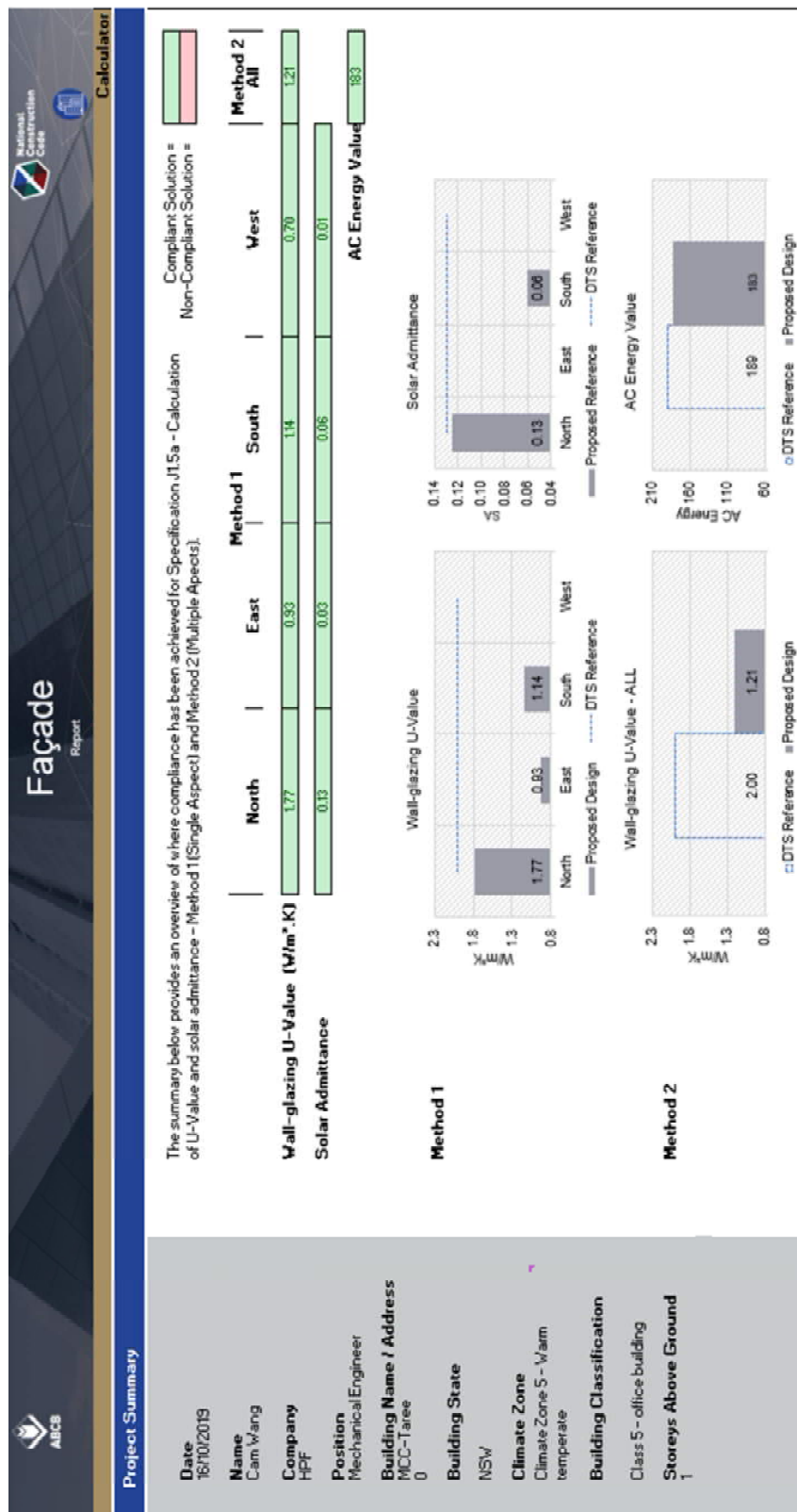
01 Facilities Monitoring shall be in compliance with the DTS provisions.

APPENDIX A FABRIC INSULATION MARKUP





APPENDIX B FAÇADE CALCULATOR



[illegible]