

**NCC 2022 Section J Compliance Report**  
**Issue A – 5<sup>th</sup> September 2024**

**Proposed Child Care Centre**  
**70 Rodd Street, CANOWINDRA NSW 2804**

For

**Robert Wilson**

Authored by

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<b>Part J Section</b>	<b>Applicable</b>	<b>Not Applicable</b>
<b>Part J4 Building Fabric</b>		
J4D3 Thermal Construction	✓	
J4D4 Roof and Ceiling Construction	✓	
J4D5 Roof Lights		✓
J4D6 Walls and Glazing	✓	
J4D7 Floors	✓	
<b>Part J5 Building Sealing</b>		
J5D4 Roof Lights		✓
J5D5 Windows and Doors	✓	
J5D6 Exhaust Fans	✓	
J5D7 Construction of Ceilings, Walls & Floors	✓	
J5D8 Evaporative Coolers	✓	
<b>Part J5 Air-conditioning &amp; Ventilation Systems</b>		
J5D3 Air-conditioning System Control	✓	
J5D4 Mechanical Ventilation Systems	✓	
J5D5 Fan Systems	✓	
<b>Part J7 Artificial Lighting and Power</b>		
J7D3 Artificial Lighting	✓	
J7D4 Interior Artificial Lighting & Power Control	✓	
J7D6 Exterior Artificial Lighting	✓	
J7D7 Boiling Water & Chilled Water Storage	✓	
<b>Part J8 Heated Water Supply</b>		
J8D2 Heated Water Supply	✓	
<b>Part J9 Facilities for Monitoring</b>		
J9D3 Facilities for Energy Monitoring	✓	

## 1. Project Description

### Development Description

The proposed development is for the construction of a new Child Care Centre.

### NCC Building Classification

The proposed building is a Class 9b building.

### Climate Zone

The proposed building works are in Climate Zone 4.

## 2. Part J4 Building Fabric

The conditioned portion of the proposed building uses the following construction materials.

Floor Construction: Concrete slab on ground

Wall Construction: Brick veneer

Roof Construction: Framed roof with metal roof sheeting

### J4D4 Roof and Ceiling Construction

The minimum Total R-Value for a roof or ceiling that is part of the envelope in Climate Zone 4 is R3.7 for an upward direction of heat flow.

#### Proposed Roof System:

Roof	Required R-value	Achieved R-value	Construction example
Pitched Roof	R3.7 downward	R3.89	Metal roof sheeting / Roof frame / R3.5 Insulation / Selected ceiling

### J4D6 Walls and Glazing

The minimum Total R-Value for a wall area with glazing area less than 80% of wall glazing construction area that is part of the envelope in Climate Zone 4 is R1.4.

#### Proposed Wall System:

Wall	Required R-value	Achieved R-value	Construction example
Brick Veneer	R1.4	R1.48	Masonry Brick / air gap / timber frame / R1.0 bulk insulation / plasterboard

Refer to Glazing Calculator for glazing requirements.

### J4D7 Floors

The minimum Total R-Value for a floor, without an in-slab heating or cooling system, is R2.0 downwards heat flow.

The minimum Total R-Value for a floor, with an in-slab heating or cooling system, is R3.25 downwards heat flow.

#### Proposed Floor System:

Floor	Required R-value	Achieved R-value	Construction example
Concrete Slab	R2.0 downward	R2.13	Concrete slab / Soil thermal performance Specification 39 NCC - Volume 1 2022

### 3. Part J7 Artificial Lighting

The maximum allowable illumination for the proposed works is 2184W.

A total of 1854W is being proposed for this development.

Refer to Lighting Calculator for details.

## 4. Section J Requirements

The following specifications is required for the proposed building to comply with Section J, of the Building Code of Australia 2022

### PART J4 BUILDING FABRIC

#### J4D2 Application of part

- (1) The *Deemed-to-Satisfy Provisions* of this Part apply to building elements forming the *envelope* of a Class 3 and Class 5 to 9 building.
- (2) NSW J4D3, applies to building elements forming the *envelope* of a *sole-occupancy unit* in a Class 2 building and a Class 4 part of a building.
- (3) (2) only applies to thermal insulation in a *sole-occupancy unit* in a Class 2 building and a Class 4 part of a building where a *development consent* specifies that the insulation is to be provided as part of the development.

#### J4D3 Thermal construction – general (NSW)

- (1) Where *required*, insulation must comply with AS/NZS 4859.1 and be installed so that it—
  - (a) abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must be against the member; and
  - (a) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the does not affect the safe or effective operation of a *service* or fitting.
- (2) Where *required*, *reflective insulation* must be installed with—
  - (a) the necessary airspace to achieve the *required R-Value* between a reflective side of the *reflective insulation* and a building lining or cladding; and
  - (b) the *reflective insulation* closely fitted against any penetration, door or *window* opening; and
  - (c) the *reflective insulation* adequately supported by framing members; and
  - (d) each adjoining sheet of roll membrane being—
    - (i) overlapped not less than 50 mm; or
    - (ii) taped together.
- (3) Where *required*, bulk insulation must be installed so that—
  - (a) 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
  - (b) 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.
- (4) Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in [Specification 36](#).

- (5) The *required Total R-Value* and *Total System U-Value*, including allowance for thermal bridging, must be—
- (a) calculated in accordance with AS/NZS 4859.2 for a roof or floor; or
  - (b) determined in accordance with *Specification 37* for *wall-glazing construction*; or determined in accordance with *Specification 39* or *Section 3.5* of CIBSE Guide A for soil or sub-floor spaces

#### **J4D4 Roof and Ceiling Construction (NSW)**

- (1) The *Total System U-Value* of *wall-glazing construction*, including *wall-glazing construction* which wholly or partly forms the *envelope* internally, must not be greater than—
- (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, U2.0; and
  - (b) for a Class 3 or 9c building or a Class 9a *ward area*—
    - (i) in *climate zones* 1, 3, 4, 6 or 7, U1.1; or
    - (ii) in *climate zones* 2 or 5, U2.0; or
    - (iii) in *climate zone* 8, U0.9.
- (2) The *Total System U-Value* of *display glazing* must not be greater than U5.8.
- (3) The *Total System U-Value* of *wall-glazing construction* must be calculated in accordance with *Specification 37*.
- (4) Wall components of a *wall-glazing construction* must achieve a minimum *Total R-Value* of—
- (a) where the wall is less than 80% of the area of the *wall-glazing construction*, R1.0; or
  - (b) where the wall is 80% or more of the area of the *wall-glazing construction*, the value specified in NSW Table J4D6a.
- (5) The *solar admittance* of externally facing *wall-glazing construction*, excluding *wall-glazing construction* which is wholly internal, must not be greater than—
- (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, the values specified in NSW Table J4D6b; and

#### **J4D5 Roof Lights**

*Rooflights* must have—

- (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—
  - (i) for *Total system SHGC*, in accordance with Table J4D5; and
  - (ii) for *Total system U-Value*, not more than U3.9.

**Table J1.4 Roof lights - Total system SHGC**

Roof light shaft index	Total area of roof lights up to 3.5% of the floor area of the room or space	Total area of roof lights more than 3.5% and up to 5% of the floor area of the room or space
< 1.0	≤ 0.45	≤ 0.29
≥ 1.0 to < 2.5	≤ 0.51	≤ 0.33
≥ 2.5	≤ 0.76	≤ 0.49

#### **J4D6 Walls and Glazing (NSW)**

- (1) The *Total System U-Value* of *wall-glazing construction*, including *wall-glazing construction* which wholly or partly forms the *envelope* internally, must not be greater than—
  - (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, U2.0; and
  - (b) for a Class 3 or 9c building or a Class 9a *ward area*—
    - (i) in *climate zones* 1, 3, 4, 6 or 7, U1.1; or
    - (ii) in *climate zones* 2 or 5, U2.0; or
    - (iii) in *climate zone* 8, U0.9.
- (2) The *Total System U-Value* of *display glazing* must not be greater than U5.8.
- (3) The *Total System U-Value* of *wall-glazing construction* must be calculated in accordance with Specification 37.
- (4) Wall components of a *wall-glazing construction* must achieve a minimum *Total R-Value* of—
  - (a) where the wall is less than 80% of the area of the *wall-glazing construction*, R1.0; or
  - (b) where the wall is 80% or more of the area of the *wall-glazing construction*, the value specified in NSW Table J4D6a.
- (5) The *solar admittance* of externally facing *wall-glazing construction*, excluding *wall-glazing construction* which is wholly internal, must not be greater than—
  - (a) for a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*, the values specified in NSW Table J4D6b; and
  - (b) for a Class 3 or 9c building or a Class 9a *ward area*, the values specified in NSW Table J4D6c.
- (6) The *solar admittance* of a *wall-glazing construction* must be calculated in accordance with Specification 37.
- (7) The *Total system SHGC* of *display glazing* must not be greater than 0.81 divided by the applicable shading factor specified in S37C7.

## J4D7 Floors

- (1) A floor must achieve the *Total R-Value* specified in Table J4D7.
- (2) For the purposes of (1), 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, except—
  - (a) in *climate zone* 8; or
  - (b) a Class 3, Class 9a *ward area* or Class 9b building in *climate zone* 7 that has a *floor area* to floor perimeter ratio of less than or equal to 2.
- (3) A floor must be insulated around the vertical edge of its perimeter with insulation having an *R-Value* greater than or equal to 1.0 when the floor—
  - (a) is a concrete slab-on-ground in *climate zone* 8; or
  - (b) has an in-slab or in-screed heating or cooling system, except where used solely in a bathroom, amenity area or the like.
- (4) Insulation *required* by (3) for a concrete slab-on-ground must—
  - (a) be *water resistant*; and
  - (b) be continuous from the adjacent finished ground level—
    - (i) to a depth not less than 300 mm; or
    - (ii) for the full depth of the vertical edge of the concrete slab-on-ground.

## PART J5 BUILDING SEALING

### J5D4 Roof lights

- (1) A *roof light* must be sealed, or capable of being sealed, when serving—
  - (a) a *conditioned space*; or
  - (b) a *habitable room* in *climate zones* 4, 5, 6, 7 or 8.
- (2) A *roof light required* by (1) to be sealed, or capable of being sealed, must be constructed with—
  - (a) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or
  - (b) a weatherproof seal; or
  - (c) a shutter system readily operated either manually, mechanically or electronically by the occupant.

### J5D5 Windows and Doors

- (1) A door, openable *window* or the like must be sealed—
  - (a) when forming part of the *envelope*; or
  - (b) in *climate zones* 4, 5, 6, 7 or 8.
- (2) The requirements of (1) do not apply to—



- (a) a *window* complying with AS 2047; or
  - (b) a fire door or smoke door; or
  - (c) a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security.
- (3) A seal to restrict air infiltration—
- (a) for the bottom edge of a door, must be a draft protection device; and
  - (b) for the other edges of a door or the edges of an openable *window* or other such opening, may be a foam or rubber compression strip, fibrous seal or the like.
- (4) An entrance to a building, if leading to a *conditioned space* must have an airlock, *self-closing door*, *rapid roller door*, revolving door or the like, other than—
- (a) where the *conditioned space* has a *floor area* of not more than 50 m<sup>2</sup>; or
  - (b) where a café, restaurant, open front shop or the like has—
    - (i) a 3 m deep un-conditioned zone between the main entrance, including an open front, and the *conditioned space*; and
    - (ii) at all other entrances to the café, restaurant, open front shop or the like, *self-closing doors*.
- (5) A loading dock entrance, if leading to a *conditioned space*, must be fitted with a *rapid roller door* or the like.

#### **J5D6 Exhaust Fans**

An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving—

- (a) a *conditioned space*; or
- (b) a *habitable room* in *climate zones* 4, 5, 6, 7 or 8.

#### **J5D7 Construction of Ceilings, Walls and Floors**

- (1) 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 (2)—
- (a) when forming part of the *envelope*; or
  - (b) in *climate zones* 4, 5, 6, 7 or 8.
- (2) Construction *required* by (1) must be—
- (a) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
  - (b) sealed at junctions and penetrations with—
    - (i) close fitting architrave, skirting or cornice; or
    - (ii) expanding foam, rubber compressible strip, caulking or the like.

- (3) The requirements of (1) do not apply to openings, grilles or the like *required* for smoke hazard management.

### **J5D8 Evaporative Coolers**

An evaporative cooler must be fitted with a self-closing damper or the like—

- (a) when serving a heated space; or
- (b) in *climate zones* 4, 5, 6, 7 or 8.

## **PART J6 AIR-CONDITIONING AND VENTILATION SYSTEMS**

### **J5.2 Air-conditioning system control**

- (1) An *air-conditioning* system—
- (a) must be capable of being deactivated when the building or part of a building served by that system is not occupied; and
  - (b) when serving more than one *air-conditioning* zone or area with different heating or cooling needs, must—
    - (i) thermostatically control the temperature of each zone or area; and
    - (ii) not control the temperature by mixing actively heated air and actively cooled air; and
    - (iii) limit reheating to not more than—
      - (A) for a fixed supply air rate, a 7.5 K rise in temperature; and
      - (B) for a variable supply air rate, a 7.5 K rise in temperature at the nominal supply air rate but increased or decreased at the same rate that the supply air rate is respectively decreased or increased; and
- which provides the *required* mechanical ventilation, other than in *climate zone* 1 or where dehumidification control is needed, must have an *outdoor air economy cycle* if the total air flow rate of any airside component of an *air-conditioning* system is greater than or equal to the flow rates in *Table J6D3*; and
- which contains more than one water heater, chiller or coil, must be capable of stopping the flow of water to those not operating; and
- with an airflow of more than 1000 L/s, must have a variable speed fan when its supply air quantity is capable of being varied; and
- when serving a *sole-occupancy unit* in a Class 3 building, must not operate when any external door of the *sole-occupancy unit* that opens to a balcony or the like, is open for more than one minute; and
- must have the ability to use direct signals from the control components responsible for the delivery of comfort conditions in the building to regulate the operation of central plant; and

must have a control dead band of not less than 2°C, except where a smaller range is *required* for specialised applications; and must be provided with balancing dampers and balancing valves, as *required* to meet the needs of the system at its maximum operating condition, that ensure the maximum design air or fluid flow is achieved but not exceeded by more than 15% above design at each—

- (i) component; or
  - (ii) group of components operating under a common control in a system containing multiple components; and
- (c) must ensure that each independently operating space of more than 1 000 m<sup>2</sup> and every separate floor of the building has provision to terminate airflow independently of the remainder of the system sufficient to allow for different operating times; and
- (d) must have automatic variable temperature operation of heated water and chilled water circuits; and
- (e) when deactivated, must close any motorised outdoor air or return air damper that is not otherwise being actively controlled.
- (2) When two or more *air-conditioning* systems serve the same space they must use control sequences that prevent the systems from operating in opposing heating and cooling modes.
- (3) Time switches — the following applies:
- (a) A time switch must be provided to control—
    - (i) an *air-conditioning* system of more than 2 kW<sub>r</sub>; and
    - (ii) a heater of more than 1 kW<sub>heating</sub> used for *air-conditioning*.
  - (b) variable pre-programmed times and on variable pre-programmed days.
  - (c) The requirements of (a) and (b) do not apply to—
    - (i) an *air-conditioning* system that serves—
      - (A) only one *sole-occupancy unit* in a Class 2, 3 or 9c building; or
      - (B) a Class 4 part of a building; or
    - (ii) a *conditioned space* where *air-conditioning* is needed for 24 hour continuous use.

#### **J6D4 Mechanical Ventilation Systems**

- (1) General — A mechanical ventilation system, including one that is part of an *air-conditioning* system, except where the mechanical system serves only one *sole-occupancy unit* in a Class 2 building or serves only a Class 4 part of a building, must—
- (a) be capable of being deactivated when the building or part of the building served by that system is not occupied; and

- (b) when serving a *conditioned space*, except in periods when evaporative cooling is being used—
    - (i) where specified in Table J6D4, have—
      - (A) an energy reclaiming system that preconditions *outdoor air* at a minimum sensible heat transfer effectiveness of 60%; or
      - (B) demand control ventilation in accordance with AS 1668.2 if appropriate to the application; and
    - (ii) not exceed the minimum *outdoor air* quantity *required* by Part F6 by more than 20%, except where—
      - (A) additional unconditioned *outdoor air* is supplied for free cooling; or
      - (B) additional mechanical ventilation is needed to balance the *required* exhaust or process exhaust; or
      - (C) an energy reclaiming system preconditions all the *outdoor air*; and
  - (c) for an airflow of more than 1000 L/s, have a variable speed fan unless the downstream airflow is *required* by Part F6 to be constant.
- (2) Exhaust systems — An exhaust system with an air flow rate of more than 1000 L/s must be capable of stopping the motor when the system is not needed, except for an exhaust system in a *sole-occupancy unit* in a Class 2, 3 or 9c building.
- (3) *Carpark* exhaust systems — *Carpark* exhaust systems must have a control system in accordance with—
- (a) clause 4.11.2 of AS 1668.2; or
  - (b) clause 4.11.3 of AS 1668.2.
- (4) Time switches — The following applies:
- (a) A time switch must be provided to a mechanical ventilation system with an air flow rate of more than 1000 L/s.
  - (b) The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.
  - (c) The requirements of (a) and (b) do not apply to—
    - (i) a mechanical ventilation system that serves—
      - (A) only one *sole-occupancy unit* in a Class 2, 3 or 9c building; or
      - (B) a Class 4 part of a building; or
    - (ii) a building where mechanical ventilation is needed for 24 hour occupancy.

## **PART J7 ARTIFICIAL LIGHTING AND POWER**

### **J7D3 Artificial lighting**

- (2) In a Class 3 or Class 5 to 9 building—
  - a. for artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances obtained by multiplying the area of each

space by the maximum *illumination power density* in Table J7D3a; and

- b. the aggregate design illumination power load in (a) is the sum of the design illumination power loads in each of the spaces served; and
- c. where there are multiple lighting systems serving the same space, the design illumination power load for (b) is—

- i. the total illumination power load of all systems; or

where a control system permits only one system to operate at a time based on the highest illumination power load; or determined by the formula—

$$\sqrt{H \times T^2 + P \times (100 - T)^2} \times I_{100}$$

- d. In the formula at (c)(ii)—
  - i.  $H$  = the highest illumination power load; and
  - ii.  $T$  = the time for which the maximum illumination power load will occur, expressed as a percentage; and
  - iii.  $P$  = the predominant illumination power load.

#### **J7D4 Interior artificial lighting and power control**

- (4) 95% of the light fittings in a building or *storey* of a building, other than a Class 3 building of more than 250 m<sup>2</sup> must be controlled by—
  - (a) a time switch in accordance with [Specification 40](#); or
  - (b) an occupant sensing device such as—
    - (i) a security key card reader that registers a person entering and leaving the building; or
    - (ii) a motion detector in accordance with [Specification 40](#).

## **PART J8 HEATED WATER SUPPLY**

### **J8D2 Heated water supply**

A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.

## **PART J9 FACILITIES FOR MONITORING**

### **J9D3 Facilities for energy monitoring**

- (1) A building or *sole-occupancy unit* with a *floor area* of more than 500 m<sup>2</sup> must have energy meters configured to record the time-of-use consumption of gas and electricity.

A building with a *floor area* of more than 2 500 m<sup>2</sup> must have energy meters configured to enable individual time-of-use energy data recording, in accordance

- (1) with (3), of—
  - (a) *air-conditioning* plant including, where appropriate, heating plant, cooling plant and air handling fans; and
  - (b) artificial lighting; and
  - (c) appliance power; and
  - (d) central hot water; and
  - (e) internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and
  - (f) on-site *renewable energy* equipment; and
  - (g) on-site electric vehicle charging equipment; and
  - (h) on-site *battery systems*; and
  - (i) other ancillary plant.
- (2) Energy meters *required* by (2) must be interlinked by a communication system that collates the time-of-use energy data to a single interface monitoring system where it can be stored, analysed and reviewed.
- (3) The provisions of (2) do not apply to energy meters serving—
  - (a) a Class 2 building where the total *floor area* of the common areas is less than 500 m<sup>2</sup>; or
  - (b) individual *sole-occupancy units* with a *floor area* of less than 2 500 m<sup>2</sup>.



# Non-residential Lighting




**Building name/description**  
 70 Rodd Street, Canowindra

**Classification**  
 Class 9b

**Number of rows preferred in table below**    16  
(as currently displayed)

ID	Description	Floor area of the space	Perimeter of the space	Floor to ceiling height	Design illumination power load	Space	Illuminance		Adjustment factor 1	Adjustment factor 2	Light colour adjustment factors		SATISFIES PART J7D3
							Designed lux level	Recommended lux level			Light colour adjustment factor 1	Light colour adjustment factor 2	
1	Activity Room 1	46.7 m <sup>2</sup>	30 m	2.7 m	260 W	School - general purpose learning areas and tutorial rooms					a) CRI ≥ 90	e) CCT ≥ 4500 K	307 W 14% of 85%
2	Activity Room 2	72.9 m <sup>2</sup>	38 m	2.7 m	360 W	School - general purpose learning areas and tutorial rooms							443 W 19% of 85%
3	Activity Room 3	72.9 m <sup>2</sup>	36 m	2.7 m	360 W	School - general purpose learning areas and tutorial rooms							437 W 20% of 85%
4	Art Room	10.0 m <sup>2</sup>	14 m	2.7 m	27 W	An illumination of not more than 65 lx							34 W 1% of 85%
5	Art Room	10.0 m <sup>2</sup>	14 m	2.7 m	27 W	An illumination of not more than 80 lx							34 W 1% of 85%
6	Amenities Rm 1	8.0 m <sup>2</sup>	12 m	2.7 m	36 W	Toilet, locker room, staff room, rest room and the like							41 W 2% of 85%
7	Amenities Rm 2/3	14.5 m <sup>2</sup>	15 m	2.7 m	54 W	Toilet, locker room, staff room, rest room and the like							69 W 3% of 85%
8	Acc. Amenities	8.1 m <sup>2</sup>	12 m	2.7 m	36 W	Toilet, locker room, staff room, rest room and the like							41 W 2% of 85%
9	Ambulant WC	3.8 m <sup>2</sup>	10 m	2.7 m	18 W	Toilet, locker room, staff room, rest room and the like							20 W 1% of 85%
10	Laundry	8.7 m <sup>2</sup>	12 m	2.7 m	18 W	Service area, cleaners room and the like							22 W 1% of 85%
11	Store	3.8 m <sup>2</sup>	8 m	2.7 m	9 W	Storage							11 W 0% of 85%
12	Store	4.3 m <sup>2</sup>	9 m	2.7 m	9 W	Storage							11 W 0% of 85%
13	Corridor	31.0 m <sup>2</sup>	42 m	2.7 m	200 W	Corridors							263 W 11% of 85%
14	Reception	36.0 m <sup>2</sup>	28 m	2.7 m	220 W	Office - artificially lit to an ambient level							246 W 12% of 85%
15	Office	10.7 m <sup>2</sup>	14 m	2.7 m	80 W	Office - artificially lit to an ambient level of 200 lux or more							80 W 4% of 85%
16	Staff Room	27.8 m <sup>2</sup>	22 m	2.7 m	120 W	Toilet, locker room, staff room, rest room and the like							128 W 6% of 85%

**Total**    1854 W

**Total**    2184 W



*if inputs are valid*

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# Façade

Wall Glazing Areas + Results



User Input

Active Row - All Inputs Required

User Dropdown

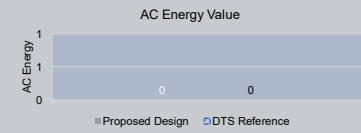
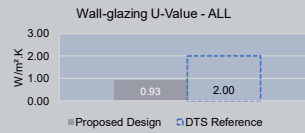
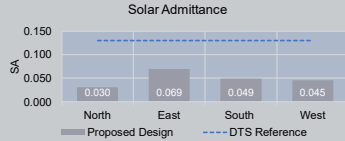
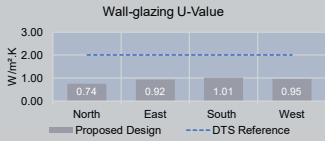
Calculator

Results

Class 9b - theatres and cinemas with multiple auditoria, Climate Zone 4 - Hot dry summer, cool winter

Method 1

Method 2



## Wall Glazing Area

Compliant Solution =    
Non-Compliant Solution =  

North	Glazing Reference	Height (m)	Width (m)	Glazing Area (m²)	Shading Reference	Wall Reference	Wall Area (m²)	Total Area (m²)	Internal	
1	Sliding Window	0.6	9.64	5.784	Eave 600 Window	External Wall	60.7	66.48	<input type="checkbox"/>	
2									<input type="checkbox"/>	
3									<input type="checkbox"/>	
4									<input type="checkbox"/>	
5									<input type="checkbox"/>	
6									<input type="checkbox"/>	
				<b>Result</b>	<b>Target</b>					
				Wall-glazing U-Value (W/m².K)	0.74	2.00				
				Solar Admittance	0.030	0.130				
				Glazing Area (m²)	5.784	4.60				
				Wall Area (m²)	60.7	0.44				
				Glazing to Façade Ratio	9%	2.65				
				Average Glazing U-Value (W/m².K)	4.60					
				Average Glazing SHGC	0.44					
				Average Wall R-Value (m².K/W)	2.65					
East	Glazing Reference	Height (m)	Width (m)	Glazing Area (m²)	Shading Reference	Wall Reference	Wall Area (m²)	Total Area (m²)	Internal	
1	Sliding Door	1.2	4.83	5.796	Eave 1200 Window	External Wall	39.1	44.90	<input type="checkbox"/>	
2	Sliding Door	2.1	1.81	3.801	Sliding Door	External Wall	7.6	11.40	<input type="checkbox"/>	
3									<input type="checkbox"/>	
4									<input type="checkbox"/>	
5									<input type="checkbox"/>	
6									<input type="checkbox"/>	
				<b>Result</b>	<b>Target</b>					
				Wall-glazing U-Value (W/m².K)	0.92	2.00				
				Solar Admittance	0.069	0.130				
				Glazing Area (m²)	11.592	4.60				
				Wall Area (m²)	78.2	0.63				
				Glazing to Façade Ratio	13%	2.65				
				Average Glazing U-Value (W/m².K)	4.60					
				Average Glazing SHGC	0.63					
				Average Wall R-Value (m².K/W)	2.65					
South	Glazing Reference	Height (m)	Width (m)	Glazing Area (m²)	Shading Reference	Wall Reference	Wall Area (m²)	Total Area (m²)	Internal	
1	Sliding Window	0.6	3.02	1.812	Eave 600 Window	External Wall	26.5	28.31	<input type="checkbox"/>	
2	Sliding Window	0.6	1.51	0.906	Verandah 600H Window	External Wall	7.2	8.11	<input type="checkbox"/>	
3	Hinged Door	2.1	3.6	7.56	Verandah	External Wall	8.4	15.96	<input type="checkbox"/>	
4	Sliding Door	2.1	3.6	7.56	Verandah	External Wall	6.4	13.96	<input type="checkbox"/>	
5									<input type="checkbox"/>	
6									<input type="checkbox"/>	
				<b>Result</b>	<b>Target</b>					
				Wall-glazing U-Value (W/m².K)	1.01	2.00				
				Solar Admittance	0.049	0.130				
				Glazing Area (m²)	18.744	4.56				
				Wall Area (m²)	106	0.49				
				Glazing to Façade Ratio	15%	2.65				
				Average Glazing U-Value (W/m².K)	4.56					
				Average Glazing SHGC	0.49					
				Average Wall R-Value (m².K/W)	2.65					
West	Glazing Reference	Height (m)	Width (m)	Glazing Area (m²)	Shading Reference	Wall Reference	Wall Area (m²)	Total Area (m²)	Internal	
1	Double Hung Window	1.5	4.55	6.825	Eave 1500 Window	External Wall	28.1	34.93	<input type="checkbox"/>	
2	Sliding Window	0.6	0.91	0.546	Verandah 600H Window	External Wall	4.3	4.85	<input type="checkbox"/>	
3	Sliding Door	2.1	3	6.3	Verandah	External Wall	10.2	16.50	<input type="checkbox"/>	
4									<input type="checkbox"/>	
5									<input type="checkbox"/>	
6									<input type="checkbox"/>	
				<b>Result</b>	<b>Target</b>					
				Wall-glazing U-Value (W/m².K)	0.95	2.00				
				Solar Admittance	0.045	0.130				
				Glazing Area (m²)	13.671	4.50				
				Wall Area (m²)	84.3	0.53				
				Glazing to Façade Ratio	14%	2.65				
				Average Glazing U-Value (W/m².K)	4.50					
				Average Glazing SHGC	0.53					
				Average Wall R-Value (m².K/W)	2.65					

## Reference Building

Include shading?

	Glazing to Façade Ratio	Wall U-Value (W/m².K)	Method 1 Glazing U-Value (W/m².K)	Shading Multiplier	SHGC	Method 2 Wall U-Value (W/m².K)	Method 2 Glazing U-Value (W/m².K)	SHGC
North	9%	0.38	5.80	0.792	0.81	0.38	5.80	0.00
East	13%	0.38	5.80	0.852	0.81			
South	15%	0.38	5.80	0.675	0.81			
West	14%	0.38	5.80	0.644	0.81			