



**Alterations and additions to an existing resulting in a
secondary dwelling attached to the principal dwelling
62 Southern Cross Way, Allambie Heights NSW 2096**

National Construction Code 2016 Assessment Report

Dated: 16th August 2019

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Revision	Assessed By	Date	Issue or Description of Amendment	Approved By	Date
A	Dyan Artesano	27.11.2018	For Client Review	Yin Ye	30.11.2018
B	Dyan Artesano	03.12.2018	DA Phase	Yin Ye	04.12.2018
C	Max Gelder	16.08.2019	DA Phase	Cheyne James	16.08.2019

EXECUTIVE SUMMARY

We have reviewed architectural design documents prepared by Northern Beaches Designs (refer Appendix A) for compliance with the National Construction Code 2016.

The assessment of the design documentation has revealed that the following areas are non-compliances required to be assessed against the relevant performance requirements of the NCC relating to fire safety.

Table 1 - List of Non-Compliances (Essential Fire Safety Measures)

DTS Clause	Description of Non-Compliance	Performance Requirement
C3.2	Northern window serving master dwelling to master bedroom within 3m of the side boundaries not protected.	CP2

Any fire engineered solution relating to CP9, EP1.3, EP1.4, EP1.6, EP2.2 and EP3.2 will need to be approved after consultation with the NSW Fire Brigade as part of the Construction Certificate process.

The application for Construction Certificate shall be assessed under the relevant provisions of the Environmental Planning & Assessment Act 1979 (As Amended) and the Environmental Planning & Assessment Regulation 2000.

LIMITATIONS

The content of this report was prepared with reference to the plans and documentation outlined within Appendix A of this report.

This report does not assess or include the following –

- Detailed assessment of construction plans
- Provision of any construction approvals or certification under Part 4A or Part 5 of the Environmental Planning & Assessment Act 1979.
- Detailed assessment of any structural elements or geotechnical matters relating to the building
- Assessment of mechanical plant operations, electrical systems or security systems
- Assessment of any Heritage significance
- Assessment of energy or water authority requirements
- Consideration of Council's local planning policy or State Environmental Planning policy issues
- Address any requirements of statutory authorities
- Services / equipment operating capacity / design
- Local planning policies and/or guidelines
- Does not constitute construction approval nor a Part 4A Certificate under the EP&A Act / Regulations

BUILDING ASSESSMENT DATA

The building has been assessed in accordance with C1.1, C1.2, C1.3 and C2.2 C1.6 of the National Construction Code 2016, Volume 1. A summary of this follows.

Table 2 - Building Summary

Classification	2, 10a, 10b
Number of Storeys Contained	2
Rise In Storeys	2
Type of Construction	C
Effective Height (m)	3.66 (57.56RL – 53.9RL)

SECTION B – STRUCTURAL PROVISIONS

The proposed development has not been assessed against Section B – Structural Provisions of the National Construction Code 2016, however the following information can be provided in relation to the proposal.

All new structural works are to comply with the applicable requirements of AS/NZS 1170.1 and glazing is to comply with AS1288, and AS2047.

Certification from a suitably qualified and experienced Engineer is to be provided prior to the issue of the Construction Certificate.

SECTION C – FIRE RESISTANCE

The proposed development has been assessed against Section C – Fire Resistance of the National Construction Code 2016. The findings have been detailed in the following section where applicable, and where further detail is required to accurately assess compliance. Where a non-compliance has been identified it shall be detailed and replicated in the Executive Summary.

C1 – FIRE RESISTANCE AND STABILITY

The proposed works shall be designed and constructed generally in accordance with C1.1 and Specification C1.1 of the National Construction Code 2016, with regard to C1.5 and Part C2 – Compartmentation and Separation.

C1.1 – TYPE OF CONSTRUCTION REQUIRED

The proposed works shall be designed and constructed generally in accordance with C1.1 and Specification C1.1 of the National Construction Code 2016, with regard to C1.5 and Part C2 – Compartmentation and Separation:

- Type C Construction – Table 5, Specification C1.1 (Appendix C):
 - Bounding Construction to achieve an FRL of 90/90/90
 - Internal walls required to achieve an FRL must extend:
 - i. *to the underside of the floor next above if that floor has an FRL of at least 30/30/30 or a fire-protective covering on the underside of the floor; or*
 - ii. *to the underside of a ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or*
 - iii. *to the underside of the roof covering if it is non-combustible, and except for roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not be crossed by timber or other combustible building elements; or*
 - iv. *450 mm above the roof covering if it is combustible;*

Further detail and specifications shall be provided in support of an application for a Construction Certificate.

C1.8 – LIGHTWEIGHT CONSTRUCTION

If lightweight construction is to be provided, it must be provided in accordance with Specification C1.8.

Further detail and specifications shall be provided in support of an application for a Construction Certificate.

C1.10 – FIRE HAZARD PROPERTIES

The fire hazard properties of fixed surface linings and mechanical ductwork shall be addressed within the application for a Construction Certificate.

C1.12 – NON-COMBUSTIBLE MATERIALS

The following materials, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required:

- a) *Plasterboard*
- b) *Perforated gypsum lath with a normal paper finish*
- c) *Fibrous-plaster sheet*
- d) *Fibre-reinforced cement sheeting*
- e) *Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0*
- f) *Bonded laminated materials where—*
 - i. *each laminate is non-combustible; and*
 - ii. *each adhesive layer does not exceed 1 mm in thickness; and*
 - iii. *the total thickness of the adhesive layers does not exceed 2 mm; and*
 - iv. *the Spread-of-Flame Index and the Smoke-Developed Index of the laminated material as a whole does not exceed 0 and 3 respectively*

Further detail and specifications shall be provided in support of an application for a Construction Certificate.

PART C3 – PROTECTION OF OPENINGS

C3.2 – PROTECTION OF OPENINGS IN EXTERNAL WALLS

Openings in an external wall requiring an FRL shall be protected in accordance with C3.4, where the distance between the opening and the fire-source feature to which it is exposed is less than –

- i. *3 m from a side or rear boundary of the allotment; or*
- ii. *6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or*
- iii. *6 m from another building on the allotment that is not Class 10.*

C3.4 – ACCEPTABLE METHODS OF PROTECTION

Openings that are to be protected in accordance with C3.2 and C3.3 are to be protected in accordance with NCC Clause C3.4 and Specification C3.4.

Assessment of the Development Application documentation shows that compliance is readily achievable, however further detail shall be required to determine compliance.

The north facing window serving the master bedroom to the principal dwelling is to be protected by any of the following:

- (A) *internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or*
- (B) *–/60/– fire windows that are automatic closing or permanently fixed in the closed position; or*
- (C) *–/60/– automatic closing fire shutters.*

SECTION D – ACCESS AND EGRESS

The proposed development has been assessed against Section D – Access and Egress of the National Construction Code 2016. The findings have been detailed in the following section, and where further detail is required to accurately assess compliance or where a non-compliance has been identified it shall be noted.

PART D1 – PROVISION FOR ESCAPE

D1.2 NUMBER OF EXITS REQUIRED

Exits are to be provided in accordance with NCC Clause D1.2 as follows:

- a) *All buildings — Every building must have at least one exit from each storey.*
- b) *Class 2 to 8 buildings — In addition to any horizontal exit, not less than 2 exits must be provided from the following:*
 - (i) *Each storey if the building has an effective height of more than 25 m.*
 - (ii) *A Class 2 or 3 building subject to C1.5.*
- g) *Access to exits — Without passing through another sole-occupancy unit every occupant of a storey or part of a storey must have access to—*
 - (i) *an exit; or*
 - (ii) *at least 2 exits, if 2 or more exits are required.*

The works proposed to be conducted result in both the principal dwelling and the secondary dwelling to have independent exits discharging directly to road or open space.

D1.4 EXIT TRAVEL DISTANCES

Exit distances within the development are to be provided in accordance with NCC Clause D1.4, measured from the entrance doorway of any sole occupancy unit to an exit:

- 6m from an exit or from a point of choice
- 20m from a single exit serving the storey at the level of egress to a road or open space

The provided exits provided to the development directly discharge into road or open space, thereby eliminating exit travel distance requirements.

D1.5 – DISTANCE BETWEEN ALTERNATIVE EXITS

Exit travel distances are to be provided in accordance D1.5 in accordance with the NCC 2016.

D1.6 – DIMENSIONS OF EXITS AND PATHS OF TRAVEL TO EXITS

Dimensions of exits and paths of travel to exits are to be provided in accordance D1.6 in accordance with the NCC 2016.

D1.10 DISCHARGE FROM EXITS

The proposed locations of exits have been provided generally in accordance with D1.10.

PART D2 – CONSTRUCTION OF EXITS

Minimum dimensions of 1000mm and 2000mm height to be provided within exits, with the paths of travel should provide a minimum width of 1000mm (note that all maintenance access, cat walks, etc may comply with AS1657 in which case a 600mm clear width is required).

Doorways are permitted to contain a clear opening width of the required width of the exit minus 250mm with a height of 1980mm as part of egress requirements. Access for persons with disabilities – where required – however are to be provided by way of a clear doorway opening width of 850mm (i.e minimum 870 mm doors).

Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. This would be required at the discharge point of each fire-isolated stair on the ground floor for a distance of 3m.

D2.20 & D2.21 – SWINGING DOORS AND OPERATION OF LATCH

The entry doors to each proposed dwelling serve as the required exit for each sole occupancy unit. As per D2.20 (b) (i), these doors need not swing in the direction of egress if they are fitted with a device for holding it in the open position; and the requirements of D2.21 do not apply as the door serves only a sole occupancy unit in a Class 2 building.

Compliance is readily achievable. Further detail shall be provided during the assessment of the Construction Certificate in relation to the provision of the hold open device

PART D3 – ACCESS FOR PEOPLE WITH A DISABILITY

Access for people with disabilities shall be provided to and within the building in accordance with the requirements of Clause D3.2, D3.3 and D3.4 of the NCC 2016. Parts of the building required to be accessible shall comply with the requirements of AS1428.1-2009. As such, Class 2 buildings with no common areas – such as the subject development – are not required to be accessible in accordance with Clause D3.1.

BALUSTRADING AND HANDRAIL

Balustrading to a height of 1000mm with a maximum opening of 125mm in any direction should be provided adjacent to balconies, landings, corridors etc where located adjacent to a change in level exceeding 1000mm.

Where it is possible to fall more than 4m to the finished floor below, the balustrade shall not contain any horizontal or near horizontal members that facilitate climbing.

Any windows with a sill height of less than 1.7m in bedrooms or 865mm in all other cases with a fall of more than 2m for windows, 4m for all other cases, openings are to be restricted or a protective barrier that does not allow a 125mm sphere to pass through.

Walls adjacent to windows and balustrades which are required to be not climbable are to be clear of climbable elements for a distance of 1m from the balustrade. This includes GPO's, gas outlets, climbable window and doors sills and the like.

Handrails should generally be provided at a minimum height of 865mm alongside of all ramps and stairs.

The main public stairs and ramps should be designed in accordance with the requirements of AS1428.1 for persons with disabilities. This requires a handrail on each side of the stair and ramp and for the handrail to extend approximately 550mm – 600mm past the last tread / end of ramp.

SECTION E – FIRE SERVICES & EQUIPMENT

The proposed development has been assessed against Section E – Services & Equipment of the National Construction Code 2016. The findings have been detailed in the following section, and where further detail is required to accurately assess compliance or where a non-compliance has been identified it shall be noted.

PART E1 – FIRE FIGHTING EQUIPMENT

The fire services outlined in the Appendix C have been provided to the existing building. The following fire services are to be provided as per of the proposed works:

- Portable Fire Extinguishers in accordance with Clause E1.6 of the BCA and AS 2444-2001

Further detail will be provided during the assessment of the Construction Certificate.

E1.6 – PORTABLE FIRE EXTINGUISHERS

The building shall be fitted with portable fire extinguishers in accordance with Clause E1.6 of the NCC 2016 and AS2444.

Portable fire extinguishers must be—

- i. provided as listed in Table E1.6; and*
 - ii. for a Class 2 or 3 building or Class 4 part of a building, provided—*
 - A. to serve the whole Class 2 or 3 building or Class 4 part of a building where one or more internal fire hydrants are installed; or*
 - B. where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m², and for the purposes of this clause, a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building is considered to be a fire compartment; and*
 - iii. (iii) subject to (b), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.*
- b) Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be—*
- i. an ABE type fire extinguisher; and*
 - ii. a minimum size of 2.5 kg; and*
 - iii. distributed outside a sole-occupancy unit—*
 - A. to serve only the storey at which they are located; and*
 - B. so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.*

Further detail will be provided for assessment during the assessment of the Construction Certificate.

PART E2 – SMOKE HAZARD MANAGEMENT

Smoke hazard management consisting of an automatic smoke detection system and alarm system shall be provided within each sole occupancy unit in accordance with Table E2.2a and Specification E2.2a of the NCC 2016 and AS3786.

- (a) A smoke alarm system must—*
 - (i) consist of smoke alarms complying with AS 3786; and*
 - (ii) be powered from the consumers mains source.*
- (b) In kitchens and other areas where the use of the area is likely to result in smoke alarms causing spurious signals—*

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- (i) any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms are installed elsewhere in the sole-occupancy unit in accordance with Clause 3(c)(i) and 3(c)(ii) or*
- (ii) an alarm acknowledgement facility may be installed, except where the kitchen or other area is sprinklered, the alarms need not be installed in the kitchen or other areas likely to result in spurious signals.*
- (c) In a Class 2 or 3 building or Class 4 part of a building, alarms must—*
- (i) be installed within each sole-occupancy unit, and located on or near the ceiling in any storey—*
- (A) containing bedrooms—*
- (aa) between each part of the sole-occupancy unit containing bedrooms and the remainder of the sole-occupancy unit; and*
- (bb) where bedrooms are served by a hallway, in that hallway; and*
- (B) not containing any bedrooms, in egress paths; and*
- (ii) where there is more than one alarm installed within a sole-occupancy unit, be interconnected within that sole-occupancy unit; and*
- (iii) be installed in a building not protected with a sprinkler system, in public corridors and other internal public spaces, located in accordance with the requirements for smoke detectors in AS 1670.1 and connected to activate a building occupant warning system in accordance with Clause 6.*

Further detail will be provided for assessment during the assessment of the Construction Certificate.

SECTION F – HEALTH AND AMENITY

The proposed development has been assessed against Section F – Health and Amenity of the National Construction Code 2016. The findings have been detailed in the following section, and where further detail is required to accurately assess compliance or where a non-compliance has been identified it shall be noted.

PART F1 – DAMP AND WEATHERPROOFING

F1.1 – STORMWATER DRAINAGE

Stormwater drainage is to be provided in compliance with AS/NZS 3500.3.

Compliance is readily achievable. Further detail will be provided to confirm compliance during the assessment of the Construction Certificate.

F1.4 – EXTERNAL ABOVE GROUND MEMBRANES

Waterproofing membranes for external above ground use must comply with AS 4654 Parts 1 and 2.

Compliance is readily achievable. Further detail will be provided to confirm compliance during the assessment of the Construction Certificate.

F1.5 – ROOF COVERINGS

A roof must be covered with—

- (a) concrete roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050, as appropriate; or*
- (b) terracotta roofing tiles complying with AS 2049 and fixed, except in cyclonic areas, in accordance with AS 2050; or*
- (c) cellulose cement corrugated sheeting complying with AS/NZS 2908.1 and installed in accordance with AS/NZS 1562.2; or*
- (d) metal sheet roofing complying with AS 1562.1; or*
- (e) plastic sheet roofing designed and installed in accordance with AS/NZS 4256 Parts 1, 2, 3 and 5 and AS/NZS 1562.3; or*
- (f) asphalt shingles complying with ASTM D3018-90, Class A.*

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

F1.6 – SARKING

Sarking-type materials used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

F1.7 – WATERPROOFING OF WET AREAS IN BUILDINGS

Wet areas are to be constructed in accordance with NCC Clause F1.7, Table F1.7 and AS3740.

- (a) In a Class 2 and 3 building and a Class 4 part of a building, building elements in wet areas must—*
 - (i) be water resistant or waterproof in accordance with Table F1.7; and*

(ii) comply with AS 3740.

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

F1.9 – DAMP-PROOFING

Damp-proofing is to be provided in accordance with F1.9 of NCC 2016.

- (a) Except for a building covered by (c), moisture from the ground must be prevented from reaching—*
- (i) the lowest floor timbers and the walls above the lowest floor joists; and*
 - (ii) the walls above the damp-proof course; and*
 - (iii) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders.*
- (b) Where a damp-proof course is provided, it must consist of—*
- (i) a material that complies with AS/NZS 2904; or*
 - (ii) impervious sheet material in accordance with AS 3660.1.*
- (c) The following buildings need not comply with (a):*
- (i) A Class 7 or 8 building where in the particular case there is no necessity for compliance.*
 - (ii) A garage, tool shed, sanitary compartment, or the like, forming part of a building used for other purposes.*
 - (iii) An open spectator stand or open-deck carpark.*

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

F1.10 – DAMP-PROOFING OF FLOORS ON THE GROUND

Damp-proofing of floors constructed on ground are to provided with a vapour barrier in accordance with F1.10 of NCC 2016 and AS2870, except where :

- (a) weatherproofing is not required; or*
- (b) the floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means.*

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

F1.11 – PROVISION OF FLOOR WASTES

Floor wastes are to be provided, and floors are to be graded towards the floor waste are to be provided in accordance with F1.11 of NCC 2016.

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

F1.13 – GLAZED ASSEMBLIES

Glazed assemblies in an external wall are to comply with AS2047 in relation to resistance to water penetrations.

Compliance readily achievable, and further detail to be provided for assessment of the Construction Certificate.

PART F2 – SANITARY AND OTHER FACILITIES

F2.1 – FACILITIES IN RESIDENTIAL BUILDINGS

Sanitary facilities are to be provided to the building in accordance with NCC Clause F2.1 and Table F2.1 at the following rates:

Within each sole occupancy unit –

- (a) a kitchen sink and facilities for the preparation and cooking of food; and*
- (b) a bath or shower; and*
- (c) a closet pan; and*
- (d) a washbasin.*

Within each laundry facilities, provide either—

(a) in each sole-occupancy unit—

- (i) clothes washing facilities, comprising at least one washtub and space for a washing machine; and*
- (ii) clothes drying facilities comprising—*
 - (A) clothes line or hoist with not less than 7.5 m of line; or*
 - (B) space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facilities;*

Note: A kitchen sink or washbasin must not be counted as a laundry washtub.

The documentation provided for the assessment of this report has satisfactorily detailed and provided sanitary facilities in accordance with F2.1 of NCC 2016.

PART F4 – LIGHT AND VENTILATION

F4.1 – PROVISION OF NATURAL LIGHT

Natural light has been provided to all habitable rooms by means of windows provided in accordance with NCC Clause F4.2, except for the ground floor bathroom. This shall be provided with artificial lighting in accordance with F4.4.

F4.3 – NATURAL LIGHT BORROWED FROM ADJOINING ROOM

Borrowing of natural light from an adjoining room has not been proposed.

F4.4 – ARTIFICIAL LIGHTING

Artificial lighting shall be provided where natural lighting cannot be provided in accordance with NCC Clause F4.4 and AS/NZS 1680.0. In this case, this will be applied to Laundry B.

(a) Artificial lighting must be provided—

- (ii) if natural light of a standard equivalent to that required by F4.2 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, in—*

(B) Class 2 buildings — to sanitary compartments, bathrooms, shower rooms, airlocks, laundries, common stairways and other spaces used in common by the occupants of the building; and

(b) The artificial lighting system must comply with AS/NZS 1680.0.

Details shall accompany the plans submitted for assessment of the Construction Certificate.

F4.5, F4.6 & F4.7 – VENTILATION OF ROOMS, NATURAL VENTILATION AND VENTILATION BORROWED FROM ADJOINING ROOM

A habitable room, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have be ventilated in accordance with NCC Clauses F4.5, F4.6 and F4.7.

The documentation provided for the assessment of this report has detailed that the proposed development generally complies with the provisions of NCC Clauses F4.5, 4.6 and 4.7. Compliance readily achievable, and further detail to be provided as required for assessment of the Construction Certificate.

F4.8 – RESTRICTION ON LOCATION OF SANITARY COMPARTMENTS

Sanitary facilities are to be located in accordance with NCC Clause F4.8 In this regard, the location of the proposed sanitary compartments provided on the deign documentation complies.

F4.9 – AIRLOCKS

Sanitary facilities have not been provided in locations where an airlock is required.

PART F5 – SOUND TRANSMISSION & INSULATION

The sound transmission and insulation requirements for the Class 2 portions shall be provided in accordance with Part F5 of the NCC 2016 for the following elements:

F5.2 – DETERMINATION OF AIRBORNE SOUND INSULATION RATINGS

A form of construction required to have an airborne sound insulation rating must—

(a) have the required value for weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation term ($R_w + C_{tr}$) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or

(b) comply with Specification F5.2.

Compliance readily achievable, and further detail to be provided as required for assessment of the Construction Certificate.

F5.3 – DETERMINATION OF IMPACT SOUND INSULATION RATINGS

A floor in a building required to have an impact sound insulation rating in a building

(a) A floor in a building required to have an impact sound insulation rating must—

(i) have the required value for weighted normalised impact sound pressure level ($L_{n,w}$) determined in accordance with AS ISO 717.2 using results from laboratory measurements; or

(ii) comply with Specification F5.2.

(b) A wall in a building required to have an impact sound insulation rating must—

(i) for a Class 2 or 3 building be of discontinuous construction; and

(ii) for a Class 9c building, must—

(A) for other than masonry, be two or more separate leaves without rigid mechanical connection except at the periphery; or

(B) be identical with a prototype that is no less resistant to the transmission of impact sound when tested in accordance with Specification F5.5 than a wall listed in Table 2 of Specification F5.2.

(c) For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and

(i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and

(ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery.

Compliance readily achievable, and further detail to be provided as required for assessment of the Construction Certificate.

F5.4 – SOUND INSULATION RATING OF FLOORS

A floor separating sole-occupancy units or parts of a different classification shall comply with Clause F5.4 of NCC 2016, that being having a sound insulation rating of:

(i) $R_w + C_{tr}$ (airborne) not less than 50

(ii) $L_{n,w} + C_I$ (impact) not more than 62

Compliance readily achievable, and further detail to be provided as required for assessment of the Construction Certificate.

F5.5 – SOUND INSULATION RATING OF WALLS

A wall in a Class 2 building shall comply with Clause F5.5 of NCC 2016, that being having a sound insulation rating of:

(a) A wall in a Class 2 or 3 building must—

(i) have an $R_w + C_{tr}$ (airborne) not less than 50, if it separates sole-occupancy units;

and

(ii) have an R_w (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and

(iii) comply with F5.3(b) if it separates—

(A) a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or

(B) a sole-occupancy unit from a plant room or lift shaft.

(b) A door may be incorporated in a wall in a Class 2 or 3 building that separates a sole-occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an R_w not less than 30.

(e) Where a wall required to have sound insulation has a floor above, the wall must continue to—

(i) the underside of the floor above; or

(ii) a ceiling that provides the sound insulation required for the wall.

(f) Where a wall required to have sound insulation has a roof above, the wall must continue to—

(i) the underside of the roof above; or

(ii) a ceiling that provides the sound insulation required for the wall

Compliance readily achievable, and further detail to be provided as required for assessment of the Construction Certificate.

F5.6 – SOUND INSULATION RATING OF INTERNAL SERVICES

A wall in a Class 2 building shall comply with Clause F5.5 of NCC 2016, that being having a sound insulation rating of:

(a) If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an $R_w + C_{tr}$ (airborne) not less than—

(i) 40 if the adjacent room is a habitable room (other than a kitchen); or

(ii) 25 if the adjacent room is a kitchen or non-habitable room.

(b) If a storm water pipe passes through a sole-occupancy unit it must be separated in accordance with (a)(i) and (ii)

Compliance readily achievable, and further detail to be provided as required for assessment of the Construction Certificate.

ENERGY EFFICIENCY

The proposed development shall be provided insulation, building sealing and services in accordance with NSW Part J of the NCC 2016 as applicable to a Climate Zone 6.

The deemed-to-satisfy provisions of the NCC only apply to thermal insulation in a Class 2 building where a development consent or a Complying Development certificate specifies that the insulation is to be provided as part of the development.

The development is subject to BASIX, and a BASIX Certificate will be required prior to the issuance of the Construction Certificate for the works.

The building can comply with the deemed-to-satisfy provisions of NCC 2016, relating to the following areas:

- a) J1 – Building Fabric
- b) J2 – Glazing
Glazing shall be provided in accordance with J2.4.
- c) J3 – Building Sealing
Windows and doors are to be sealed in accordance with J3.4, exhaust fans – such as the kitchen exhaust fan or kitchen – to be provided in accordance with J3.5. Roofs, walls and floors are to be provided in accordance with J3.6.
- d) J4 – ***
- e) J5 – Air Conditioning & Ventilation Systems
Air-conditioning and mechanical ventilation shall be provided in accordance with J5.2 and J5.3 of NCC 2016.
- f) J6 – Artificial Lighting & Power
Artificial lighting is to be provided within each dwelling in accordance with J6.2 of NCC 2016.
- g) J7 - Hot 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. The remaining sections are not applicable as the proposed development does not incorporate a swimming pool or spa.
- h) J8 – Facilities for Energy Monitoring
A facility to monitor and record the consumption of gas and electricity is not required as the building and each sole occupancy unit does not exceed 500m².

The proposed site will be located in a climate zone 6.

APPENDIX A - DESIGN DOCUMENTATION

The following documentation was used in the assessment and preparation of this report: -

Drawing No.	Title	Date	Drawn By	Revision
1825-DA3/A	Cover Page – Materials and Finishes	24.07.2019	Northern Beaches Designs	-
1825-DA4/A	Survey	24.07.2019	Northern Beaches Designs	-
1825-DA5/A	Site Analysis and Waste Management Plan	24.07.2019	Northern Beaches Designs	-
1825-DA6/A	Ground Floor Plan	24.07.2019	Northern Beaches Designs	-
1825-DA3/A	First Floor Plan	24.07.2019	Northern Beaches Designs	-
1825-DA7/A	Roof Plan	24.07.2019	Northern Beaches Designs	-
1825-DA8/A	Elevations, N S	24.07.2019	Northern Beaches Designs	-
1825-DA9/A	Elevations, E W	24.07.2019	Northern Beaches Designs	-
1825-DA10/A	Section A-A, B-B	24.07.2019	Northern Beaches Designs	-

APPENDIX B - DRAFT FIRE SAFETY SCHEDULE

	Essential Fire Safety Measures	Standard of Performance
1.	Lightweight Construction	BCA Clause C1.8 & AS/NZS1530.3 – 1999
2.	Portable Fire Extinguishers	BCA Clause E1.6 & AS2444 – 2001
3.	Smoke Alarm System	BCA Spec. E2.2a & AS3786 –2014
4.	Fire Shutters – Option 1	BCA Spec. C3.4 & AS1905.2 – 2005
5.	Fire Windows – Option 2	BCA Spec. C3.4

APPENDIX D – FIRE RESISTANCE LEVELS

The table below represents the Fire resistance levels required in accordance with NCC 2016:

Table 5 TYPE C CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	Class of building—FRL: (in minutes)			
	<i>Structural adequacy/ Integrity/ Insulation</i>			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any <i>fire-source feature</i> to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	—/—/—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
3 m or more	—/—/—	—/—/—	—/—/—	—/—/—
EXTERNAL COLUMN not incorporated in an <i>external wall</i> , where the distance from any <i>fire-source feature</i> to which it is exposed is—				
Less than 1.5 m	90/—/—	90/—/—	90/—/—	90/—/—
1.5 to less than 3 m	—/—/—	60/—/—	60/—/—	60/—/—
3 m or more	—/—/—	—/—/—	—/—/—	—/—/—
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS—				
Bounding <i>public corridors</i> , public lobbies and the like—	60 / 60/ 60	—/—/—	—/—/—	—/—/—
Between or bounding <i>sole-occupancy units</i> —	60/ 60/ 60	—/—/—	—/—/—	—/—/—
Bounding a stair if <i>required</i> to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	—/—/—	—/—/—	—/—/—	—/—/—

Table 5.2 REQUIREMENTS FOR CARPARKS

Building element		FRL (not less than) <i>Structural adequacy/ Integrity/ Insulation</i>
		ESA/M (not greater than)
Wall		
(a)	<i>external wall</i>	
	(i) less than 1.5 m from a <i>fire-source feature</i> to which it is exposed:	
	<i>Loadbearing</i>	60/60/60
	<i>Non-loadbearing</i>	-/-/60
	(ii) 1.5 m or more from a <i>fire-source feature</i> to which it is exposed	-/-/-
(b)	<i>internal wall</i>	-/-/-
(c)	<i>fire wall</i>	
	(i) from the direction used as a <i>carpark</i>	60/60/60
	(ii) from the direction not used as a <i>carpark</i>	90/90/90
Column		
(a)	steel column less than 1.5 m from a <i>fire-source feature</i>	60/-/- or 26 m ² /tonne
(b)	any other column less than 1.5 m from a <i>fire-source feature</i>	60/-/-
(c)	any other column not covered by (a) or (b)	-/-/-
Beam		
(a)	less than 1.5 m from a <i>fire-source feature</i>	
	(i) steel floor beam in continuous contact with a concrete floor slab	60/-/- or 30 m ² /tonne
	(ii) any other beam	60/-/-

(b) 1.5 m or more from a *fire-source feature*

-/-/-

Roof, floor slab and vehicle ramp

-/-/-

Note: ESA/M means the ratio of exposed surface area to mass per unit length.