Bank Street Park
Blackwattle Bay / Tjerruing

SSD-53386706

Appendix AI

Building Code of Australia Report (Philip Chun)

December 2023

PHILIP CHUN
Building Compliance

PROPOSED BANK STREET PARK DEVELOPMENT
1A-19 BANK STREET, PYRMONT NSW

BCA COMPLIANCE REPORT

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DOCUMENT ACCEPTANCE

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Revision No.	Prepared by	Description	Date
R01	Shaneel Sharma	Draft BCA 2022 Report for review and comments	20/10/23
R02	Philip Smillie	BCA 2022 Report	1/11/23

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1.0 Introduction

The purpose of this report is to offer comments and recommendations for compliance in respect to the Building Code of Australia 2022**,** to support a State Significant Development Application (SSDA) for a new waterfront public park within Blackwattle Bay, to be known as Bank Street Park (SSD-53386706). Bank Street Park is located at 1A-19 Bank Street, Pyrmont on the shoreline of Tjerruing Blackwattle Bay and adjacent areas of Blackwattle Bay.

This report contains a design philosophy review of the Amenities and Store Building D, the Community, Café and Marina Building, and the Dragon Boat Storage Building concerning the capability of the design to meet Building Code of Australia 2022 (BCA) requirements. It should be noted the shade structures and water structures are not covered in this report.

We have made every attempt to assess the Deemed to Satisfy (DTS) requirements under Parts B, C, D, E, F, G, I and J of the Building Code of Australia and can confirm the proposed work is capable of complying with the Building Code of Australia. Areas of the design are still being refined so that compliance will be further assessed by the Crown Certifier prior to the issue of a Crown Certificate for the works, as is required by the certifier as part of the legislative requirements related to 'certification work' under Section 6.28 of the Environmental Planning and Assessment Act 1979.

It is the responsibility of all designers and engineers to ensure that the design complies with the requirements of the Building Code of Australia, the Australian Standards and the applicable legislation.

This report does not assess the impact of the Disability Discrimination Act (DDA), which is outside the scope of the BCA. This report is for the exclusive use of the client and cannot be used for any other purpose without prior permission from Philip Chun BC NSW Pty Ltd. The report is valid only in its entire form. Philip Chun accepts no responsibility for any loss suffered as a result of any reliance upon such assessment or report other than as being accurate at the date the report was issued.

1.1 Blackwattle Bay Precinct

Bank Street Park forms part of the Blackwattle Bay Precinct, which is an area of predominantly government owned land located on the western edge of the Pyrmont Peninsula and adjoining the waters of Blackwattle Bay (Figure 1).

Figure 1 Blackwattle Bay Precinct

Source: INSW

The precinct was rezoned in December 2022 to facilitate a new mixed-use community, providing for around 2,000 new residents and 5,600 new jobs and creating a vibrant 24/7 economy. Updated planning and land use controls were incorporated into the Sydney Local Environmental Plan 2012, along with site specific design guidance in the *Blackwattle Bay Design Guidelines.*

A critical part of the Blackwattle Bay Precinct is the high quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

1.2 Site Description

Bank Street Park is located at 1A-19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA) and includes harbour development in Blackwattle Bay. The site area is 1.1 hectares. The relevant lot and deposited plans and the respective ownership for the site are detailed in **Table 1** and shown in **Figure 2**Error! Reference source not found..

Table 1 Summary of land title details of the site

Street Address	Lot And Deposited Plan Details	Ownership
1A Bank Street, Pyrmont NSW 2009	Lot 1 DP 85206, Lot 1 DP 188671	Transport for NSW
1-3 Bank Street, Pyrmont NSW 2009	Lots 1-2 DP 1089643, Lot 1 DP 439245	Infrastructure NSW
5 Bank Street, Pyrmont NSW 2009	Lot 20 DP 803159	Transport for NSW
7 Bank Street, Pyrmont NSW 2009	Lot 19 DP 803159	Transport for NSW
9 Bank Street, Pyrmont NSW 2009	Lot 21 DP 803159	Transport for NSW
11 Bank Street, Pyrmont NSW 2009	Lot 22 DP 803159	Transport for NSW
17-19 Bank Street, Pyrmont NSW 2009	Lots 5-6 DP 803160	Transport for NSW
Sydney Harbour	Lot 5 DP 1209992	Roads and Maritime Services (Transport for NSW)
Sydney Harbour	Lot 107 in DP 1076596	Transport for NSW
Part Bank Street road reserve	N/A	City of Sydney Council

Bank Street Park is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south.

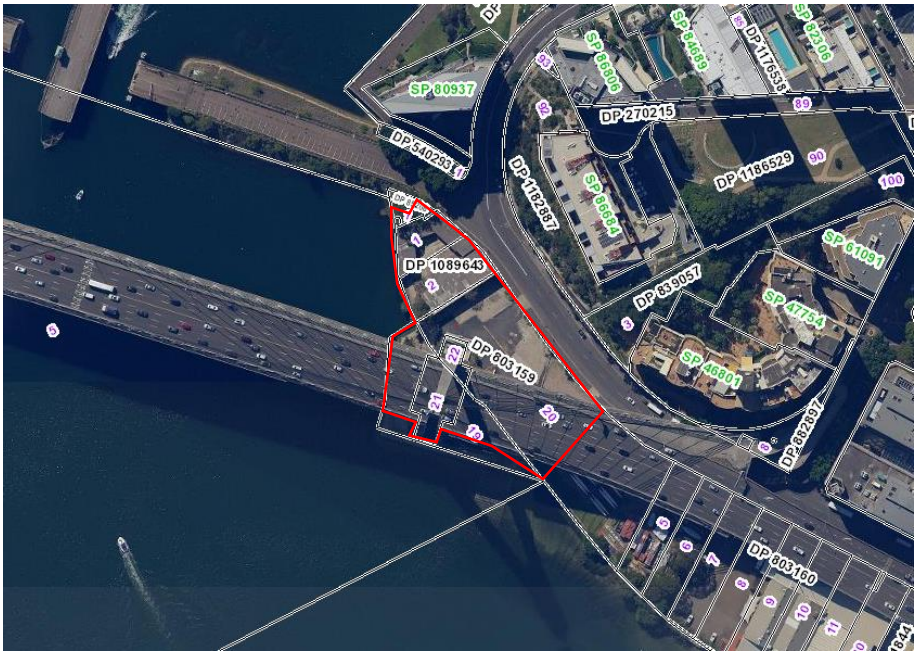

Figure 2 Site Context Map
The indicative site location is outlined in red.
Source: SixMaps with Architectus edits (2023)

Figure 3 Bank Street Park site location within Blackwattle Bay State Significant Precinct
The indicative site location is outlined in red.
Source: Blackwattle Bay Design Guidelines with Architectus edits (2023)

1.3 Overview of the Proposed Development

Development consent is being sought for a *recreation area* for the primary purpose of a *public park*, comprising:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use;
- Demolition of three existing buildings at 1-3 Bank Street;
- New and adapted facilities for community use, including:
  - New single storey building to accommodate flexible community space, café, and marina office/store facilities, with green roof and photovoltaics;
  - Adaptive reuse of Building D for public amenities, bin and other storage;
  - Boat launching ramp and pontoon for passive watercraft, including dragon boats and kayaks;
  - Boat storage building with change facilities for dragon boat users with publicly accessible rooftop deck;
- Public domain works, including:
  - 'Interpretation Garden' in existing building 'ruins' at 1-3 Bank Street;
  - Split level foreshore promenade;
  - Multi-purpose court with edge seating and partial fence;
  - Nature-based inclusive play space for ages 2-12;
  - Fitness equipment;
  - Public plaza and grassed open space areas;
  - New tree plantings and planter beds;
  - Public art, wayfinding and interpretative signage, lighting, bike parking and seating;
- Harbour works including:
  - Overwater boardwalk;
  - Land/water interface works, including sandstone terracing into water and support structure, to improve marine habitat;
  - Demolition and construction of a new timber launching ramp for dragon boats;
  - Kayak/passive craft pontoon; and
  - Restoration, repair and alterations to the existing seawall for new stormwater outlets.
- Works to Bank Street road reserve, including:

- Road space reallocation to provide separated cycleway;
- Cycleway transition to Bank Street to continue south as part of future works;
- Reinstatement of existing on-street parallel parking;
- Tree planting;
- Accessible parking space; and
- Loading zone adjacent 1-3 Bank Street.

1.4 Planning Secretary's Environmental Assessment Requirements

This report has been prepared in response to the relevant requirements outlined within the Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for application SSD-53386706. **Table 2** addresses the relevant SEARs requirements and provides a project response.

Table 2 Secretary's Environmental Assessments Requirements

Item	SEARs	Relevant Report Section(s)
4 and 5	BCA report is required documentation under SEARs items 4 and 5.	The development is capable of complying with the deemed-to-satisfy and performance requirements of the BCA.

1.5 Brief

The objective of the report is to inform the design team of the main issues and areas to address, and ultimately, which issues will need redesign, additional detailing, clarification or performance solutions with respect to compliance with BCA 2022.

1.6 Documentation provided and assessed

The assessed design documentation comprises of the plans provided by Collins and Turner as listed below.

Discipline	Drawing No. / Reference	Dated
Architectural	346_SSDA_010 (02), 346_SSDA_111 (03), 346_SSDA_112 (02), 346_SSDA_113 (04), 346_SSDA_114 (03), 346_SSDA_140 (04), 346_SSDA_141 (04), 346_SSDA_142 (04), 346_SSDA_143 (04), 346_SSDA_201 (03), 346_SSDA_202 (02), 346_SSDA_203 (03), 346_SSDA_204 (02), 346_SSDA_205 (03), 346_SSDA_206 (02), 346_SSDA_310 (02), 346_SSDA_311 (02), 346_SSDA_312 (02), 346_SSDA_411 (02)	13/10/23

1.7 Scope and limitations

This report covers the main issues under Sections A, B, C, D (excluding D4), E, F, G, and J of Volume 1 of the BCA 2022 (including the NSW variations) for the Amenities and Store Building D, the Community, Café and Marina Building, and the Dragon Boat Storage Building.

Areas of the building design will need further assessment and we have highlighted where we believe this is to occur.

The following limitations apply to the assessment:

- The report considers matters of a significant nature only and should not be considered exhaustive.
- The plans are assessed to the extent necessary to allow the design team to progressively continue with the detailed design. This means the design has been assessed to be capable of complying with the BCA without necessarily having all the detailed design completed at this stage.
- Generally, the assessment does not incorporate a detailed assessment of the requirements of the Australian Standards.

- Fire-resistance ratings of any structural elements including services documentation have not been reviewed.
- Assessment against the requirements of the Disability Discrimination Act 1992 including the Disability (Access to Premises – Buildings) Standards 2010 is outside the scope of this report.
- Requirements of other regulatory authorities and utilities including, but not limited to, Telstra and the like communications authority, Gas Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, NSW Department of Planning and Environment, Occupational Health and Safety, Health, Dangerous Goods and the like.
- The BCA report and associated compliance advice is not intended or permitted to be relied on by any other party with respect to their obligations to ensure compliance including but not limited to the making of a compliance declaration under the NSW Design and Building Professionals Act.

The above are generally dealt with under separate reports from the respective design consultants.

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1.8 Other Requirements

There will be other criteria outside BCA 2022 that will apply to the building and whilst some of these have been listed below, this will impact the buildings design and may include but not be limited to the following

- Utility requirements – Energy Authority, Telecom, Water, Gas and the like
- Fire and Rescue NSW requirements
- Heritage
- Archaeology
- Indigenous Impact

2.0 Amenities and Store Building D

According to the Building Code of Australia 2022 the following criteria apply to the Amenities and Store Building D and will further assist in the design and assessment of the building and its various parts.

2.1 Description of the building

The building is described as follows with respect to levels, rise in storeys, uses and classification.

2.2 Classifications for the building

The different parts of the building are classified as follows.

Class 7: *a building which is—*
(a) Class 7a — a carpark; or
(b) Class 7b — for storage or display of goods or produce for sale by wholesale.

Class 9 buildings: *a Class 9 building is a building of a public nature that includes one or more of the following sub-classifications:*
(1) Class 9a — a health-care building including any parts of the building set aside as laboratories, and includes a health-care
building used as a residential care building.
(2) Class 9b — an assembly building including a trade workshop or laboratory in a primary or secondary school

The table below designates the classifications applicable for the proposed building.

Use	BCA Class
Amenities / Toilets & Storage Areas	Class 9b & 7b

2.3 Rise in storeys – C2D3

The building has a rise in storeys of 1.

Overall Levels Contained	1
Rise in Storeys	1
Type of Construction	Type C Construction
Effective Height (m)	N/A
Floor Area	Approximately 146m^2

2.4 Type of construction – C2D2

The building type of construction will need to be at least Type C construction.

Table C2D2 Type of construction required:

Rise in storeys	Class of building 2, 3, 9	Class of building 5, 6, 7, 8
4 or more	A	A
3	A	B
2	B	C
1	***C***	***C***

2.5 Building Regulation Assessment

According to the Building Code of Australia the following requirements apply to the building.

Part B1 – Structural Provisions
The structural components of the building must comply with the applicable Australian Standards and have

not been part of this assessment.

The structural engineers will need to ensure the structural requirements of BCA Clauses B1D1, B1D2, B1D3 and B1D4 are considered in the buildings design (including the importance level of the building and the need for earthquake restraints on the superstructure and building services). This will mean assessment according to all relevant parts of Section B of the Building Code of Australia.

The importance level of the building is to be determined by the Structural Engineer in accordance with Table B1D3a of the BCA.

Part C2 – Fire Resistance and Stability
All works are to be in accordance with the requirements of Specification 5 for a Class 7b building (being the Class requiring the higher Fire Resistance Level requirements) of Type C Construction. The fundamental concept of fire rating for the building will be as per the tables S5C24a to S5C24e in Appendix B.
The north-western walls of the building that are within 3m of the side allotment boundary are to at least achieve an FRL of 90min or consolidate the multiple allotments. Details will need to be provided at CC stage to verify compliance.

C2D11 – Fire hazard properties
Fire hazard properties of all new floor, wall and ceiling linings and attachments must comply with Specification C2D11.
Compliance is readily achievable.

Part C3 – Compartmentation and Separation

C3D3 – General floor area and volume limitations
The size of any fire compartment in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum floor area nor the relevant maximum volume set out in Table C3D3 below.
As the building only has a floor area of approximately 146m^2 the limitations of Table C3D3 are not exceeded and the building can remain of Type C construction.

Table C3D3 Maximum size of fire compartments or atria:

Classification	Type A Construction	Type B Construction	Type C Construction
5, 9b or 9c	Max floor area—8 000 m^2	Max floor area—5 500 m^2	**Max floor area—3 000 m^2**
	Max volume—48 000 m^3	Max volume—33 000 m^3	**Max volume—18 000 m^3**
6, 7, 8 or 9a (except for patient care areas)	Max floor area—5 000 m^2	Max floor area—3 500 m^2	**Max floor area—2 000 m^2**
	Max volume—30 000 m^3	Max volume—21 000 m^3	**Max volume—12 000 m^3**

C3D9 – Separation of classifications in the same storey
If a building has parts of different classifications located alongside one another in the same storey each building element in that storey must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or the parts must be separated in that storey by a fire wall.
It is noted that the same FRL requirements are required for Class 7b and Class 9b buildings of Type C construction and generally 90-minute FRLs are required for external loadbearing elements that are within 3m of a fire-source feature.

Part C4 – Protection of Openings

C4D3 – Protection of openings in external walls
(1) Subject to (2), openings in an external wall that is required to have an FRL must be protected in accordance with C4D5, and if wall-wetting sprinklers are used, they must be located externally.
(2) The requirements of (1) only apply if the distance between the opening and the fire-source feature to which it is exposed is less than—
(a) 3 m from a side or rear boundary of the allotment; or
(b) 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
(c) 6 m from another building on the allotment that is not Class 10.

(3) Openings required to be protected under (1), must not occupy more than 1/3 of the area of the external wall of the storey in which they are located unless they are in a Class 9b building used as an open spectator stand.

The proposed windows within the north-western external wall of the building adjacent to the side allotment boundary are to be protected in accordance with C4D5 below or consolidate the multiple allotments. Details will need to be provided at CC stage to verify compliance.

C4D5 – Acceptable methods of protection
(1) Where protection is required, doorways, windows and other openings must be protected as follows:
(a) Doorways—
(i) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
(ii) –/60/30 fire doors that are self-closing or automatic closing.
(b) Windows—
(i) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
(ii) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or
(iii) –/60/– automatic closing fire shutters.
Other openings—
(i) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or
(ii) construction having an FRL not less than –/60/–.
(2) Fire doors, fire windows and fire shutters must comply with Specification 12.

Part D2 – Provision for escape

D2D3 – Number of exits required
All buildings must have at least one exit from each storey.
Complies.

D2D5 - Exit travel distances
No point on a floor must be more than 20m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.
Complies.

D2D7 - Height of exits, paths of travel to exits and doorways
In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.
Compliance readily achievable.

D2D8 - Width of exits and paths of travel to exits
The unobstructed width of each required exit or path of travel to an exit must be not less than 1 m except for doorways where the unobstructed width must not be less than 750mm or 850mm if accessibility is required.
Where accessibility is required the widths of the entry doorways to the amenities and store areas are to be at least 850mm clear in width. The eastern single doorway to the Placemaking Store must be at least 750mm clear in width. Details to be shown on the CC plans when produced.

Part D3 – Construction of exits

D3D24 – Doorways and doors
A doorway serving as a required exit or forming part of a required exit
(a) must not be fitted with a revolving door; and
(b) must not be fitted with a roller shutter or tilt-up door unless—
(i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m2; and
(ii) the doorway is the only required exit from the building or part; and
(iii) it is held in the open position while the building or part is lawfully occupied; and
(c) must not be fitted with a sliding door unless—
(i) it leads directly to a road or open space; and

(ii) the door is able to be opened manually under a force of not more than 110 N: and
(d) if fitted with a door which is power-operated—
(i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and
(ii) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.
Compliance readily achievable.

D3D25 – Swinging doors
A swinging door in a required exit or forming part of a required exit must swing in the direction of egress unless it serves a building or part with a floor area not more than 200 m^2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position.
Compliance readily achievable.

Part D4 – Access for people with a disability

Please refer to Philip Chun's Accessibility Report for compliance with matters regarding Part D4 of the BCA.

Part E1 – Fire Fighting Equipment

E1D2 – Fire hydrant
A fire hydrant system is not required to the building as it has a floor area of less than 500m^2.

E1D3 – Fire hose reels
Fire hose reels are not required to be provided to the building as it has a floor area of less than 500m^2.

E1D14 – Portable Fire Extinguishers
Portable fire extinguishers are to be provided within the building in accordance with AS 2441-2005 to cover Class A fire risks in normally occupied fire compartments less than 500m^2 not provided with fire hose reels and To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used.
Services consultants to note. Portable fire extinguishers are to be provided as above.

Part E4 – Visibility in an emergency, exit signs and warning systems
An emergency lighting system and exit signage complying with AS 2293.1-2018 must be installed in a Class 7b / 9b building where the storey has a floor area more than 300m^2.
As the building has a floor area of less than 300m^2 an emergency lighting system is not required within the building.

Part F3 – Roof and wall cladding (Weatherproofing)

F3D2 – Roof coverings
A roof must be covered with:
- Roof tiles complying with AS 2049, fixed in accordance with AS 2050; or
- Metal sheet roofing complying with AS 1562.1; or
- Plastic sheet roofing designed and installed in accordance with AS 1562.3; or
- Terracotta, fibre-cement and timber slates and shingles designed and installed in accordance with AS 4597, except in cyclonic areas; or
- An external waterproofing membrane complying with F1D5.

Architect to note.

F3D3 - Sarking
Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1 and AS 4200.2.
Architect to note.

F3D4 – Glazed Assemblies

The following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: windows; sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame; adjustable louvres; shopfronts; and window walls with one piece framing.

F3D5 –Wall cladding
External wall cladding must comply with one or a combination of the following:
- Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700
- Autoclaved aerated concrete: AS 5146.3.
- Metal wall cladding: AS 1562.1

Architect to note.

Noting that a Class 7 building need not comply with the above where in the particular case there is no necessity for compliance otherwise a Weatherproofing Performance Solution would be required for any systems not specified within the Deemed to Satisfy provisions of Part F3.

Part F4 – Sanitary & other facilities

F4D5 – Accessible sanitary facilities
In a building required to be accessible at each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, not less than one sanitary compartment suitable for a person with an ambulant disability for use by males and not less than one sanitary compartment suitable for a person with an ambulant disability for use by females, each in accordance with AS 1428.1, must be provided.
Individual ambulant facilities for use by males and females have been provided. Architect to ensure further details are provided as the design develops to ensure compliance with AS 1428.1-2009.

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only.
The location of the doorway currently shown to the unisex accessible toilet requires it to be accessed by crossing an area that is reserved for males only. It is recommended the doorways be located adjacent to each other directly opposite the main entry doorway. Amendment recommended with the plans for CC.

F4D6 - Accessible unisex sanitary compartments
For a Class 5, 6, 7, 8 or 9 building, not less than 1 accessible unisex sanitary compartment must be provided on each storey containing sanitary compartments; and where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.
Complies.

Part F6 – Lighting & Ventilation

F6D5 - Artificial lighting
The artificial lighting system must comply with F6D5 and AS/NZS 1680.0.
Services consultants to note.

F6D6 - Ventilation of rooms
Mechanical ventilation or air-conditioning system complying with AS1668.2 is required to all areas not provided with natural ventilation.
Services consultants to note.

Section J – Energy Efficiency

The building is in Climate Zone 5. We understand the Amenities Store Block D will not be air-conditioned hence need not be in a thermal wall and roof envelope. Notwithstanding, the services design comprising the electrical, hydraulic, and mechanical services must also comply with Parts J1-J9 of BCA 2022. *Services consultants to note.*

3.0 Community, Café and Marina Building

According to the Building Code of Australia 2022 the following criteria apply to the Community, Café and Marina Building and will further assist in the design and assessment of the building and its various parts.

3.1 Description of the building

The building is described as follows with respect to levels, rise in storeys, uses and classification.

3.2 Classifications for the building

The different parts of the building are classified as follows.

Class 5: *an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.*

Class 6: *a shop or other building for the sale of goods by retail or the supply of services direct to the public, including—*
(a) an eating room, café, restaurant, milk or soft-drink bar; or
(b) a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or
(c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
(d) market or sale room, showroom, or service station.

Class 7: *a building which is—*
(a) Class 7a — a carpark; or
(b) Class 7b — for storage or display of goods or produce for sale by wholesale.

Class 9 buildings: *a Class 9 building is a building of a public nature that includes one or more of the following sub-classifications:*
(1) Class 9a — a health-care building including any parts of the building set aside as laboratories, and includes a health-care building used as a residential care building.
(2) Class 9b — an assembly building including a trade workshop or laboratory in a primary or secondary school

The table below designates the classifications applicable for the proposed building.

Use	BCA Class
Marina Office	Class 5
Café	Class 6
Marina Storage	Class 7b
Community Hall	Class 9b

3.3 Rise in storeys – C2D3

The building has a rise in storeys of 1.

Overall Levels Contained	1
Rise in Storeys	1
Type of Construction	Type C Construction
Effective Height (m)	N/A
Floor Area	Approximately 454m^2

3.4 Type of construction – C2D2

The building type of construction will need to be at least Type C construction.

Table C2D2 Type of construction required:

Rise in storeys	Class of building 2, 3, 9	Class of building 5, 6, 7, 8
4 or more	A	A
3	A	B
2	B	C
1	***C***	***C***

3.5 Building Regulation Assessment

According to the Building Code of Australia the following requirements apply to the building.

Part B1 – Structural Provisions

The structural components of the building must comply with the applicable Australian Standards and have not been part of this assessment.

The structural engineers will need to ensure the structural requirements of BCA Clauses B1D1, B1D2, B1D3 and B1D4 are considered in the buildings design (including the importance level of the building and the need for earthquake restraints on the superstructure and building services). This will mean assessment according to all relevant parts of Section B of the Building Code of Australia.

The importance level of the building is to be determined by the Structural Engineer in accordance with Table B1D3a of the BCA.

Part C2 – Fire Resistance and Stability

All works are to be in accordance with the requirements of Specification 5 for a Class 7b building (being the Class requiring the higher Fire Resistance Level requirements) of Type C Construction. The fundamental concept of fire rating for the building will be as per the tables S5C24a to S5C24e in Appendix B.

The south-eastern walls of the building that are within 3m of the side allotment boundary are to at least achieve an FRL of 90min or consolidate the multiple allotments. Details will need to be provided at Crown Certificate (CC) stage to verify compliance. Lot consolidation is recommended prior to the issue of an Occupation Certificate upon completion of works.

C2D11 – Fire hazard properties

Fire hazard properties of all new floor, wall and ceiling linings and attachments must comply with Specification C2D11. *Compliance is readily achievable.*

Part C3 – Compartmentation and Separation

C3D3 – General floor area and volume limitations

The size of any fire compartment in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum floor area nor the relevant maximum volume set out in Table C3D3 below.

As the building only has a floor area of approximately 454m^2 the limitations of Table C3D3 are not exceeded and the building can remain of Type C construction.

Table C3D3 Maximum size of fire compartments or atria:

Classification	Type A Construction	Type B Construction	Type C Construction
5, 9b or 9c	Max floor area—8 000 m^2	Max floor area—5 500 m^2	**Max floor area—3 000 m^2**
	Max volume—48 000 m^3	Max volume—33 000 m^3	**Max volume—18 000 m^3**
6, 7, 8 or 9a (except for patient care areas)	Max floor area—5 000 m^2	Max floor area—3 500 m^2	**Max floor area—2 000 m^2**
	Max volume—30 000 m^3	Max volume—21 000 m^3	**Max volume—12 000 m^3**

C3D9 – Separation of classifications in the same storey

If a building has parts of different classifications located alongside one another in the same storey each building element in that storey must have the higher FRL prescribed in Specification 5 for that element for the classifications concerned; or the parts must be separated in that storey by a fire wall.

It is noted that the same FRL requirements are required for Class 5, 6, 7b & 9b buildings of Type C construction and generally 90-minute FRLs are required for external loadbearing elements that are within 3m of a fire-source feature.

Part C4 – Protection of Openings

C4D3 – Protection of openings in external walls

(1) Subject to (2), openings in an external wall that is required to have an FRL must be protected in accordance with C4D5, and if wall-wetting sprinklers are used, they must be located externally.

(2) The requirements of (1) only apply if the distance between the opening and the fire-source feature to which it is exposed is less than—
(a) 3 m from a side or rear boundary of the allotment; or
(b) 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
(c) 6 m from another building on the allotment that is not Class 10.
(3) Openings required to be protected under (1), must not occupy more than 1/3 of the area of the external wall of the storey in which they are located unless they are in a Class 9b building used as an open spectator stand.

The proposed windows and doorways within the south-eastern external walls of the building adjacent to the side allotment boundary are to be protected in accordance with C4D5 below or consolidate the multiple allotments. Details will need to be provided at Crown Certificate (CC) stage to verify compliance.

C4D5 – Acceptable methods of protection
(1) Where protection is required, doorways, windows and other openings must be protected as follows:
(a) Doorways—
(i) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
(ii) –/60/30 fire doors that are self-closing or automatic closing.
(b) Windows—
(i) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
(ii) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or
(iii) –/60/– automatic closing fire shutters.
Other openings—
(i) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or
(ii) construction having an FRL not less than –/60/–.
(2) Fire doors, fire windows and fire shutters must comply with Specification 12.

Part D2 – Provision for escape

D2D3 – Number of exits required
All buildings must have at least one exit from each storey.
Complies.

D2D5 - Exit travel distances
No point on a floor must be more than 20m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.
Complies.

D2D7 - Height of exits, paths of travel to exits and doorways
In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.
Compliance readily achievable.

D2D8 - Width of exits and paths of travel to exits
The unobstructed width of each required exit or path of travel to an exit must be not less than 1 m except for doorways where the unobstructed width must not be less than 750mm or 850mm if accessibility is required.
Where accessibility is required the widths of the doorways must be at least 850mm clear in width. Where accessibility is not required the widths of the doorway must be at least 750mm clear in width. Details to be included in the door schedule with the plans for CC.

If the storey accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width of required exits or paths of travel to an exit, except for doorways, must be not less than— 1 m plus 250 mm for each 25 persons (or part) in excess of 100. *Complies. The community hall is*

provided with 2 exit doorways that have a total aggregate egress width of approximately 2m and in accordance with D2D18 below the maximum population of 104 people can be accommodated within the Community Hall part of the building.

D2D18 – Number of persons accommodated
The population determined in accordance with the floor area of the Community Hall part of the building (104m^2) can accommodate a population of 104 people as Table D2D18 of the BCA requires 1m^2 per person for Public Hall. As stated in D2D8 above egress is satisfactory.
We note the architect has confirmed the expected population will not exceed 100 persons for sanitary facility calculations.

Part D3 – Construction of exits

D3D24 – Doorways and doors
A doorway serving as a required exit or forming part of a required exit
(a) must not be fitted with a revolving door; and
(b) must not be fitted with a roller shutter or tilt-up door unless—
(i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m2; and
(ii) the doorway is the only required exit from the building or part; and
(iii) it is held in the open position while the building or part is lawfully occupied; and
(c) must not be fitted with a sliding door unless—
(i) it leads directly to a road or open space; and
(ii) the door is able to be opened manually under a force of not more than 110 N: and
(d) if fitted with a door which is power-operated—
(i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and
(ii) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.
Compliance readily achievable.

D3D25 – Swinging doors
A swinging door in a required exit or forming part of a required exit must swing in the direction of egress unless it serves a building or part with a floor area not more than 200 m^2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position.
Compliance readily achievable.

Part D4 – Access for people with a disability

Please refer to Philip Chun's Accessibility Report for compliance with matters regarding Part D4 of the BCA.

Part E1 – Fire Fighting Equipment

E1D2 – Fire hydrant
A fire hydrant system is not required to the Community Marina building as it has a floor area of less than 500m^2.

E1D3 – Fire hose reels
Fire hose reels are not required to be provided to the building as it has a floor area of less than 500m^2.

E1D14 – Portable Fire Extinguishers
Portable fire extinguishers are to be provided within the building in accordance with AS 2441-2005 to cover Class A fire risks in normally occupied fire compartments less than 500m^2 not provided with fire hose reels, to cover Class F fire risks involving cooking oils and fats in kitchens, if applicable to cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used and if applicable to cover AE or E fire risks associated with emergency services switchboards.
Services consultants to note. Portable fire extinguishers are to be provided as above.

E2 – Smoke Hazard Management

(NSW Variation) E2D16 – Class 9b – assembly buildings: all

A building or part of a building used as an assembly building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS 1668.1) which does not form part of the smoke hazard management system, on the activation of —

(i) smoke detectors installed complying with S20C6; and
(ii) any other installed fire detection and alarm system, including a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17.

Automatic shutdown of any air handling systems within the Community Hall Class 9b part must be provided as above. Services consultants to note and details of compliance to be provided at CC stage.

Part E4 – Visibility in an emergency, exit signs and warning systems

An emergency lighting system and exit signage complying with AS 2293.1-2018 must be installed in a Class 5, 6, 7b & 9b building where the storey has a floor area more than 300m^2. The Class 6 & 9b parts are to be provided with emergency lighting in every room or space where there is public access.

As the building has a floor area of more than 300m^2 an exit & emergency lighting system is to be provided within the building. Services consultants to note and details of compliance to be provided at CC stage.

Part F3 – Roof and wall cladding (Weatherproofing)

F3D2 – Roof coverings

A roof must be covered with:

- Roof tiles complying with AS 2049, fixed in accordance with AS 2050; or
- Metal sheet roofing complying with AS 1562.1; or
- Plastic sheet roofing designed and installed in accordance with AS 1562.3; or
- Terracotta, fibre-cement and timber slates and shingles designed and installed in accordance with AS 4597, except in cyclonic areas; or
- An external waterproofing membrane complying with F1D5.

Architect to note.

F3D3 - Sarking

Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1 and AS 4200.2.

Architect to note.

F3D4 – Glazed Assemblies

The following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: windows; sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame; adjustable louvres; shopfronts; and window walls with one piece framing.

F3D5 –Wall cladding

External wall cladding must comply with one or a combination of the following:

- Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700
- Autoclaved aerated concrete: AS 5146.3.
- Metal wall cladding: AS 1562.1

Architect to note.

A Weatherproofing Performance Solution would be required for any systems not specified within the Deemed to Satisfy provisions of Part F3.

Part F4 – Sanitary & other facilities

F4D4 – Facilities in Class 3 to 9 buildings

- Marina Office: The provision of 1x unisex accessible sanitary compartment within the Marina Office can cater for a maximum population of 10 employees.

- Community Hall: The provision of 1x unisex accessible sanitary compartment, 1x male ambulant compartment w/ washbasin & 1x Female Ambulant Compartment w/ washbasin can cater for a maximum population of 100 patrons (50 male & 50 female).

- Café: Provision of sanitary facilities for Café patrons is only required if more than 20 patrons will be accommodated and the single unisex accessible sanitary compartment adjacent the café can cater for a population of 10 employees.

We note the architect has confirmed the expected population will not exceed 100 persons for sanitary facility calculations in which case the quantity of facilities is considered satisfactory. Note - there is redundancy within the Amenities Building for additional population.

F4D5 – Accessible sanitary facilities
In a building required to be accessible at each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment at that bank of toilets, not less than one sanitary compartment suitable for a person with an ambulant disability for use by males and not less than one sanitary compartment suitable for a person with an ambulant disability for use by females, each in accordance with AS 1428.1, must be provided.
Individual ambulant facilities for use by males and females have been provided. Architect to ensure further details are provided as the design develops to ensure compliance with AS 1428.1-2009.

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only.
Complies.

F4D6 - Accessible unisex sanitary compartments
For a Class 5, 6, 7, 8 or 9 building, not less than 1 accessible unisex sanitary compartment must be provided on each storey containing sanitary compartments; and where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.
Complies.

Part F6 – Lighting & Ventilation

F6D5 - Artificial lighting
The artificial lighting system must comply with F6D5 and AS/NZS 1680.0.
Services consultants to note.

F6D6 - Ventilation of rooms
Mechanical ventilation or air-conditioning system complying with AS1668.2 is required to all areas not provided with natural ventilation.
Services consultants to note.

Section J – Energy Efficiency

As the Community / Marina building is likely to be air-conditioned, a specialist report from a qualified energy efficiency consultant will need to be provided for the design at CC stage to verify compliance with Section J of the BCA (noting that the building is in Climate Zone 5).

The services design particularly the electrical, hydraulic, and mechanical services must also comply with Parts J1-J9 of BCA 2022.
Services consultants to note.

4.0 Dragon Boat Storage Building

According to the Building Code of Australia 2022 the following criteria apply to the Dragon Boat Storage building and will further assist in the design and assessment of the building and its various parts.

4.1 Description of the building

The building is described as follows with respect to levels, rise in storeys, uses and classification.

4.2 Classifications for the building

The different parts of the building are classified as follows.

Class 7: *a building which is—*
(a) Class 7a — a carpark; or
(b) Class 7b — for storage or display of goods or produce for sale by wholesale.

The table below designates the classifications applicable for the proposed building.

Use	BCA Class
Dragon Boat Storage Building	Class 7b

4.3 Rise in storeys – C2D3

The building has a rise in storeys of 1.

Overall Levels Contained	1
Rise in Storeys	1
Type of Construction	Type C Construction
Effective Height (m)	N/A
Floor Area	Approximately 497m^2

4.4 Type of construction – C2D2

The building type of construction will need to be at least Type C construction.

Table C2D2 Type of construction required:

Rise in storeys	Class of building 2, 3, 9	Class of building 5, 6, 7, 8
4 or more	A	A
3	A	B
2	B	C
1	***C***	***C***

4.5 Building Regulation Assessment

According to the Building Code of Australia the following requirements apply to the building.

Part B1 – Structural Provisions
The structural components of the building must comply with the applicable Australian Standards and have not been part of this assessment.

The structural engineers will need to ensure the structural requirements of BCA Clauses B1D1, B1D2, B1D3 and B1D4 are considered in the buildings design (including the importance level of the building and the need for earthquake restraints on the superstructure and building services). This will mean assessment according to all relevant parts of Section B of the Building Code of Australia.

The importance level of the building is to be determined by the Structural Engineer in accordance with Table B1D3a of the BCA.

Part C2 – Fire Resistance and Stability
All works are to be in accordance with the requirements of Specification 5 for a Class 7b building (being the Class requiring the higher Fire Resistance Level requirements) of Type C Construction. The fundamental concept of fire rating for the building will be as per the tables S5C24a to S5C24e in Appendix B.
Confirm consolidation of the multiple allotments otherwise the external walls and openings within 3m of the boundaries will need to fire rated and protected in accordance with C4D5 of the BCA. Details will need to be provided at Crown Certificate (CC) stage to verify compliance.

C2D11 – Fire hazard properties
Fire hazard properties of all new floor, wall and ceiling linings and attachments must comply with Specification C2D11.
Compliance is readily achievable.

Part C3 – Compartmentation and Separation

C3D3 – General floor area and volume limitations
The size of any fire compartment in a Class 5, 6, 7, 8 or 9 building must not exceed the relevant maximum floor area nor the relevant maximum volume set out in Table C3D3 below.
As the building only has a floor area of approximately 497m² the limitations of Table C3D3 are not exceeded and the building can remain of Type C construction.

Table C3D3 Maximum size of fire compartments or atria:

Classification	Type A Construction	Type B Construction	Type C Construction
5, 9b or 9c	Max floor area—8 000 m²	Max floor area—5 500 m²	**Max floor area—3 000 m²**
	Max volume—48 000 m³	Max volume—33 000 m³	**Max volume—18 000 m³**
6, 7, 8 or 9a (except for patient care areas)	Max floor area—5 000 m²	Max floor area—3 500 m²	**Max floor area—2 000 m²**
	Max volume—30 000 m³	Max volume—21 000 m³	**Max volume—12 000 m³**

Part D2 – Provision for escape

D2D3 – Number of exits required
All buildings must have at least one exit from each storey.
Complies.

D2D5 - Exit travel distances
No point on a floor must be more than 20m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.
Complies.

D2D7 - Height of exits, paths of travel to exits and doorways
In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.
Compliance readily achievable.

D2D8 - Width of exits and paths of travel to exits
The unobstructed width of each required exit or path of travel to an exit must be not less than 1 m except for doorways where the unobstructed width must not be less than 750mm or 850mm if accessibility is required.
Complies.

Part D3 – Construction of exits

D3D24 – Doorways and doors

A doorway serving as a required exit or forming part of a required exit
(a) must not be fitted with a revolving door; and
(b) must not be fitted with a roller shutter or tilt-up door unless—
(i) it serves a Class 6, 7 or 8 building or part with a floor area not more than 200 m2; and
(ii) the doorway is the only required exit from the building or part; and
(iii) it is held in the open position while the building or part is lawfully occupied; and
(c) must not be fitted with a sliding door unless—
(i) it leads directly to a road or open space; and
(ii) the door is able to be opened manually under a force of not more than 110 N: and
(d) if fitted with a door which is power-operated—
(i) it must be able to be opened manually under a force of not more than 110 N if there is a malfunction or failure of the power source; and
(ii) if it leads directly to a road or open space it must open automatically if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.
Compliance readily achievable.

D3D25 – Swinging doors
A swinging door in a required exit or forming part of a required exit must swing in the direction of egress unless it serves a building or part with a floor area not more than 200 m^2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position.
Complies.

Part D4 – Access for people with a disability

Please refer to Philip Chun's Accessibility Report for compliance with matters regarding Part D4 of the BCA.

Part E1 – Fire Fighting Equipment

E1D2 – Fire hydrant
A fire hydrant system is not required to the Dragon Boat Storage building as it has a floor area of less than 500m^2.

E1D3 – Fire hose reels
Fire hose reels are not required to be provided to the building as it has a floor area of less than 500m^2.

E1D14 – Portable Fire Extinguishers
Portable fire extinguishers are to be provided within the building in accordance with AS 2441-2005 to cover Class A fire risks in normally occupied fire compartments less than 500m^2 not provided with fire hose reels, if applicable to cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used and if applicable to cover AE or E fire risks associated with emergency services switchboards.
Services consultants to note. Portable fire extinguishers are to be provided as above.

Part E4 – Visibility in an emergency, exit signs and warning systems
An emergency lighting system and exit signage complying with AS 2293.1-2018 must be installed in a Class 5, 6, 7b & 9b building where the storey has a floor area more than 300m^2.
As the building has a floor area of more than 300m^2 an exit & emergency lighting system is to be provided within the building.

Part F3 – Roof and wall cladding (Weatherproofing)

F3D2 – Roof coverings
A roof must be covered with:
- Roof tiles complying with AS 2049, fixed in accordance with AS 2050; or

- Metal sheet roofing complying with AS 1562.1; or
- Plastic sheet roofing designed and installed in accordance with AS 1562.3; or
- Terracotta, fibre-cement and timber slates and shingles designed and installed in accordance with AS 4597, except in cyclonic areas; or
- An external waterproofing membrane complying with F1D5.

Architect to note.

F3D3 - Sarking
Sarking-type material used for weatherproofing of roofs and walls must comply with AS 4200.1 and AS 4200.2.
Architect to note.

F3D4 – Glazed Assemblies
The following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: windows; sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame; adjustable louvres; shopfronts; and window walls with one piece framing.

F3D5 –Wall cladding
External wall cladding must comply with one or a combination of the following:
- Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700
- Autoclaved aerated concrete: AS 5146.3.
- Metal wall cladding: AS 1562.1

Note - a Class 7 or 8 building need not comply with the above where in the particular case there is no necessity for compliance. Notwithstanding, it is recommended that a Weatherproofing Performance Solution be provided a Crown Certificate (CC) stage in this instance.

Part F4 – Sanitary & other facilities

F4D4 – Facilities in Class 3 to 9 buildings
Amenities are to be provided for Dragon Boat Storage employees.
We understand that the building will be occupied by Dragon Boat Storage users rather than employees. Employees are expected to be from the nearby Marina Office which has its own sanitary facilities, in which case no facilities are needed to it. As a redundancy there are the public amenities available in nearby Black D.

F4D6 - Accessible unisex sanitary compartments. *As above. No new facilities are being provided for the Dragon Boat Storage building, hence no accessible facility needed.*

Part F6 – Lighting & Ventilation

F6D5 - Artificial lighting
The artificial lighting system must comply with F6D5 and AS/NZS 1680.0.
Services consultants to note.

F6D6 - Ventilation of rooms
Mechanical ventilation or air-conditioning system complying with AS1668.2 is required to all areas not provided with natural ventilation.
Services consultants to note.

Section J – Energy Efficiency

The Dragon Boat Storage building is not likely to be air-conditioned hence need not be in a thermal wall and roof envelope. Notwithstanding, the services design comprising the electrical, hydraulic, and mechanical services (if any) must comply with Parts J1-J9 of BCA 2022. *Services consultants to note.*

5.0 Conclusion

We have assessed the proposed design to date, and we have reviewed the proposal's compliance with respect to the Building Code of Australia 2022. The design is at a point where the inherent BCA philosophies have been checked and we can confirm that upon addressing the items raised within this report the proposed work is capable of complying with the Building Code of Australia.

Please also note that areas of the design are still being refined so that compliance will be further assessed prior to the issue of a Crown Works Certificate for the works, as is required by the certifier as part of the legislative requirements related to Crown certification work under Section 6.28 of the Environmental Planning and Assessment Act 1979..