

STRATEGIC PLANNING

DRAFT **Randwick** **Development** **Control Plan** **D13 Little Bay** **Cove**

D05917344

18 November 2025

Note

Part D13 of the Draft Randwick DCP has been developed by replicating the 2009 Masterplan into a DCP format. It includes no major changes and retains the existing objectives and provisions. Minor amendments have been made to ensure alignment with current legislation, policies and guidelines introduced since the Masterplan was adopted by Council in 2009. Additional requirements have been included for the protection of the State Heritage Miocene Geological and Ochre Site (added to the State Heritage Register on 24 February 2023) and references have been updated to reflect changes in other parts of the Draft Randwick DCP 2025.

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1. Introduction

This Development Control Plan (DCP) provides a framework for the redevelopment of land at Little Bay Cove (see Figure 1). It provides controls to guide the built form, environmental and amenity standards, and requirements for appropriate heritage protection for the site.

The following documents should be read in conjunction with this DCP:

- Little Bay Stage 1 Master Plan adopted with variations February 2009 and subsequent amendments. The principles and controls of the master plan are reflected in this DCP
- Prince Henry Master Plan adopted with variations May 2003 and subsequent amendments
- The Prince Henry Site, Little Bay – Conservation Management Plan (CMP) prepared by Godden Mackay Logan, May 2002 (amended February 2003), and any subsequent amendments endorsed by the NSW Heritage Council
- The Prince Henry Site, Little Bay – Archaeological Management Plan (AMP) prepared by Godden Mackay Logan, August 2002
- Any Specific Elements Conservation Policy (SECP) for the site, as required by the CMP (see Appendix F)
- The Bushland Plan of Management (POM) and the Little Bay Geological Reserve Plan of Management (POM)
- The State Heritage Miocene Geological and Ochre Site (NSW State Heritage Register)

1.1. Alignment with other planning instruments

This site specific DCP applies to all new development, and significant alterations and additions to existing development on land situated on the subject site illustrated in Figure 1. These controls supplement the provisions of the Randwick Local Environmental Plan (RLEP 2012) which sets out the height and density and uses for the location and any other local planning statutory requirements outside this DCP.

In addition to the RLEP, several State Environmental Planning Policies (SEPPs) apply to certain types of development within on the site, depending on the nature of the proposal. The key SEPPs include:

- Housing SEPP 2021 (including the supplementary Apartment Design Guide (ADG))
- Transport and Infrastructure SEPP 2021
- Sustainable Buildings SEPP 2023

This DCP should also be read in conjunction with:

- Part A - Introduction
- Part B - General Controls
- Other Parts of the DCP for specific development types, locations or sites, if relevant to the Development Application (DA).

To the extent of any inconsistency between this DCP and any other sections of Randwick DCP 2025, this DCP will prevail.

Figure 1: Land to which this plan applies – Little Bay Cove Site



Source: Randwick Council

Objectives

The objectives for Little Bay Cove are to:

1. Create a sustainable neighbourhood that integrates new development
2. To protect remnant bushland and the cultural significance of the Little Bay Miocene Geological site and Ochre site
3. Ensure design reflects the site's unique location and characteristics
4. Permeate the existing urban landscape and facilitate a new urban connection to the water and its adjacent landscape
5. Protect the visual amenity and scenic value of the coastline
6. Ensure development reflects the principles of the adopted master plan for the site
7. Create a diverse range of passive and active spaces useable by future residents and the wider community
8. Ensure development demonstrates architectural merit and incorporates high quality materials and finishes
9. Ensure development promotes and incorporates the principles of Ecologically Sustainable Development (ESD)
10. Provide for a mix of land uses and dwelling types
11. Provide for housing choice to accommodate the needs of current and future households and affordability
12. Protect and enhance remnant native vegetation, habitat corridors, riparian buffers and wetland area.

Note

The Little Bay Cove Masterplan (2009) contains the relevant development controls in effect for the Little Bay Cove site and has been implemented into this DCP.

This DCP should be read in conjunction with the Little Bay Cove Masterplan and relevant documents outlined in Section 1: Introduction.

1.2. Heritage requirements

Part of the Little Bay Cove Site lies within the Prince Henry Hospital Heritage Conservation Area and partly within the State Heritage Register curtilage. Development Applications (DA) that incorporate development within the NSW State Heritage Register curtilage may constitute Integrated Development. Applicants should check with Council to determine Integrated Development requirements prior to lodging any DA.

A Heritage Impact Statement (HIS) prepared by a suitably qualified professional must be included with any DA, together with a Specific Elements Conservation Policy (SECP) (where applicable).

Applicants should refer to the Conservation Management Plan (CMP), the Archaeological Management Plan (AMP) and any relevant Specific Elements Conservation Management Policy (SECP) when preparing a DA.

Built and landscape elements

- a) Significant built and landscape items and elements should be retained, conserved, managed and interpreted in accordance with the detailed policies in the Conservation Management Plan (CMP) and any relevant Specific Elements Conservation Policy (SECP) as well as the requirements of the NSW Heritage Act 1977.

Aboriginal archaeology

- b) Identified and potential Aboriginal archaeological objects and sites are to be conserved and managed in accordance with the Archaeological Management Plan (AMP) and the requirements of the NSW National Parks and Wildlife Act 1974
- c) Damage or destruction of any Aboriginal object or place is only permitted where a permit or consent has been issued by the Director of the National Parks and Wildlife Service (NPWS), Office of Environment and Heritage
- d) Any proposals affecting known or discovered Aboriginal objects or places on the Little Bay Cove site or proposals that will disturb the ground within identified Aboriginal Archaeological Zones must be referred to the La Perouse Local Aboriginal Land Council (LPLALC)
- e) Prepare an Aboriginal Heritage assessment if required.

Historical archaeology

- f) Identified and potential archaeological relics and sites are to be conserved and managed in accordance with the Archaeological Management Plan (AMP) and the requirements of the NSW Heritage Act 1977
- g) Where the archaeological assessment determines that the development would disturb a potential historical archaeological resource, an application for an excavation permit issued under the NSW Heritage Act 1977 is required.

Geological Heritage

- h) The Little Bay Miocene Geological and Ochre Site, including the Critical Exposure Area, Cleared Area, and Paleovalley, is of exceptional scientific, cultural, and heritage significance and must be protected from adverse impacts arising from development
- i) Development Applications (DAs) must identify the extent of the Miocene site on all plans and documentation, including mapping of the Critical Exposure Area, Cleared Area, and Paleovalley
- j) A minimum buffer of 20 metres must be maintained around the Critical Exposure Area

and Cleared Area. No excavation, construction, or landscaping works are permitted within this buffer unless approved by the NSW Heritage Council.

- k) Any excavation within 30 metres of the Little Bay Miocene Geological and Ochre Site must be supported by:
 - i. A Geotechnical Impact Assessment prepared by a certified geologist.
 - ii. A Heritage Impact Statement referencing the CMP and SECP.
 - iii. Evidence of consultation with the NSW Heritage Council and the La Perouse Local Aboriginal Land Council (LPLALC), where Aboriginal ochre deposits may be affected.
- l) Endorsement of Randwick City Council and Heritage NSW is required for excavation within the possible extent of the Palaeovalley Area below RL 26.
- m) All development must comply with the Little Bay Geological Reserve Plan of Management, the Prince Henry Conservation Management Plan (CMP), and any relevant Specific Elements Conservation Policy (SECP).

Note

Geological heritage conservation controls are informed by the International Union for Conservation of Nature's - Guidelines for geoconservation in protected and conserved areas.

Note

In addition to the abovementioned requirements, all development within a Heritage Conservation Area or heritage item must comply with the requirements outlined in Part B2 – Heritage in the Randwick DCP

2. Site context

This subsection outlines the context and key features of the Little Bay Cove Site outlined in the Little Bay Cove Masterplan 2009.

2.1. Regional and local context

The subject site is located at the southern end of the Randwick Local Government Area (LGA). The site is bound by the Coast Golf Course to the east, Anzac Parade to the west, Housing NSW land to the north and the Prince Henry Site to the south. The Site originally formed part of the grounds of the Coast Hospital, subsequently known as the Prince Henry Hospital Site. The Site is one of several large parcels situated on the Anzac Parade corridor that has been redeveloped. The site is serviced by buses to important local centres such as Maroubra Junction, Kingsford and Kensington as well as various regional and recreational facilities including the University of New South Wales (UNSW), Prince of Wales Hospital Campus and Centennial and Moore Parks.

Figure 2: Regional context

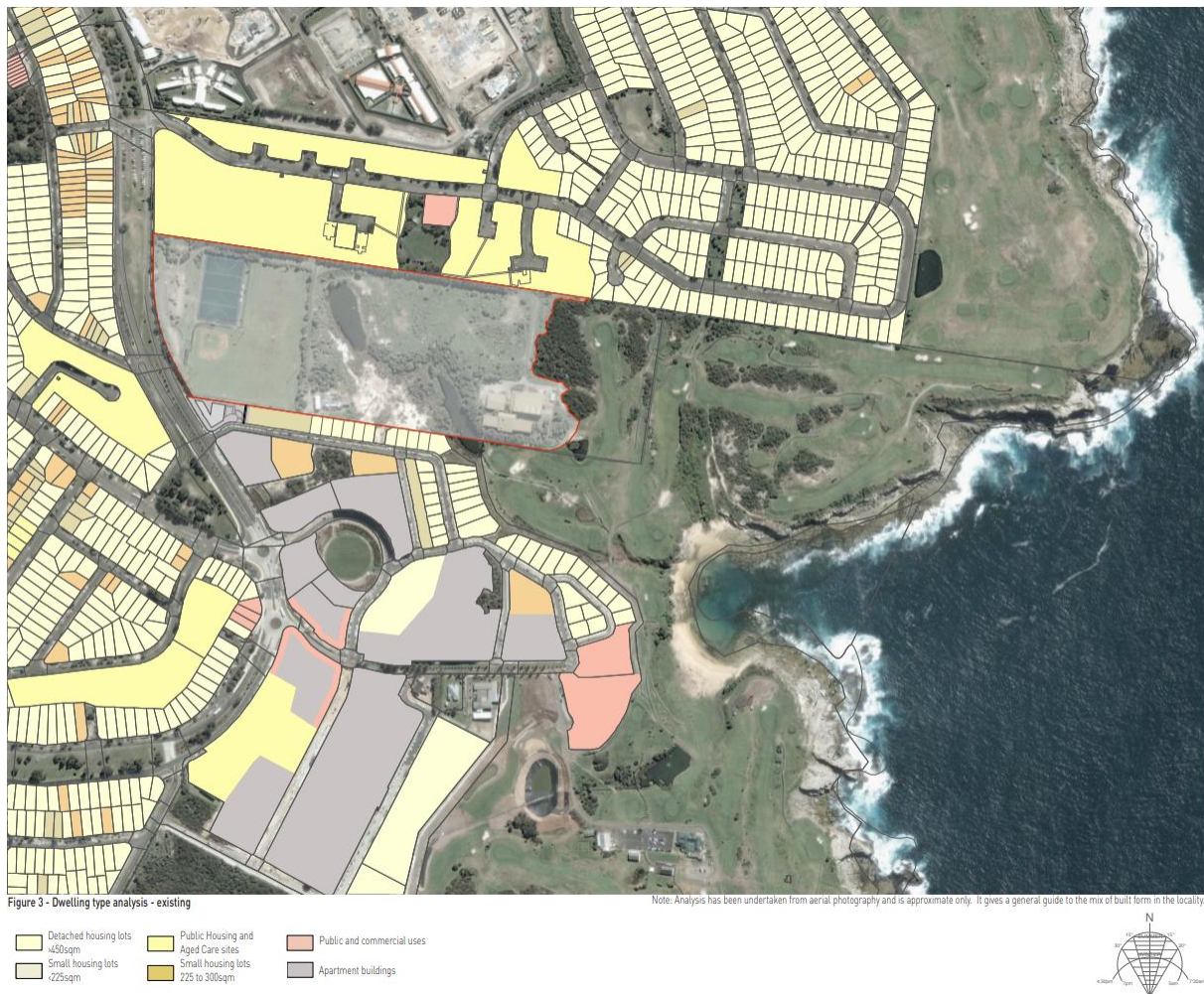


Source: Little Bay Cove Masterplan

2.2. Local urban conditions

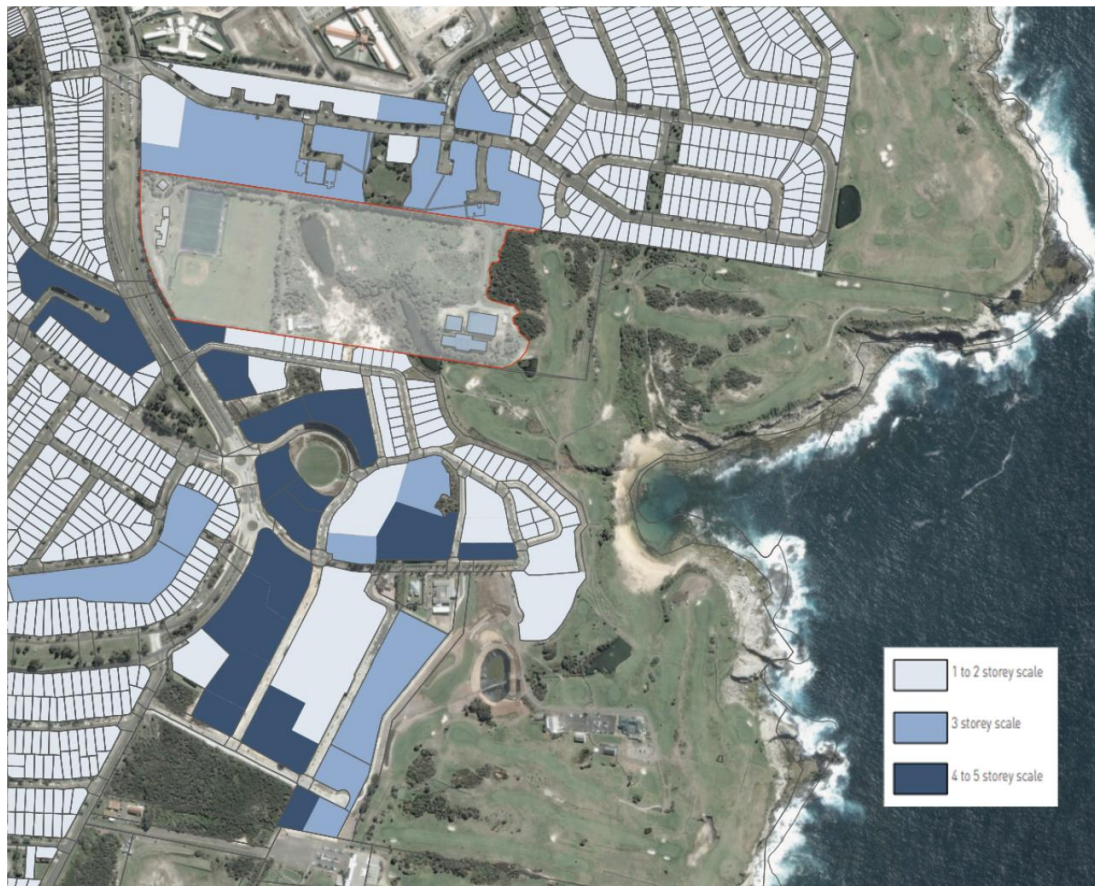
The existing residential setting is predominantly detached dwelling housing (1-2 storeys), with some dual occupancy and townhouse developments. Multi-unit residential apartment buildings (ranging from 2-5 storeys) are also located in the vicinity as part of Housing NSW land and the neighbouring Prince Henry Site which has contributed to a diverse housing mix in the locality through the provision of multi-unit residential apartments, town houses, row houses and refurbishments of heritage buildings. Part of the Little Bay Cove Site has also been developed since the adoption of the Little Bay Cove Masterplan with 4-5 storey multi dwelling residential buildings fronting Anzac Parade in the west of the site.

Figure 3: Dwelling type analysis



Source: Little Bay Cove Masterplan

Figure 4: Local building heights



Source: Little Bay Cove Masterplan

2.3. Historical context

Prior to the European settlement of Little Bay, a vibrant and rich Aboriginal life thrived in the local area. Evidence of this can be seen in the numerous middens, rock engravings and ochre sites present in the local area. The present-day Aboriginal community, represented by the La Perouse Local Aboriginal Land Council maintain a close association with these sites, and actively participate in their ongoing protection and maintenance.

From 1881 – 1934 the site was part of the grounds of the Coast Hospital, built originally as a quarantine hospital for infectious diseases. In 1934 the hospital was renamed as the Prince Henry Hospital. When the hospital uses vacated the site, it was quarried for sand, during which time Miocene and ochre deposits were exposed. The Miocene deposits are common in the Sydney region but rarely exposed, and the site is listed on the Register of the National Estate. The ochre deposits are significant to the local Aboriginal community. Quarrying activity resulted in the formation of the existing dams in the centre of the site. The sand mining also exposed acid generating shales within the drainage corridor. The Southern basin is currently used for water storage for the adjacent golf course irrigation system. Despite the disturbance of mining, a remnant band of Eastern Suburbs Banksia Scrub (ESBS) adjoins the Eastern boundary of the site on land owned by the University of NSW. This is a Critically Endangered Ecological Community as listed by DECC.

The University of NSW acquired the site in October 1959. The west part of the site was filled with building and demolition waste to the current level to accommodate playing fields. The University also constructed a number of buildings, including structures associated with the sporting field uses, and the Solar Energy Research Centre, known as “Solarch” on the southern

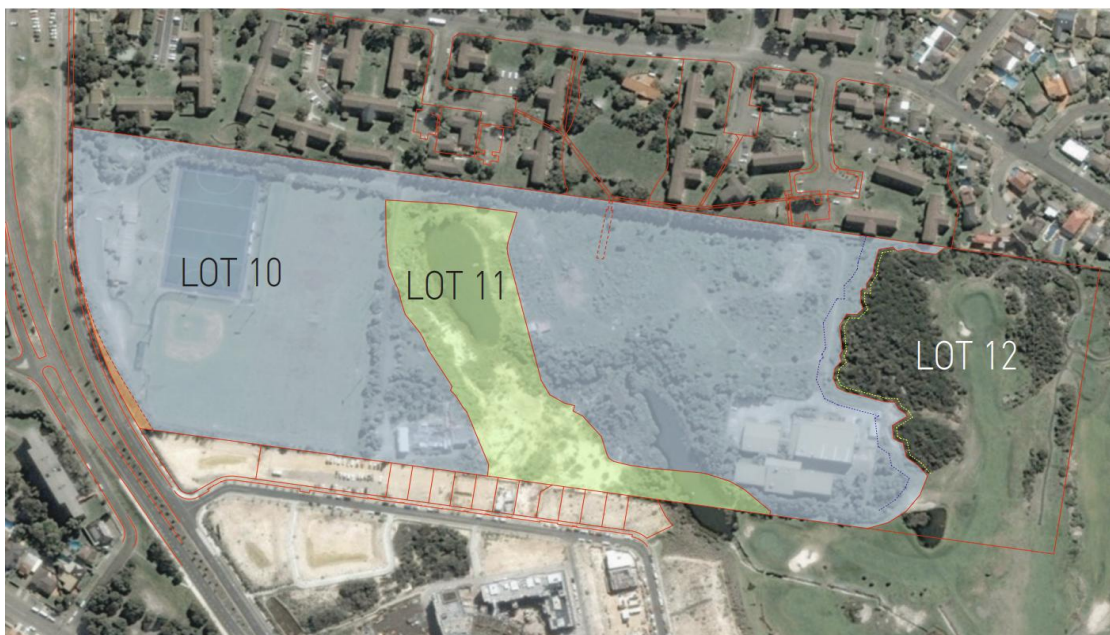
boundary of the site between 1992 and 1995. The building was constructed by the students of the University as an exemplar of energy efficient design. Drinking water, stormwater and sewage were managed on the site, and important research on solar power was conducted during that time. The building ceased to be actively used in 2003 and was destroyed by fire in 2007. The Eastern part of the site was also filled after mining and a biological resources facility was constructed by UNSW in the 1970's and operated until July 2008.

A Stage 1 DA for the Community-title subdivision of the subject site into 149 residential allotments with associated building envelopes, carparking, roads and open space was approved in September 2007. In January 2008, an additional application (DA/886/2007) was approved to subdivide the land known as Lot 1 DP 164309 into three separate Torrens Title allotments. The details of the subdivided allotments are as follows:

- Lot 10 – comprising the developable portion of the subject site with a total area of 11.42 hectares.
- Lot 11 – located in the centre of the subject site and containing the central corridor, Miocene and Ochre site with a total site area of 2.171 hectares
- Lot 12 – Adjacent to the eastern side of the subject site containing the ESBS remnant with a total area of 3.411 hectares.

A subdivision certificate application was approved under delegated authority on 13 June 2008 and the three allotments were legally referenced as Lot 10, 11 and 12 DP 1127716 (see Figure 5).

Figure 5: Subdivision of Little Bay Cove – DA/886/2007



Source: DA/886/2007 – Randwick City Council

A Stage 2 DA for bulk earthworks and remediation of land and demolition of all existing buildings on site with deferred commencement was granted in November 2008; however, development never commenced. Lots 10 and 11 were later purchased by Charter Hall in 2008 and Lot 12 remains in the ownership of UNSW.

Little Bay Stage 1 Plan

In December 2009, DA/81/2009 which sought consent for a Stage 1 DA including built form controls, site remediation, bulk earthworks, infrastructure and services works, demolition of all structures on site, associated landscaping and subdivision of the site into 28 residential lots and

10 super lots was approved in the Land and Environment Court. Figure 6 outlines the Stage 1 Lot Plan that forms part of the Little Bay Cove Masterplan (2009). To date, Lot 5 and 11 have been constructed consisting of multi-unit residential development (5 storeys), the remaining sites consist of vacant lots.

Figure 6: Little Bay Cove Stage 1 lot plan



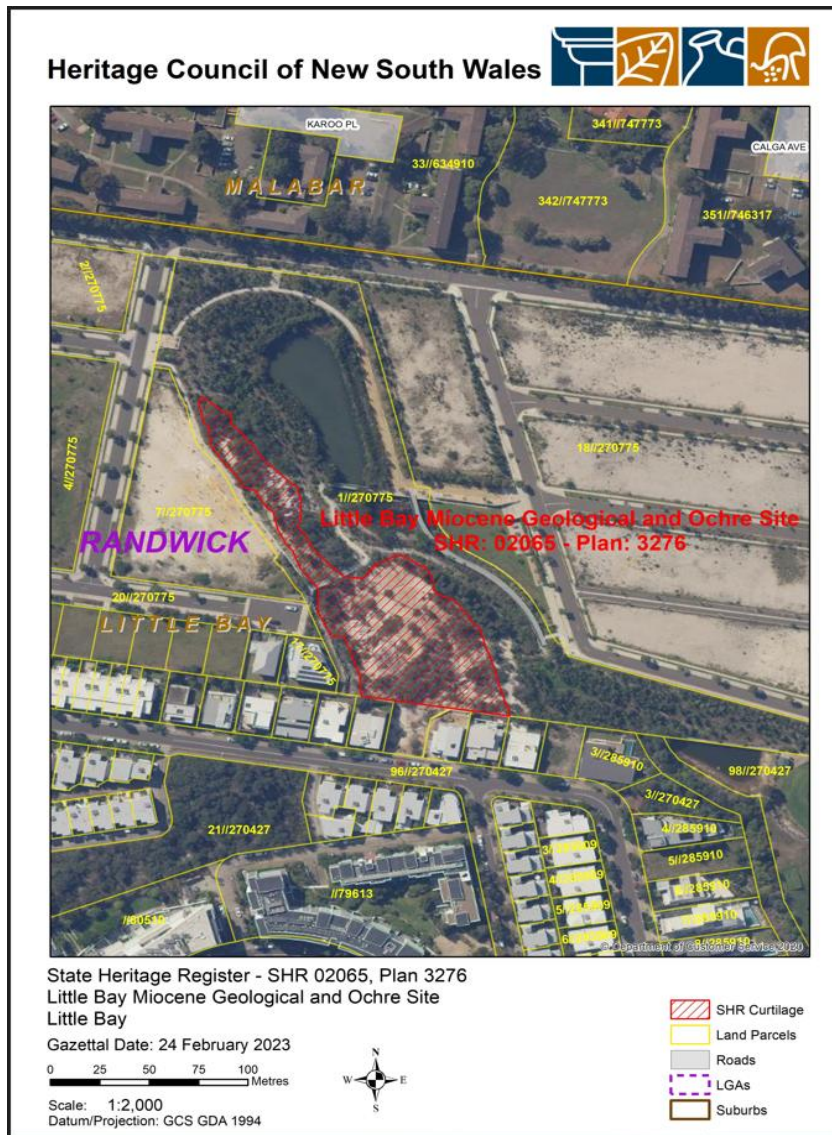
Source: Little Bay Cove Masterplan

2.4. Heritage context

The Little Bay Cove Site is of national significance and provides evidence of topography, relative sea level, vertical land movements and coastal landscape prior to the formation of Sydney Harbour and other coastal valleys (refer to the CMP, and Little Bay Geological Site SECP and Plan of Management).

In February 2023, the Little Bay Miocene Geological and Ochre Site was listed on the NSW State Heritage Register as an item of State heritage significance (see figure 7). RLEP also identifies part of the Little Bay Cove Site as a Heritage Conservation Area. Schedule 5 of RLEP contains a list of existing heritage items and archaeological sites.

Figure 7: Little Bay Miocene Geological and Ochre Site



Source: Heritage Council NSW

Note

Refer to Part D11 – Prince Henry Site for types of elements of heritage significance occurring within the adjacent Prince Henry Site and parts of Little Bay Cove.

2.5. Constraints

Exposed miocene and red/white ochres

The Central Corridor contains:

- Exposed Miocene sediments that have been revealed due to quarry operations
- Red and white ochres which have been used by local indigenous communities

The exposed areas of the Little Bay Geological site cover about two hectares of land on an irregular slope facing east towards the beach at Little Bay and comprise the Critical Exposure Area and the Cleared Area. The exposed area extends across the boundary between the Little Bay Cove site and the adjacent Prince Henry site. The significance of the Critical Exposure Area and the Cleared Area are described as follows:

The Critical Exposure Area within the Prince Henry site is the only known area where the significant relationships between outcrops of exposed Hawkesbury Sandstone and gully-fill sands can be clearly seen, providing evidence of geological processes involved in the formation of the east coast of Australia. Additionally, the critical Exposure Area within the Little Bay Cove land contains the only known exposure of estuarine peaty clay shales which have been classified as having Exceptional Significance to understanding of plan evolution in Australia and of local climate conditions around 15 million years ago.

The Cleared Area represents the extent of land, once covered by wind-blown sand and heathland scrub, which has been disturbed by previous mining and subsequent erosion exposing several important geological elements and their inter-relationships. Although there is some superficial disturbance, the Cleared Area demonstrates the variation within the general soil profile and enables analysis and comparison between soil profiles in the Cleared Area and the Critical Exposure Area.

The Paleovalley

The Paleovalley comprises a broad band of land (that includes the Cleared Area and Critical Exposure Area) extending largely underground (without ground surface expression) through the Long Bay Gaol, Little Bay Cove and Prince Henry sites to Little Bay. The Paleovalley has been found to be of Exceptional Significance as it represents the full history of the Miocene stream channel (that ran in the area as part of a previous ancient estuarine environment to its existing sandstone state some 30m above sea level). Its overall geometry will add greatly to understanding of this unique site as well as the geological history of the east coast of Australia. It is also of Exceptional Significance for its research potential as the area is likely to contain clays and sands which contain fossil pollen and leaves, believed to be well preserved for future study.

Note

Exposed Miocene and Red/White Ochres archaeological context is taken from the Prince Henry Site at Little Bay – Little Bay Geological Site (Specific Elements Conservation Policy (SECP)).

Ochre Site

Red and White Ochre Deposits within the Central Corridor have been identified and surveyed in conjunction with representatives of the La Perouse Local Aboriginal Land Council, Archaeological & Heritage Management Solutions, and Travers Environmental. The Indigenous site has been accurately surveyed and has been fully protected within a buffer of variable width of between 7-10 m. Earth works associated with the basins and drainage channel in the central corridor and the adjoining park elements have been placed outside of the validated Aboriginal site. The red and white ochre sites will be protected within a native landscape and the current exposed faces will be retained as is, with no further revegetation works directly on the faces.

Eastern Suburbs Banksia Scrub (ESBS)

The Eastern Suburbs Banksia Scrub (ESBS) vegetation is contained within the adjoining Lot 12, which is owned by the University of New South Wales. As this native vegetation asset lies outside of the subject site, this plan is limited to edge treatment and protection. The following protective measures are required under the subdivision adopted including:

- The entire area of ESBS has been set aside for conservation
- Roads and native landscaping provide a buffer against the impacts of the proposed development
- Setbacks have been provided for asset protection against bushfires in the ESBS
- Vegetation Management for the ESBS includes native revegetation works to minimise edge effects

Figure 8: Miocene deposits and ESBS locations



Source: *Little Bay Cove Masterplan*

3. Design principles

3.1. Urban design principles

The following urban design principles are identified in the Little Bay Stage 1 Masterplan (2009):

- Reinforce physical and visual connections between urban areas and natural landscapes, especially the coastline
- Design street networks and public spaces to promote openness, accessibility, and integration
- Avoid barriers to movement; prioritise pedestrian and cycle permeability across the site and into adjacent areas
- Use existing natural features—topography, geology, and vegetation as foundational design references
- Integrate native and site-responsive plantings to preserve ecological character
- Allow natural constraints to guide development, ensuring compatibility and resilience
- Deliver high-quality public spaces including streets, promenades, parks, and gardens that are inclusive and welcoming
- Ensure the public domain is legible, connected, and returned to the community as a shared asset
- Establish a clear and functional street hierarchy that supports diverse land uses and building typologies
- Align built form with natural and urban elements to create a coherent and legible urban fabric
- Encourage adaptable and mixed-use development that responds to both site conditions and community needs
- Promote a rich mix of housing types and building forms, including detached dwellings, townhouses, and apartments
- Vary street widths, setbacks, and block sizes to support a fine-grained and responsive urban texture
- Ensure built form transitions are well-managed, particularly at rear boundaries and interfaces with public spaces.

3.2. Architects design statement

The Little Bay Cove site offers an important opportunity for sensitive infill and the unification of the urban grain on the eastern side of Anzac Parade, and to continue the diversification of local housing types that commenced with the development of the Prince Henry Hospital site in 2005. The Prince Henry project has increased local housing choice through the provision of apartment buildings, townhouses, row houses, courtyard houses and refurbishments of heritage buildings.

The Little Bay Stage 1 Master Plan continues this process ensuring that local housing stock responds to contemporary social phenomena such as decreasing household sizes, sustainability and affordability pressures. The layout of the Little Bay Stage 1 Master Plan, and the controls that guide the future built form that will frame the public domain including its streets, parks, open spaces, water bodies and ecological corridors are carefully considered to ensure a complementary scale relationship between built form and open space on, and around, the site.

3.3. Stage 1 plan

Explanation

The plan provides a legible street pattern that is conceived as an extension of both the existing urban grain and broader landscape systems that surround the site. It maximises connectivity with existing areas and anticipates future opportunities for connections to be established with neighbouring sites. Pedestrian connections to the adjacent Prince Henry Site are provided at all points where the neighbouring subdivision pattern will accommodate them. The Stage 1 Plan (Figure 9) is organised as a grid of east-west oriented streets that provide long vistas through the site and to the important landscape corridors that punctuate the site.

Ocean Avenue forms the primary avenue on the site. It provides the Housing NSW site to the north, maximum flexibility for adjusting its street pattern and connecting into the subject site in the future. Solarch Avenue provides a secondary access point to Anzac Parade. Fairway Terrace, View Street and Christo Street provide defined public edges to the primary open space corridors in the site. A rich series of residential streets completes the urban grain between.

The urban lounge park forms a lively focus for urban activity and recreation. The central Paleo Valley Park protects existing site features and utilises the existing water bodies for water treatment on the site. Its form and topography emphasise the corridor's relationship to Little Bay. Brand Park provides landscaped recreational space on the edge of the corridor. Over 50% of the site area is provided as public domain - streets, parks, promenades and gardens for the benefit of the wider community.

Figure 9: Little Bay Cove Stage 1 lot plan



Source: Little Bay Cove Masterplan

3.4. Urban interfaces

Explanation

Existing urban interfaces to the north and south of the site are characterised by the rear fences of private allotments. Perceived security issues result in the construction of tall fences, creating a defensive edge character rather than one which encourages engagement between the public and private realm. The local area has some examples of positive urban edges where open space is defined by a public street. This enshrines public access and provides much improved definition and surveillance of open spaces - allowing a graded transition to be developed between the public and private realms.

The Little Bay Stage 1 Plan aims wherever possible to define open spaces with public streets or with multi-unit residential development so that positive engagement with open spaces on the site can be explored, and appropriate surveillance incorporated. Conditions where side or rear fences define open spaces are minimised.

Figure 10: Urban interfaces



Source: Little Bay Cove Masterplan

3.5. Height distribution

The distribution of height is based on the following design principles:

Urban design principles

- Locate appropriate heights to allow the efficient use of urban land
- Reinforce the urban pattern by locating taller buildings along regional urban frontages and important landscape frontages throughout the project
- Locate higher buildings convenient to transport routes
- Optimise casual surveillance of public open spaces
- Encourage more height aligned to smaller building footprints to allow more landscape area on individual lots.

Height in the Little Bay context

- Distribute a variety of heights across the site, that relate to the heights of buildings found in the Little Bay context
- Reinforce the existing scale of buildings along the Anzac Parade frontage

- Match like with like along the site's southern boundary in response to the rear fence to rear fence boundary condition
- Mirror the mix of taller and lower buildings facing the Golf Course and Little Bay, as found in the Prince Henry site adjacent (the taller building at Prince Henry site is closer to the bay than proposed in this project)
- Provide building heights consistent and compatible with planned and existing adjoining development
- Provide consistency with the approach adopted in the adjoining Prince Henry site of positioning higher buildings along Anzac Parade and adjacent to public open space.

Height distribution within the site

- Distribute heights in relation to the scale of the streets and open spaces they define
- Reinforce the Urban Lounge with an appropriately strong street walled character
- Position taller buildings on open space edges to maximise potential for passive surveillance of open spaces
- Position taller buildings in locations least likely to cause impact or be incompatible with dwellings within and external to the site
- Create diversity in the urban environment, allowing for the provision of a range of differing accommodation spaces and character
- Locate higher buildings to retain important view lines to and through the site
- Position higher buildings to minimise overshadowing to sites within and external to the site
- Intersperse higher and lower building forms to avoid a concentration of taller buildings
- Decisively distribute height, rather than concentrate it as a homogenous zone, to create a varied scale and silhouette across the site (this is a characteristic of the best urban areas in Randwick Municipality such as Coogee and Clovelly).

Figure 11: Height distribution map



Source: Little Bay Cove Masterplan

3.6. Street pattern

Explanation

The public street pattern is laid out with a predominantly east-west alignment. This provides the site with a legible street pattern, provides long vistas to the open spaces within and beyond and integrates with the broader locality. All the streets have a strong landscape character with street tree planting, swales and raingardens that differentiate the hierarchy and character of streets within the plan.

Ocean Avenue has been located to maximise potential and flexibility for the Housing NSW site to connect into the street pattern in future. It provides the major access from Anzac Parade and has been sized to accommodate future bus traffic. The street is characterised by an unimpeded vista towards the ocean at the eastern end of the street.

Solarch Avenue is a secondary avenue. It provides a secondary access point to Anzac Parade and terminates in a belvedere that provides views to Little Bay and Paleo Valley at its eastern end. Landscape edge streets provide definition to open space corridors within and adjacent the site - enshrining the right of public access and open prospect.

A series of residential streets completes the street pattern between the more definitive avenues and edge streets. Laneways maximise options for future buildings to provide vehicular access on the steeper parts of the site and reduce kerb crossings in associated streets. Shared zones adjacent to the urban lounge prioritise pedestrian movement, while allowing access for emergency and service vehicles as required. Pedestrian linkages are provided to maximise connectivity with the Prince Henry site wherever possible.

Figure 12: Street pattern map



Source: Little Bay Cove Masterplan

3.7. Pedestrian links

Explanation

Pedestrian links are keyed into the local system of coastal walks, pedestrian connections and street linkages. The plan aims to make the local area more walkable by linking a series of urban and landscape features by a network of paths - and to stimulate use of newly created public open space and recreation assets.

Little Bay Beach, the Coast Golf Course, Prince Henry Oval and future retail facilities, the Urban Lounge, Paleo Valley Park and Brand Park are within walking distance of existing and future local residents, the broader community and visitors. By encouraging residents to walk, car dependence can be reduced which has a range of environmental and health benefits. Local neighbourhoods can also become more convivial and safer. The layout of the public domain adds significant recreational assets for the wider community, encouraging a range of healthy activities and the enjoyment of the broader landscape such as walking, jogging, leisurely cycling, roller blading and the like.

Pathways within the site have been carefully placed to allow viewing and enjoyment of the geological and ecological features, while controlling access as required to protect these important elements.

Figure 13: Pedestrian links



Source: Little Bay Cove Masterplan

3.8. Permeability and vistas

Explanation

The Little Bay Stage 1 plan provides a continuous extension of the surrounding urban fabric. The urban grain is designed to allow vistas into and through the site - so that the site is easily negotiable and so that pedestrians have a strong sense of their orientation in the broader landscape. The open-ended street, with views to park and sea is characteristic of the best areas in the Randwick LGA such as Coogee, Malabar, Clovelly and Maroubra. Wherever possible, street vistas are directed to open space corridors within and adjacent to the site and care has been taken to ensure that these views are not enclosed or terminated by built form. This enhances the site's sense of spaciousness and permeability. More closed arrangements, such as cul-de-sacs, winding streets and off-set intersections are avoided.

Figure 14: Permeability and vistas



Source: Little Bay Cove Masterplan

3.9. Open space and landscape principles

Explanation

The design philosophy for the landscape architecture of the project employs water sensitive design strategies combined with local endemic plant material to develop an ecologically responsible design for the site. The experience of the landscape has been carefully considered to support a diversity of spaces that provide a range of amenity. The public domain comprises vibrant, environmentally innovative public spaces where people will gather, linger and celebrate. A diverse range of open spaces are provided:

- An urban park, called the Urban Lounge, which forms a lively focus for the western part of the site
- Paleo Valley Park - which forms the heart of the project and is defined by the geologically significant miocene cliff face and incorporates biofiltration zones
- Brand Park, which supports active play and community uses.

Accessible connections are provided between the public domain, adjoining sites, the coastal walkway and Little Bay Beach. Spaces within the Stage 1 Plan have been designed to satisfy both the new residents and the existing local community, encouraging interaction that maximises recreational opportunities. All parks and open spaces in the site have a public street address and have adjacent on street parking to promote their use and enjoyment by future residents, and existing residents to the north and south of the subject site and beyond. The plan promotes these spaces as being part of a wider local network of open spaces and amenities designed for use by all. They are conceived of being integrated with the local pedestrian network (see Section 3.7 of this DCP).

Figure 15: Permeability and vistas



Source: Little Bay Cove Masterplan

3.10. Site wide sustainability initiatives

Explanation

Smart design and the incorporation of sustainability initiatives will contribute towards Little Bay achieving a high level of environmental performance which will assist in improving the sustainability of the project.

Water balance and Water Sensitive Urban Design (WSUD)

An integrated water cycle will recycle wastewater for reuse in the dwellings, with extra available for use in the public parks as well as the neighbouring golf course. In addition, Water Sensitive Urban Design (WSUD) will ensure all stormwater and rainwater is treated through a series of swales, biofiltration ponds and the central dam before replenishing the natural water cycle. This naturally filtered stormwater is then available for re-use by the adjoining golf course.

Street layout

The proposed street layouts optimise solar access to each block and promote a sense of openness with public domain views of the ocean and parks. Ensuring good solar access to the lots is an important aspect of sustainable design.

Renewable energy

Opportunities for the use of solar power and wind power are being investigated to provide renewable energy to the public domain in Little Bay.

Transport

The street design in Little Bay promotes pedestrian activity. The low speed and low traffic street environment is cycle friendly. Pedestrian connections to the adjoining Prince Henry site further enhance pedestrian permeability providing access to local shopping and retail facilities, reducing car use. Public transport is available to the site via the bus routes along Anzac Parade and Ocean Avenue has been designed to be wide enough to accommodate buses in the case of a future diversion of a bus route through the site.

Figure 16: Solar orientation on the site



Source: Little Bay Cove Masterplan

3.11. Water sensitive urban design principles

Explanation

The proposed Water Management Strategy has been designed to meet the following objectives through implementing principles of Water Sensitive Urban Design (WSUD) and Stormwater Management:

Objectives

The objectives for WSUD are to:

1. Improve stormwater quality prior to discharge
2. Manage stormwater quantity via on-site detention
3. Manage the effects of flooding in the Central Drainage Corridor
4. Integrate water sensitive urban design elements with the landscape strategy for the site.

The proposed stormwater treatment strategy is a treatment train approach, with measures forming natural and visually attractive forms within landscaped areas. The water treatment measures consist of bioretention swales/raingardens at critical locations, two wetlands, two gross pollutant traps and bioretention through the central drainage corridor.

Figure 17: WSUD strategy



Source: Little Bay Cove Masterplan

4. Public domain elements

4.1. Street plan

Explanation

Good street design and layout are the foundation of the city and its residential neighbourhoods. Streets provide address for future residents and have great social and amenity attributes when well designed. Detailed street design has been undertaken to articulate the street hierarchy and create differing street characters within a unified palette throughout the site.

Streets in Little Bay Cove have been designed to accommodate:

- Dedicated pedestrian footpaths
- Shared cycleways
- Swales
- Carriageways to suit anticipated traffic flows
- On street parking distributed throughout the site
- Street tree planting
- Underground services reticulation
- Future public transport provision

Note

New streets and intersections must be set out and constructed in accordance with the drawings and specifications contained in Appendix A of this DCP.

Figure 18: Street plan



Source: Little Bay Cove Masterplan

4.2. Open space plan

Explanation

The design of the site's open space is influenced and informed by the discipline of 'urban ecology', where the site design components are integral to the location's social, environmental and ecological systems.

It aims to:

- Promote social interaction and a range of recreational opportunities by incorporating a public urban park and a public park at the heart of the project
- Establish a perimeter planting of locally indigenous species to help re-link the site with its original ecological community and to link the site with the remaining patch of ESBS
- Promote accessible connections between the public domain and the adjoining sites, the coastal walkway and Little Bay Beach
- Provide spaces that satisfy both the residents and the local community encouraging neighbourhood interaction
- Create a pedestrian network and shared cycle ways to connect into the existing network
- Provide a wide range of spaces for recreation such as BBQ area, toddler playground, walking / jogging and wide lawn play areas
- Provide viewing platforms with seating at designated viewing locations
- Provide educational signage about the history of the site, the ESBS and the Miocene
- Protect the adjoining ESBS as well as the exposed Miocene and Ochre deposit
- Promote the use of local and regionally native vegetation and sustainable irrigation
- Provide erosion control
- Promote re-generation of the Central Corridor to encourage the return of native ecosystems and promote urban biodiversity
- Encourage the use of salvaged and recycled materials and timber sourced from ecologically responsible forestry operations
- Retain as many existing native trees as possible.

Figure 19: Street plan



Source: Little Bay Cove Masterplan

Note

Further information relating to design principles of open space in Little Bay Cove can be found in Appendix B of this DCP.

4.3. Off-site works

Note

All development relating to offsite works shall refer to and comply with the technical details and specifications outlined in Appendix C of this DCP including:

- Intersections
- Paving and kerbing
- Bioretention swales
- Parking lanes
- Ramps
- Vehicle crossings
- Retaining walls
- Elevated pathways, lookouts and structures
- Street lighting
- Street furniture

5. Private domain controls

5.1. Allotment plan

Explanation

The allotment plan for the Little Bay Stage 1 Plan anticipates an appropriate distribution of building types throughout the site. The subdivision and titling of land on the Little Bay Site should reflect the surveyor's Draft Community Subdivision Plan that formalizes the subdivision plan in Figure 20. Consent is sought for the subdivision of the site into:

- A number of community title lots
- 10 super lots
- 28 individual dwelling lots.

Controls

The Community Title lots incorporate the streets, parkland and open spaces. Future subdivision of super lots 2, 3, 4, 9 and 10 must comply with the following controls:

- a) Each individual lot and each individual dwelling must have a public street frontage
- b) Lots are to be oriented to enable dwellings to take advantage of micro climatic benefits and have dimensions that allow adequate on-site solar access and access to breezes
- c) Lots are to be designed to maximise efficiency in house plans and useable external areas by having a regular shape
- d) Battle axe lots are not permitted
- e) Lots designed for villa housing or other forms of housing where dwellings do not have an address on a public street frontage are prohibited
- f) The division of super lots into private allotments should contribute to housing diversity across the site.

Figure 20: Allotment plan



Source: Little Bay Cove Masterplan

Note

Since the commencement of the Little Bay Cove Masterplan 2009, lots have been subdivided in accordance with the Allotment Plan.

5.2. Dwelling types

Objectives

Dwelling types in the Little Bay Stage 1 Plan are distributed to:

1. Reinforce the urban pattern and street hierarchy
2. Locate the highest densities in areas best served by public transport, outlook and/or public amenity
3. Locate increased densities in areas adjacent public open spaces to provide the greatest amenity for the maximum number of future residents and to provide highly active and engaging public interfaces
4. Match 'like with like' along the interface with the Prince Henry site to the south
5. Maximise the number of regular, efficient and well oriented blocks for small lot, townhouse, courtyard and detached housing
6. Locate multi unit residential apartments in areas where they can resolve idiosyncratic boundary conditions as they can adapt much more readily to irregular geometries than small lot housing
7. Locate multi unit residential apartment buildings so that they are dispersed amongst other buildings types, do not dominate any street and do not occupy both sides of a street at any point.

Controls

- a) Housing typology must be implemented in accordance with Table 1 and the map located in Figure 21 below
- b) Villa housing or any form of housing where the street address to a dwelling is not on a public street is prohibited.

Table 1: Dwelling typology controls

Map Key	Housing typology
1	Detached residences and/or attached dual occupancy lots
2	Detached residences, semi-detached dwellings, row housing with individual parking and/or square courtyard housing with individual parking
3	Detached residences, semi attached housing, row housing with individual/shared parking and/or apartments with common entry lobby from street frontage and underground parking
4	Row housing with individual parking, row housing with shared basement parking and/or maisonette housing types with shared basement parking
5	Multi-unit apartment buildings, apartments with common garden and parking facilities. Common entry lobby from street frontage

Figure 21: Housing typology plan



Source: Little Bay Cove Masterplan

5.3. Building height control plan

Objectives

Building heights in the Little Bay Stage 1 Plan are distributed to:

1. Reinforce the urban pattern and street hierarchy
2. Allow for equitable solar access and outlook to dwellings within each block
3. Control building heights to prevent overshadowing of Eastern Suburbs Banksia Scrub
4. Minimise the impact of built form on adjoining and nearby land
5. Avoid placing higher buildings in areas that would block street vistas to landscaped open spaces
6. Intersperse higher and lower building forms to minimise large concentrations of higher buildings
7. Locate height in relation to the expansive scale of major streets and open spaces.

Controls

- a. New development must comply with the building heights specified in Table 2 and the map located in Figure 22 below.
- b. Excavation within the possible extent of the Palaeovalley Area should not be below RL 26 unless endorsed by Randwick City Council and Heritage NSW.

Table 2: Building height controls

Map Key	Building height controls
2	Two storeys permitted: - 7m maximum wall height above RGL - 8m maximum roof height above RGL
2 + A	Two storeys + attic room or roof terrace permitted: - 8m maximum wall height above RGL - 9m maximum roof height above RGL
B + 3	Basement + three storeys permitted: - 1.2 maximum protrusion of basement above RGL - 11m maximum wall height above RGL - 12m maximum roof height above RGL
B + 5	Basement + five storeys permitted: - 1.2 maximum protrusion of basement above RGL - 17.2 maximum wall height to fifth storey above RGL - 18m maximum roof height above RGL
*	Development Applications for sites adjacent to ESBS must include shadow diagrams that demonstrate that built form on these sites will cause no overshadowing of the mapped area of the ESBS between 9am and 3pm at summer, equinox and mid-winter. <u>Note:</u> the Asset Protection Zone may be overshadowed during these times.

Figure 22: Building height control plan



Source: Little Bay Cove Masterplan

5.4. Density control plan

Objectives

Density in the Little Bay Stage 1 Plan is disturbed to:

1. Ensure that built form reinforces the urban pattern and street hierarchy
2. Encourage a diverse mix of dwelling types and sizes across the site, rather than homogenous zones
3. Locate the highest densities in areas best serviced by public transport, open prospect and/or public amenity
4. Locate increased densities in areas adjacent to public open spaces to provide the greatest amenity for the maximum number of future residents and to provide highly active and engaging public interfaces
5. Control bulk and scale across the site.

Controls

- a) The Gross Floor Area (GFA) of each development parcel must not exceed the limits outlined in the Density Control Plan in Figure 23 and specific lot GFA requirements outlined in Figure 24.

Figure 23: Density control plan



Source: Little Bay Cove Masterplan

Figure 24: GFA table (individual lots)

Lot #	Site Area	Masterplan GFA	Lot Type
1	14,515	nil	Community Property
2	5,460.0	5,000	Superlot
3	5,006.0	5,350	Superlot
4	5,009.0	5,350	Superlot
5	2,311.0	3,000	Superlot
6	6,656.0	7,000	Superlot
7	4,665.0	6,150	Superlot
8	3,707.0	4,600	Superlot
9	8,036.0	6,962	Superlot
10	5,708.0	4,000	Superlot
11	9,445.0	14,520	Superlot
12	432.5	216	Single House Lot
13	432.5	216	Single House Lot
14	432.6	216	Single House Lot
15	432.6	216	Single House Lot
16	432.7	216	Single House Lot
17	432.7	216	Single House Lot
18	432.7	216	Single House Lot
19	432.8	216	Single House Lot
20	432.8	216	Single House Lot
21	570.0	285	Single House Lot
22	501.1	250	Single House Lot
23	478.5	239	Single House Lot
24	478.5	239	Single House Lot
25	478.5	239	Single House Lot
26	478.5	239	Single House Lot
27	478.5	239	Single House Lot
28	478.5	239	Single House Lot
29	478.5	239	Single House Lot
30	478.5	239	Single House Lot
31	478.9	239	Single House Lot
32	522.5	261	Single House Lot
33	482.7	241	Single House Lot
34	489.2	244	Single House Lot
35	485.7	242	Single House Lot
36	478.6	239	Single House Lot
37	489.7	244	Single House Lot
38	476.6	238	Single House Lot
39	459.7	229	Single House Lot
40	35,170	nil	Roads
41	4,451	nil	Park
42	3,243	nil	Park
43	3,075	nil	Landscaped Lot
44	1,306	nil	Irregular north-east Lot
45	5,042	nil	Ochre/Miocene Lot
Total	135,961.6	68,500	

5.5. Setback control plan

Objectives

Setbacks in the Little Bay Stage 1 Plan are configured to:

1. Allow built form to reinforce the urban pattern and street hierarchy
2. Ensure that separation between the rear and side boundaries of allotments enables adequate and equitable levels of privacy and solar access to each dwelling
3. Allow for the creation of contiguous landscaped areas to contribute to the public domain, provide separation, green aspect and amenity in the private domain and provide necessary separation to the ESBS
4. Encourage the most efficient use of urban capable land.

Controls

- a) Setbacks of development must comply with the setback controls outlined in Table 3 and Figure 25 below.

Table 3: Setback controls

Map Key	Setback controls
	Provide a minimum 1.2m, 2.2m, 3m or 5m setback from the allotment boundary to any part of the building as noted on the Setback Control Plan (Figure 25). These areas form the street interface.
	Provide a minimum 1.2m or 3m setback from an allotment boundary with a public open space to any part of the building as shown on the Setback Control Plan (Figure 25). These areas form the public open space interface.
	Provide a minimum 6m or 8m setback from the rear allotment boundary to any part of the building as shown on the Setback Control Plan (Figure 25). These areas form private landscape spaces. Provide a minimum 10m separation between buildings as shown on Figure 25. These areas form private landscaped areas.
	Provide a 12m setback from the mapped boundary of the ESBS. These areas form part of an Asset Protection Zone.
	Zero lot setback permitted for a maximum of 65% of the length of any side boundary.
	Provide a minimum of 1m setback on one side of the allotment and a minimum of 2m setback on the opposing side boundary.
	Zero lot setback permitted for a maximum of 60% of the length of the allotment boundary only. 1.2m minimum setback required for the remainder.
	Zero lot setback permitted for a maximum of 50% of the length of the allotment boundary. 6m minimum setback required for the remainder.
	Zero lot setback permitted for a maximum of 33% of the length of the rear allotment boundary. 5m minimum setback required for the remainder of the building. Zero lot zone must be identical for northern and southern lots that share a boundary. The remainder of the boundary should be a 1.8m high masonry boundary wall.

Legend

- Street/public domain setback
- Public open space setbacks
- Asset protection zone setbacks
- Private garden setbacks

5.6. Landscape control plan

Landscaped areas in the Little Bay Stage 1 Plan are defined to:

- ## Controls

- Table 4: Landscaping controls

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3. Encourage passive solar design that minimises energy consumption
4. Reduce the need for mechanical heating and cooling, and artificial lighting.

Controls

For detached dwellings, attached dual occupancy, semi-detached dwellings, row housing and maisonettes:

- a) The principal living room of 70% of dwellings within a development must receive a minimum of 3 hours sunlight on at least 2m² of glazing between 9am and 3pm on June 21
- b) The principal area of private open space must receive a minimum of 3 hours direct sunlight between 9am and 3pm on June 21
- c) All applications must demonstrate that the proposed built form will allow neighbouring developments to meet their solar access requirements. For multi dwelling residential apartments solar access must comply with *4A Solar and daylight access* of the ADG.

All applications must demonstrate that the proposed built form will allow neighbouring developments to meet their solar access requirements.

5.8. Visual privacy

Explanation

Visual privacy plays a significant role in the perceived level of enjoyment of living in an urban environment. It is important to ensure residents have a reasonable level of privacy without compromising views, outlook, ventilation or solar access. Visual privacy is influenced by topography, site configuration, scale of the proposed development, dwelling layout and relationship to adjoining development.

Objectives

The visual privacy objectives are to:

1. Maximise outlook and views from habitable rooms and private open spaces without compromising visual privacy
2. Ensure that new development respects the existing level of privacy of adjoining and nearby properties and minimises adverse privacy impacts.

Controls

For detached dwellings, attached dual occupancy, semi-detached dwellings, row housing and maisonettes:

- a) Minimise direct overlooking of principal living rooms and private open spaces of other dwellings by appropriate planning of dwelling layouts and associated garden spaces
- b) Where habitable rooms have a direct outlook onto neighbouring habitable rooms above ground level and are not separated by a distance of at least 12 m, the designer must:
 - i. Offset windows to limit views, or
 - ii. Incorporate appropriate screening, or
 - iii. Specify sill heights of 1.6m above floor level, or
 - iv. Design angled bay windows to prevent direct views, or
 - v. Install obscure glazing to parts of an opening below 1.6m above finished floor level.
- c) Windows and balconies above ground level must be designed to prevent overlooking of

- more than 50% of the private open space of a lower level dwelling directly below.
- d) For multi dwelling residential apartments separation between buildings within multi-unit residential apartments shall comply with the minimum requirements within section 2F *Building Separation* of the ADG.

5.9. Acoustic privacy

Explanation

Acoustic privacy is a measure of sound insulation between dwellings and between external and internal spaces. Acoustic privacy is particularly important for the amenity of apartments in residential flat buildings and mixed-use developments. Designing for acoustic privacy relates to the location and separation of buildings and the arrangement of apartments and internal spaces within apartments.

Objectives

The acoustic privacy objectives are to:

1. Ensure a high level of amenity by protecting the privacy of residential dwellings within residential flat buildings, attached dwellings and multi-dwelling housing, both within the dwellings and in private open spaces
2. Ensure that dwellings close to noise sources such as roads are sited and designed to provide a comfortable living and sleeping environment.

Controls

For detached dwellings, attached dual occupancy, semi detached dwellings, row housing and maisonettes:

- a) Common party walls and floors between dwellings must be constructed in accordance with the noise transmission and insulation requirements of the National Construction Code of Australia (NCC)
- b) The noise level from mechanical plant, including air conditioning units and pool filtration units must not exceed 5dBA above ambient background noise level measured at the property boundary.

For multi dwelling residential apartments acoustic privacy must comply with Chapter 4H *Acoustic Privacy* of the ADG, additionally:

- c) Common party walls and floors between dwellings must be constructed in accordance with the noise transmission and insulation requirements of the NCC
- d) Dwellings affected by noise from Anzac Parade shall be designed in accordance with AS3671-1989 Acoustics - Road traffic noise intrusion - Building Siting and Construction;
- e) The noise level from mechanical plant, including air conditioning units and pool filtration units must not exceed 5dBA above ambient background noise level measured at the property boundary.

5.10. View sharing

Explanation

View sharing refers to the equitable distribution and preservation of visual access to the site's unique coastal and landscape features. The area's natural topography, open space corridors, and ocean outlooks are key assets that contribute to its identity. View sharing ensures that these visual connections are maintained through careful planning of building heights, setbacks, and street alignments allowing both public and private realms to benefit from the site's expansive and scenic qualities.

Objectives

The objectives for view sharing are to:

1. Maintain and enhance significant views and vistas throughout the site
2. Ensure buildings are designed to maximise view sharing
3. Ensure the visual amenity of the coast is protected

Controls

- a) Where views to the coastline, golf course and district views towards Botany Bay are available from within the private domain they should be shared equitably and reasonably between dwellings
- b) Buildings in the private domain should be designed to ensure that their amenity is not dependent upon views obtained across lots in separate private ownership
- c) Applicants are advised that views obtained across sites in separate private ownership are not protected under this plan where they would unreasonably restrict the development potential of neighbouring sites under the controls of this DCP
- d) In terms of view sharing, priority is given to standing views from habitable rooms and associated upper-level private open spaces
- e) Sitting views, views from non-habitable rooms or views obtained across side boundaries are not protected under this plan
- f) Applicants are advised to review the controls in this document to appraise themselves of the permissible forms of development on surrounding sites.

5.11. Multi-unit residential apartment size and mix

Explanation

Dwelling layout has a significant influence on environmental sustainability and residential amenity. This is particularly important for apartments, and dwellings on small lots. An efficient layout should minimise circulation space and should allow flexible furniture arrangements. A mix of housing and apartment types provides housing choice and accommodates a range of household types. This assists in integrating new development with the existing community.

The mix of dwelling types provided in the Little Bay Stage 1 Plan should address social issues of decreasing household sizes and sustainable building typologies that maximise the efficient use of urban capable land.

Note

In addition to the below controls, multi-unit residential apartment buildings must comply with the NSW Apartment Design Guidelines (ADG) <https://www.planning.nsw.gov.au/policy-and-legislation/housing/apartment-design-guide>.

Objectives

The apartment size and mix objectives are to:

1. Ensure dwelling layouts are efficient and provide high standards of residential amenity
2. Maximise the environmental performance of apartments and dwellings
3. Provide a diversity of housing types which cater for different household requirements now and in the future
4. Encourage optimal natural ventilation through dual aspect apartments

Controls

- a) Apartment sizes must comply with the minimum sizes outlined in section 4D Apartment size and layout of the ADG
- b) Cross over or cross through apartments greater than 18m in depth in accordance with the ADG and must have a minimum clear internal dimension of 4m.
- c) All habitable room sizes are to comply with Chapter 4D *Apartment size and layout* of the ADG
- d) The maximum internal depth of any single orientation apartment is 8m.
- e) Double loaded access corridors are discouraged unless servicing cross over or cross through apartment types
- f) The maximum number of apartments per floor accessible from a single core is limited to eight, except where apartments are cross over or cross through types.

5.12. Amenity

Explanation

Amenity refers to the quality and comfort of the living environment, shaped by access to natural landscapes, coastal views, open spaces, sunlight, privacy, and walkable streets. The site's design prioritises a balance between built form and public domain, ensuring that residents and visitors enjoy a high standard of environmental, visual, and social amenity through thoughtful planning, diverse housing types, and generous public spaces.

Objectives

The objectives for amenity are to:

- 1. Ensure that development enhances the comfort, liveability and environmental quality of residential and public spaces through access to sunlight, privacy and natural ventilation
- 2. Maintain and strengthen connections to coastal views, open spaces and ecological corridors to support visual and recreational amenity for all users
- 3. Promote a high standard of urban design that balances built form with generous public domain, contributing to a cohesive and enjoyable environment.

Controls

- a) All common access corridors to multi-unit residential apartment buildings must receive natural light and be naturally ventilated
- b) Multi unit residential apartments must comply with Chapters 4B *Natural ventilation* and 4D *Apartment size and layout* of the ADG
- c) Comply with or exceed the following minimum finished floor to finished ceiling heights:
 - i. Ground floor in mixed use building – 3.3m
 - ii. Habitable rooms – 2.7m
 - iii. Non habitable rooms – 2.4m
 - iv. Upper floor in 2 storey apartment – 2.4m
- d) South facing single orientation apartments are not permitted
- e) Private open space and balconies must comply with 4E *Private open space and balconies* of the ADG
- f) Lightweight pergolas, sunscreens, privacy screens and planters are permissible on roof terraces, provided they do not increase the bulk of the building and comply with the mandated height controls.

5.13. Environmental design

Explanation

Environmental design in Little Bay Cove prioritises sustainable development that responds to the site's coastal climate, natural topography, and ecological values. It promotes passive design strategies, integration of native landscaping, and protection of solar access and sea breezes to enhance comfort, reduce energy use, and support biodiversity across both built and public domains.

Objectives

The objectives for environmental design are to:

1. Reduce consumption of potable water and encourage water reuse on site
2. Encourage design strategies that enhance thermal comfort, reduce energy consumption, and support natural ventilation.

Controls

- a) Every development application must be accompanied by the relevant sustainable design documentation such as a BASIX certificate or a Section J report in line with Part B3 of this DCP
- b) Energy and water consumption rates in proposed development must be in compliance with Part B3 of this DCP
- c) Every dwelling must incorporate passive solar design principles and allow for cross ventilation. Window and door placement and operation should be designed to allow night time ventilation without compromising security
- d) All buildings are to be pre-wired to accept solar panels and photovoltaics and are to be promoted to residents
- e) All detached dwellings are required to have:
 - i. Rainwater or recycled water for non-potable supply for toilet flushing and garden irrigation
 - ii. an external clothes drying area.
- f) Any intention to service a building with air conditioning must be declared in a development application. No dwelling is to rely on air conditioning to provide adequate thermal comfort levels to occupants. The following must be provided in all air-conditioned buildings:
- g) Compressible seals/ weather stripping to external doors and operable windows
- h) Fully sealed gaps around windows, doors and openings and to all wall and floor junctions
- i) Self-closing dampers or high-density filters to exhaust fans
- j) Imperforate ceiling diffusers to skylights
- k) Sealing and insulation to all ductwork and refrigerant lines
- l) All detached dwellings, semi-attached dwellings and row houses and residential apartment buildings must have:
 - I. Non potable water supply for toilet flushing and garden irrigation
 - II. External clothes drying areas
 - III. All interior paints, adhesives and carpets must have low VOC content
 - IV. All interior joinery made from composite wood should have low or no formaldehyde content
 - V. The use of PVC should be avoided wherever possible unless in accordance with *B3 Sustainability* of this DCP.
- m) Heating of pools and spas is strongly discouraged. Where pool and/or spa heating is proposed it must be solar or 5-star gas. Dwellings with pools and spas must have a water tank for filling and topping up

- n) Excavation within the possible extent of the Palaeovalley Area should not be below RL 26 unless endorsed by Randwick City Council and Heritage NSW.

5.14. Safety and security

Explanation

Safety and security refer to formal and informal measures that protect properties, residents and visitors. Developments should provide safe ground level entry and exit and enable casual surveillance.

Objectives

The objectives for safety and security are to:

1. Encourage building design that provides casual surveillance of streets and open space areas
2. Provide a safe and secure living environment for residents and visitors
3. Promote the design of buildings and open space areas which encourage community safety and reduce the opportunity for crime.

Controls

- a) Buildings should be designed to provide casual surveillance of streets, walkways and open spaces
- b) Footpaths, landscaped areas and driveways must provide opportunities for surveillance and allow safe movement of residents around the site
- c) High walls around residential buildings and parking structures which obstruct views into the development are prohibited
- d) Dwelling and building entries must be well lit and visible from the footpath on a public street
- e) The demarcation between public, communal and private areas in a development is to be clearly recognisable
- f) Multi unit residential apartment buildings must have adequate lighting in common areas, stairwells and lifts
- g) Shared entries should serve a minimum number of dwellings and be lockable, with controlled access operated from within each dwelling
- h) Dwelling houses must be designed to allow residents to see people approaching their dwelling without the need to open the front door
- i) Secure car parking is to be provided in multi unit residential apartment buildings.

5.15. Waste management

Explanation

Waste management supports sustainable living through efficient, well-integrated systems for waste separation, storage, and collection. Development should minimise environmental impact by encouraging recycling, reducing landfill waste, and ensuring waste facilities are discreetly located, accessible, and compatible with the site's coastal character and high amenity standards.

Waste Management practices for Multi Unit Residential Apartment Buildings and Row Housing with shared basements should be generally consistent with section 4W *Waster Management* of the ADG.

Objectives

The objectives for waste management are to:

1. Ensure waste storage and collection systems are well-integrated, accessible, and do not detract from the visual or environmental quality of the site
2. Encourage waste minimisation through the provision of facilities that support recycling, composting, and responsible disposal
3. Support sustainable living by designing waste infrastructure that aligns with the site's coastal character and high amenity standards.

Controls

- a) Waste is to comply with Part B9 – Waste Management of the DCP and *4W Management* of the ADG.
- b) Waste storage facilities for garbage and recycling containers in Multi Unit Residential Apartment Buildings and Row Housing with shared basements are to be provided either in a centralised garbage/recycling room accessible to garbage compactors or in a facility where bins can be easily wheeled to the street for collection. The maximum preferred grade for manual bin carting is 1:14
- c) The location and design of waste collection facilities are to be recessive when viewed from public places. Waste facilities must not be located between the front alignment of any building and any public street or open space
- d) Provide separate waste collection areas for residential and any commercial waste
- e) All kitchens must be provided with facilities that enable waste to be divided and sorted into different waste streams to encourage the composting and recycling of materials.

5.16. Storage and site facilities

Explanation

Storage and site facilities should support the functionality and liveability of dwellings while maintaining the area's high amenity and coastal character. Facilities such as storage, waste enclosures, and utility areas must be well-integrated, secure, and discreetly located to minimise visual impact and ensure ease of access for residents and service providers.

Objectives

The objectives for storage and site facilities are to:

1. Ensure storage areas, utility spaces, and site facilities are secure, functional, and conveniently accessible to residents and service providers
2. Integrate facilities such as storage, waste enclosures, and services infrastructure into the built form in a way that minimises visual and environmental impact
3. Support high-quality urban and coastal character by locating site facilities discreetly and ensuring they do not detract from the public domain or residential amenity.

Controls

- a) Development for multi unit residential development must provide storage that complies with the rates within *4G Storage* of the ADG
- b) All water, sewerage, recycled water, electricity, gas, and telecommunications connections are to be provided in accordance with the requirements of the relevant utility provider

- a) All meter boxes are to be located in positions that are accessible to each utility provider as required - but should be screened from public streets and open spaces
- b) All mailboxes are to be provided in accordance with the delivery requirements of Australia Post
- c) Multi unit residential developments should be provided with a common television/radio antennae or receptor
- d) Satellite receiver dishes are not permitted to be installed where they will be visible from the public domain.

Note

The minimum apartment sizes in Section 5.11 do not include storage provisions. Storage in kitchen cupboards and 50% of the storage in bedroom wardrobes must be excluded from the storage calculation.

5.17. Public street interfaces

Explanation

Although privately owned, front garden areas have a strong impact on the quality of the public domain and are an important contribution that each individual house or building makes to the character of the street in which it is situated.

Controls

- a) Provide gardens and landscaped areas at the front of dwellings to contribute to the quality of streets and public spaces in accordance with the dimensions of the setback requirements of Section 5.5 of this DCP
- b) Minimise the impact of vehicular access and parking in front garden areas
- c) Wherever possible, permeable surface treatments should be used for off street parking spaces and driveways. The use of wheel tracks that minimise impervious surfaces is also encouraged
- d) Lightweight canopy parking structures are permitted in areas where a setback of 5.5m or more is required. These must be predominantly open in character - and may include permeable screen walls and doors for enclosure. Solid walls and doors are not permitted
- e) Front gardens should be fenced along the street boundary and side boundaries forward of the primary building line to a maximum height of 1.5m. 1.2m is preferred along primary street frontages. Fence heights must be consistent along each street
- f) Minimise the use of water-dependant turfed areas in the public domain street interface. Such surfaces are more suited to recreational uses and should be minimised in front gardens
- g) The use of local endemic species is encouraged in the public domain and public domain interface, however exotic species are also permitted. Small productive herb, vegetable or picking gardens are also permitted in front garden areas
- h) Front gardens should be maintained to an extremely high standard at all times. For Multi-Unit residential apartment sites, management of a minimum of 50% of the front garden landscape as a common area of the facility is encouraged
- i) Garden structures such as gazebos, clothes lines, play equipment, swimming pools, spa baths, water storage tanks and the like are prohibited in front garden areas.

5.18. Public open space interfaces

Explanation

Public open spaces and parks within the development have a specific landscape character. For this reason, privately owned garden areas that are located adjacent to public open spaces are controlled in this DCP.

Controls

- a) Front garden spaces adjacent the central park landscape corridor must comply with the retaining wall types as specified in Section 4.3 of this DCP - at any point where the park level is set below the level of the private allotment.
- b) Front gardens should be maintained to a high standard at all times. For Multi-Unit residential apartment sites, management of a minimum of 50% of the front garden landscape as a common area of the facility is encouraged.
- c) Garden structures such as gazebos, clothes lines, play equipment, swimming pools, spa baths, water storage tanks and the like are prohibited in garden areas adjacent public open spaces.

5.19. Private open spaces

Explanation

Private open spaces should be flexible and allow for the personalised enjoyment of residents. As such their design and use is subject to fewer controls than those areas in the public domain interface. Central and rear gardens can also contribute to the public domain through the provision of tree planting and contiguous areas of soft landscaping that enable stormwater infiltration.

Objectives

The objectives for private open space are to:

- 1. Provide adequate space for landscaping, visual and acoustic privacy, sunlight penetration and private open space
- 2. Ensure that all residents have access to useable and well-designed private open space.

Controls

- a) Development in which the ADG applies must comply with *4E Private open space and balconies*
- b) Provide gardens and landscaped areas at the centre and/or rear of dwellings to create pleasant outdoor spaces for a range of leisure, recreation, entertaining and utilitarian functions
- c) Provide gardens that relate to the primary habitable rooms of dwellings to provide strong relationships between interior and exterior spaces and maximise the amenity of dwellings
- d) Maximise infiltration and reduce urban run-off by the provision of soft landscaping and permeable surfaces wherever possible
- e) Tree planting in central and rear gardens should generally be between 4m to 12m height at maturity
- f) Central and/or rear gardens should be fenced along the rear boundary and alongside boundaries behind the primary building line to a maximum height of 1.8m
- g) Simple timber and/or masonry fences are encouraged
- h) Open decorative fences, chain mesh, grillwork, decorative motifs and solid metal fencing are discouraged
- i) The centre line of fences and associated footings should be set on the property boundary
- j) Swimming pools and spas are discouraged, given the proximity of this development to the Little Bay Beach. Where provided, they must not exceed 65m² or 10% of the site area, whichever is the lesser
- k) Sheds and outbuildings are permitted to a maximum of 20m² in area and a maximum height of 2.4m
- l) Tennis courts are not permitted.

5.20. Bushfire risk

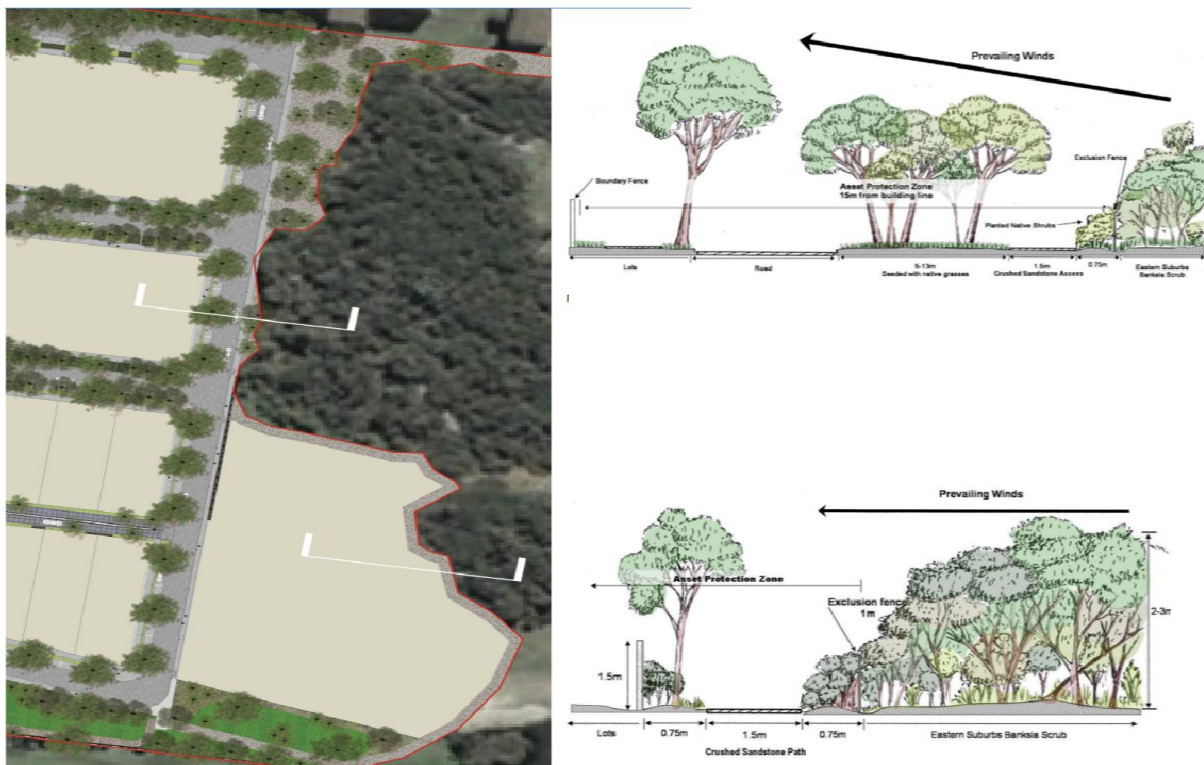
Explanation

An area of remnant bushland adjacent to the Little Bay Cove Site, identified in Figure 27 of this Section. They are not classified as Bushfire Prone Land under the *Rural Fires Act 1997*. To manage potential bushfire risk in areas adjacent the ESBS, an Asset Protection Zone (APZ) has been established along its boundary. The APZ has generally been accommodated within the street reserve and public open space. Lot 6 has an APZ within its allotment boundaries. Guidelines for the management of APZs can be found in Appendix D of this DCP.

Controls

- a) All development must comply with the Management of Asset Protection Zones outlined in Appendix D of this DCP.

Figure 27: Bushfire protection map



Source: Little Bay Cove Masterplan

5.21. Car parking provisions

Note

In addition to the below controls, car parking and on-site bicycle provisions for all dwellings must comply with Part B7 – Transport, traffic and parking in the Randwick DCP

Design of parking areas

Controls

- a) All parking and service vehicle areas should be designed in accordance with Australian Standards
- b) Proposals for underground parking must be supported by a hydrological and geological report issued by a certified specialist. The assessment must identify any potential impacts of the proposed excavation on the Little Bay Miocene Geological Heritage Site and Aboriginal Ochre Site Conservation Area, including possible impacts to groundwater recharge and stormwater runoff
- c) Where possible, maximise natural ventilation to the upper level of basement and semi-basement car parking ensuring appropriate screening is used
- d) Multi-unit Residential Apartments and Row Housing with shared parking, the design of parking layouts must enable all vehicles to enter and leave the site in a forward direction.
- e) Excavation within the possible extent of the Palaeovalley Area should not be below RL 26 unless endorsed by Randwick City Council and Heritage NSW
- f) Car parking for development within the Cleared Area and/or Ochre site must be provided above ground to prevent any damage to their significant features.

Design of driveways and access

Controls

- a) All parking and service vehicle areas should be designed in accordance Australian Standards
- b) Driveway entries must not be located where they would occupy a view corridor defined by the extension of the alignment of Riparian Street or Banksia Street through Lots 11 and 8
- c) Driveway entries must be separated from pedestrian entries
- d) Driveways must have a maximum width of 3m at the property boundary and footpath crossing, except:
 - i. Multi unit residential apartment entries – 5.5m
 - ii. In Bay Lane – equal width of the garage
 - iii. To detached dwellings in Solarch Street – 5.8m
- e) Shared driveways between attached dwellings are encouraged, to minimise kerb crossings
- f) Garage doors are to be setback a minimum of 1m of the predominant building face and their widths restricted to the Australian Standard required minimums
- g) Garages and open parking structures facing streets or public open spaces must have a maximum width of 6m or 38% of the allotment frontage, whichever is the lesser
- h) Garages facing Bay Lane may have a maximum width of 60% of the frontage dimension.

5.22. Dwelling design

Controls

- a) Provide houses that are specifically designed for this site
- b) Design houses of modest architectural scale, formed from compact, thinly proportioned elements and/or pavilions that are arranged to relate to the site topography
- c) Large bulky forms with deep, square footprints are not permitted
- d) Courtyard houses and pavilion houses are strongly encouraged
- e) Avoid references to historicist architectural styles and periods. Use of elements such as complex roofs with multiple hips and gables, dormers, turrets, finials, porticoes, mock Federation, Tudor, Georgian, Tuscan, Manor house references and the like are not permitted.

Figure 28: Map of distinctive architectural patterns



Source: Little Bay Cove Masterplan

5.23. Material palette

Explanation

The exposed Miocene and ochre sources on the subject site are within white, pink through to deep red tonal ranges. Similarly, heritage structures on the Prince Henry site relate to the materials of the site by exhibiting a palette of deeper red dark brickwork, light grey render and also areas of very light brickwork. Accordingly, buildings within the Little Bay plan are required to make reference to the base materials of the site.

Buildings will be predominantly formed from a palette of light materials, however each building will also have an allowance for a certain percentage of its facade area to explore the richer colours of the site's base material. The light and dark palettes are described in the following sections.

Objectives

The objectives for material palette are to:

1. Ensure that there is a level of consistency between buildings in regard to use of high quality, durable materials, finishes and detailing in the construction of dwellings
2. Employ current best practice in the fields of Architecture, Landscape Architecture, Engineering and Construction in the design of all dwellings and garden areas
3. Minimise environmental impact by selecting materials with low embodied energy, recycled renewable, non toxic and non polluting.

Figure 29: ochre and sandstone formations on site



Source: Little Bay Cove Masterplan

Masonry

Controls

Masonry finishes should reflect the materials that are of the place. As such the permissible material palette references the sandstone and Miocene found locally. The permissible material palette is as follows:

Stone

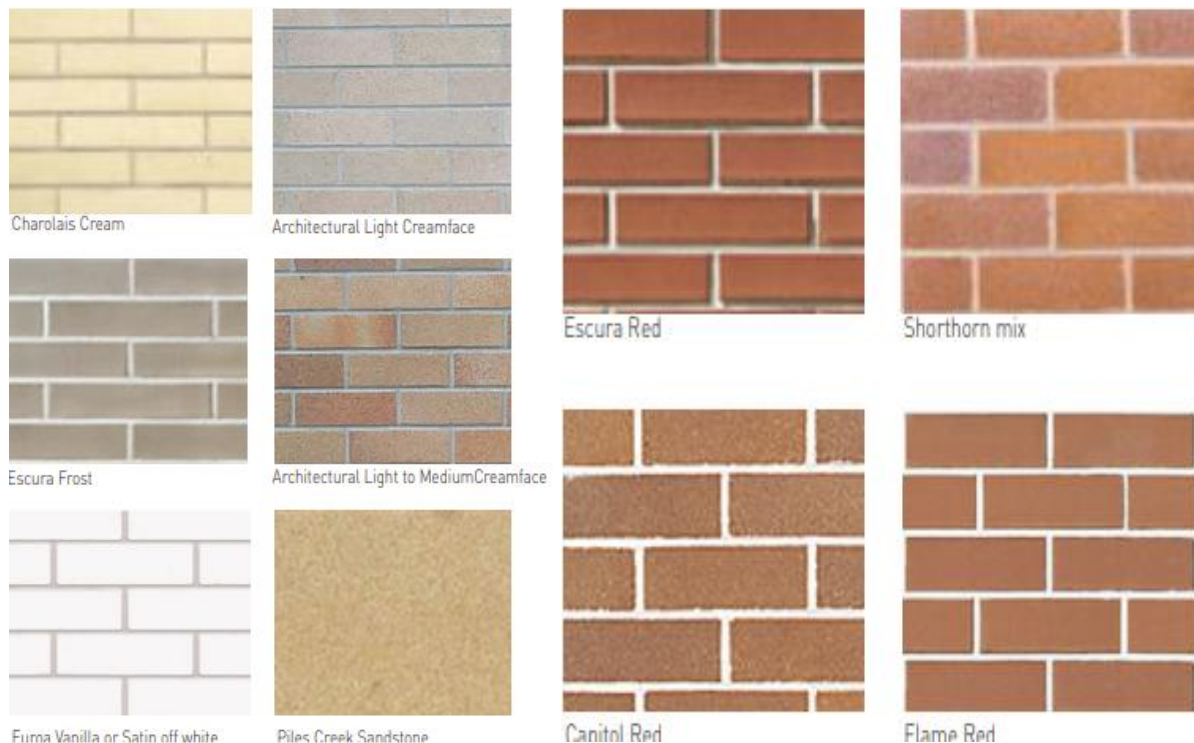
- a) Any solid stone or stone veneer used in building facades that are visible from the public domain must be Piles Creek white sandstone
- b) Any substitutions arising from availability constraints must match the tonal range of the above stones as assessed by physical sample compared to project sample held by Randwick City Council.

Brickwork

- c) All face brickwork must be Exposure Grade. Permissible specifications include:
 - i. Bowral bricks Charolais Cream
 - ii. Borl Escura Frost (Exposure Grade)
 - iii. Namoi Valley Architectural Light Creamface
 - iv. Namoi Valley Architectural Light to Medium Creamface
 - v. Euroa clay products Vanilla or Satin off white

- vi. Bowral bricks Capitol Red or Shorthorn Mix
- vii. Bowral Escura Red or Flame Red.

Figure 30: Masonry palette examples



Source: Little Bay Cove Masterplan

Rendered masonry

- d) Rendered masonry may be finished with paint or sand pigmented render in a tonal range to match the brickwork colours in the Light and Red palettes.

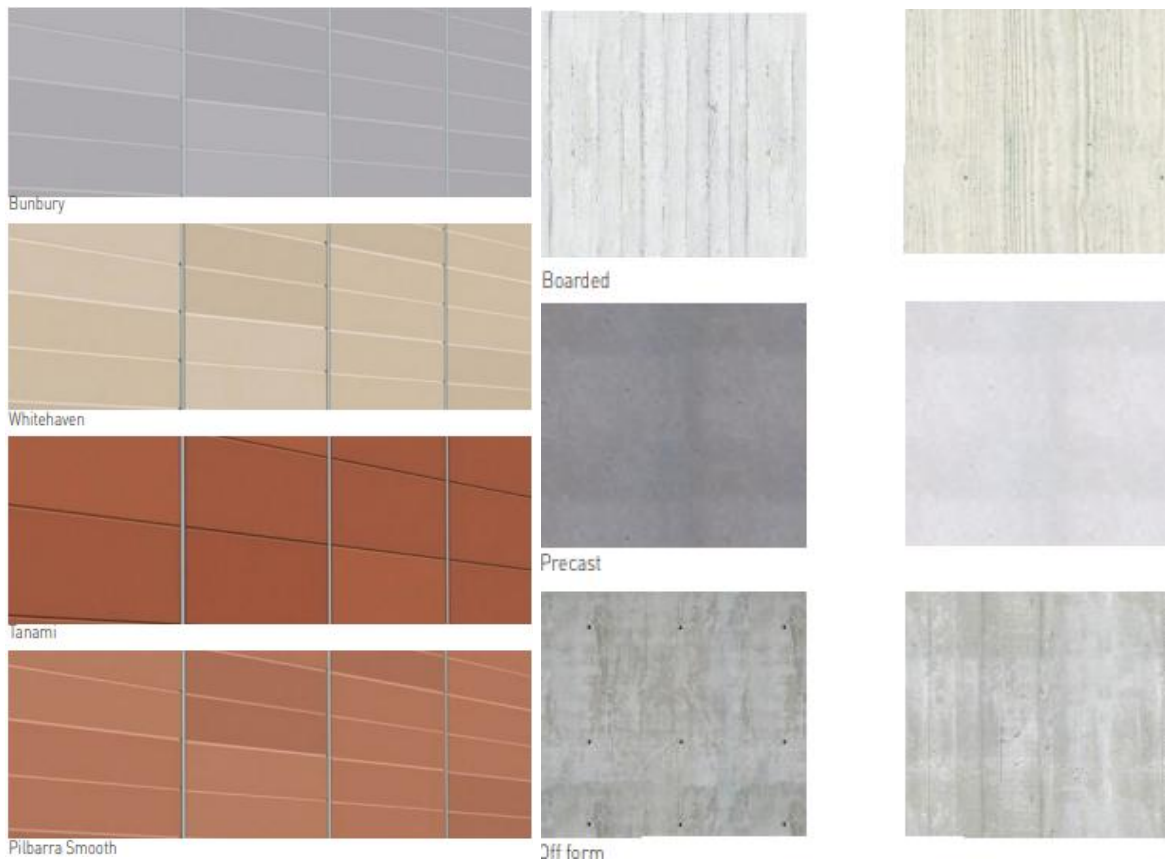
Terra cotta cladding tiles

- e) Permissible terra cotta cladding tiles include:
 - i. Terracade XP Whitehaven Smooth
 - ii. Terracade XP Bunbury Smooth
 - iii. Terracade TN Tanami
 - iv. Terracade XP Pilbarra Smooth
 - v. Terracade XP Pilbarra Linear.

Concrete

- f) All off form or precast concrete must be of minimum Class 2 finish with grey, off white or white cement
- g) Concrete is permitted in areas designated for both the Light and Dark Palettes
- h) Preferably, concrete should not be painted, but if necessary should be painted to match the original substrate colour. These restrictions apply to all concrete elements including projecting slab edges and soffits
- i) Diluted Keim paint finishes with salt retardants are also permitted in tones to match the base concrete colour
- j) Exposed aggregates in colours that reference the base material palette's are also permitted.

Figure 31: Terra cotta and concrete palette examples



Source: Little Bay Cove Masterplan

Rammed earth and pise

- k) Rammed earth or pise construction should reflect colours in the lighter range of the foundation material of the site in terms of the light and dark palettes on the site

Lightweight materials

Timber

- a) Permissible timber materials include:
 - i. Durable Australian hardwoods
 - ii. Western red cedar
 - iii. Natural finish weathering to grey (Note: suitable for durable hardwoods only)
 - iv. Oiled/sealed finish.
- b) Light coloured olive, honey, cream, grey brown timbers are favoured in the light palette areas
- c) For red palette areas use more intense dark brown and rich red coloured timbers
- d) Given the natural variability of timber, applicants are required to submit samples with their development applications, but for guidance the following species are recommended:
 - i. Blackbutt
 - ii. Spotted Gum
 - iii. Tallowwood
 - iv. Bluegum
 - v. Jarrah
 - vi. Ironbark
 - vii. Karri.

- e) Buildings in lots adjacent asset protection zones may vary these controls to comply with AS3959 Building in Bushfire Prone areas if necessary, while conforming with the intent of the colour palettes.

Marine grade plywood

- f) Permissible marine grade plywood includes:
 - i. Oiled finish
 - ii. Clear sealed finish
 - iii. Stained finish in colours to suit the Light and Red Palettes.

Figure 32: Timber and timber stain palette examples



Source: Little Bay Cove Masterplan

Fibre cement sheeting

- g) Permissible fibre cement sheeting must be clear sealed
- h) PVC joining strips and corner caps are not permitted
- i) Joint and corner should be finished with metallic strips or timber battens.

Metal wall cladding

- j) Colorbond, Colorbond Ultra or Colorbond Stainless Steel profiled walling in Custom Orb, Custom Orb Blue or Longline 305 profiles are permitted in the following colours:
 - i. Surfmist, Dune or Windspray
 - ii. Zincalume
 - iii. Headland or Manor Red (20% of facade area max).
- k) Standing seam walling or panels in the following finishes:
 - i. Pre weathered zinc (grey only)
 - ii. Copper cladding (Note -Natural copper finish permitted only - pretreatment to accelerate verdigris/green finish is not permitted).

Steel framing

- l) Colours for steelwork should be equal to Ferrodor 'St Enoch Grey' or International Paints 'Gun Metal Grey' or painted in colour to match adjacent materials
- m) The following lightweight materials are prohibited:
 - i. Any lightweight finish rendered to mimic masonry
 - ii. Imported timbers

- iii. Timber from old growth forests
- iv. Large expanses of reflective surfaces with high gloss, vitrified, enamel finishes and the like
- v. Aluminium composite panels.

Figure 33: Lightweight cladding palette examples



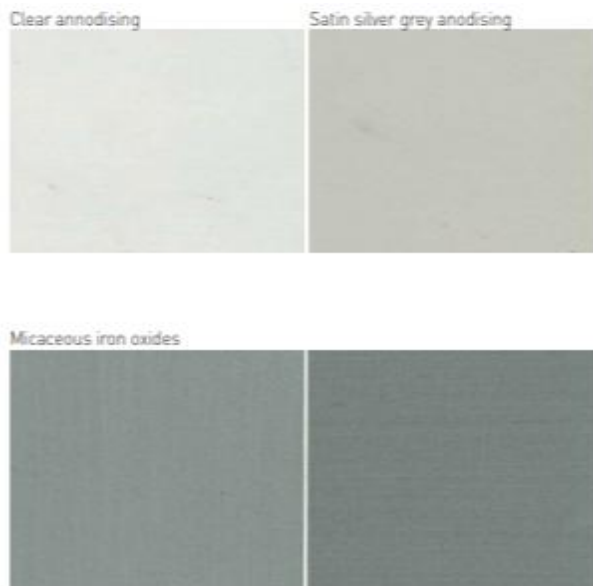
Source: Little Bay Cove Masterplan

Windows and glazing

- a) Openings to the street should be carefully controlled to provide a predominantly walled character to streets to afford residents appropriate levels of privacy. The area of glazing must not exceed 40% of the area of the front façade
- b) The reflectivity of glazed surfaces should be minimised through careful design. Areas of glazing should be recessed within the thickness of external walls and/or protected by sun shading elements appropriate to orientation from one of the following:
 - i. Fully operable timber shutters
 - ii. Operable aluminium louvred blinds
 - iii. Operable fabric awnings
 - iv. Overhanging eaves or hoods.
- c) Permitted framing materials include:
 - i. Steel frame windows - galvanised or micaceous iron oxide in mid through light grey
 - ii. Commercial grade aluminium windows - 25 micron thickness anodising in clear, satin silver grey, or satin stainless grey - or equal in powdercoat
 - iii. Timber windows, oiled/sealed
 - iv. Glass louvres (must be high performance to habitable rooms).
- d) Insect screening in bronze or stainless steel, Permitted glazing materials must meet the requirements of BASIX
- e) Small areas of colour backed glass are also permitted but should reference the light and dark palettes
- f) Prohibited materials include:

- i. Domestic/residential grade aluminium window suites (NB All aluminium suites must be commercial grade)
- ii. Glazing with applied solar tinting films and/or mirrored surfaces
- iii. Large areas of unprotected glazing
- iv. Glass blocks
- v. Fritted glass surfaces
- vi. Solid rolling metal shutters that allow no light transmission or ventilation in the closed position.

Figure 34: window finishes



Source: Little Bay Cove Masterplan

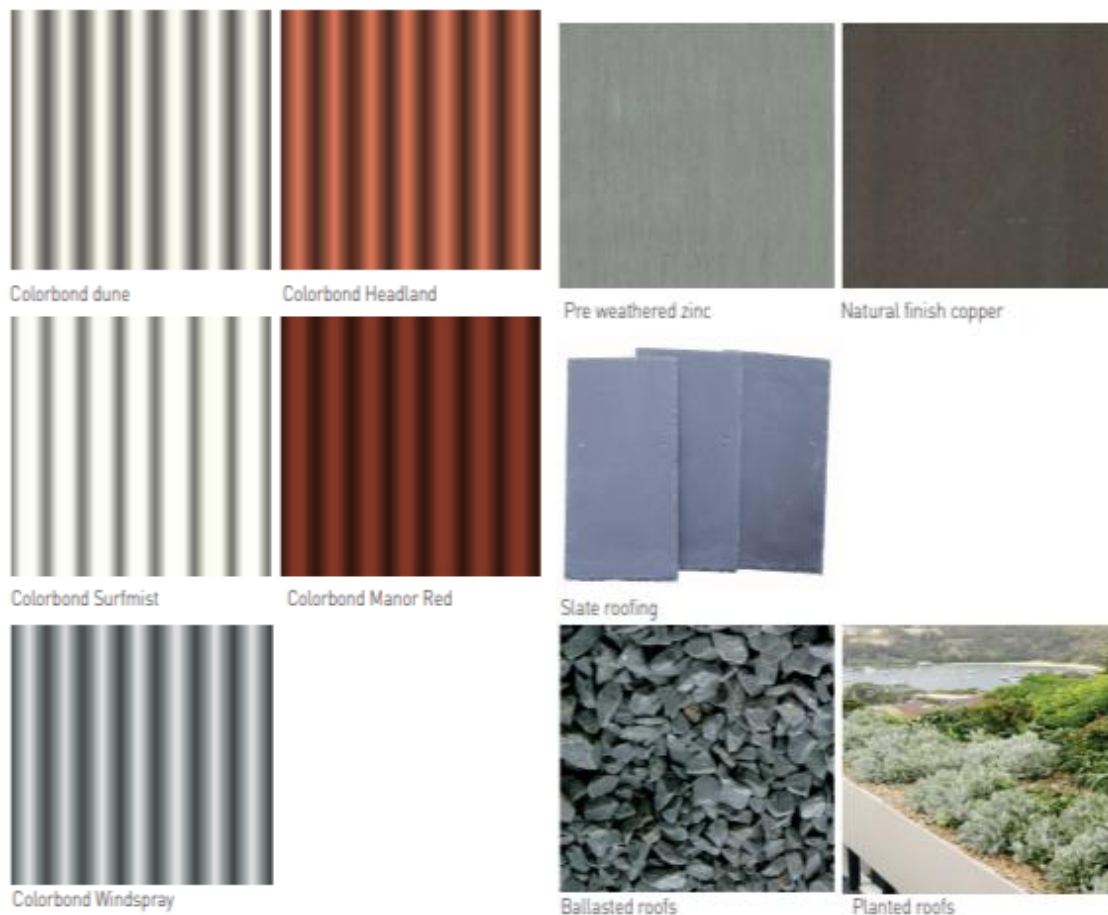
Roofing

Roofing may have one of the following architectural expressions:

- a) If the roof is visible the roof edge should be finely detailed with min. 600mm overhanging eaves to attenuate the edge of the building when seen against the sky
- b) If the roof is intended to be concealed, the building should have an expressed parapet, capped with either:
 - i. A flush clear zincalume barge-soaker with maximum visible flashing of 40mm or
 - ii. Preweathered zinc flashing of maximum 40mm
- c) Usable roof terraces are permitted
- d) Roof forms should generally have simple pitched, monopitched, flat or simple curved profiles
- e) Complex roof geometries with graphic representations of wavelike forms or historicist forms with excessive numbers of hips, gables, finials and turrets are prohibited
- f) Permitted roof materials:
 - i. Colorbond Surfmist, Dune or Windspray
 - ii. CSR Nullabor flat terra cotta tile in Slate Grey
 - iii. Pre-weathered standing seam zinc roofing
 - iv. Slate roofing
 - v. Timber shingles (weather to grey)
 - vi. Pebble/gravel ballasted roofs in grey tones
 - vii. Planted roofs with appropriately hardy coastal species
 - viii. Colorbond Headland, Manor Red

- ix. CSR Nullabor flat terra cotta tile in Earth
- x. Standing seam copper roofing
- xi. Pebble/gravel ballasted roofs in grey or brown tones
- xii. Planted roofs with appropriately hardy coastal species
- g) Permitted roof plumbing materials include:
 - i. Quad or half round gutters in zincalume
 - ii. quad or half round gutters in zinc
 - iii. circular or rectangular downpipes to match

Figure 35: Roofing finishes



Source: Little Bay Cove Masterplan

Balustrades and handrails

- a) Permitted balustrade materials include:
 - i. Masonry (as per permissible masonry finishes)
 - ii. Flat bar or steel rod framing
 - iii. Timber framing and/or battens
 - iv. Stainless steel wire and fine steel meshes
 - v. Glass set within flat bar steel framing only
- b) Discouraged materials include:
 - i. Frameless glass balustrades
 - ii. Aluminium balustrades

5.24. Building services

Controls

- a) Hot water units and air conditioning condensing units must not be visible from any point in the public domain
- b) Building services must not be exposed on the facades of buildings, and should be enclosed in risers within the building envelope. (Roof drainage and drenching sprinklers (if required) are permitted)
- c) Solar collectors, hot water heating systems are permitted to be installed on roofs and should be placed so as not to shade each other, and to maximise a northerly orientation
- d) Satellite dishes and television aerials should be concealed within roofs wherever possible or located in positions where they are not visible from the public domain.

5.25. Paving in the public domain interface

Controls

Paving and driveways in the areas visible from streets, parks and the public domain area of the site should be consistent and within the following limited colour/material range:

- a) Permitted materials include:
 - i. Reconstituted stone, such as Haddonstone or Urbanstone
 - ii. Eco Concepts concrete pavers or equal
 - iii. Granite or bluestone porphyry sets
 - iv. Sandstone
 - v. Dry laid (mortarless) brick paving
 - vi. Concrete.
- b) Colours should suit the architectural palette
- c) Discouraged materials include:
 - i. Stencilled concrete
 - ii. Coloured concrete
 - iii. Granite or ceramic tiles.

5.26. Garage doors

Controls

- a) Permitted materials include horizontal slim line and panel lift doors such as:
 - i. B&D Panel Masta Contemporary
 - ii. Slim Master
 - iii. Panelift SevilleTurino
 - iv. Horizontal timber panelled or battened doors.
- b) Permitted colours include:
 - i. Birch
 - ii. Sand bar
 - iii. Merino
 - iv. Stone
 - v. Gull grey
 - vi. Jasmin brown
 - vii. Slate grey
 - viii. Cedar brown
 - ix. Sarawak red
 - x. For timber refer to Section 5.23.

- c) Discouraged materials include:
 - i. Traditional imprint and patterned doors
 - ii. Roller doors

5.27. Geological Heritage

Objectives

The objectives for geological heritage are to:

1. Recognise the importance of the Little Bay Geological and Ochre sites and their geological and heritage significance within the Little Bay Cove site and adjacent lands including the Prince Henry site
2. Ensure that development minimises adverse impacts on the Little Bay Geological Site and Ochre site
3. Protect remnant bushland and the significant features of the Little Bay Geological site and Ochre site
4. Protect the integrity and visibility of the Miocene Geological Site, including the Critical Exposure Area, Cleared Area, and Paleovalley
5. Ensure development does not compromise the scientific, educational, cultural, and heritage values of the site
6. Promote public awareness and interpretation of the geological significance through sensitive design and signage
7. Manage those areas of the Little Bay Geological site and the Potential Ochre site within the Little Bay Cove site consistent and together with those areas in adjacent land including the Prince Henry site

Controls

All development must be in accordance with the Conservation Management Plan, Archaeological Management Plan and any relevant Specific Elements Conservation Policy and must demonstrate that:

Site significance

- a) the Critical Exposure Area of the Little Bay Geological Site (which also contains the exposed part of the Ochre Site) is to be retained intact, and new development is to be designed to minimise impacts on this area.

Site identification and mapping

- b) The Miocene Geological Site must be clearly identified on all site plans submitted with a DA.
- c) The Critical Exposure Area, Cleared Area, and Paleovalley must be mapped and referenced in all relevant documentation.

Buffer zones

- d) A minimum buffer of 20 metres must be maintained around the Critical Exposure Area and Cleared Area
- e) No excavation, construction, or landscaping works are permitted within the buffer zone unless approved by the Heritage Council of NSW.

Excavation and ground disturbance

- f) Any proposed excavation within 30 metres of the Miocene site must be accompanied by a Geotechnical Impact Assessment prepared by a certified geologist
- g) A Heritage Impact Statement referencing the CMP and SECP must be submitted

- h) Evidence of consultation with the NSW Heritage Council and La Perouse Local Aboriginal Land Council must be provided
- i) excavation within the possible extent of the Palaeovalley Area should not be below RL 26 unless endorsed by Randwick City Council and the Heritage NSW
- j) new development on lots within the Cleared Area of the Little Bay Geological Site and within the boundaries of the Ochre site is designed so that non-essential excavation or scouring of significant rock surfaces is avoided
- k) the number and size of footings on the exposed rock surfaces within the Cleared Area and Ochre site are to be minimized
- l) ground level adjustments within the Cleared Area and extent of the Ochre site are made by fill, not excavation.

Stormwater and groundwater management

- m) Development must demonstrate that stormwater and groundwater flows will not erode or alter the Miocene exposures
- n) All drainage infrastructure must be designed to divert runoff away from the geological site
- o) Use permeable paving and swales in adjacent areas to reduce runoff velocity.

Public access and interpretation

- p) Public access to the Miocene site must be controlled to prevent erosion and vandalism
- q) Interpretive signage must be provided at designated viewing platforms
- r) Revegetation works must not obscure exposed geological faces
- s) Car parking for development within the Cleared Area and/or Ochre site must be provided above ground to prevent any damage to their significant features.

Visual protection

- t) Built form adjacent to the Miocene site must be limited to two storeys within 20 metres of the site.
- u) Use materials and colours that blend with the natural landscape.
- v) Avoid reflective surfaces or lighting that may detract from the site's visual integrity.

Integration with CMP and SECP

- w) All development must comply with the Little Bay Geological Reserve Plan of Management (POM), Bushland Plan of Management (POM), Prince Henry Conservation Management Plan (CMP), and any Specific Elements Conservation Policy (SECP) relevant to the Miocene site. All development must meet the objectives of these POMs and CMP and SECP.

Note

Geological heritage conservation controls are informed by the International Union for Conservation of Nature's - Guidelines for geoconservation in protected and conserved

5.28. Built and Archaeological Heritage

Objectives

The objective for built heritage are to:

1. Ensure that new development respects, enhances and contributes to the heritage significance of Prince Henry site and Prince Henry Heritage Conservation Area

2. Restore and reconstruct built and landscape elements that contribute to the heritage significance of Prince Henry site and Prince Henry Heritage Conservation Area and its setting
3. Ensure new buildings, infill development and alterations/additions respect the design and scale of existing heritage buildings and elements on the Prince Henry Site
4. Select colours and materials that aesthetically relate to the coastal environment and respect the heritage significance of the Prince Henry site and Prince Henry Heritage Conservation Area
5. Ensure that new buildings relate sympathetically to neighbouring significant heritage buildings and the Prince Henry Heritage Conservation Area
6. Ensure signage is consistent with the desired future character, and respects the heritage significance, of the Prince Henry Site and Prince Henry Heritage Conservation Area
7. Ensure that significant and heritage trees are to protected during construction
8. Provide a built form that respects the site's characteristics and its neighbours including existing significant heritage items and the natural environment in the Prince Henry site and Prince Henry Heritage Conservation Area
9. Ensure that the distribution of built form responds to the site topography, attributes, and heritage significance of the Prince Henry site and Prince Henry Heritage Conservation Area
10. Conserve, manage and interpret identified and potential Aboriginal relics and sites in accordance with the AMP and the requirements of the NSW National Parks and Wildlife Act, including but not limited to the Aboriginal Heritage Information Management System (AHIMS)
11. Minimise development impacts on areas of Aboriginal heritage significance and seek to enhance the values of these areas

Controls

- c) New buildings must comply with the requirements in the Table 2 and the map located in Figure 22 of this Part of the DCP
- c) The Gross Floor Area (GFA) of each development parcel must not exceed the limits outlined in the Density Control Plan in Figure 23 and specific lot GFA requirements outlined in Figure 24 of this Part of the DCP
- c) An Aboriginal heritage assessment is to be prepared for land under the following circumstances:
 - i. the NSW NPWS Aboriginal Sites Register identifies sites in or near the development area, which could potentially be affected during or after the development
 - ii. the proposed development is likely to have an impact on areas of bushland or undisturbed ground
 - iii. the proposed development is likely to have an impact on areas containing sandstone outcrops, rock shelters, old growth trees, sand bodies and ground adjacent to watercourses, lakes and swamps
 - iv. the proposed development is likely to have an impact on an area of importance to the Aboriginal community not included in the above (e.g. story places, missions etc).
- c) An Aboriginal Heritage Impact Permit (AHIP) is required when a proposed activity or development is likely to harm Aboriginal objects or places in New South Wales having regard to the provisions of Part 6 of the National Parks and Wildlife Act 1974.

Illustrative built form controls

Figure 36: Built form section AA



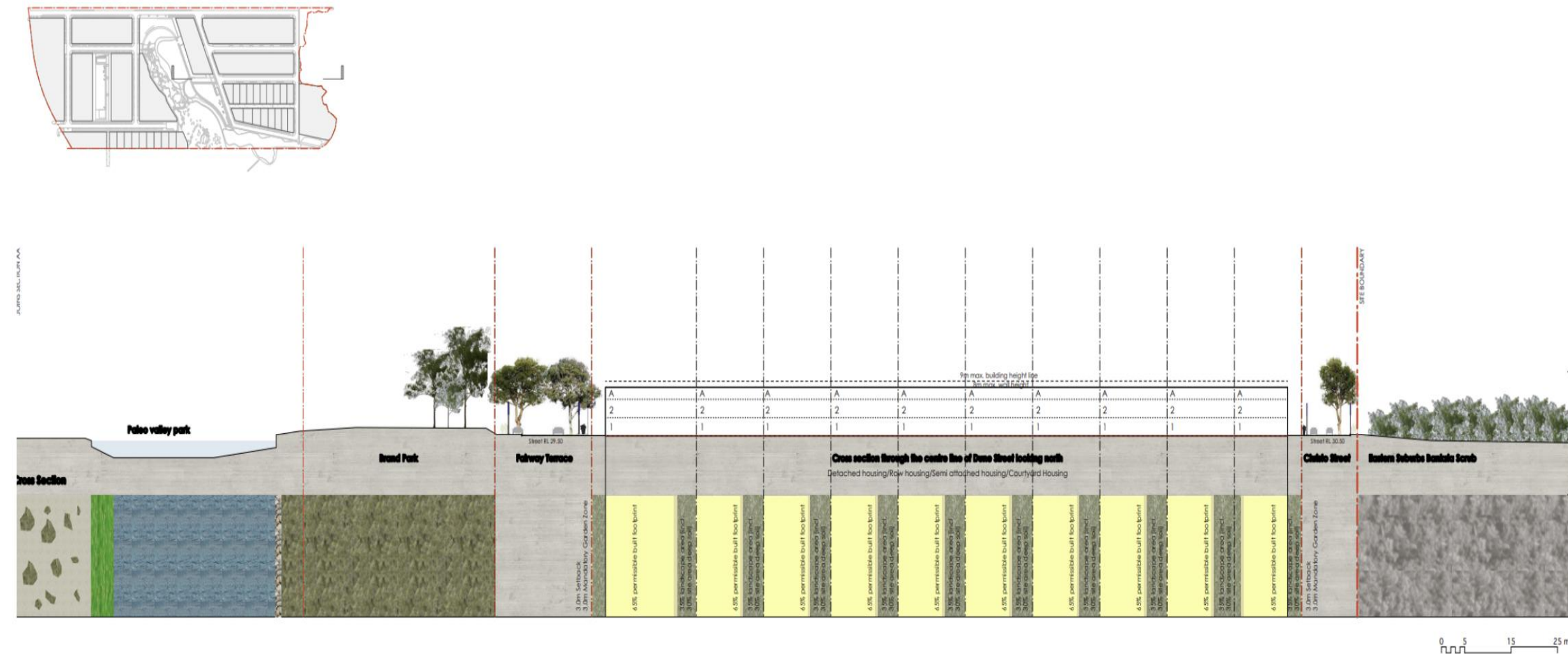
Little Bay Stage 1 Plan

	Detached housing built form
	Detached housing/semi attached/row housing/ courtyard housing built form
	Detached housing/semi attached/row housing/ multi unit residential apartment built form
	Row housing/maisonette housing built form
	Multi unit residential apartment built form
	Landscaped area (in accordance with Section 5.5)
	Deep soil landscape (in accordance with Section 5.5)
	Landscape in the public domain

- Allotment boundary
- Indicative subdivision boundary
(Subject to future detailed design and application)
- Proposed remediated ground level (RGL)
- - - Maximum building height line
- Setback line
- Indicative floor level

The building envelopes shown in this plan illustrate the parts of the site where buildings may be placed, within which all other criteria in this Stage 1 Plan must also be satisfied.

Maximum building envelopes will not always be able to be achieved as requirements such as maximum allowable floor space, minimum landscaped area, solar access, overshadowing and other individual site constraints will reduce the achievable building form.



Source: Little Bay Cove Masterplan

Figure 38: Built form section CC

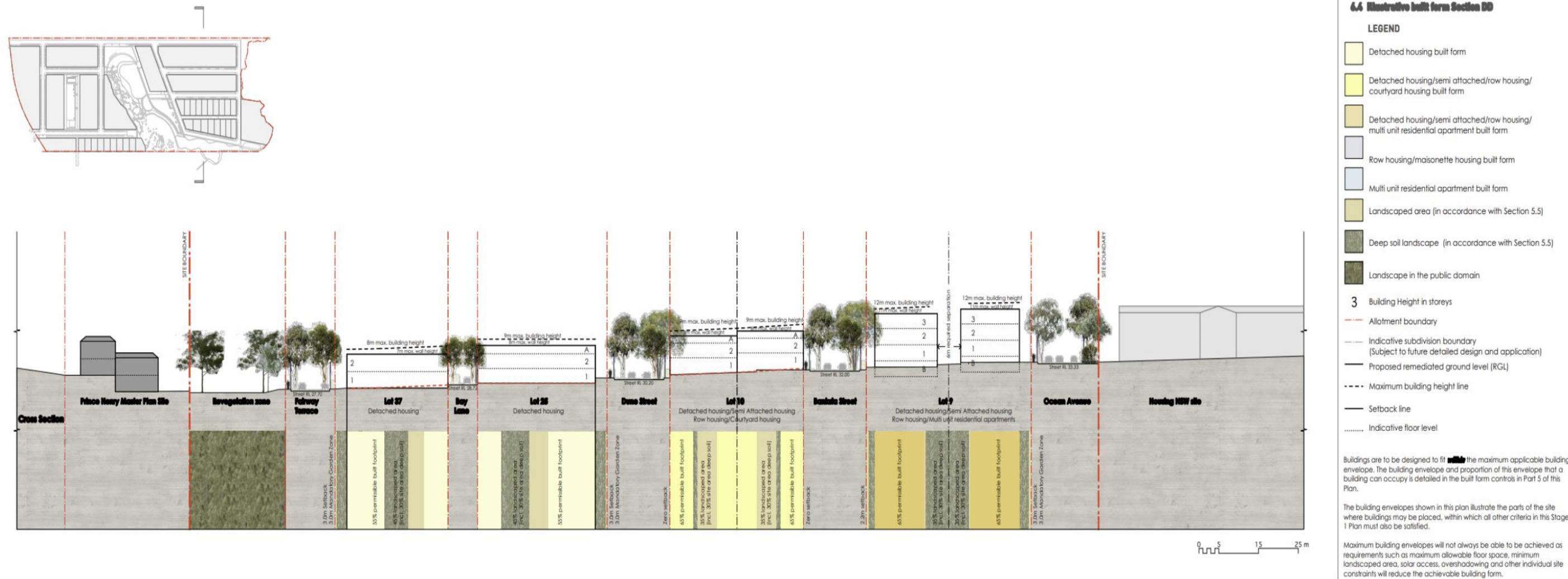
Little Bay Stage 1 Plan



Source: Little Bay Cove Masterplan

Figure 39: Built form section DD

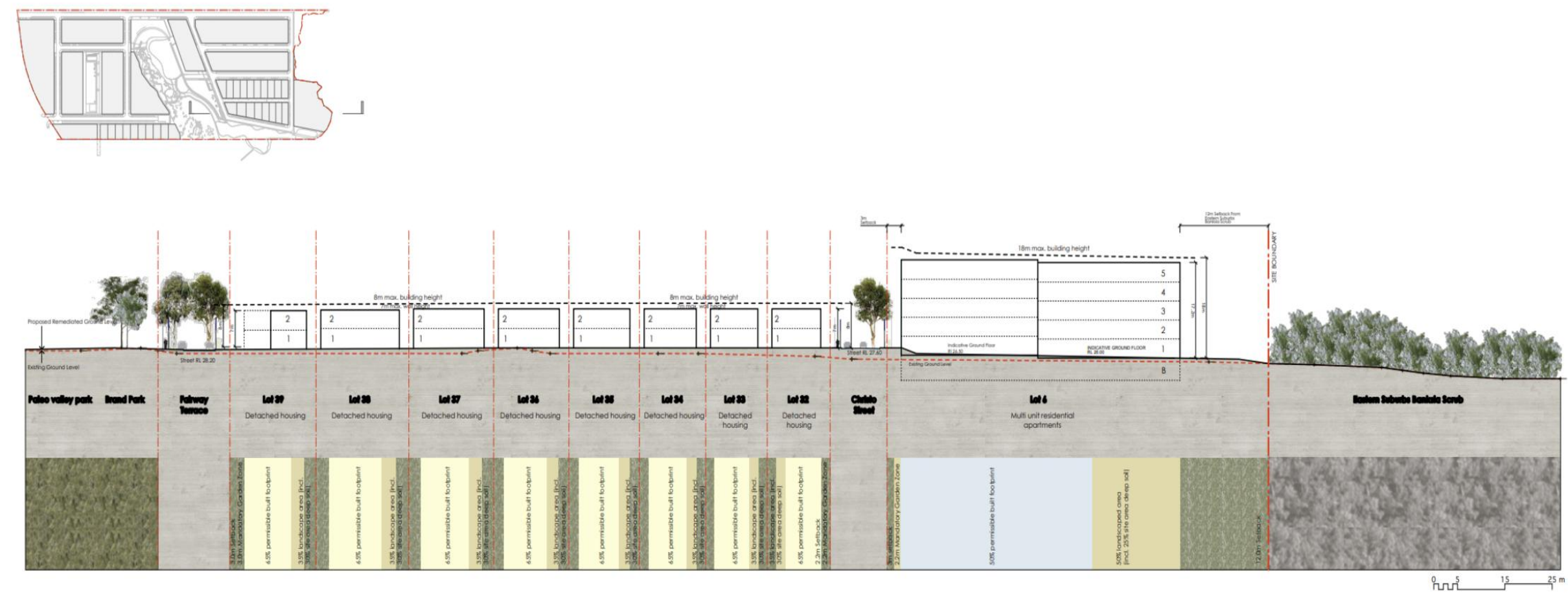
Little Bay Stage 1 Plan



Source: Little Bay Cove Masterplan

Figure 40: Built form section EE

Little Bay Stage 1 Plan



6 illustrative built form controls

6.5 Illustrative built form Section EE

LEGEND

- Detached housing built form
- Detached housing/semi attached/row housing/courtyard housing built form
- Detached housing/semi attached/row housing/multi unit residential apartment built form
- Row housing/maisonette housing built form
- Multi unit residential apartment built form
- Landscaped area (in accordance with Section 5.5)
- Deep soil landscape (in accordance with Section 5.5)
- Landscape in the public domain

3 Building Height in storeys

- Allotment boundary
- Indicative subdivision boundary (Subject to future detailed design and application)
- Proposed remediated ground level (RGL)
- Maximum building height line
- Setback line
- Indicative floor level

Buildings are to be designed to fit within the maximum applicable building envelope. The building envelope and proportion of this envelope that a building can occupy is detailed in the built form controls in Part 5 of this Plan.

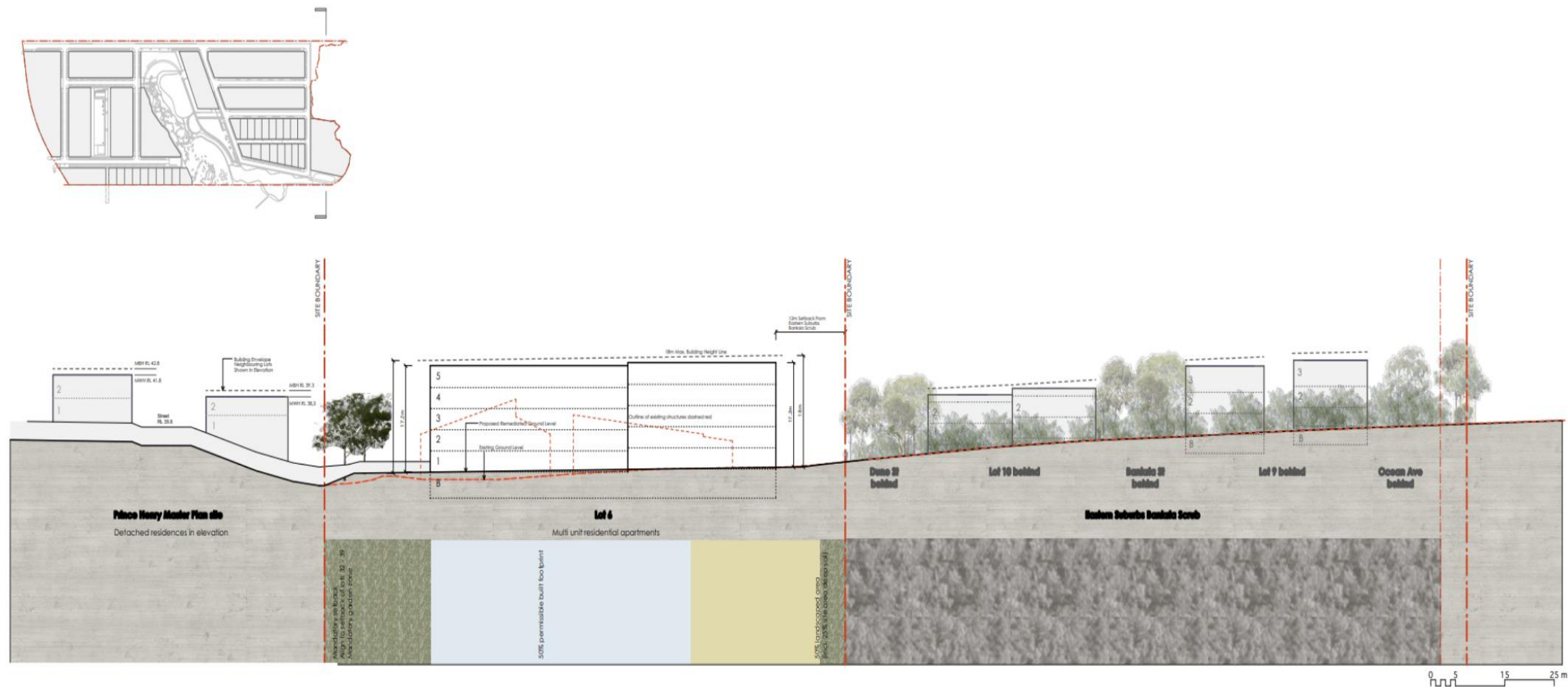
The building envelopes shown in this plan illustrate the parts of the site where buildings may be placed, within which all other criteria in this Stage 1 Plan must also be satisfied.

Maximum building envelopes will not always be able to be achieved as requirements such as maximum allowable floor space, minimum landscaped area, solar access, overshadowing and other individual site constraints will reduce the achievable building form.

Source: Little Bay Cove Masterplan

Figure 41: Built form section FF

Little Bay Stage 1 Plan



6 illustrative built form controls

4.6 Illustrative built form Section FF

- LEGEND**
- Detached housing built form
 - Detached housing/semi attached/row housing/courtyard housing built form
 - Detached housing/semi attached/row housing/multi unit residential apartment built form
 - Row housing/maisonette housing built form
 - Multi unit residential apartment built form
 - Landscaped area (in accordance with Section 5.5)
 - Deep soil landscape (in accordance with Section 5.5)
 - Landscape in the public domain
- 3 Building Height in storeys**
- Allotment boundary
 - Indicative subdivision boundary (Subject to future detailed design and application)
 - Proposed remediated ground level (RGL)
 - Maximum building height line
 - Setback line
 - Indicative floor level

Buildings are to be designed to fit within the maximum applicable building envelope. The building envelope and proportion of this envelope that a building can occupy is detailed in the built form controls in Part 5 of this Plan.

The building envelopes shown in this plan illustrate the parts of the site where buildings may be placed, within which all other criteria in this Stage 1 Plan must also be satisfied.

Maximum building envelopes will not always be able to be achieved as requirements such as maximum allowable floor space, minimum landscaped area, solar access, overshadowing and other individual site constraints will reduce the achievable building form.

Source: Little Bay Cove Masterplan



4.2.5 Reserve Streets



Street

Fairway Terrace

Reservation

12.5m

Footpaths

1.5m each side of the street
Ecopave finish to detail.

Swales + Nature Strips

1.4m Nature strip

Street Tree Planting

Eucalyptus botryoides

Lighting

Hel solar light poles, or equivalent

P4 lighting category for pedestrian circulation
V4 lighting category for vehicular traffic

Enable solar power generation connected to
grid power supply in areas that are shaded

Vehicular carriageway

6.0m

Asphalt surface with flush Bluestone kerbing to
parking lanes and raised Bluestone kerbing to
path edges.

Parking lanes

2.1m parking lane on reserve side
as nominated on LSK02

Driveway crossings

Bridged driveway crossings to detail



4.2.6 Reserve Streets



Street

Christo Street

Reservation

12.0m to 12.5m

Footpaths

1.8m to residential side
1.5m to park side
Ecopave finish to detail

Swales + Nature Strips

0.9m nature strip

Street Tree Planting

Eucalyptus botryoides

Lighting

Hel solar light poles, or equivalent

P4 lighting category for pedestrian circulation
V4 lighting category for vehicular traffic

Enable solar power generation connected to
grid power supply in areas that are shaded

Vehicular carriageway

6.0m

Asphalt surface with flush Bluestone kerbing
to parking lanes and raised Bluestone kerbing
to path edges.

Parking lanes

2.3m parking lane
as nominated on LSK02

Driveway crossings

Concrete ramps
Bridged driveway crossings to detail





4.2.7 Access ways

Street type
Park streets

Park streets

Reservation

...to the ...

2016-11-28 09:10:10

Footpaths

Within the park reserve

Swales + Nature Strips

5.0m bioswale on eastern side of park

Street Tree Planting

Angophora costata
Corymbia gummlifera
Cupaniopsis anacardioides
Eucalyptus haemastoma

Lighting

Hei solar light poles, or equivalent

P4 lighting category for pedestrian circulation
V4 lighting category for vehicular traffic

Enable solar power generation connected to grid power supply in areas that are shaded

Vehicular carriageway

4.0m western side
5.5m eastern side
Bluestone setts

Parking lanes

No parking permitted on these streets

Driveway crossings

No driveway crossings permitted on these streets.

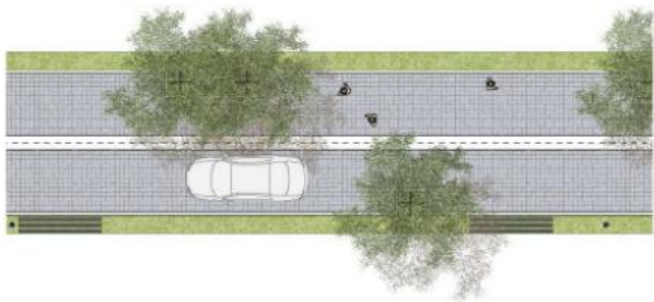
Pedestrian access to dwellings only.

Traffic restrictions

Access for emergency vehicles, deliveries and removalists only. No parking.

7500
250 2700 600 2700 750

4.2.8 Lane



Street type
Bay Lane

Reservation
7.5m

Footpaths
No footpaths

Swales + Nature Strips
0.75m nature strips each side

Street Tree Planting
Banksia integrifolia

Lighting
Hel solar light poles, or equivalent

P4 lighting category for pedestrian circulation
V5 lighting category for vehicular traffic

Enable solar power generation connected to
grid power supply in areas that are shaded

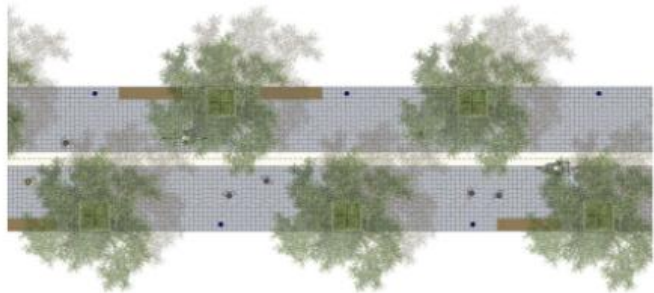
Vehicular carriageway
6.0m

Bluestone sets with central concrete dishdrain

Parking lanes
No parking permitted.



4.2.9 Pedestrian links



Street type
Prince Henry Link

Reservation
6.0m

Footpaths
Bluestone sets

Swales + Nature Strips
N/A

Street Tree Planting
Eucalyptus haemastoma

Lighting
Hel solar light poles, or equivalent

P4 lighting category for pedestrian circulation
V5 lighting category for vehicular traffic

Enable solar power generation connected to
grid power supply in areas that are shaded

Vehicular carriageway
No vehicular access



public domain elements

4.3.3.2 Urban Lounge intersections



4.3.3 Fairway Terrace Intersections



4.3.4 Dune and Banksia Street Intersections



Appendix B: Open space design principles

4.4.1 Paleo Valley Park

The Central Corridor Parkland or 'Paleo Valley' forms the heart of the project and will be of great benefit to the entire community. The Paleo Valley parkland is defined to the west by a dramatically exposed formation of Miocene geology cliff face.

The significance of the Miocene area is enhanced with nearby deposits of ochre that are still used by La Perouse indigenous peoples. These are proposed for retention and protection. The landscapes surrounding these formations will be allowed to revegetate naturally with locally endemic species to create an ecologically responsive natural hillside. Water sensitive urban design functions and ecological services for the site will be accommodated within the valley. The ponds and biofiltration zones will form habitat for local birds and frogs.

Pedestrian connections to the parks are strategically located to align with surrounding streets and footpaths. It is proposed to create a scenic walkway above the top of the Miocene that connects the higher northern streets to the lower southern streets. This loop intersects with two lookouts on the ends of Riparian Street and Solarch Avenue, called Riparian lookout and Miocene lookout.

The walkway winds down to water level via a seating and viewing area on mid level surrounded by revegetated Cabbage tree palms and eucalypts. It then connects into a pondside board-walk that links to a raised stair system up to Ocean Avenue. The stair is discreetly located in a wide u-shaped verge that functions as the 1 in 100 year overland flow pathway.

Strategic pedestrian linkages to the coast and golf courses are afforded by raised boardwalks that continue the Scenic Walk and connect into a path system on the golf course down to Little Bay Beach and to the Coastal Walkway.

Random access across The Coast Golfcourse will be discouraged by a range of signage, landscaping, buffer zones, fencing and education, where appropriate.

Opportunities for reusing site material and demolition works in the design will be explored along with the potential to harness wind and solar energy for the public domain. Water from the waste water treatment system will be used for pond top up and irrigation, putting the public domain at the leading edge of environmental sustainability.





4.4.2 Brand Park

On the southern part of the Paleo Valley is located a level park, called Brand Park named after the nearby 1800's settlement.

This park supports active play and community uses with a large bbq arbour providing a verdant green shelter for family picnics. The lawn is elevated to catch views and breeze and is shaped in a form that reflects the previous uses of the site. It is a counterpoint to the naturalistic ecological landscape to the west.

This area provides a natural viewing point to the exposed miocene and ochre deposits, so that they can be viewed and enjoyed without being accessed directly.



Figure 35 - Aerial view of bbq arbour

public domain elements

4.4.3 The Urban Lounge

The Urban Lounge is a public park in the western precinct.

The interface to Riparian Street will be a "look out" allowing views over the park and the interface to Solarch Avenue will be a Toddler Play area.

The playground includes a water play area, a structure with climbing plants to provide shade and various play stations. It is surrounded by seating for parents and a planted bioswale and forms the entrance to the Urban Lounge from the south.

Emergency and service vehicle access is possible along the paved areas which can be used for community events and markets to activate the park.

The level change of 1m from west to east is managed with the introduction of grass dunes along the western pathway.

The dunes can be used as play element and also to relax under one of the trees in the park. Activation of public space is of prime importance and the design promotes multifunctional spaces that can be used for a variety of public activities.

The design is intended to be able to accommodate activities such as:

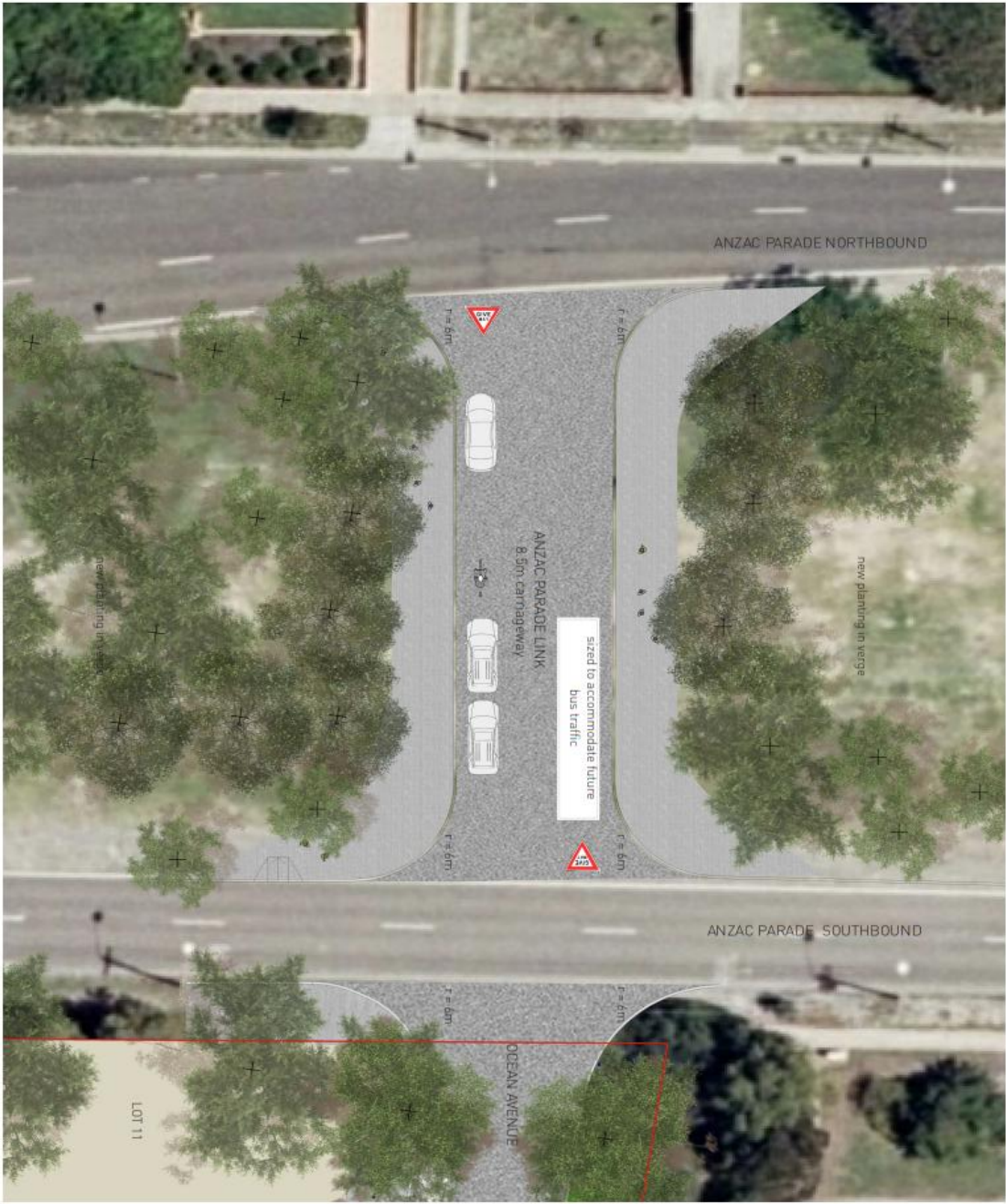
- Exercising and playing on lawn area;
- Relaxing on grass dunes and lounge's;
- Kids playground;
- Markets and
- Community events and gatherings on viewing platform.



Figures 36 to 39 - Perspective views of the urban lounge

Appendix C: Off-site works

Little Bay Stage 1 Plan



Figures 40 - Plan of Anzac Parade link

4

public domain elements

4.5 Off site works

4.5.1 Anzac Parade Intersection

A new section of road will be constructed opposite the northern access driveway linking the northbound and southbound carriageways of Anzac Parade.

The new road connection through the central median of Anzac Parade will be some 30 metres in length and will provide one traffic lane in each direction.

The intersection of the proposed new road connection with the northbound and southbound carriageways of Anzac Parade will be controlled by 'Give Way' signs, with priority given to the main road traffic flow on Anzac Parade.

The new street connection will be unsignalised, will have capacity to store five queued vehicles in each direction on approach to the centrally located 'Give Way' signs.

The proposed arrangement will minimise the increase in traffic flows on Anzac Parade and Little Bay Road to the south and reduce potential U-turns at the intersection of Anzac Parade and Little Bay Road.

Refer to the Transport Report for Proposed Residential Subdivision, Anzac Parade, Little Bay by Colston Budd Hunt and Kales Pty Ltd for further detail.



4.6 Technical Details

4.6.1 Paving and Kerbing

Crushed aggregate



Insitu concrete



Bluestone setts



No fines concrete



Bluestone paving



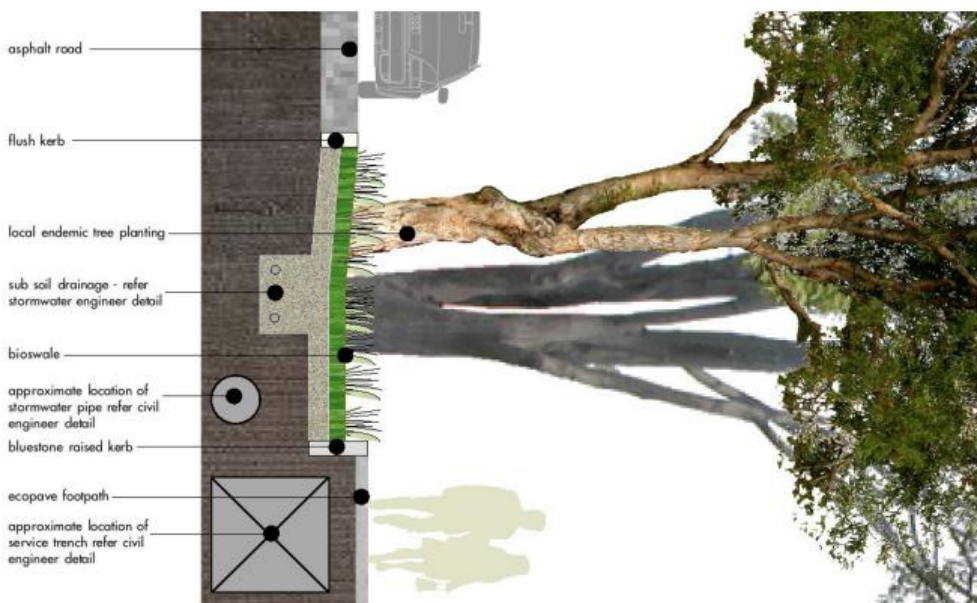
Asphaltic concrete



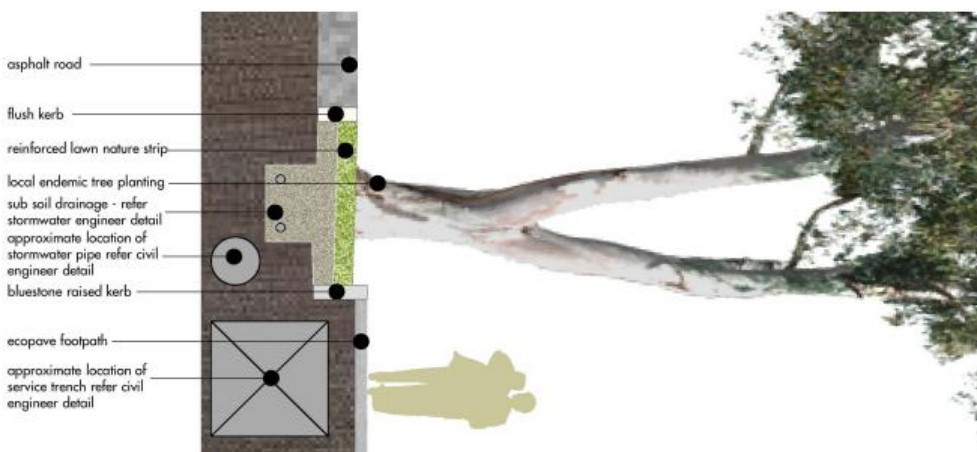
Bioretention swale - Urban Lounge



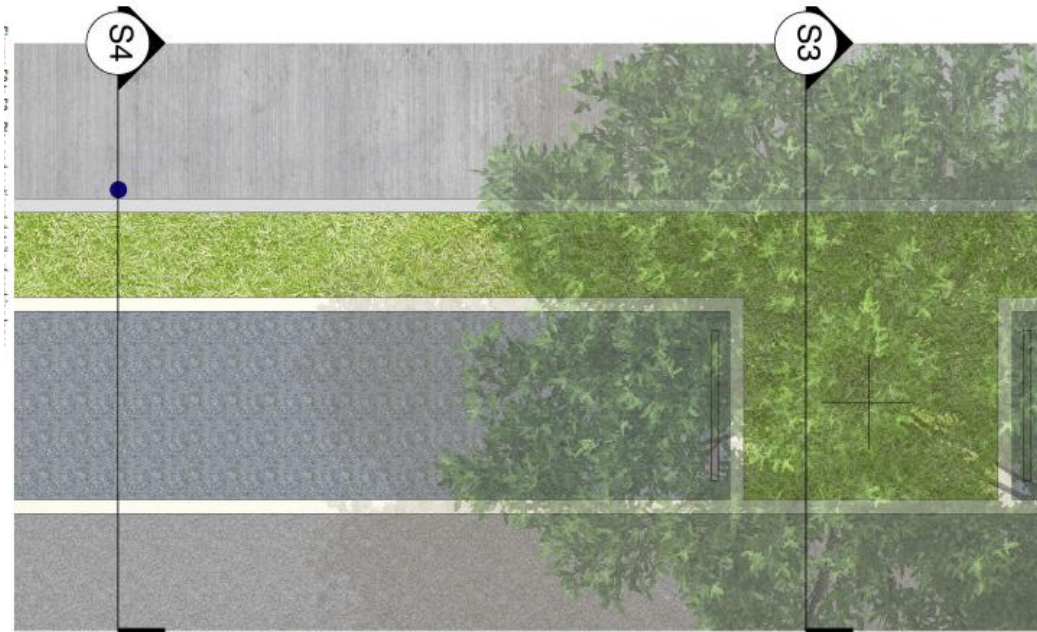
Bioretention swale - Raingarden streets



Landscape nature strip



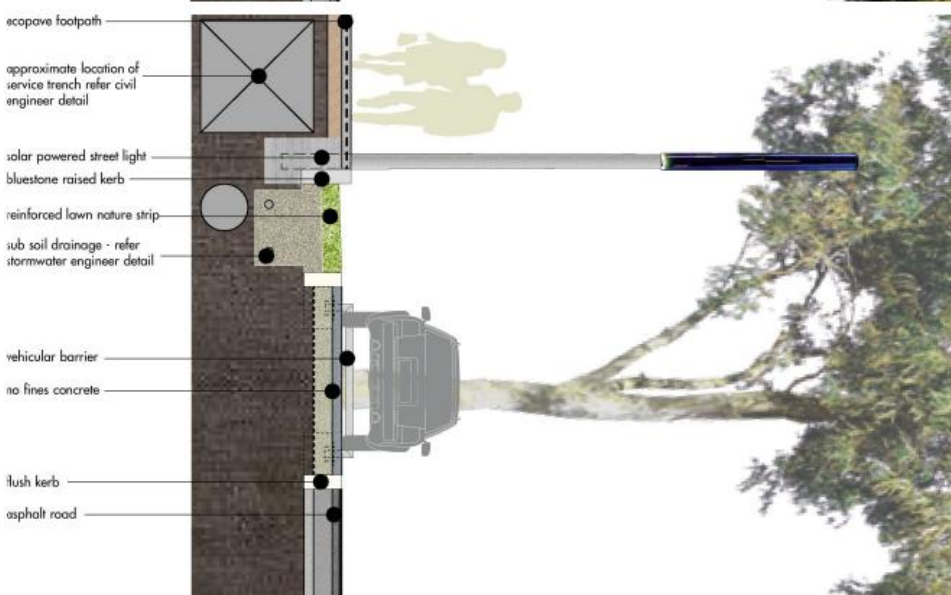
4.6.3 Parking Lanes Plan

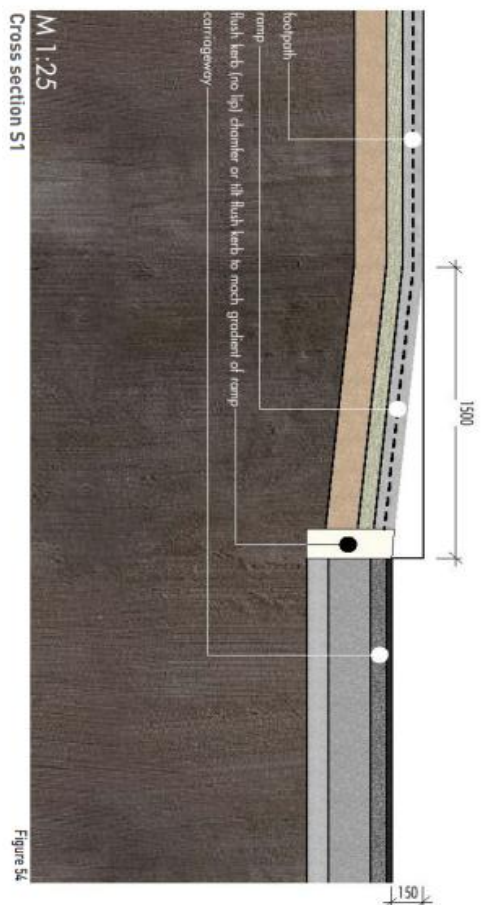
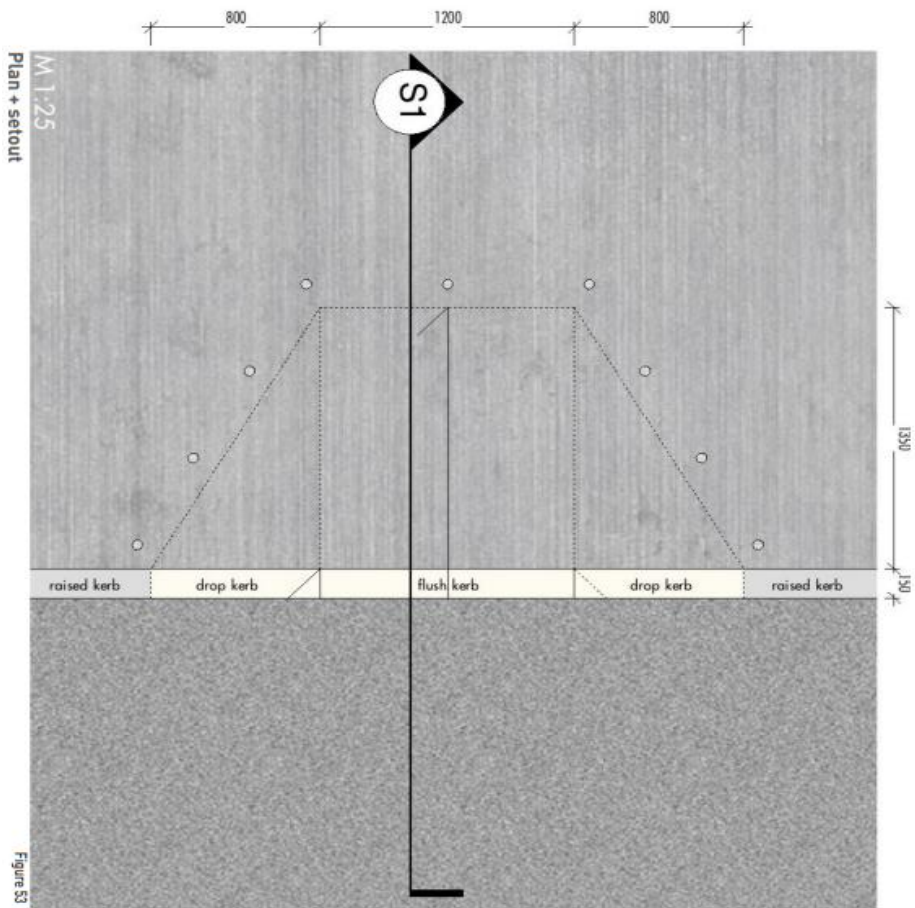


Section through tree pit S3



Section through parking bay S4





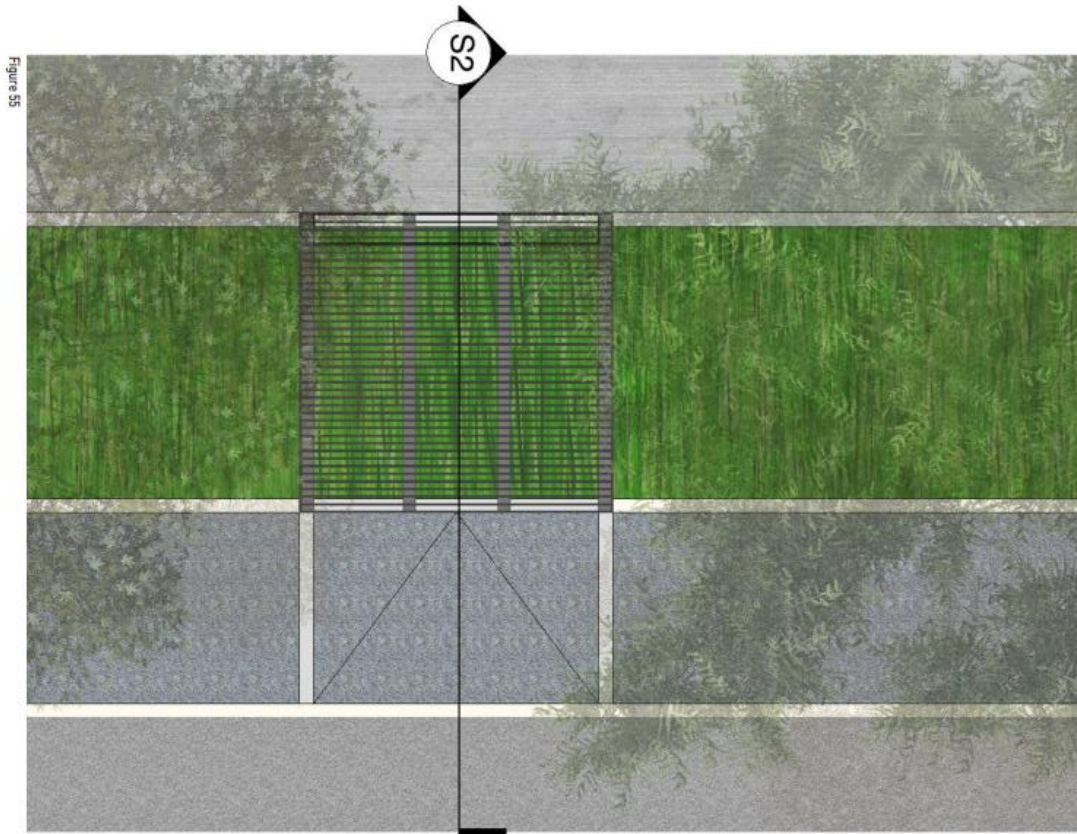


Figure 55

Cross section S2



Figure 56

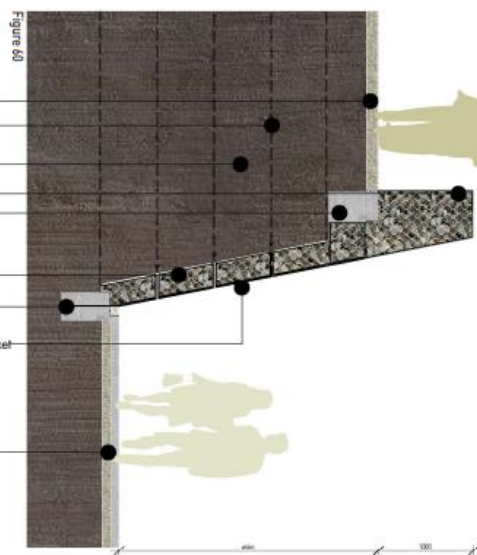
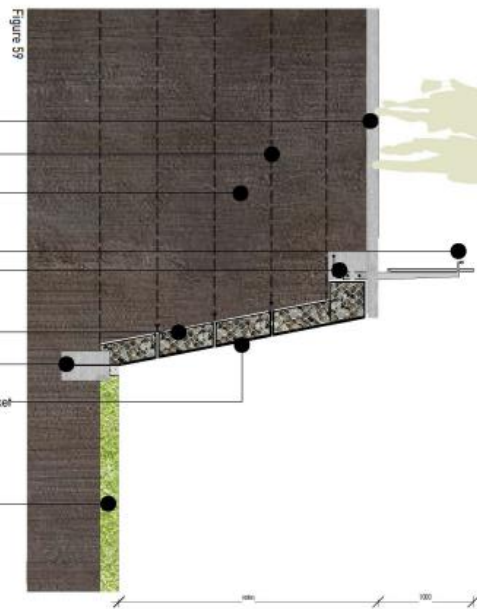
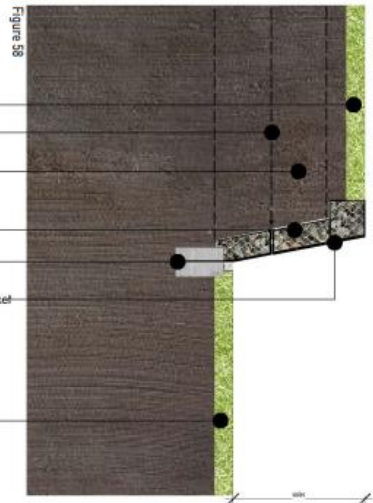
Location of gabion retaining walls



Wall type 1 - retaining wall

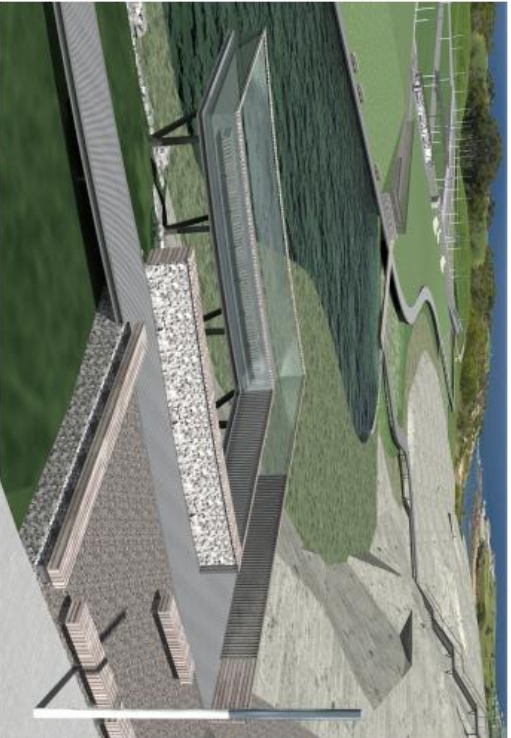
Wall type 2 - retaining wall with balustrade

Figure 57



4.6.7 Elevated pathways, lookouts and structures

4 public domain elements



Cabbage tree lookout



Miocene lookout

Figures 61 to 64 - Perspective views of elevated structures



Ocean avenue stairs



Paleo valley stairs

Where possible the landscape construction will utilise recycled materials and will use materials with low embodied energy.

The materials palette used will be simple, utilising robust materials that are apt for their contextual setting and character and in harmony with the proposed architecture.

The design of the Paleo Valley stairs will be resolved following discussions with the La Perouse Local Aboriginal Land Council.

4.6.8 Street Lighting

A Lighting Master Plan for the project has been prepared by Steensen Varming to provide a reference for the development of detailed concepts and specifications for future external lighting works at Little Bay and to ensure a holistic approach throughout the lit night-time environment within the precinct.

The plan recognises that the Little Bay project consists of areas with disparate character and usage, and that an appreciation of these, both individually and in terms of their interdependence, is fundamental in the development of future lighting strategies.

The distribution of light and lighting structures is based upon an understanding of the layout and functionality of different parts of the Little Bay Stage 1 plan. This relates to the usage of spaces and pedestrian movement in, to, out of and around the precinct.

For detailed lighting analysis, please refer to the Public Domain Lighting Master Plan prepared by Steensen Varming.

Lighting types have been proposed for different areas in the Stage 1 plan.

- (i) Primary avenues
 - Ocean Avenue
 - Solarch Avenue
- (ii) Secondary streets
 - Green Street
 - Vew Street
 - Riparian Street
 - Banksia Street
 - Dune Street
 - Christo Street
 - Fairway Terrace
- (iii) Gathering and leisure spaces
 - Urban Lounge
 - Brand Park
- (iv) Parkland areas, pedestrian pathways
 - Paleo valley Park
- (v) Feature elements

Solar street lighting has been considered as an environmentally sustainable design strategy. The Hei Solar Light is an example luminaire currently being investigated for the provision of base and enhanced base lighting.

Hei Solar Lights consist of photovoltaic power generator units. The power generated is then stored in an in built battery system within the luminaire body and powers light emitting diodes (LEDs).

Due to shading by trees and buildings it may not be possible for the photovoltaic units to generate energy at all locations. Where it is not possible to generate solar power, the character of the light poles can still be kept consistent, having the same lighting characteristics, but with the difference that they can be cabled and work on a conventional electricity supply.

Options for solar powered photovoltaic panels are being actively considered for areas in the public domain. Hybrid power systems with electricity produced by PV panels fed into the grid during daylight hours and therefore directly offsetting some or all of the energy demand of the night-time lighting are also being reviewed, as is the provision of power for lighting by vertical axis turbines.

The specification for street lighting will be confirmed at the time of construction, as renewable energy technologies and light sources are advancing rapidly.

4 public domain elements

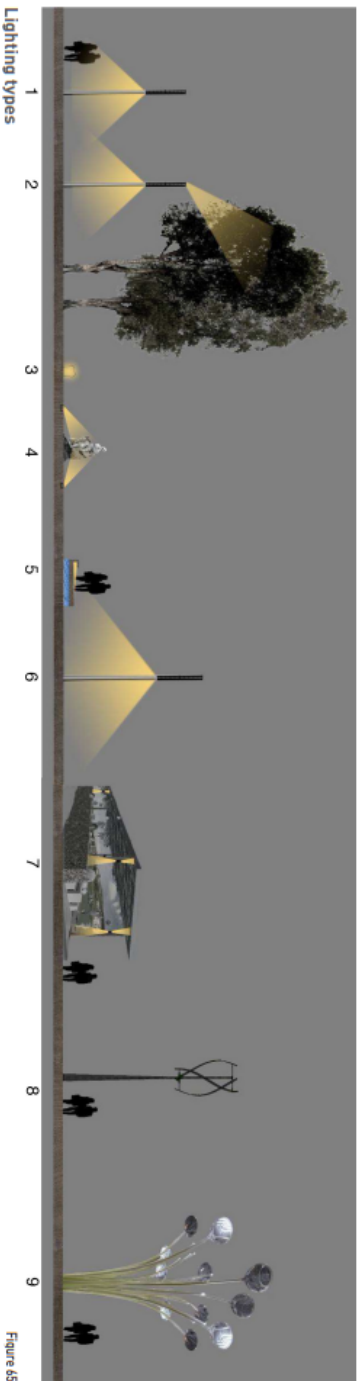


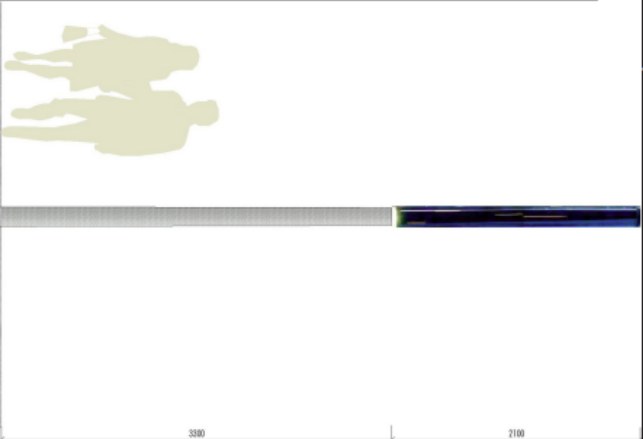
Figure 65

Hei Solar street light

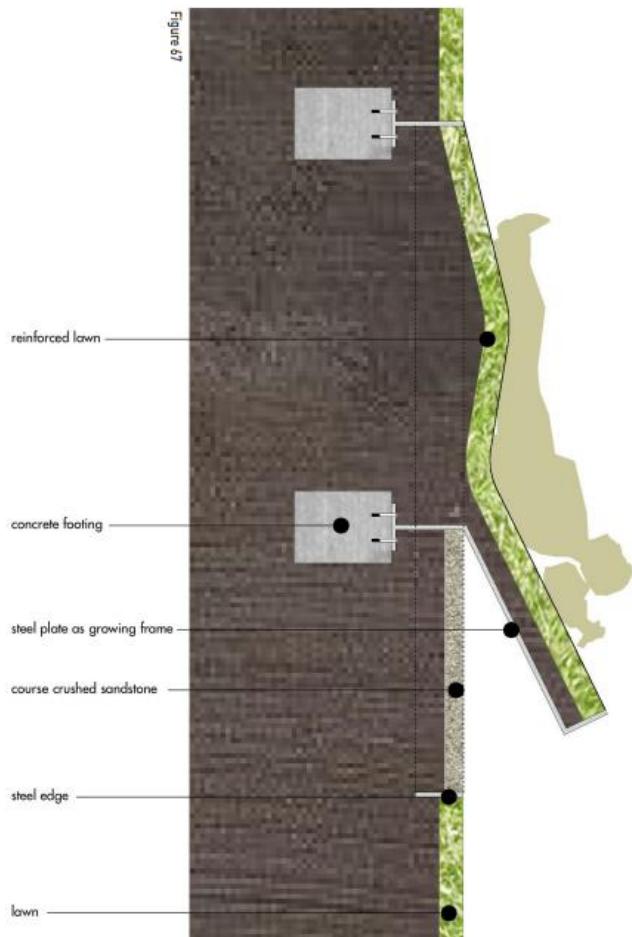
Lighting types legend

- 1. Poletop Luminaire
- 2. Poletop Luminaire with additional Feature Lighting Element
- 3. Illuminated or luminous Landscape Furniture element
- 4. Illuminated Public Art/Sculpture
- 5. Concealed Pathway Marker Lighting
- 6. Higher Light Pole for coverage of wider areas
- 7. Lighting incorporated to areas with cover may consist of up and downlighting and can also incorporate solar panels
- 8. Sculptural wind power generators may also include lighting elements
- 9. Solar sculptures may also include lighting elements

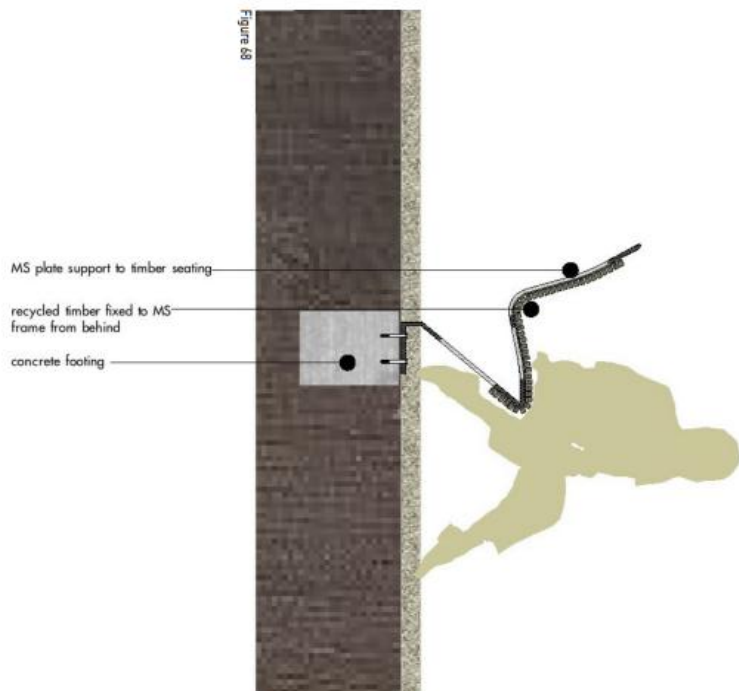
Figure 66



Urban 'lawnges'



Recycled timber seating



Appendix D: Management of Asset Protection Zones

Management of Asset Protection Zones

The NSW Rural Fire Service (RFS) advise that when living in a bushfire prone environment asset protection zones are required to be provided between hazardous fuels and a dwelling.

The RFS provide basic advice in respect of managing asset protection zones in several documents namely *Planning for Bushfire Protection 2006* and *Standards for Asset Protection Zones* (undated but circa 2006).

Asset protection zones provide a level of defensible space between the hazard and a habitable dwelling or similar structure. These zones are usually shown on plans adjacent to either cultural or natural assets (eg. dwelling). They act to significantly lessen the impact of intense fire. The major mitigating factor that limits the effects of wildfire is the amount of fuel available to burn. By reducing the amount of fuel there will be a reduction in the intensity of the fire.

When considering bush fire fuel it is important to understand that it occurs in our native bushland in three vertical layers – see Table 1.

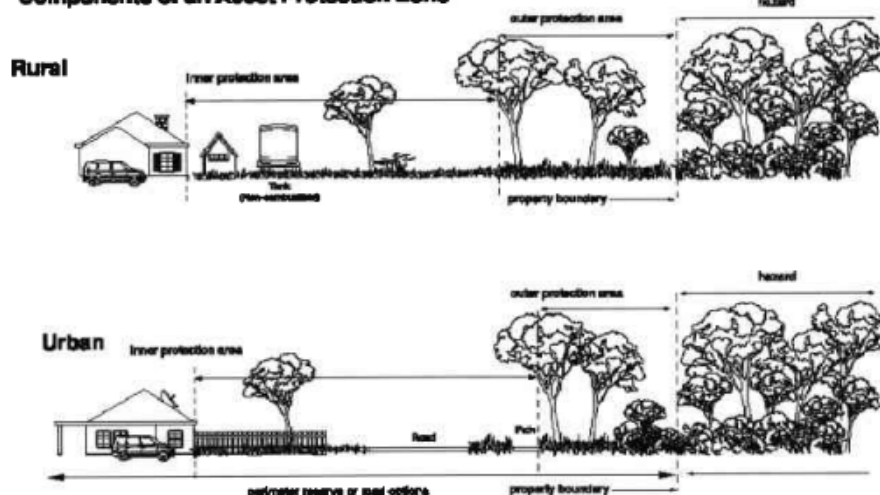
Table 1 – Fuel Layers

Fuel Layer Name	Location of Layer in vertical Column	Type of Fuel
Ground Fuels	Below ground level	Peatmoss (always below the surface)
Surface Fuels	0-200 mm	Litter layer (leaves & twigs)
Aerial Fuels	200 – 3000 mm	Shrubs and grasses
Canopy Fuels	> 3000 mm	Tree canopy

The asset protection zone can be further classified into two sub-zones with each having a specific role. These sub-zone areas are called the inner protection area (IPA) and the outer protection area (OPA) – see figure below.

The IPA is managed as a fuel free zone while the OPA is managed as a fuel reduced zone. This means that the fuel free zone has little fuel available to be consumed in the event of a fire whilst the fuel reduced zones has less than normal fuel levels that could be consumed in the event of a fire.

Components of an Asset Protection Zone



Bushfire Protection Assessment – Anzac Parade, Little Bay (Ref: 8095)

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4

Inner Protection Area (IPA)

This area is *almost free* of all fuels and usually takes the form of grassy areas, car parks, roads, concrete areas, tracks or trails. It does not imply or require the wholesale removal of every tree and or shrub.

This zone is intended to stop the transmission of flame and reduce the transmission of radiant heat by the elimination of available fuel. This area also allows airborne embers to fall safely without igniting further outbreaks.

This zone also provides a safe fire fighting position and is operationally important for implementation of clear fire control lines.

Grasses may occur within an Inner APZ if they are generally no higher than 50-75mm. Above this height, fuel weights tend to increase exponentially and consequentially cause greater flame heights and therefore fire intensity

Shrubs may occur within an Inner Protection Area in the form of clumping amidst open grassy areas. The design of the clumping will be dependent on species selection and spatial density. For example the larger the shrubs the less clumping may occur in a given area.

A tree may occur within an Inner Protection Area if the canopy does not form a link with shrubs and other canopy. The reason is to lessen any chance for 'vegetation linking' and the capability for fire to extend into the canopy. As a general rule trees are allowed within an Inner Protection Area but only where those trees are at least 5 metres away from a dwelling.

A recommended performance standard for the fuel load of an inner protection area is between 0 – 4 t/ha. Shrubs may occur within an inner protection area commensurate with a spatial distribution of 15-20%. For example an area of 100m² (10mx10m) can have up to 20% of this area composed of shrubs.

If a shrub layer is present the following table shows the additional fuel weights that should be added to the calculated surface fuels.

Shrub cover	Fuel Weight
10-30 %	2.5 tonnes / ha
35-50 %	5.0 tonnes / ha
55-75%	7.5 tonnes / ha

Presence of Trees within an Inner Protection Area

A tree may occur within an Inner Protection Area if the canopy does not form a link with shrubs. The reason is to lessen any chance for 'vegetation linking' and the capability for fire to extend into the canopy.

It is a basic premise in fire behaviour understanding that fire cannot occur in the canopy unless surface fuels such as grasses or shrubs are burning. This merging creates opportunity for fire to link with the canopy and therefore increase fire intensity by some significant amount.

Trees that have a canopy beginning near the ground (such as Forest Oaks *Allocasuarina*) form a continuous link with the tree canopy and shrubs. A forest canopy cannot therefore burn without fuel to feed that fire. In a 'tall open forest' where the trees are generally above 20 metres in height the canopy is separated from the land surface by some distance. In an 'open woodland' the low canopy height (usually < 5 metres) merges with the shrubland layer.

Knowing the relationship between the shrub layer and the tree canopy allows fire managers to design safer areas in the asset protection zones. It is for this reason that vegetation such as Forest Oaks are usually excluded from an Inner Protection Area.

Similarly in 'open forests' the height of the forest is sufficiently removed from the shrub layer. As a general rule trees are allowed within an Inner Protection Area where the density of those trees is commensurate with Table 2 below and located on slopes up to 20% with a Westerly aspect.

In respect of trees that can be located in an Inner Protection Area Table 2 provides guidelines.

Table 2 – Tree Density in Inner Protection Area

Distance from dwelling wall	Trees permitted on the exposed side of a dwelling	Trees permitted on the non exposed side of a dwelling
within 5 metres	No trees	No trees
between 5-10 metres	One tree per 100 m ²	2 trees per 100 m ²
Between 10-20 metres	<10 tree per 400 m ²	<10 trees per 400 m ²

Outer Protection Area (OPA)

This zone is designed to stop the development of 'intense' fires and the transmission of 'severe' radiated heat.

The OPA assumes all trees will remain but with either a modified shrub / grass layer or regular removal of the litter layer. In some sparse vegetation communities the shrub layer may not require modification.

The fire fighting advantage will manifest in reduced fire intensity. It achieves this by denying fire a significant proportion of the fuel to feed upon. Fuels containing small (or fine) leaves such as *Forest Oaks* (or similar) are targeted for removal due to the capacity to burn quickly and therefore feed fire up into adjacent trees.

In most cases the removal of 85% of the litter layer will achieve a satisfactory OPA. A recommended performance standard for the fuel load of an Outer Protection Area is between 4-6 t/ha.

Managing the APZ

Fuel management within the asset protection zone/s should be maintained by regular maintenance such as

- Mowing grasses regularly - Grass needs to be kept short and, where possible, green.
- Raking or manual removal of fine fuels - Ground fuels such as fallen leaves, twigs (less than 6 mm in diameter) and bark should be removed on a regular basis. This is fuel that burns quickly and increases the intensity of a fire. Fine fuels can be removed by hand or with tools such as rakes, hoes and shovels.
- Removal or pruning of trees, shrubs and understorey - The control of existing vegetation involves both selective fuel reduction (removal, thinning and pruning) and the retention of vegetation. Prune or remove trees so that you do not have a continuous tree canopy leading from the hazard to the asset. Separate tree crowns by two to five metres. A canopy should not overhang within two to five metres of a dwelling. Native trees and shrubs should be retained as clumps or islands and should maintain a covering of no more than 20% of the area.

- Tree or tall shrubs may require pruning upon dwelling completion in line with PBP 2006. Notwithstanding this the presence of shrubs and trees close to a dwelling in a bushfire prone landscape requires specific attention to day to day management and owners and or occupier should be made aware that whilst landscaping can contribute to a way of life and environmental amenity the accumulated.

In addition the following general APZ planning advice should be followed.

- Ensure that vegetation does not provide a continuous path to the house.
- Plant or clear vegetation into clumps rather than continuous rows.
- Prune low branches two metres from the ground to prevent a ground fire from spreading into trees.
- Locate vegetation far enough away from the asset so that plants will not ignite the asset by direct flame contact or radiant heat emission.
- Ensure that shrubs and other plants do not directly abut the dwelling. Where this does occur, gardens should contain low-flammability plants and non flammable ground cover such as pebbles and crush tile; and
- The following RFS illustrative diagram depicts one version of an ideal situation. Specific advice is to be sought from qualified experts to ensure that the implemented asset protection zones meet the performance criteria of asset protection zones.



Figures courtesy of NSW RFS 2006.

Appendix E: Definitions

Asset Protection Zone: (APZ) is an area of land that is not built upon. The APZ is measured from the edge of the identified remnant bushland and may include streets and open spaces. There are limitations on the uses and treatment of APZ's.

Building depth: The cross sectional depth of a building or structure, measured at its deepest point.

Courtyard House: A house designed in such a way that all the principal living areas have an aspect and direct access to a reasonably sized courtyard which also forms the principal focus of the house. The courtyard may be located in the front, side or rear of the house and its essential character is as an outdoor room.

Detached Dwelling: A building that contains one, but not more than one residential dwelling, that is not attached to other houses.

Deep Soil Area: include areas used for the growing of plants (including grasses, shrubs and trees) and areas occupied by loose gravels upon soil at the ground level of the site. However, the following are not included for the purpose of calculating deep soil permeable surfaces:

- a) swimming and spa pools
- b) paved areas including step ping stone pavers
- c) artificial turf
- d) planter boxes, or planted areas above basements, podiums, roofs, or slabs.

Dwelling: A building containing a suite of rooms occupied, used or so constructed or adapted as to be capable of being occupied or used as a separate domicile.

Enclosed parking space: An area for the parking of vehicles which is roofed and defined by solid walls on at least three of its four sides

Fill: The deposition of soil, rock or other material obtained from a site outside the property boundaries of an allotment of land on which it is deposited. Areas of fill cannot be used to artificially increase the RGL and/or permissible building heights.

Floor space ratio: As defined in Randwick Local Environmental Plan 2012

Front garden area: A privately owned landscaped area located between the building and the street boundary of a property

Greywater recycling: The collection, treatment and reuse of water collected from shower, laundry and basins.

Gross floor area: As defined in Randwick Local Environmental Plan 2012

Habitable Room: Rooms used for normal domestic activities, including bedrooms, living rooms, lounge rooms, music rooms, television rooms, kitchens, dining rooms, sewing rooms, studies, playrooms, family rooms and sun rooms

Landscape Area: means any part of a site area that is used, or capable of being used, for outdoor recreation or garden areas and includes landscaped podium areas and water tanks located at ground level. It does not include areas used for parking, driveways, balconies or areas used for garbage or recycling material storage or sorting

Living area: A room used for normal domestic activities excluding bedrooms, studies and non habitable rooms

Maisonette housing: Housing types in a one-up, one-down configuration with shared basement parking. A shared entry or individual entries to each dwelling must be provided from a public street frontage

Mandatory Garden Zone: Areas required to be made as gardens with 80% deep soil area to contribute to streetscapes and form consolidated infiltration areas

Multi unit residential apartment: A single structure that comprises or includes:

- 3 or more storeys (not including levels below ground level provided for car parking or storage, or both, that protrude less than 1.2 metres above ground level), and
- 4 or more self-contained dwellings (whether or not the building includes uses for other purposes, such as shops),

but does not include a Class 1a building or a Class 1b building under the Building Code of Australia.

Non habitable room: Rooms that are occupied infrequently for short periods and include bathrooms, laundries, toilets, pantries, walk-in-robos, corridors, hallways, lobbies, darkrooms, clothes drying rooms and the like.

Pavilion house: A house designed in such a way that the footprint is formed of thinly proportioned elements that provide all principal living areas and bedrooms with an aspect and direct access to reasonably sized external spaces which form a primary focus of the rooms of the house. A Pavilion House may be formed from one or a number of pavilion elements

Private open space: An area of land, balcony, terrace and the like, suitable for the private outdoor living activities of the occupants of a dwelling.

Public domain: Areas in public ownership and/or freely accessible by the public including streets, open spaces, pedestrian pathways, cycleways and the like.

Public domain interface: Privately owned open spaces that have a strong impact and presence from the public domain such as front garden areas, areas between buildings and their associated street boundary, porches, terraces and entry thresholds

RGL: Remediated Ground Level. The ground level that exists after completion of remediation, earthwork and recontouring of the site as determined by the development consent

Roof Height: The vertical distance from the highest point on a roof to the RGL (Remediated Ground Level) of that site

Row Housing: Housing types with shared side boundary walls and private rear courtyards and/or gardens. Each dwelling must have an independent address from a public street frontage.

Secondary street frontage: The boundary of an allotment which is adjacent and parallel to a minor secondary street or lane. On corner lots with two street frontages this is generally the street frontage with the longer dimension.

Setback: The distance between the allotment boundary of a site and the external wall of a building erected or proposed to be erected.

Site area: The area contained within the title boundaries of an allotment or the area of land to which an application for consent relates.

Square courtyard housing: Single dwellings with shared side and rear boundary walls and a series of internal and external courtyard to maximise amenity

Storey: The space in a building between one floor level and the floor level immediately above, or where there is no floor above - between one floor level and the ceiling above

Storey above ground level: Any level of a building which protrudes more than 1.2m above RGL is considered to be a storey above ground.

Storey below ground level: Any level of a building which protrudes less than 1.2 above RGL is considered a storey below ground.

Villa housing: Housing where address and entries to dwellings are provided from a private driveway. This form of housing is prohibited in this plan. All dwellings must have address and access from a public street

View Sharing: A strategy ensuring the protection of significant outlooks and vistas from all parts of the public domain and the equitable and reasonable distribution of outlooks and vistas from areas within the private domain

Wall Height: The vertical distance from the highest point on an external wall to the RGL (Remediated Ground Level) of that site. Each external wall height measurement must include gable ends and attic walls with an area of 6m² or more and dormer windows that protrude horizontally from the roof more than 2.5m.

Zero lot: A condition where built form is permitted to abut the allotment boundary. Where zero lot development is permitted on both sides of an allotment boundary, the separating wall and footing zone should be centred on the shared allotment boundary. Where zero lot development is permitted on one side of an allotment boundary only, or where it abuts a public street reserve any wall and its associated footings should be displaced so as to sit wholly within the residential allotment

