

Prepared for
Defence Housing Australia
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Urban Design and Landscape Report

Fort Wallace,
Stockton

ARTIST'S IMPRESSION OF THE PROPOSED DEVELOPMENT

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SITE AND IMMEDIATE CONTEXT



Executive summary

The Fort Wallace Urban Design Report is to accompany the Fort Wallace Planning Proposal to Newcastle City Council.

This report has been prepared by Architectus for Defence Housing Australia, the owner of the Fort Wallace site at Stockton. The purpose of this report is to test the preferred urban design concepts to accompany the planning proposal to demonstrate typical street layouts, dwelling mix and development impact on the highly sensitive coastal site.

The objective of this study is to highlight key relevant issues to be addressed as part of the future master plan for the site. Key issues concerning the sites are:

- coastal dune location and coastal erosion
- ecology
- indigenous heritage
- heritage
- access

The Fort Wallace site is one of two sites on the Stockton Peninsula owned by Defence Housing Australia seeking amendments to their respective Local Environmental Plans (LEP) through a Planning Proposal. The other site being the Rifle Range site located 2 km north of Fort Wallace. The Fort Wallace and Rifle Range sites are located in separate local government areas, being Newcastle City and Port Stephens respectively. Accordingly, a separate Planning Proposal and accompanying master plan and Urban Design Report will be submitted to each Council concurrently in order to amend the different LEPs.

The sites

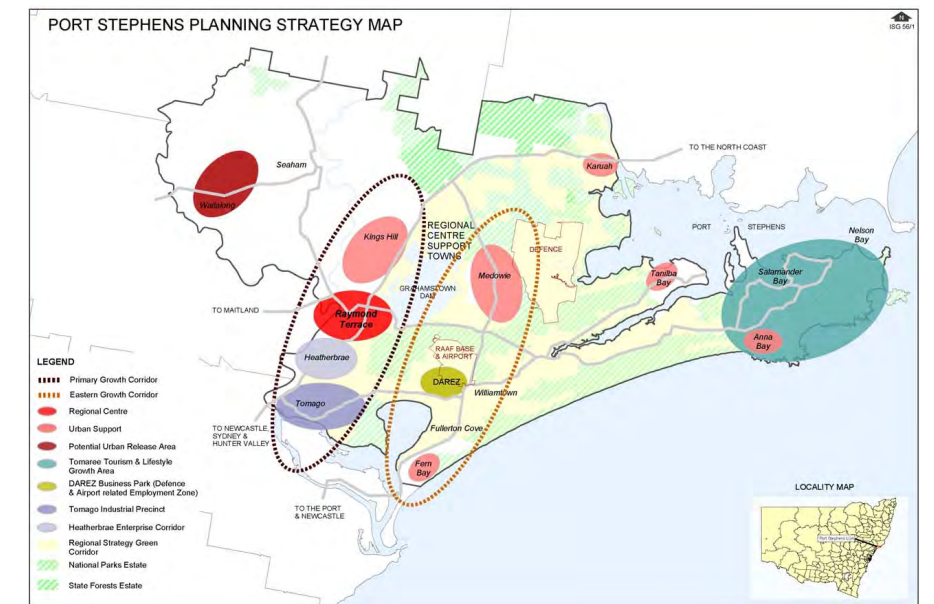
The Fort Wallace and Fern Bay Rifle Range sites are located on the Stockton peninsula approximately 5 km and 7km north of Newcastle CBD respectively. Although, relatively close to Newcastle, they are separated by the Hunter River with road access to Newcastle via the Stockton Bridge and ferry access between Newcastle and Stockton at the southern tip of the peninsula. Both sites have great amenity being located between Stockton Beach and the Hunter River.

The vision

The vision is to create a new place for the public and future residents to enjoy without compromising the site's unique history and coastal landscape character. The following planning and design principles underpin any future development of the site:

1. Touch lightly on the land
2. Embrace the coastal ecology
3. Celebrate history and cultural heritage
4. Open the gates to the public
5. Utilise interesting architectural forms

An indicative master plan has been developed (and included within this report) that embodies these best practice planning and design principles.



PSPS 2011 - Port Stephens Planning Strategy Map. The site is part of the Eastern Growth Corridor.



Historic photograph showing gun emplacement on the site. The defence heritage on the site is significant and has been key in shaping the master plan.

Master Plan Vision -

“Stockton Rifle Range and Fort Wallace will be unique coastal communities with strong links to Newcastle CBD and a growing Hunter region.

The communities will be a place where the natural coastal landscape prevails over the built environment and a rich layer of cultural heritage is celebrated and made accessible to the public.

New buildings will be contemporary in design and character, with references to traditional coastal forms and materiality. Development will ‘touch lightly’ on the ground and minimise impacts on the site.”



Character images

Indicative Master Plan



- LEGEND**
- 01/ Stockton Centre
 - 02/ Cluster Homes
 - 03/ Single Eco Home
 - 04/ Townhouses
 - 05/ Dune Apartments
 - 06/ Courtyard Homes
 - 07/ Firetrail walking path
 - 08/ Community park
 - 09/ Adaptive reuse community facility
 - 10/ Heritage precinct
 - 11/ Stairway
 - 12/ Dune boardwalk
 - 13/ Landscaped embankment
 - 14/ Shared path to Stockton



ARTIST'S IMPRESSION OF THE PROPOSED DEVELOPMENT



Proposed LEP Mapping

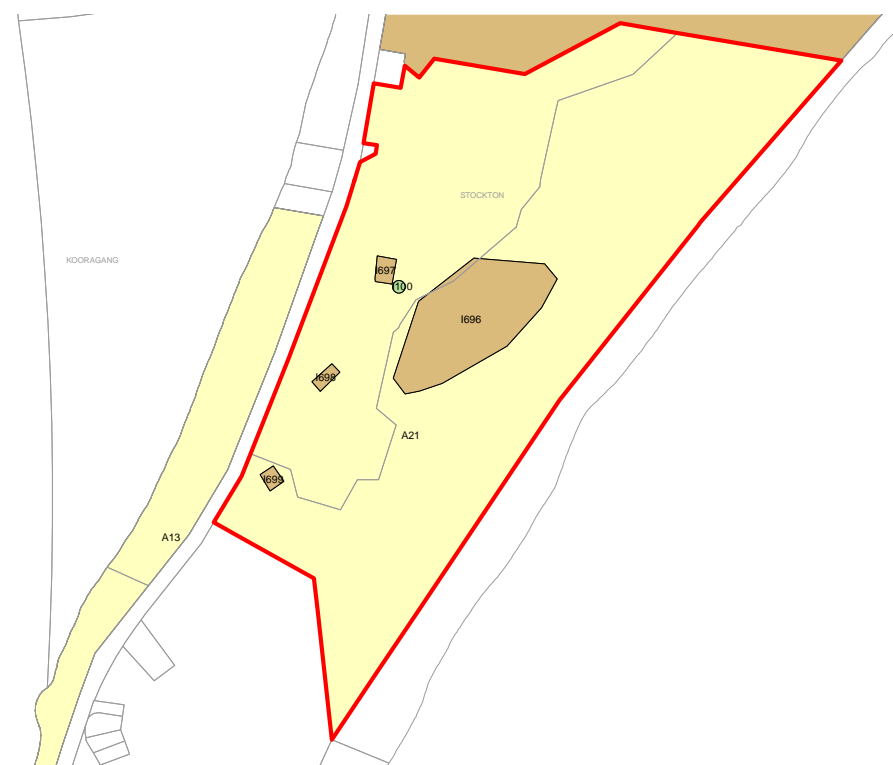
The proposed LEP controls are intended to strike the right balance between development and conservation of the site's significant features. Sensitive ecological communities, heritage items and vulnerable coastal lands are proposed to be protected and enhanced, whilst the flatter, mostly featureless parts of the site are to be made available for housing and community amenities. Through new development, the historic site can be opened up to the public, new open space can be provided and degraded relics and vegetation communities can be restored.



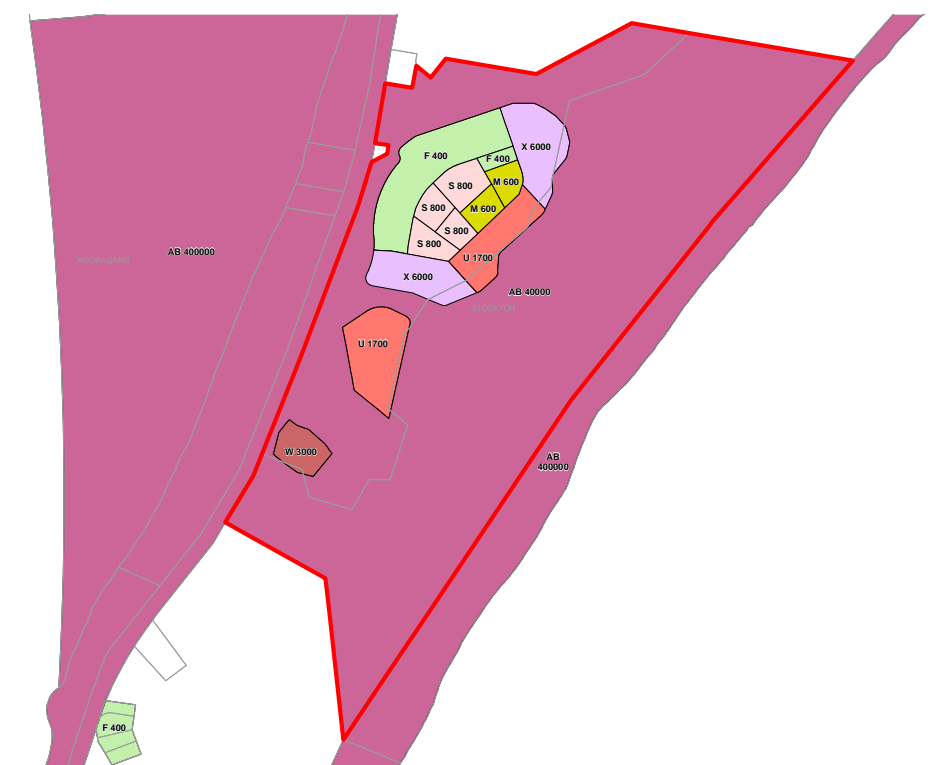
MAP 1 - Proposed Land Zoning Map



MAP 2 - Proposed Height of Buildings Map



MAP 3 - Proposed Heritage Map



MAP 4 - Proposed Lot Size Map

Introduction

THE SITE IS PART OF THE STOCKTON PENINSULA,
WITH THE TOWN CENTRE OF STOCKTON SITING
ON THE HEADLAND LOCATED APPROXIMATELY
3KM TO THE SOUTH.



1.1 The site

The Fort Wallace site is approximately 32 hectares in area and located on the Stockton peninsula north of the existing coastal village of Stockton on the northern side of the Hunter River and is 5km north of Newcastle CBD.

The Fort Wallace site is within Newcastle local government area.

The site is bound by the Stockton Centre (health care facility) to the north, a redundant water treatment works to the south, Fullerton Road and the Hunter River to the west and Stockton Beach to the east.

The site is currently accessed by a single entry off Fullerton Road. Although only 5 km from Newcastle CBD, being a peninsula the Fort Wallace site is a 20 minute drive from Newcastle CBD via the Stockton Bridge. The site is however, close to the ferry crossing between Stockton and Newcastle.

Key features of the site include:

- Significant European history with remnant defence buildings and gun emplacements with heritage significance.
- Potential for some cultural significance for local Aboriginal community.
- Undulating topography with a mix of areas of native regrowth vegetation, weed infested areas and highly modified landform due to previous defence uses.
- Elevated views west over the Hunter River and east to the coast
- Coastal dune system to its eastern boundary (shelters the remaining site areas but restricts views east to the ocean).
- Close proximity to the beach and river.

1.2 Purpose of this report

This report has been prepared by Architectus on behalf of Defence Housing Australia (DHA) for land at 338 Fullerton Street, Stockton.

The site was formerly owned and utilised by Defence as a base and training site. The site is no longer required for Defence purposes and was purchased by DHA. The purpose of this report is to prepare concept options for the site that test the site's development potential in line with its changing uses and vision for the future of the site. The site is currently vacant and secured.

The concept options developed are intended to inform a planning proposal to Newcastle Council by demonstrating the capacity of the site to accommodate development while responding to the site constraints.

1.3 Objectives of the master plan

Objectives of the Fort Wallace master plan are:

- facilitate housing for defence personnel;
- provide a scheme that is supported by stakeholders
- maintain existing views to and from heritage items
- establish public access to heritage items
- create a heritage park
- integration and conservation of heritage items
- acknowledge coastal processes and develop within the year 2010 proposed hazard line;
- protect and improve the ecological condition of the site;

- create a master plan that provides public benefit eg. public parks, beach access, possible community uses and adaptivel reuse of the heritage items;
- provide a mix of dwelling types that will meet a variety of housing needs;
- locate density on already scarred landscape (minimise building in bush);
- provide housing types that sit lightly within the landscape;
- connect with and extend the great coastal walks of Newcaslte eg. Merewether Baths/Anzac Memorial Walk/ Fort Scratchley;
- maximise potential views from the site;
- manage visual impact to the site; and
- manage bushfire and APZs.

1.4 The team

This report was prepared in consultation with a team of technical specialist consultants in order to understand the site opportunities and constraints in detail.

The team included:

- Spackman Mossop Michaels, landscape architecture;
- Umwelt, ecological advice and indigenous heritage;
- Klienfelder, bushfire advice;
- Urbis, european heritage;
- BMT WBM, coast engineering advice;
- ADW Johnson, civil engineering;
- Better Transport Futures, traffic and transport; and
- Elton Consulting, community consultation.

Architectus worked collaboratively with specialists to ensure that the concept master plan was informed and



To Maitland

Thornton

To Raymond Terrace

RAAF
Williamstown

To
Port Stephens

Fern Bay

Kooragang

RIFLE RANGE

Stockton Centre

FORT WALLACE

University of Newcastle

Waratah

Stockton

Wickham

Broadmeadow

Newcastle CBD

Adamstown

Cardiff

Kotara

Merewether

To Sydney

To Charlestown

THE SITE IS IN CLOSE PROXIMITY TO THE
AMENITY AND SERVICES OF STOCKTON AND
THE NEWCASTLE CBD. THE SITE IS ALSO WELL
LOCATED TO THE WILLIAMTOWN RAAF BASE.

2.1 Local context

The site includes two lots legally known as Lot 100 and 101, DP1152115, covering a land area of approximately 32 hectares. Fort Wallace is bound by the Stockton Centre to the north, a redundant water treatment works to the south, Fullerton Road to the west and Stockton Beach to the east. The site is approximately 3km north of the established area of Stockton and approximately 5km north of Newcastle.

The site is part of the Stockton Peninsula, with the town centre of Stockton siting on the headland located approximately 3km to the south. Stockton town centre is a small community of low and medium density residential, with a mix of uses that serves the day to day needs of residents such as newsagencies, hairdressers and grocers, as well as services such as hardware and real estate agents. The community enjoys amenity from green spaces around the water and the beach, which stretch north to the subject site and on to Port Stephens. Access to the Newcastle City Centre is available via ferry from Stockton, a trip of approximately ten minutes.

The Stockton town centre is served by a single road known as Fullerton Street that runs to the north, defining the western edge of the subject site. The Peninsula is at its narrowest point slightly to the south of the subject site, at what is currently a redundant water treatment plant owned by Hunter Water. The land begins to widen at the southern boundary of the subject site, and then gradually expands to the north. The land is bound to the east by the ocean, and to the west by the Hunter River North Channel, to which Fullerton Street runs parallel. The strip of land between Fullerton Street and the Hunter River North Channel, approximately 35m wide, is a grassed area with a shared pathway that runs to the ferry in the south and approximately to the Stockton

Centre in the north.

Fullerton Street joins Nelson Bay Road to the north of the subject site, a major road that provides access to Newcastle through Kooragang and the RAAF Base Williamtown to the north.

The site is currently part of a special uses area located between the two residential communities of Stockton and Fern Bay. The special uses include a redundant water treatment plant adjoining the site to the south, a centre that accommodates those with severe disabilities known as the Stockton Centre adjoining the site to the north, a cemetery to the north of the Stockton Centre, and a former rifle range. Some small pockets of private residential uses are interspersed.

The vision for some of these special use sites is changing. The Stockton Centre in particular has been nominated for closure due to facilities not meeting modern requirements. The vision for Fort Wallace responds appropriately to any changing use by ensuring that potential connections are accommodated. A buffer is also maintained in the indicative Master Plan for the Fort Wallace site.

The Rifle Range site, to the north of the cemetery adjoining the Fern Bay community, is currently vacant and disused. The site is owned by DHA and is subject to a planning process with Port Stephens Council.

The subject site may be accessed from Fullerton Street and from the beach, although access is currently restricted.

2.2 Site analysis

A comprehensive analysis of the site, its context, constraints and opportunities has been undertaken to inform development potential and a framework from which the master plan was developed. The following analysis underpins the structure of the master plan and identifies more broadly the developable and undevelopable areas on this highly ecologically sensitive site. The detailed site analysis looks at:

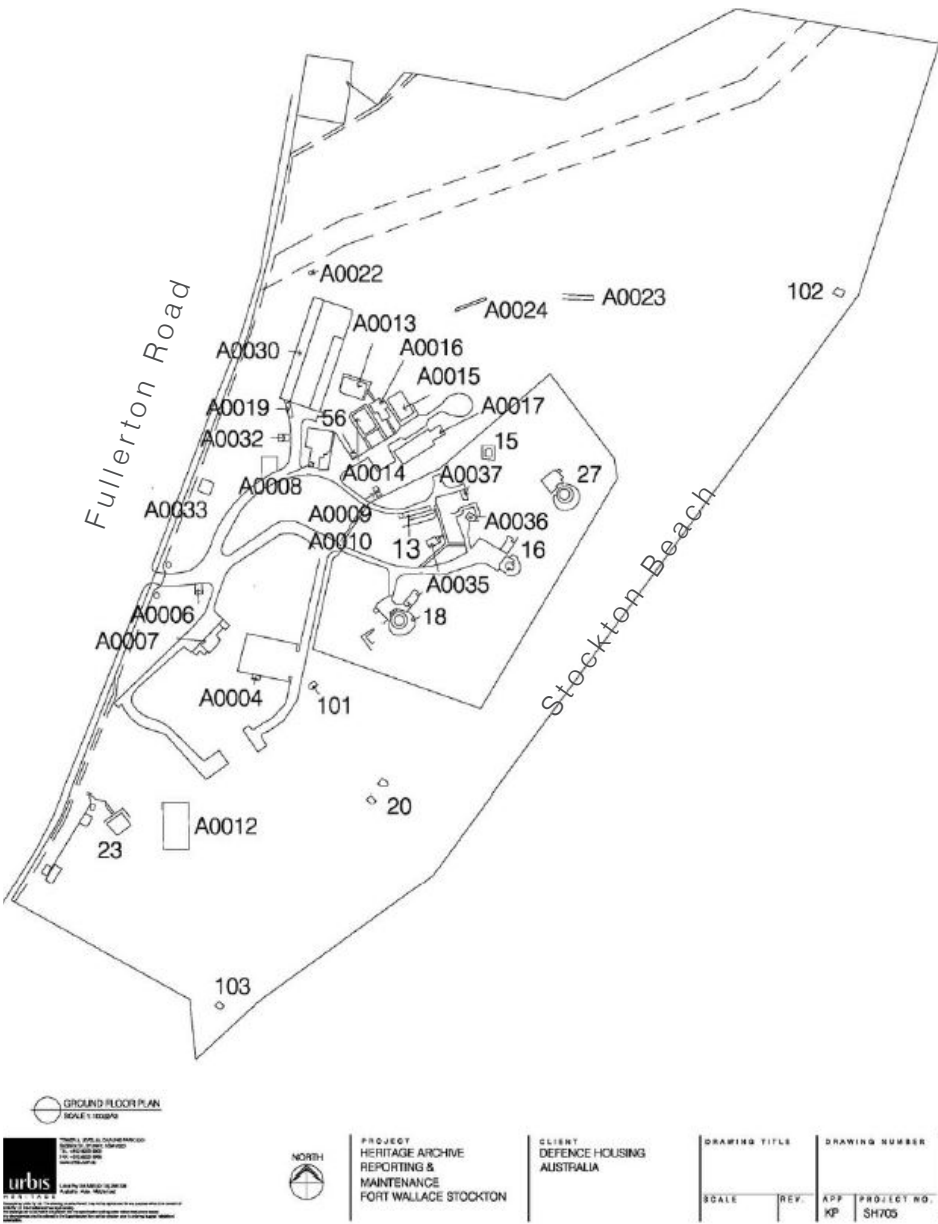
- Topography
- Ecology
- Landscape
- Coastal erosion
- Heritage
- Access and circulation
- Views
- Built form

The key site analysis findings are condensed into a combined constraints and opportunities diagram. Further detail regarding site analysis is provided in separate consultant reports undertaken specifically for this planning and urban design process.

2.3 Existing built form

There is existing built form on the site that is present from the historical use of the site by Defence. Items include searchlights; exercise equipment; stores and compounds; common room; accommodation; car pit; Hoban commemorative tree; gymnasium and drill hall; shed; fire pump house; engine room; tunnels; casualty station; radio room; plotting room; watch tower; gun emplacements and a security office.

The location of each item has been surveyed as part of the Urbis



Site photographs



1 Access road from Fullerton Street



2 View west over the Hunter River



3 View north along Stockton Beach/dunes



4 Remnant gun emplacements



5 Steps down embankment (looking north)



6 Vacant defence buildings



7 The gymnasium building



8 The old watch tower



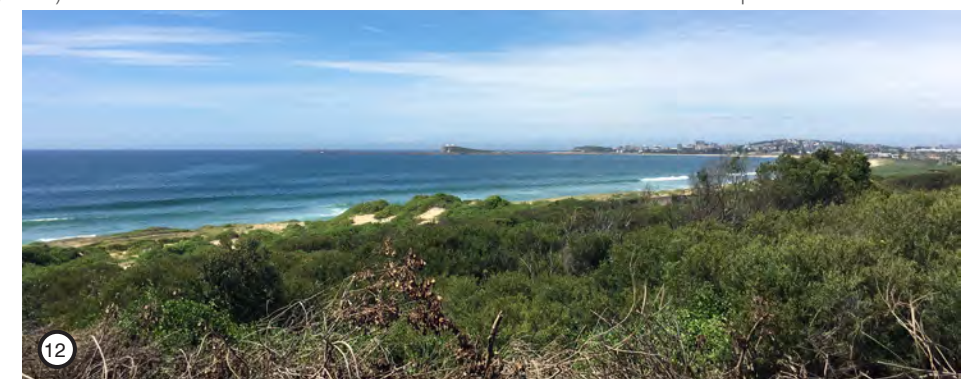
9 Open area to the northern end of the site (looking north)



10 Access road to southern part of the site



11 View south across open ground



12 View south towards Newcastle from the southern corner of the site

2.4 Stockton Peninsula History

Aboriginal Heritage

The Stockton Peninsula was originally the land of the Worimi Tribe, who knew this place as “Burrinbingon”. Evidence of Aboriginal occupation is available throughout the region, extending back several tens of thousands of years. A series of Aboriginal archaeological and cultural / historical sites are situated along the peninsula, and are now known as the “Fern Bay Complex”. These sites indicate traditional Aboriginal hunting, fishing, and cultural activities occurring throughout this area.

European Heritage

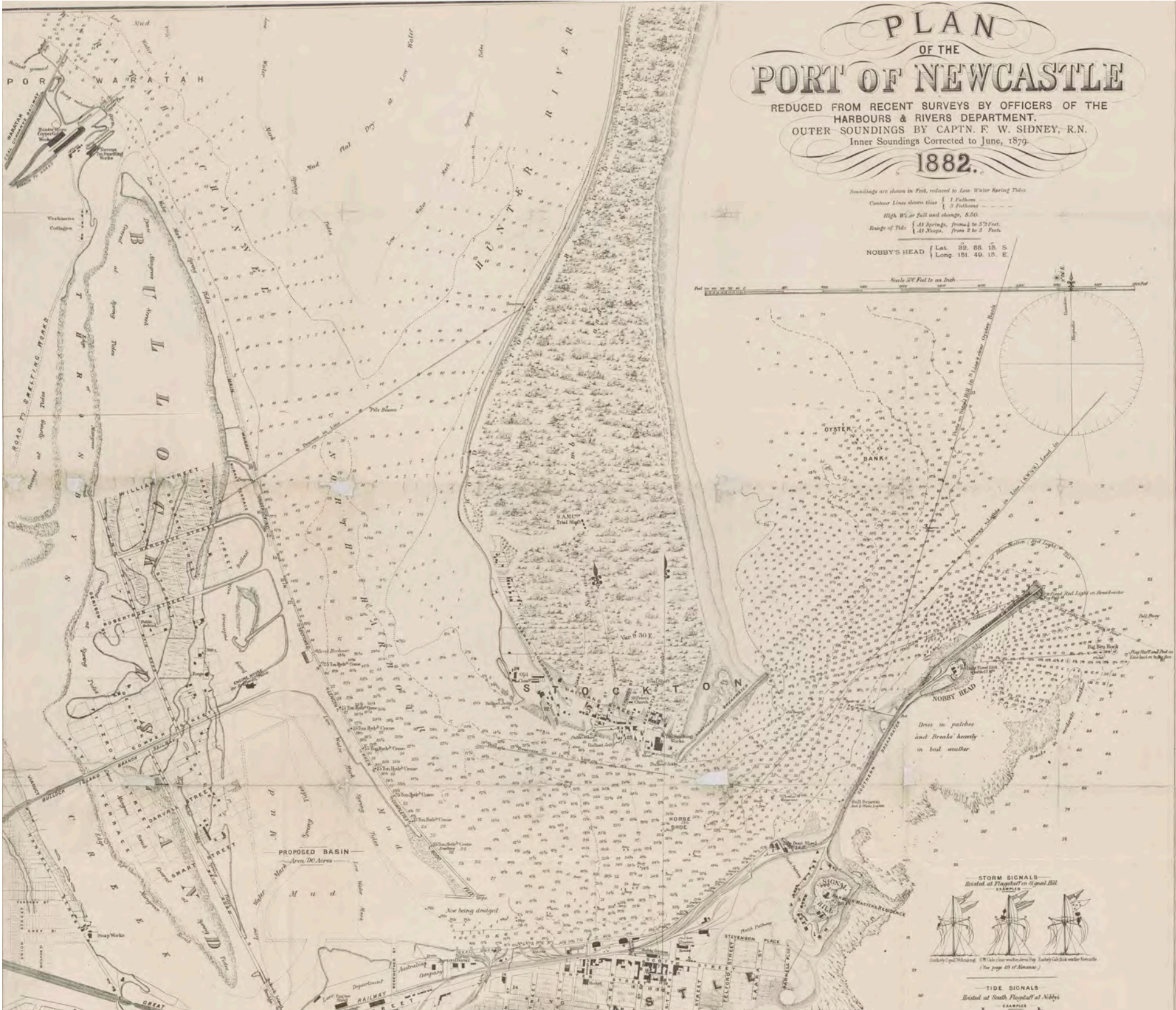
Lieutenant John Shortland stumbled upon Newcastle Harbour and the Hunter River while searching for escaped convicts in 1797. He named the Stockton Peninsula “Point Kent”.

From October 1800, Stockton became known as “Pirate Point”, when convicts escaping from Broken Bay in the Norfolk were wrecked on the southern point of the peninsula.

Newcastle was settled in June 1801, closed in February 1802 and later resettled in March 1804. From this time onwards, parts of the peninsula were granted to settlers, with the southernmost end of the peninsula generally becoming known as the “Private Township of Stockton”. Early industries in this area included saw milling, lime burning, salt works, an iron foundry, a tweed mill, a chemical plant, a tin smelter, coal mining, and ship building.

The Stockton residential suburb emerged from subdivisions made by the State Government in 1887. Vehicular and passenger ferries provided the only means of access across the harbour (aside from a long journey inland via Hexam) until the Stockton Bridge opened in 1971.

While the Stockton Peninsula may now be considered as the northern suburbs of Newcastle, it has its own distinctive seaside character.



Plan of the Port of Newcastle, National Library of Australia
<http://nla.gov.au/nla.obj-231510237/view>

2.5 Fort Wallace

Aboriginal Heritage

The Fort Wallace site was likely to have supported Aboriginal activities in the area, and while there is currently no evidence or record of indigenous heritage features on this site, the site may still have value for its proximity to important cultural sites nearby.

European Heritage

Constructed in 1912-13, Fort Wallace was the third of Newcastle's three forts to be built. This elevated site was chosen to defend an area of sea outside Fort Scratchley's coverage. The original 'Fort Stockton' name was changed to 'Fort Wallace' in November 1915 in memory of Colonel Robert Wallace, Chief of Ordnance and Commanding Officer, Royal Australian Garrison Artillery.

Fort Wallace had guns installed prior to WWI and upgrades made prior to WWII, but it was not called into action. The site had a skeleton staff until 1951, and was used for training purposes. The Army's 130 Signal Squadron provided communications and support to RAAF Williamtown, and was accommodated in barracks from 1967 until the site was closed in 1993.

Heritage Listings

Commonwealth Heritage Listing
(Place ID 105335, registered 22 June 2004).

Department of Defence Heritage Register.

Register of the National Estate (non-statutory archive)
(Place ID 18957, registered 30 May 1995).

As a Commonwealth listed site, Fort Wallace is not listed with State or Local authorities, or with the National Trust of Australia.

Opportunities for Future Uses

The reasonably well preserved Fort Wallace site is considered to have national heritage significance, as it displays evidence of three distinct and consecutive phases in coastal defence.

It is proposed that heritage items on site are incorporated into future plans for the site through heritage interpretation, adaptive reuse, ecotourism, education, recreation, or other sensitive uses.



Fort Wallace Gun Emplacement, Newcastle Cultural Collections
<http://collections.ncc.nsw.gov.au/keemu/pages/nrm/index.htm>



Fort Wallace Observation Tower, Newcastle Cultural Collections
<http://collections.ncc.nsw.gov.au/keemu/pages/nrm/index.htm>

Strategic planning framework and controls

3 Strategic planning context

3.1 Hunter Regional Plan

Architectus on behalf of Defence Housing Australia (DHA) prepared a submission on 23 March 2016 to the NSW Draft Hunter Regional Plan (DHRP) and Draft Plan for Growing Hunter City (DPGHC) 2015.

The DHRP sets out a 20-year plan prioritising the growing and diversifying of the Hunter economy as NSW's largest regional economy, and identifies subregional landscapes being the Western Hunter, Northern Tops, North East Coast and Hunter City (including Inner Newcastle) districts.

The DPGHC supplements the Regional Plan and follows the 20-year time frame, reinforcing the City as the gateway to the region by capitalising on assets for greater growth via its identified districts, Inner Newcastle, Inner West, Maitland-New England Highway Corridor, Northern Gateways and Northern Lake Macquarie.

The Fort Wallace site (Newcastle LGA, currently zoned SP2 - Defence) is shown as an 'Urban Area' in the DHRP, but as 'Non-Urban Area' in the DPGHC. It was submitted that the site's potential for renewal be recognised and shown as 'Urban Area' consistently in both documents.

The Stockton Rifle Range site (Port Stephens LGA, currently zoned E2 – Environmental Conservation) also has significant redevelopment potential. In both studies, the area is shown as 'Non-Urban Area' which may have the effect of precluding a future rezoning of the site. It was recommended that both plans show the site as 'Urban Area' or "Urban Area – For Investigation" to make way for the full assessment of the site's redevelopment potential.

Additionally, it was recommended that the Department of Planning and Environment consider the inclusion of both DHA sites within the Inner Newcastle District to recognise their strategic and visual relationship with the city and their potential to contribute to the goals for Hunter City.



Figure A - 'Figure 3 – Inner Newcastle District' from the Draft Plan for Growing Hunter City, with Architectus amendments showing the recommended classifications for the two DHA sites in Stockton. We recommend that the same land use classifications be shown on all plans in the Draft Regional Hunter Plan and Plan for Growing Hunter City.

3.2 Port Stephens Planning Strategy (PSPS) 2011

Areas identified as Fern Bay - Fullerton Cove, to the north and west of the Rifle Range, have been identified as future growth areas within the Strategy. This area, including the subject sites, comprise the Eastern Growth Corridor identified within strategic planning for Port Stephens. The area has been recommended to increase in density over the next 15-20 years since the Strategy's release, with potential for:

42 infill residential dwellings; and

1,396 dwellings within green field residential zoned land.

The Strategy also recommends the opportunity to maximise access to existing infrastructure through density increases.

As the suburb (of Stockton or Fern Bay) is among the LGA's small centres with no available commercial floorspace, the need for commercial rezoning has also been identified.

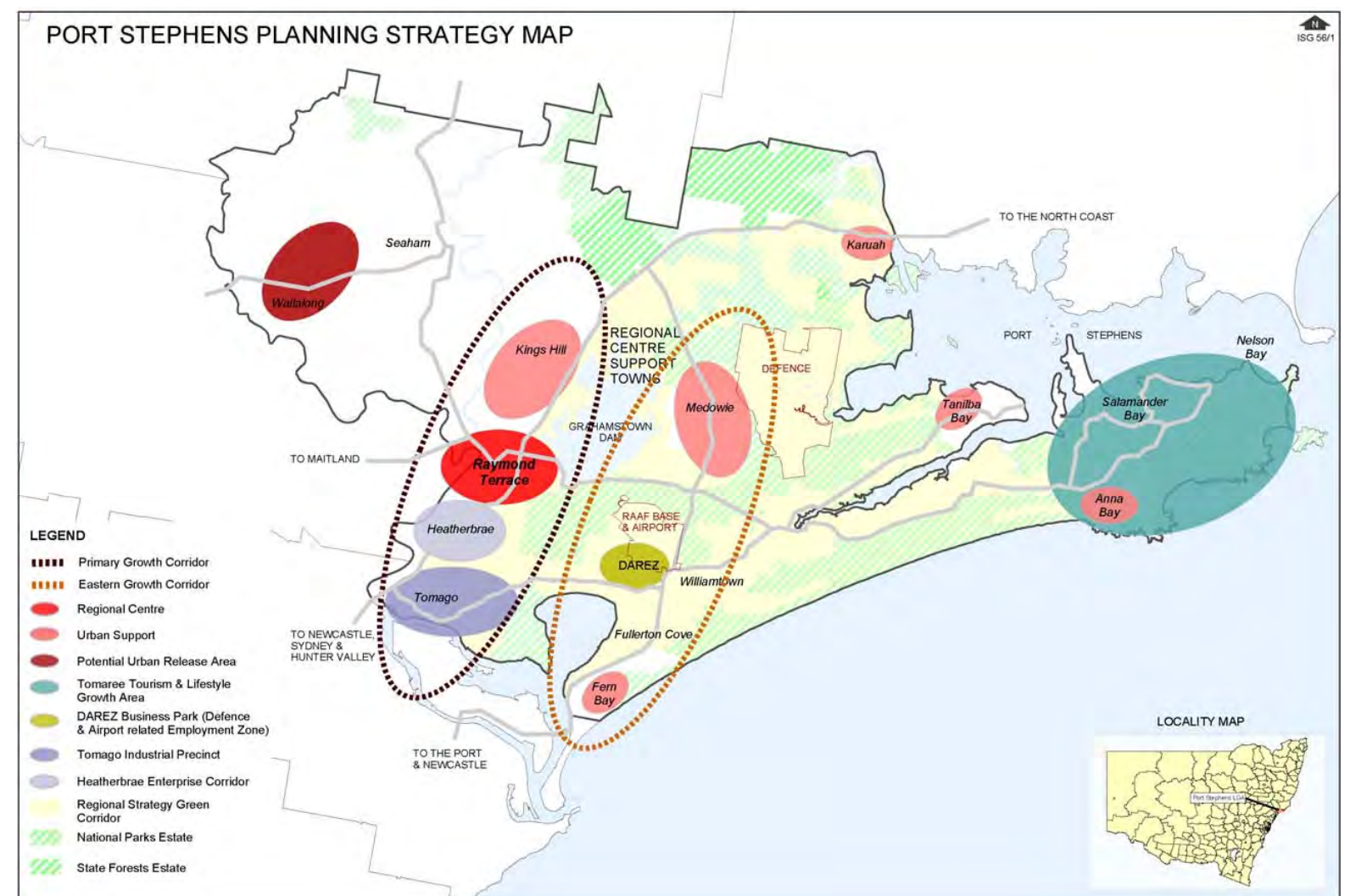
The Strategy predicts a need for an indicative 14,441 additional dwellings throughout the LGA, including infill and within rural areas.

3.3 Port Stephens Commercial and Industrial Lands Study

Fern Bay has been highlighted as one of the small centres within Port Stephens that will experience greater residential growth. It has been recommended within the Study for rezoning from 2A Residential to B1 Neighbourhood Centre. In consideration of the Newcastle Centre across the peninsula to the south, this is to accommodate the day-to-day needs



PSPS 2011 - Fern Bay - Fullerton Cove - Future Growth Area. The site is in close proximity to these future growth areas.



PSPS 2011 - Port Stephens Planning Strategy Map. The site is part of the Eastern Growth Corridor.

4 Local planning context

4.1 Planning controls

The subject site was zoned 5(a) Special Uses (Defence) under the Newcastle LEP 2003. The objective of the zone was to accommodate major transport networks and facilities; accommodate large scale facilities and services, together with ancillary activities; accommodate large scale community establishments, together with ancillary activities; and require development to be integrated and reasonably consistent in scale and character with surrounding natural, rural or urban environments.

The site zoning reflects the Defence ownership at the time of making the LEP (2012) and the requirements of the LEP to respond to Defence uses, including no applicable FSR or minimum lot size control.



Land Zoning Map, Newcastle LEP 2012

The land is currently zoned SP2 Infrastructure (Defence). The objectives of this zone are to provide for infrastructure and related uses and to prevent development that is not compatible with or that may detract from the provision of infrastructure.

The site is adjoined by land zoned SP2 Infrastructure (Sewage Systems) and Health Service Facility.

The dune and beach to the east of the site is zoned RE1 Public Recreation, while the lands to the west of the site are zoned E3 Environmental Conservation.

Nearby residential areas are zoned R2 Low Density Residential.

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Use
B5	Business Development
B7	Business Park
E1	National Parks and Nature Reserves
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
IN1	General Industrial
IN2	Light Industrial
IN4	Working Waterfront
R1	General Residential
R2	Low Density Residential
R3	Medium Density Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU3	Forestry
RU5	Village
SP1	Special Activities
SP2	Infrastructure
W1	Natural Waterways
W2	Recreational Waterways



Height of Buildings Map, Newcastle LEP 2012

The subject site has no maximum height of buildings control, in line with the adjoining sites. The height of buildings control in the Stockton town centre to the south are 8.5m.

I	8
J	9
M	12
O	15
Q	19



Acid Sulfate Soils Map, Newcastle LEP 2012

The land is subject to Acid Sulfate Soils Classes 4 and 5. Development consent for works more than 2m below the natural ground surface in Class 4 areas and works by which the water table is likely to be lowered must include an Acid Sulfate Soils Management Plan.

1	Class 1
2	Class 2
3	Class 3
4	Class 4
5	Class 5



Minimum Lot Size, Newcastle LEP 2012

The subject site is not subject to a minimum lot size control. Adjoining lands to the east and west are zoned for a minimum lot size of 40ha.

Residential areas in the Stockton local centre are subject to a minimum lot size of 400sqm. LEP provisions allow smaller lot sizes (to 200sqm per lot) where development conditions are satisfied for residential uses.

F	400
G	450
U	1000
W	4000
Z	20000 (2ha)
AB	400000 (40ha)



Heritage Map, Newcastle LEP 2012

The site adjoins a locally listed general heritage item, being the Stockton Centre to the north.

Land to the west of the site is listed as an archaeological item, identified as the Ballast Ground.

Conservation area - General
Item - General
Item - Archaeological
Item - Landscape

Site analysis

VIEW FROM THE SITE LOOKING SOUTH TOWARD NEWCASTLE



5.1 Purpose and scope

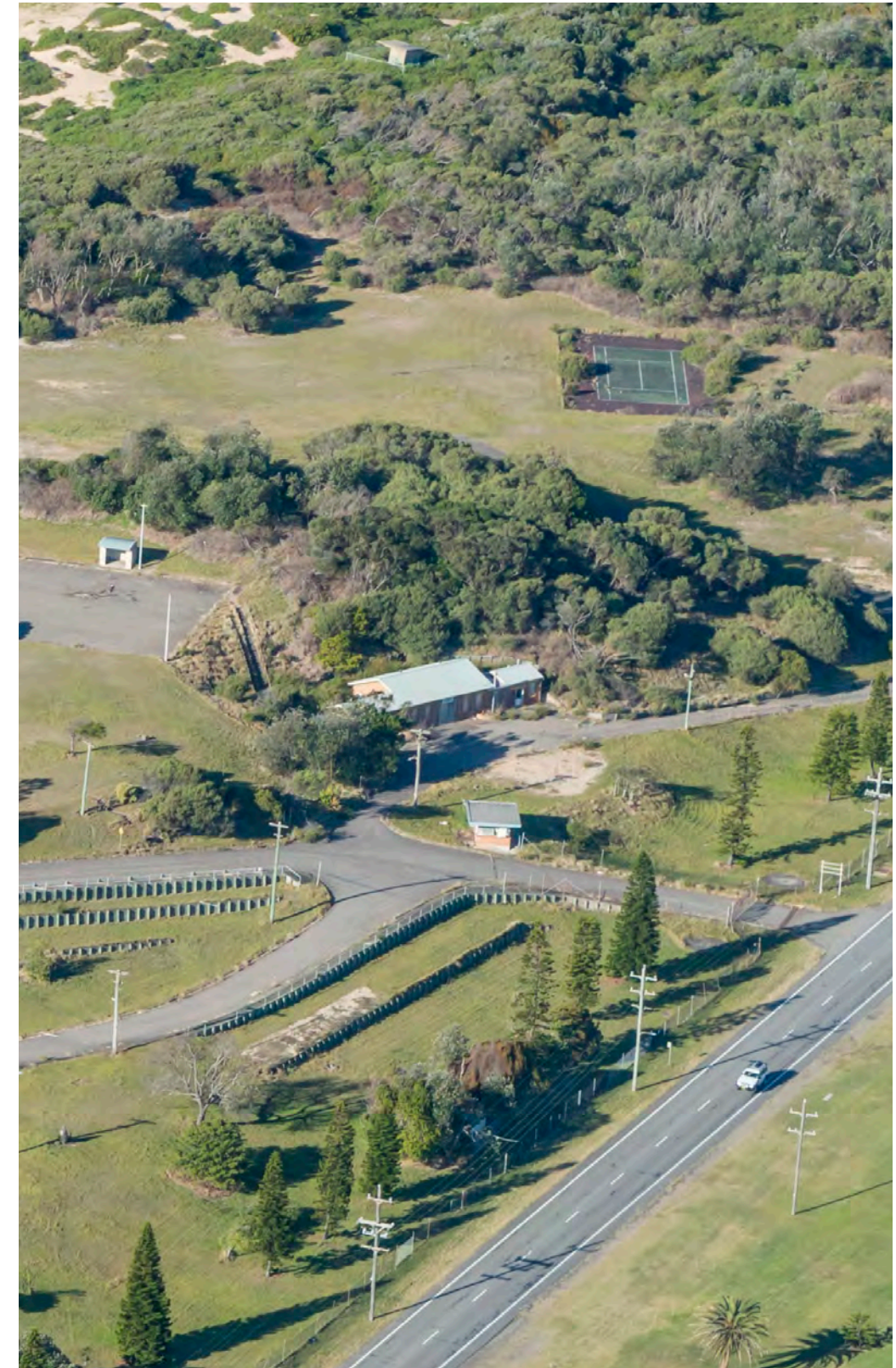
The project team has undertaken a thorough study of the physical site and its history in order to understand the site's unique and special characteristics. This examination has included site walks, document research and desktop review, site mapping, future projections relating to climate change and other studies by a range of specialist consultants.

Properly understanding the site is a crucial step in ensuring the creation of a sensitive, site-responsive and sustainable master plan. By clearly identifying the site's constraints and opportunities we are able to conserve areas of the site that are of special environmental and cultural value, and areas that could be suitable for new development, which could include public open space and amenities, streets, housing or other physical changes to the existing site.

The detailed site analysis includes:

- Topography
- Ecology
- Landscape
- Coastal erosion
- Heritage
- Access and circulation
- Views
- Built form

The detail of these analysis are presented in separate consultant reports. This section summarises technical inputs where relevant to the recommended master plan for the site.



Fullerton Street entry to the site

5.2 Topography



- ① Slope to Fullerton Street (approx 4m height) requires consideration for access grades however offers elevated views west from the site.
- ② Steep slope (approx 8-9m height) splits the site and limits accessibility but offers panoramic views and protection from prevailing winds.
- ③ Flat (relatively) open areas represent the most feasible locations for development.
- ④ Undulating ridge line along dunes offers view points over Stockton Beach and potential north-south pedestrian link.



5.3 Heritage



- ① Consider how the existing heritage items on the site can be linked together within the public domain.
- ② Opportunity to capture the major heritage assets within a new public open space.
- ③ Potential to retain the gymnasium building as a community facility within a public open space.
- ④ Consider the retention of all the remnant defence buildings/structures for future public access and interpretation.

Refer to the Urbis heritage report.



5.4 Ecology

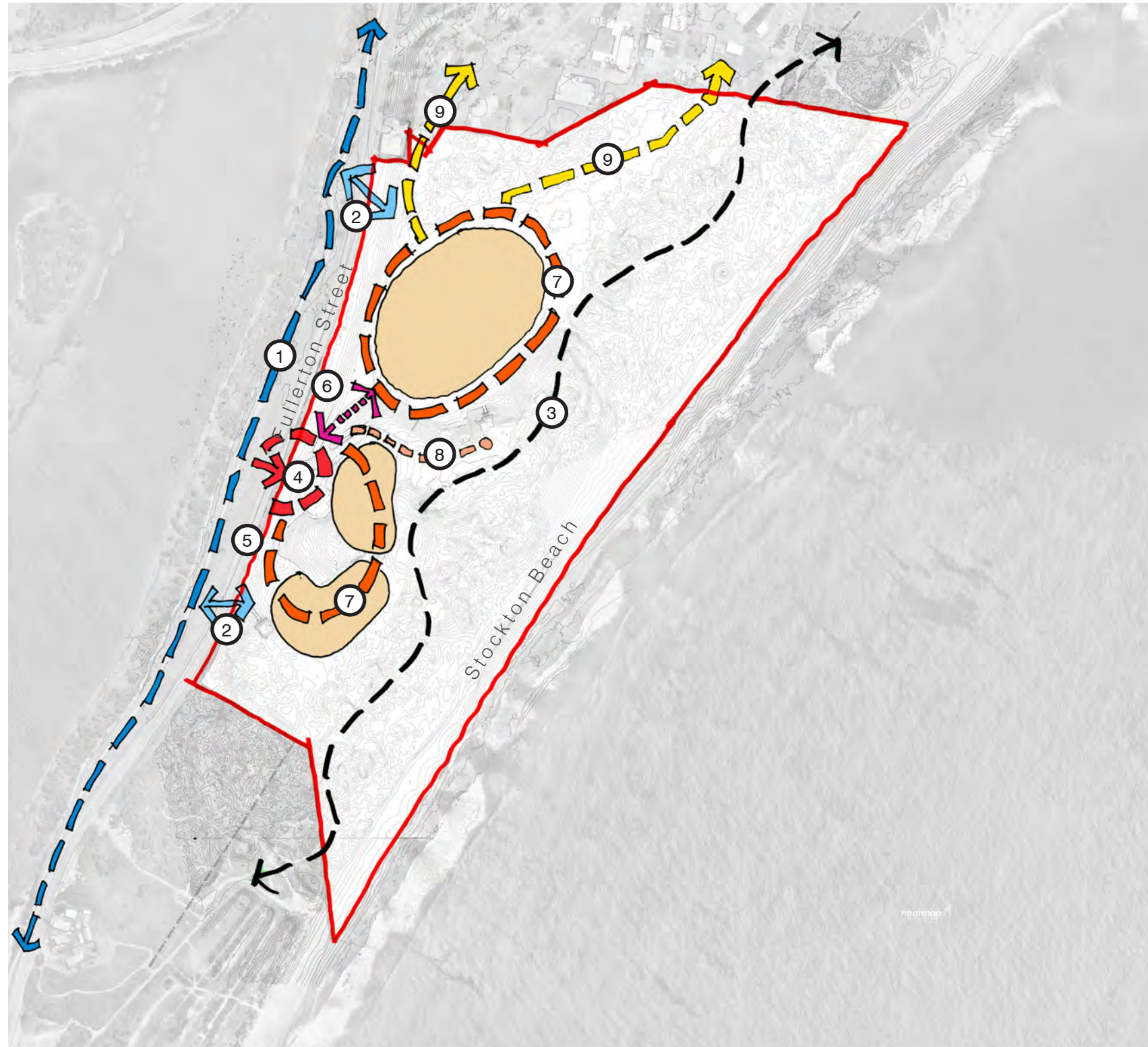


- ① Existing river estuary Mangrove ecology provides contrast to western dune ecology.
- ② Opportunity to retain and reinforce east-west ecological links.
- ③ Opportunity to reinforce north-south coastal dune ecology.

Refer to the Umwelt ecology report.



5.5 Access and circulation



- ① Existing shared path to Stockton.
- ② Potential connections to shared path network.
- ③ Potential north-south pedestrian dune connection
- ④ Existing vehicle access - opportunity to improve sense of arrival and address.
- ⑤ Potential secondary vehicle access.
- ⑥ Potential to regrade access road to achieve accessible grade.
- ⑦ Potential to re-organise the internal road network into 2 loops.
- ⑧ Vehicular access to heritage assets/park.
- ⑨ Potential future links north into Stockton Centre site.

Refer to the Better Transport Futures report.



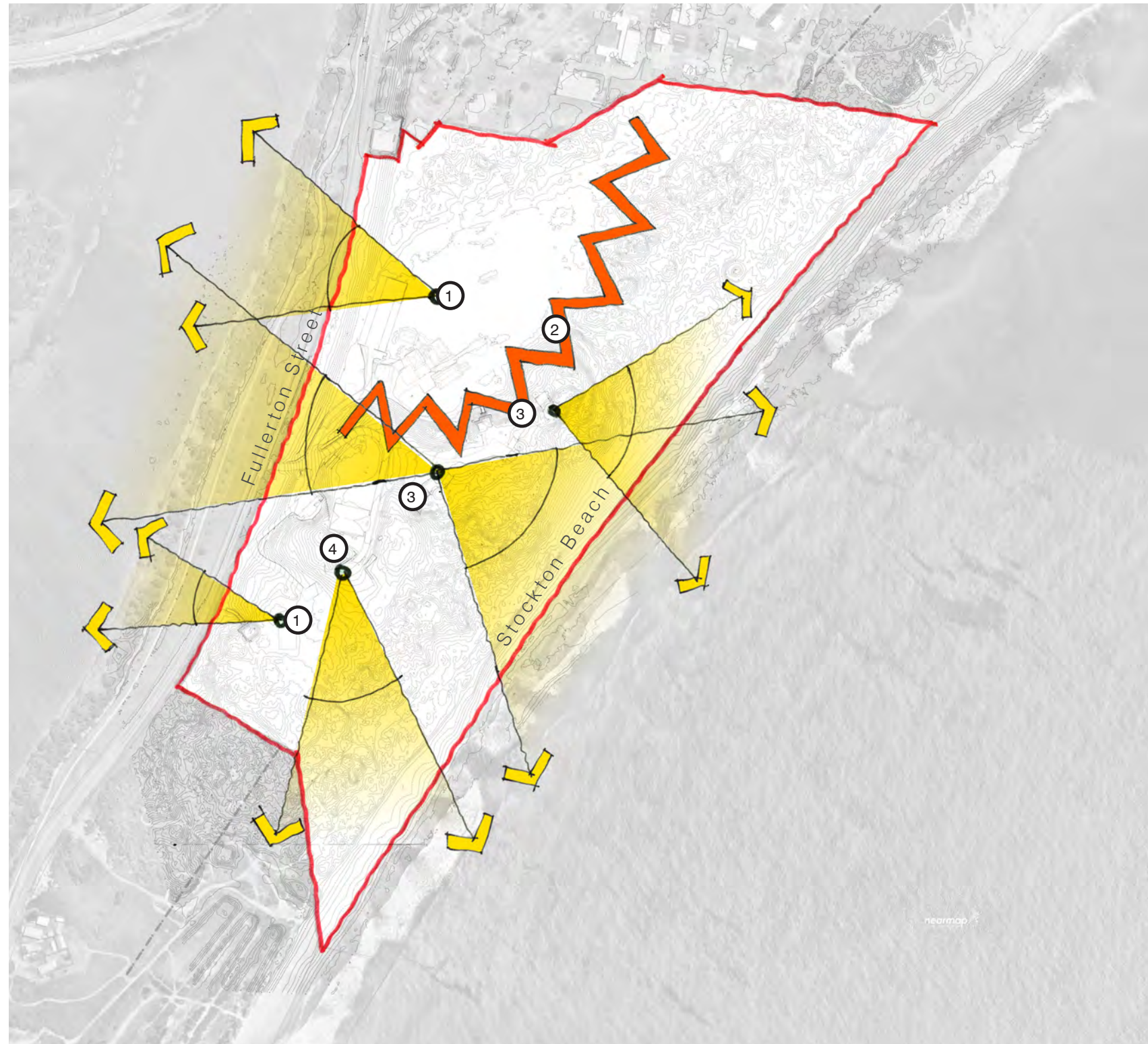
5.6 Landscape



- ① Landscape presentation/setback to Fullerton Road.
- ② Opportunity for central public park/space associated with adapted heritage structure as community facility.
- ③ Opportunity for heritage themed parkland with adapted structures and interpretation.
- ④ Potential north-south coastal dune link/bush walk/boardwalk
- ⑤ Managed bushland edge to reinforce coastal character.



5.7 Views



- ① Views west over Hunter River from elevated open ground
- ② Steep excavated slope behind existing dunes blocks views east to the ocean
- ③ Panoramic views from existing gun emplacements
- ④ Views south-east over Stockton Beach towards Nobbys Head and Newcastle CBD.



5.8 Coastal Erosion



- ① Develop westward of the 'Best Estimate' 2100 Erosion Hazard Line
- ② 'Best Estimate' 2100 Erosion Hazard Line (0.9m sea level rise)
- ③ 'Likely' 2100 Erosion Hazard Line (0.4m sea level rise)
- ④ 'Almost Certain' 2100 Erosion Hazard Line (No sea level rise)

Refer to the BMT WBM coastal engineering report.

5.9 Built form



- ① Minimise visual impact of buildings from Road.
- ② 2-3 development parcels defined by ecological and topographical constraints.
- ③ Opportunity for taller buildings adjacent to higher dune areas.
- ④ Minimise visual impact of built form from dune areas and heritage assets.



CHARACTER IMAGE SHOWING A SENSITIVE BUILT FORM RESPONSE TO A NATURAL COASTAL SETTING



5.10 Consolidated constraints and opportunities



- ① Existing vegetation communities retained and protected.
- ② Existing degraded dune area suitable for replanting and regeneration.
- ③ 'Best Estimate' 2100 Erosion Hazard Line.
- ④ Heritage items suitable for conservation, interpretation and in some cases adaptive reuse.
- ⑤ Steep slopes limit development potential, provide a sense of containment and reinforce the site's undulating coastal character.
- ⑥ Views from the site to surrounding water, coast and vegetation.
- ⑦ Potential development areas free from significant vegetation, heritage items, steep slopes and medium/high/extreme potential coastal erosion risks.
- ⑧ Opportunity for new public open space incorporating heritage items.
- ⑨ Potential public vehicle access and circulation utilising existing roads where possible.
- ⑩ Potential public pedestrian connections between public open space, heritage items, new development and the beach.
- ⑪ Opportunity to improve Fullerton Road frontage including new planting.

The proposal

ARTIST'S IMPRESSION OF THE PROPOSED DEVELOPMENT



6.1 The vision

Stockton Rifle Range and Fort Wallace will be unique coastal communities with strong links to Newcastle CBD and a growing Hunter region.

The communities will be a place where the natural coastal landscape prevails over the built environment and a rich layer of cultural heritage is celebrated and made accessible to the public.

New buildings will be contemporary in design and character, with references to traditional coastal forms and materiality. Development will 'touch lightly' on the ground and minimise impacts on the site.



6.2 Master plan principles



Touch lightly on the land

- Buildings elevated (no slab on ground).
- Streets to be to be as informal as possible (no kerb and gutter or avenue trees, informal parking).
- Work with the existing natural topography to minimise earthworks (cut and fill).
- Minimise areas of hard standing.



Create a diverse community

- A mix of building typologies that provide for defence, private and affordable housing needs.
- A range of open spaces that cater for a variety of resident requirements.
- New recreation opportunities that appeal to visitors from Stockton, Newcastle and wider Hunter region.



Embrace the coastal ecology

- Regenerate natural vegetation. Endemic sp. only.
- Buildings sit within the natural landscape and vegetation.
- Minimise private open space and boundary fences.
- Maximise views to the ocean, dunes, river and the bush.
- Manage beach access to avoid further dune erosion.



Open the gates to the public

- Provide public access via the local road, pedestrian and cycle networks.
- Explore opportunities for improved public transport links to Newcastle CBD.
- Establish new controlled pedestrian access to Stockton Beach and dune system.
- Connect to greater public domain and open space networks eg Anzac Memorial Walk



Celebrate history and cultural heritage

- Retain heritage structures as site features where ever possible.
- Interpret the site history through its landscape.
- Explore opportunities to connect with the Worimi reserve.



Utilise interesting architectural forms

- Staggered building heights.
- Natural materials and finishes.
- Articulated façades.
- Vaulted and skillion roofs.
- Varied street setbacks

Indicative Master Plan



LEGEND

- 01/ Stockton Centre
- 02/ Cluster Homes
- 03/ Single Eco Home
- 04/ Townhouses
- 05/ Dune Apartments
- 06/ Courtyard Homes
- 07/ Firetrail walking path
- 08/ Community park
- 09/ Adaptive reuse community facility
- 10/ Heritage precinct
- 11/ Stairway
- 12/ Dune boardwalk
- 13/ Landscaped embankment
- 14/ Shared path to Stockton



6.3 Indicative master plan

The indicative master plan for Fort Wallace demonstrates a best practice outcome within the proposed LEP controls. The master plan responds to the site's natural and historic constraints, proposes a diverse mix of housing to accommodate a real community and includes high quality public parks and streets.

The master plan respects the site's unique history and environmental character by reducing the development footprint to areas of the site with relatively few constraints. Rather than covering the site with low density development, the master plan proposes more energy efficient, environmentally-sensitive and higher density development with a smaller development footprint. Vegetation communities, historic elements and steeper slopes will be retained and opened up to the public for their use and enjoyment.

The development will feel distinctly public, with access for all to streets, parks and amenities, as opposed to a gated or themed community.

The development will be highly walkable and well vegetated throughout. Housing will generally recede into the landscape, allowing the natural environment to dominate.

The master plan envisages housing that not only nestles into the landscape but also responds to the site's coastal landscape character. Buildings will vary in height and type but all will adopt a coastal architectural vernacular and use natural materials and finishes typically found in coastal settings, such as timber, corrugated iron and natural stone.

The new community at Fort Wallace will benefit from the unique and special qualities of the site but the wider public will benefit also through development of the site. Historic relics will be conserved, new public space provided and existing vegetation communities will be protected and enhanced. The public realm and housing will be attractive, responsive to the locale and robust in their design and construction.



Indicative Master Plan - development relationship to environmental areas and heritage



CREATING A WALKABLE AND PEOPLE FRIENDLY PUBLIC
DOMAIN IS FUNDAMENTAL TO THE CREATION OF COMMUNITY





THE PUBLIC DOMAIN WILL INCLUDE GENEROUS PLANTING AND A SIMPLE, ROBUST MATERIALS PALETTE



Master plan public domain



Incorporate robust local materials

Use timber, concrete, stone, gravel, steel and other locally available materials that relate to the site's coastal setting.

Select materials that are durable and lower maintenance.

Avoid use of stone and timber cladding which can crack over time.



Enhance habitat

Select indigenous plant species to encourage local fauna.

Where practical plant native shrubs and native grasses in place of turf.

Protect existing dune areas from walking and trampling through fencing and signage.

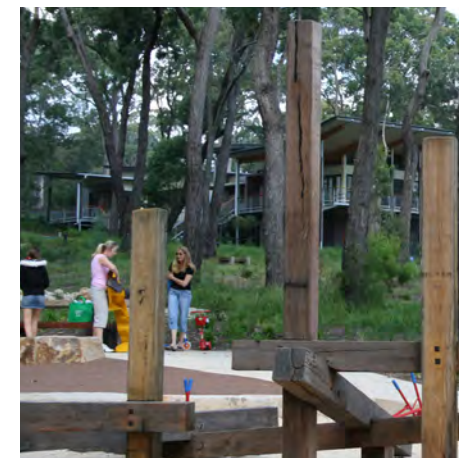


Create a green canopy

Reduce ambient air temperatures through generous planting of street trees and shade trees in public spaces.

Ensure trees have sufficient area for root growth when planted next to streets and footpaths.

Use evergreen and deciduous trees within lots to ensure good solar access to living areas.



Create a public place

Design streets to feel public and accessible to all.

Avoid use of estate-style landscape elements such as entry walls and domestic landscape materials.

Encourage the public to walk and cycle through the development by providing pathways and signage.

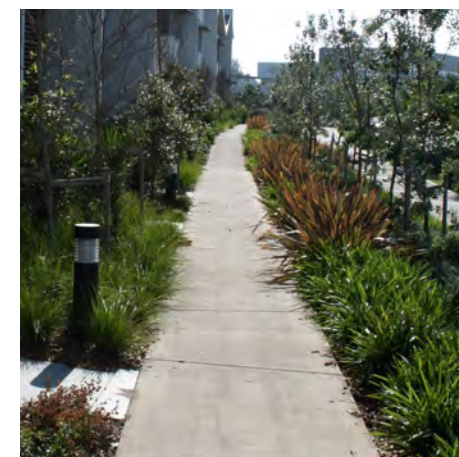


Maximise natural drainage

Maximise soft areas and use of permeable materials with high infiltration rates.

Use planted swales to collect and cleanse stormwater.

Minimise road area and consider use of permeable road materials.



Promote safety

Provide pedestrian and vehicle lighting.

Maintain clear sightlines.

Maximise passive surveillance by encouraging walking and outdoor activity.

Select non-slip materials and finishes.

Indicative Master plan



LEGEND

- 01/ Stockton Centre
- 02/ Cluster Homes
- 03/ Single Eco Home
- 04/ Townhouses
- 05/ Dune Apartments
- 06/ Courtyard Homes
- 07/ Firetrail walking path
- 08/ Community park
- 09/ Adaptive reuse community facility
- 10/ Heritage precinct
- 11/ Stairway
- 12/ Dune boardwalk
- 13/ Landscaped embankment
- 14/ Shared path to Stockton

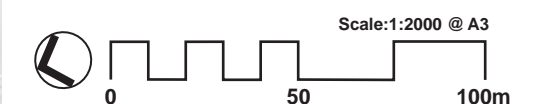


Landscape hierarchy



LEGEND

- Fullerton Street landscape frontage
- Community Park
- Heritage Park
- Natural coastal bushland/dunes
- Residential communal landscape areas
- Residential private landscape areas



7.1 Heritage Precinct

The Heritage Precinct sits atop the dunes at Fort Wallace and offers spectacular panoramic views in all directions. This area can be accessed via coastal boardwalk from Stockton Ferry Terminal, or by driving directly to the site. Heritage structures could be “made good” so as not to pose a safety risk, and offer visitors an opportunity to engage with the Fort Wallace’s military history through tactile, unscripted exploration.

Surrounding heritage structures will be adaptively reused to provide visitor amenities, such as a cafe space and outdoor classroom. The surrounding dune ecology will be protected by designated circulation paths and gathering spaces. Planting will reflect the surrounding coastal heath palette, and new hardscaping will use endemic materials such as sand, crushed oyster shells, and Australian hardwood timber.

This approach would be dependent on an agreed, strategic land ownership and management agreement with Council.

KEY FEATURES

- 01/ Refurbished heritage structure
- 02/ Public gathering and event space
- 03/ Adaptively-reused heritage structures (e.g. cafe, local museum, landcare facility)
- 04/ Dune Bushwalk and viewing platforms
- 05/ Dune Boardwalk to Stockton - Newcastle
- 06/ Dune revegetation and protection zone



An example of a dune boardwalk



An example of a dune boardwalk



An example of a public gathering space with views to the beach, connected to the boardwalk.



Interpretive Heritage Park section



- 01/ Firetrail bushwalk
- 02/ Back of dune
- 03/ Adaptively-reused structure
- 04/ Gathering and event space
- 05/ Carriageway
- 06/ Refurbished heritage structures
- 07/ Dune bushwalk
- 08/ Dune revegetation zone

Indicative planting palette



Coastal Wattle
Acacia sophorae



Coastal Banksia
Banksia integrifolia



Old Man Banksia
Banksia serrata



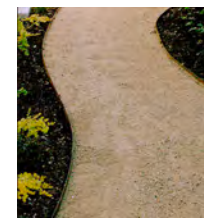
Pigface
Carpobrotus glaucescens



Mat Rush
Lomandra longifolia



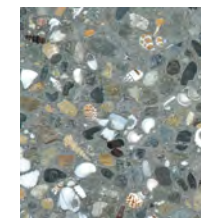
Tree Broom-heath
Monotoca elliptica



Stabilized sand



Timber boardwalk /
decking



Concrete with oyster shell
aggregate

Hardscape palette

Scale: 1:300 @ A3

7.2 Community Park

The public parklands emphasize principles of “nature play” through the selection of play facilities, materials, and native planting palette. Structures will be constructed of natural materials and will be sited within the coastal heath landscape. Trees and shade structures will provide cover from the sun without obscuring views over the dunes. Robust, low-maintenance plantings will blend play areas into the surrounding heath.

Active sports lawn and children's playground will be complemented by spaces for passive recreation. Picnic areas and shelters will be positioned behind the dune to minimize sun and strong winds from the ocean. The firebreak surrounding the community will double as a bushwalk trail, connecting the park to residential areas. Nearby heritage structures will be adaptively reused to provide public community amenity.

KEY FEATURES

- 01/ Sport lawn
- 02/ Picnic area
- 03/ "Nature play" playground
- 04/ Public community space (e.g. cafe, restaurant, civic centre)
- 05/ Adaptively-reused heritage structures
- 06/ Firetrail bushwalk
- 07/ Stair access to Heritage Precinct



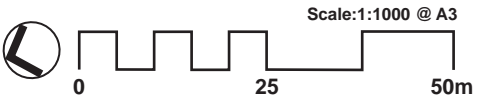
An example of a picnic area and community space



An example of a 'nature play' playground



An example of a 'nature play' playground



Community Park section

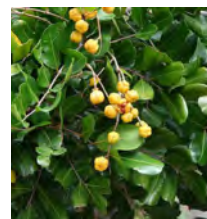


- 01/ Sports lawn
- 02/ Picnic area
- 03/ Firetrail bushwalk
- 04/ Back of dune
- 05/ Adaptively-reused structure
- 06/ Public gathering space
- 07/ Carriageway

Indicative planting palette



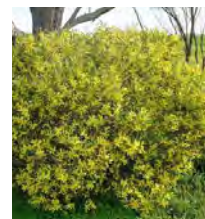
Swamp Mahogany
Eucalyptus robusta



Tukeroo
Cupaniopsis anacardioides



Red Gum
Angophora costata



Coastal Wattle
Acacia sophorae



Coastal Banksia
Banksia integrifolia



Old Man Banksia
Banksia serrata



Coastal Tea Tree
Leptospermum laevigatum



Mat Rush
Lomandra longifolia



Pigface
Carpobrotus glaucescens

Scale: 1:300 @ A3
0 5 10m

7.3 Landscape Frontage

The sloping embankment along Fullerton Street represents the public face of the Fort Wallace community to all vehicles travelling to and from Stockton, as well as boaters on the Hunter River. The embankment will be landscaped with species native to the surrounding Coastal Sand Apple - Blackbutt Forest ecosystem. Existing feature trees will be preserved and new planting will be positioned to maintain views over the river. Together with the coastal mangroves along the opposing bank, Fullerton Street will become a green corridor along Stockton Peninsula.

The Fort Wallace community will also be served by the existing shared path that connect cyclists and pedestrians to the Stockton Ferry Terminal and Newcastle CBD.

KEY FEATURES

- 01/ Hunter River
- 02/ Mangroves
- 03/ Existing shared path to Stockton Ferry Terminal
- 04/ Fullerton Street
- 05/ Revegetated embankment
- 06/ Existing feature trees retained
- 07/ Vegetated swale to capture and purify stormwater
- 08/ Single Eco-Homes
- 09/ Access track



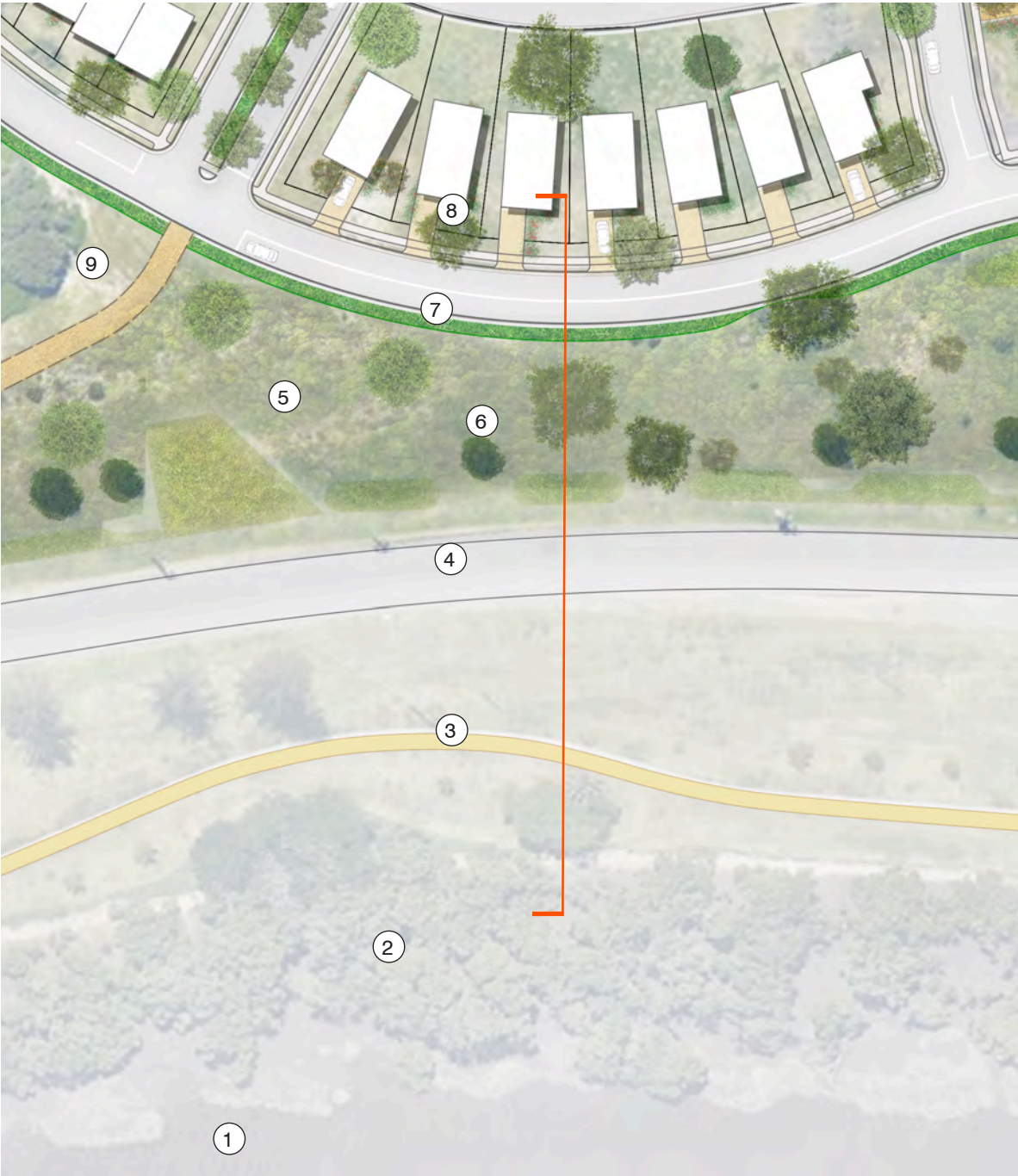
An example of a landscaped embankment



An example of a landscaped embankment



An example of a shared path



Fullerton Street Frontage Section

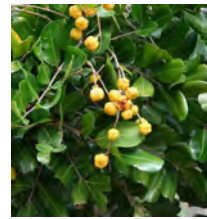


- 01/ Mangroves & Hunter River
- 02/ Shared path to Stockton
- 03/ Fullerton Street carriageway
- 04/ Detention basin
- 05/ Existing feature tree
- 06/ Revegetated embankment
- 07/ Vegetated roadside swale
- 08/ Single Eco-Home

Indicative planting palette



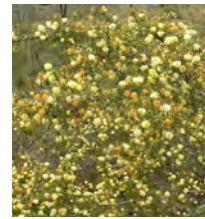
Swamp Mahogany
Eucalyptus robusta



Tukeroo
Cupaniopsis anacardioides



Red Gum
Angophora costata



Prickly Moses
Acacia ulicifolia



Old Man Banksia
Banksia serrata



Mat Rush
Lomandra longifolia



Kangaroo Grass
Themeda australis



Eggs and Bacon
Dillwynia retorta



Flax Lily
Dianella caerulea



Bracken fern
Pteridium esculentum

Scale: 1:300 @ A3
0 5 10m

7.4 Great Streets

Key to great urban environments and places are great streets. Streets connect our communities and our homes, provide us with essential services for living, and present everyday opportunities for exercise and socialising.



Designing streets for people

The Master Plan envisages several types of streets that respond to future access requirements and the existing street network on the site. All streets will be:




- Publicly accessible, with footpaths and wayfinding signage.
- Well vegetated with local plant and tree species.
- Low-key and informal in appearance.
- Designed to accommodate all modes of transport (cars, pedestrians and bicycles)
- Designed appropriately for emergency and council maintenance vehicles.

The following pages show indicative designs and locations for the four types of roads within the proposed development. The designs will be the subject of further review and adjustment as the project progresses and information becomes available.

Road hierarchy

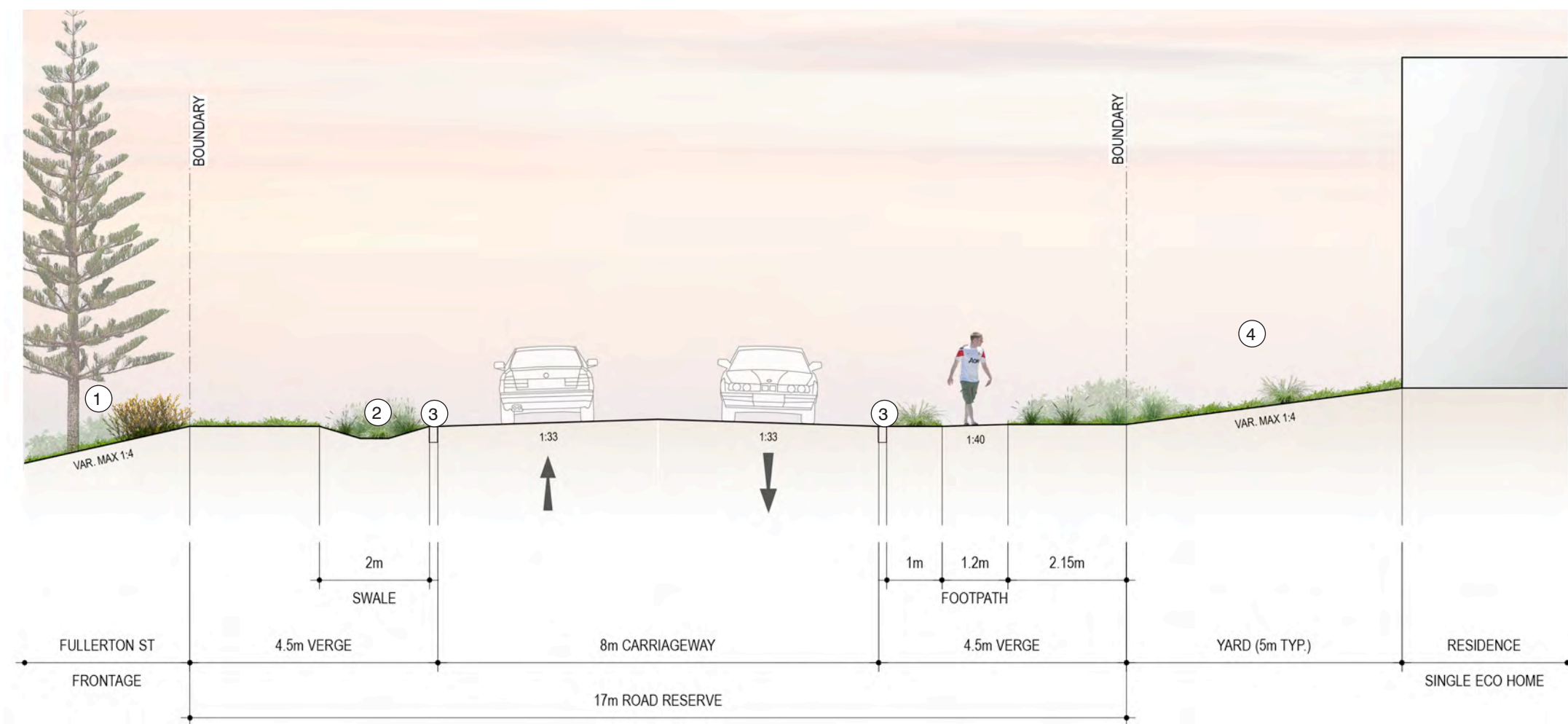


LEGEND

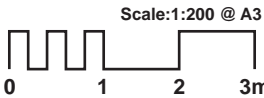
- Road Type #1
- Road Type #2
- Road Type #3
- Road Type #4
-  Heritage structure
-  Proposed parkland structure
-  Proposed residential building



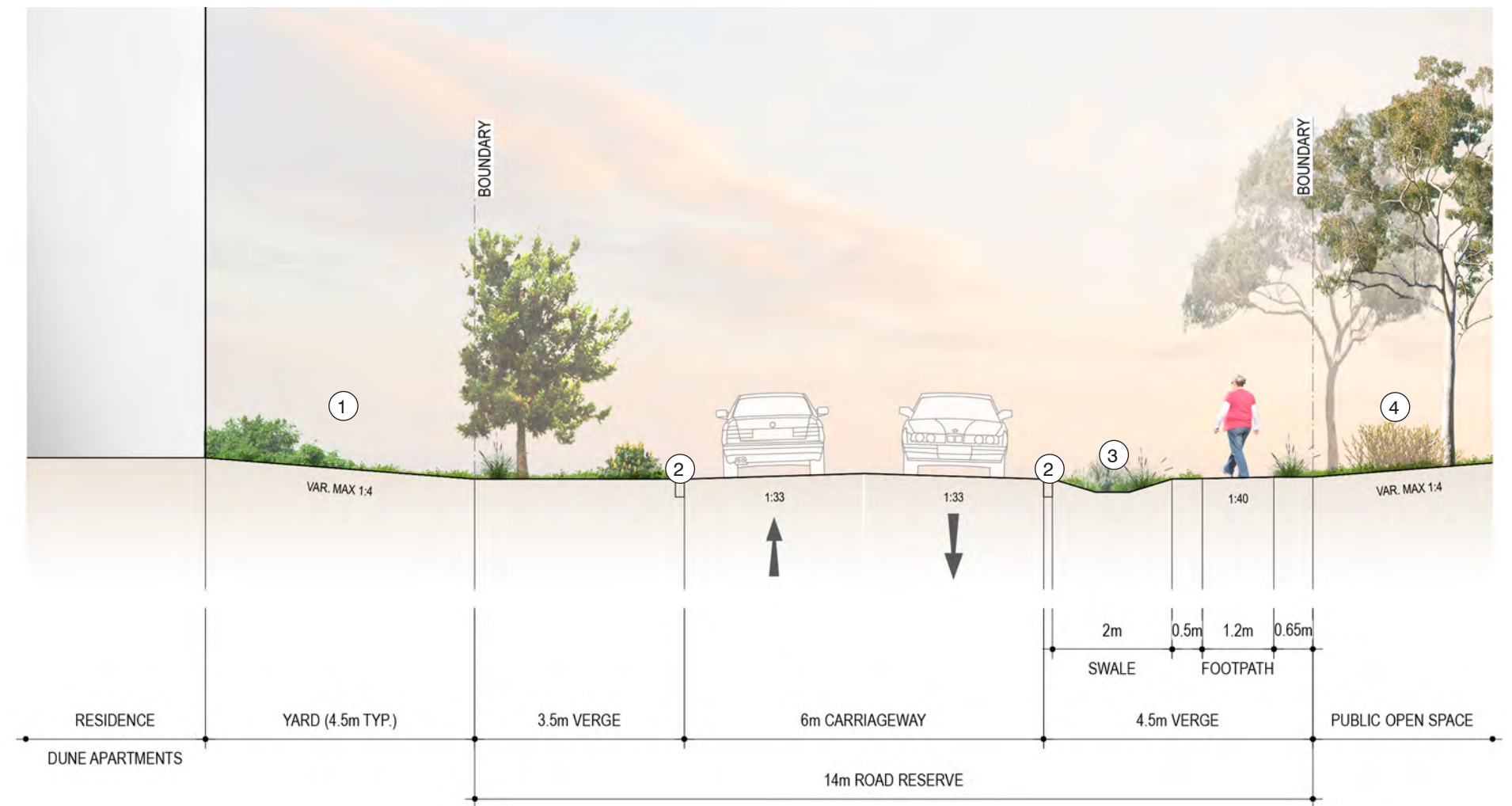
Road type 1 section



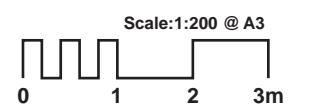
- 01/ Landscaped Fullerton Street frontage
- 02/ Vegetated swale
- 03/ Flush kerbs
- 04/ Private yard (Single Eco Home)



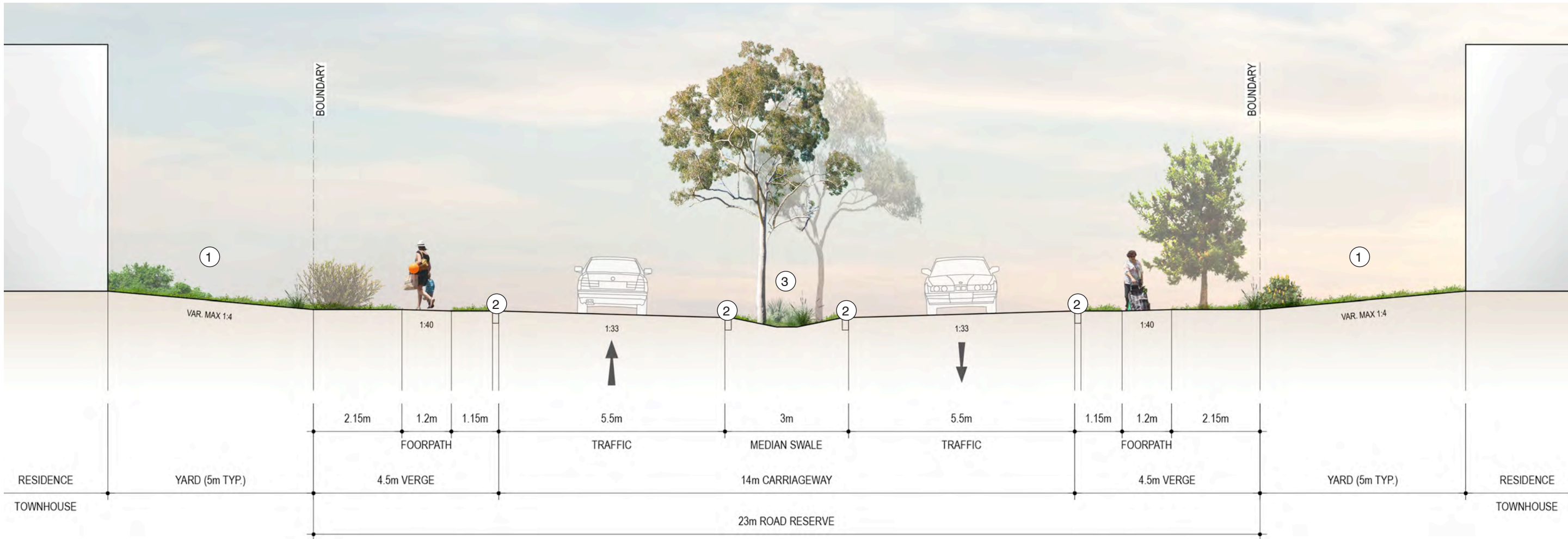
Road type 2 section



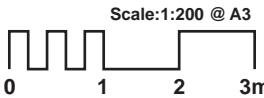
- 01/ Communal open space (Dune apartment)
- 02/ Flush kerbs
- 03/ Vegetated swale
- 04/ Public open space



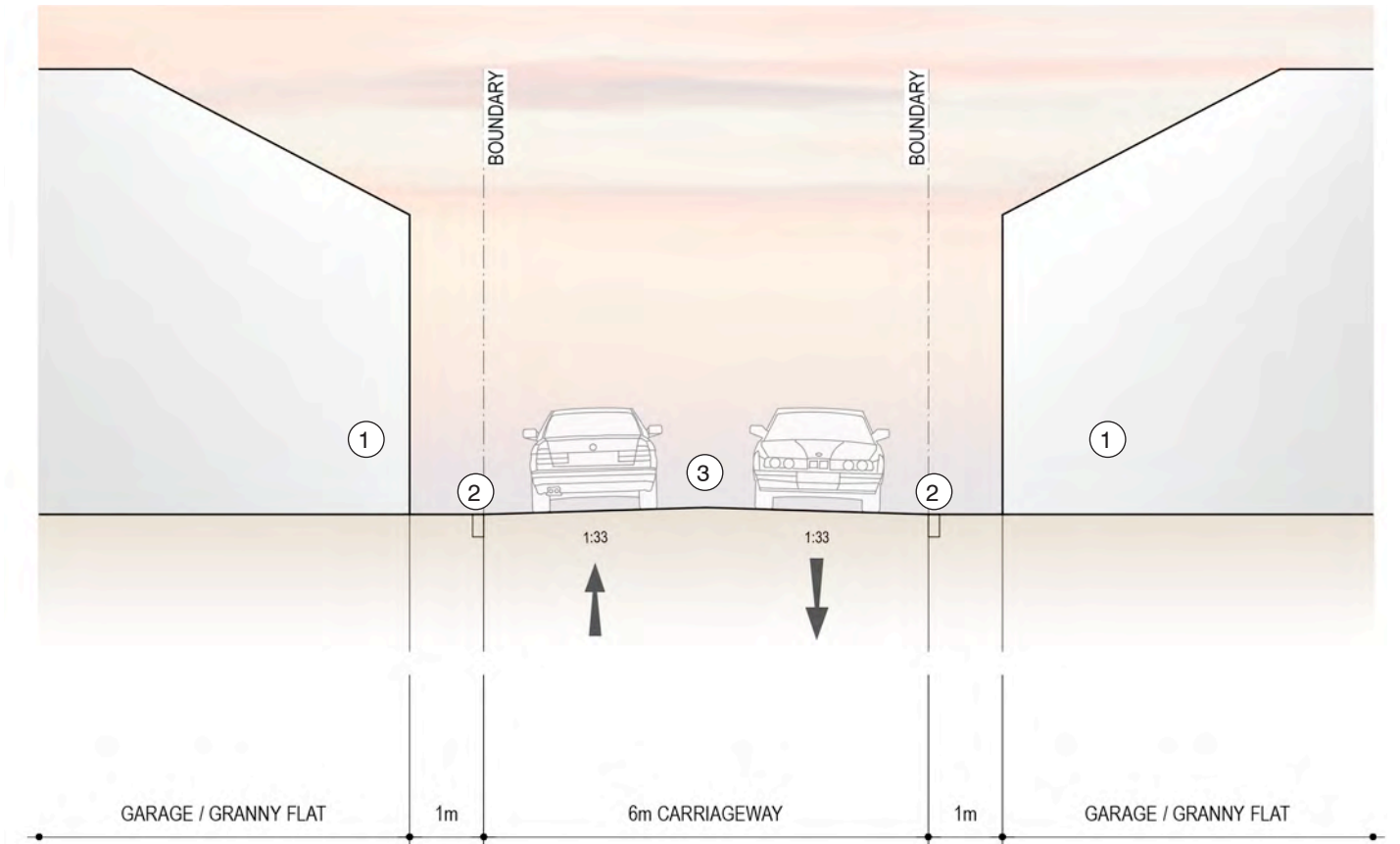
Road type 3 section



- 01/ Communal open space (Townhouse)
- 02/ Flush kerbs
- 03/ Central vegetated swale and street tree planting



Road type 4 section



- 01/ Garage or granny flat
- 02/ Flush kerbs
- 03/ Bidirectional laneway

Scale: 1:200 @ A3
0 1 2 3m

8 Master plan housing mix

The design principles set out in the previous section were used to develop a range of residential typologies that would respond to the unique nature of the site. While these typologies are used only to inform the structure of the master plan, it is intended that the key outcomes of the the typologies will be established in a site specific to guide the future development of the site.

Five dwelling typologies have been developed to support the master planning of the site. The typologies demonstrate how the design principles can be

achieved in a range of densities in order to deliver a diversity of housing on the site, including dwelling size, configuration and tenure.

The typologies include dune apartments, coastal cluster homes, single eco-homes, courtyard homes, and townhouses / row houses.

The key features of each dwelling type, including approximate heights, density, materials and sustainability mechanisms have been set out on the

following pages. Indicative floor plans and lot plans have also been developed to show how the typologies could achieve the requirements of the market.

Dune apartments



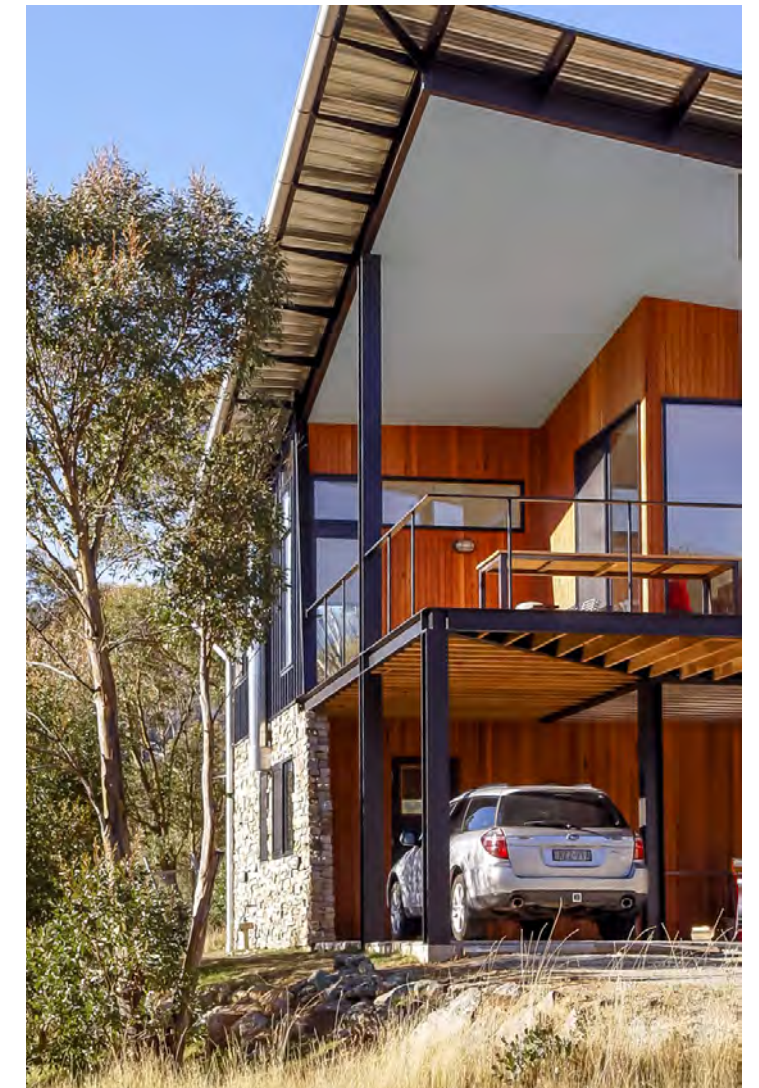
Viridian Noosa Residences - by JMA Architects

Single eco-homes



Currawong - Pittwater, NSW - by Architectus

Townhouses / row houses



Lake Crackenback

Coastal cluster homes



Bundeena masterplan - by Architectus

Courtyard homes



Little Bay, NSW

Indicative Housing Typology Diagram



8.1 Dune apartments

Description: These apartment typologies are designed to minimise the overall building footprint and bulk and maximise visual connections with the surrounding landscape. Small footprints allow for up to 4 units per floor with the potential to allow for open under croft spaces at ground floor and open stairwells and vertical circulation.

Building heights: 1-4 Storey

Approx density: 50-60 dw/ha

Construction: Steel frame concrete slab, skillion/vaulted roofs

External materials: Combination of corrugated metal sheet, timber panel cladding.

Sustainability: Passive solar design, locally sourced materials, naturally ventilated, high thermal performance, rain water harvesting, solar PV cells, minimise cut and fill, native drought tolerant species.

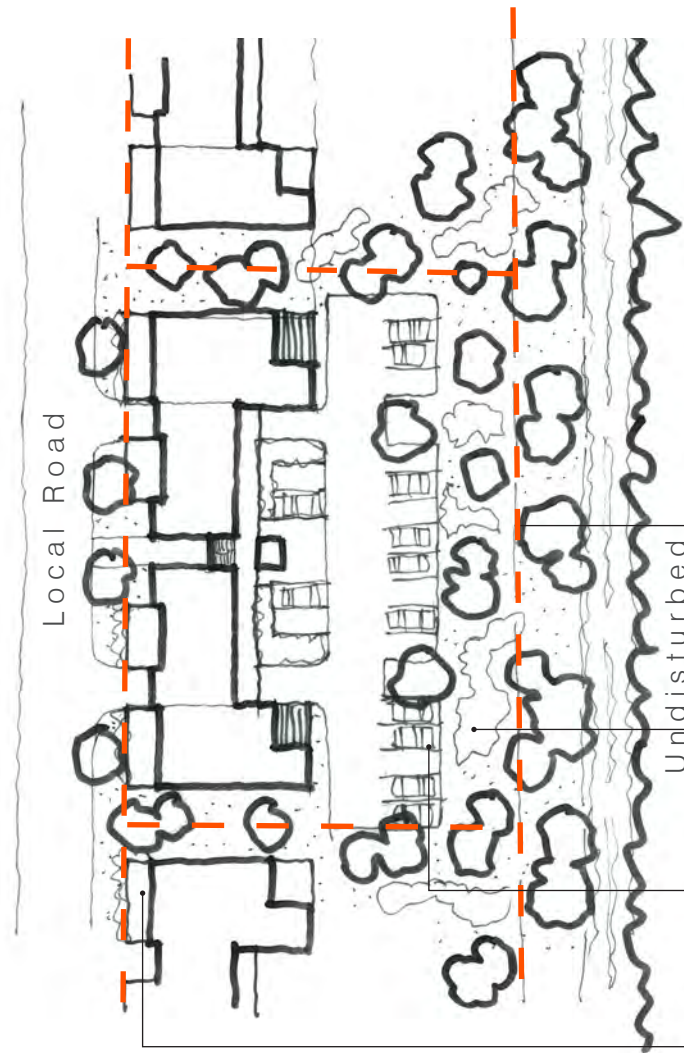


Viridian Noosa Residences - by JMA Architects



Timber coastal apartments - Wood Solutions

Typical layout



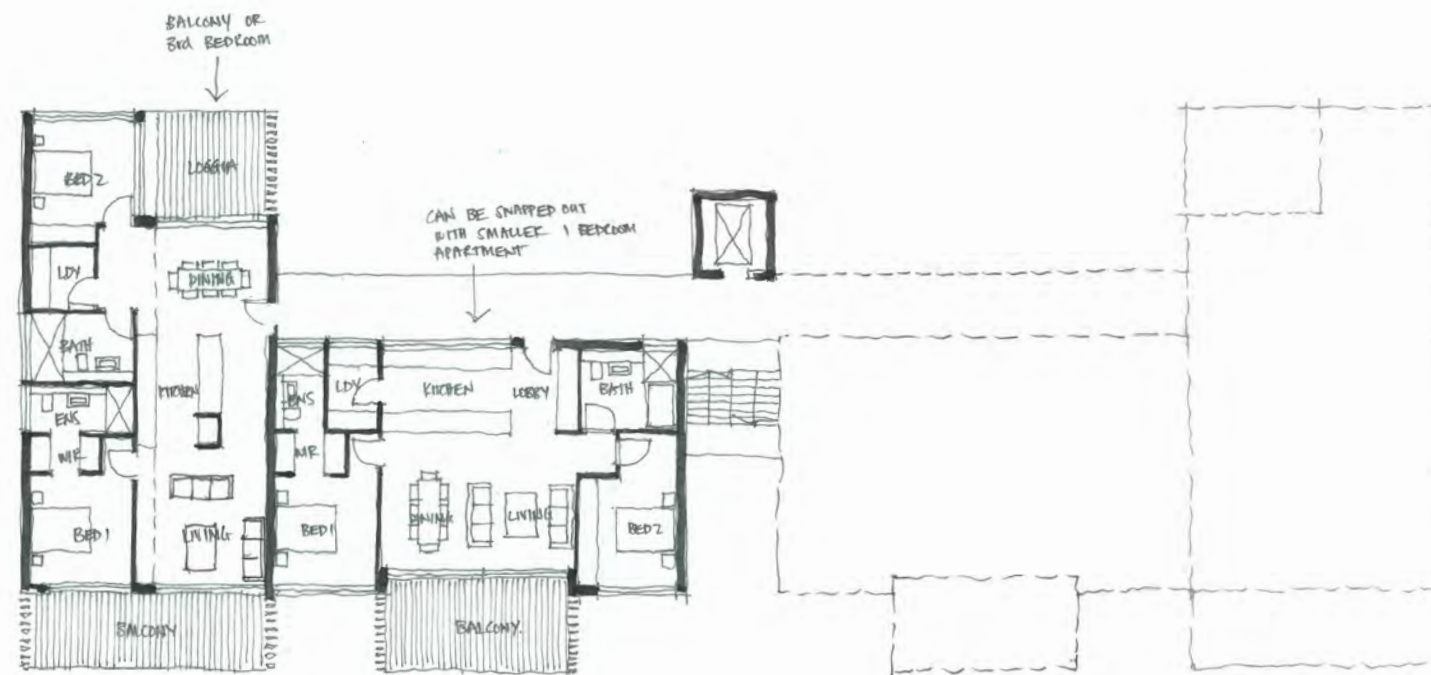
Lot boundaries - lot boundaries are to be defined with vegetation only. In general each lot will take on collective responsibility for the maintenance of the communal open space areas.

Communal open space - These areas are to be maintained as native bush gardens with contributions from each of the dwelling/unit owners.

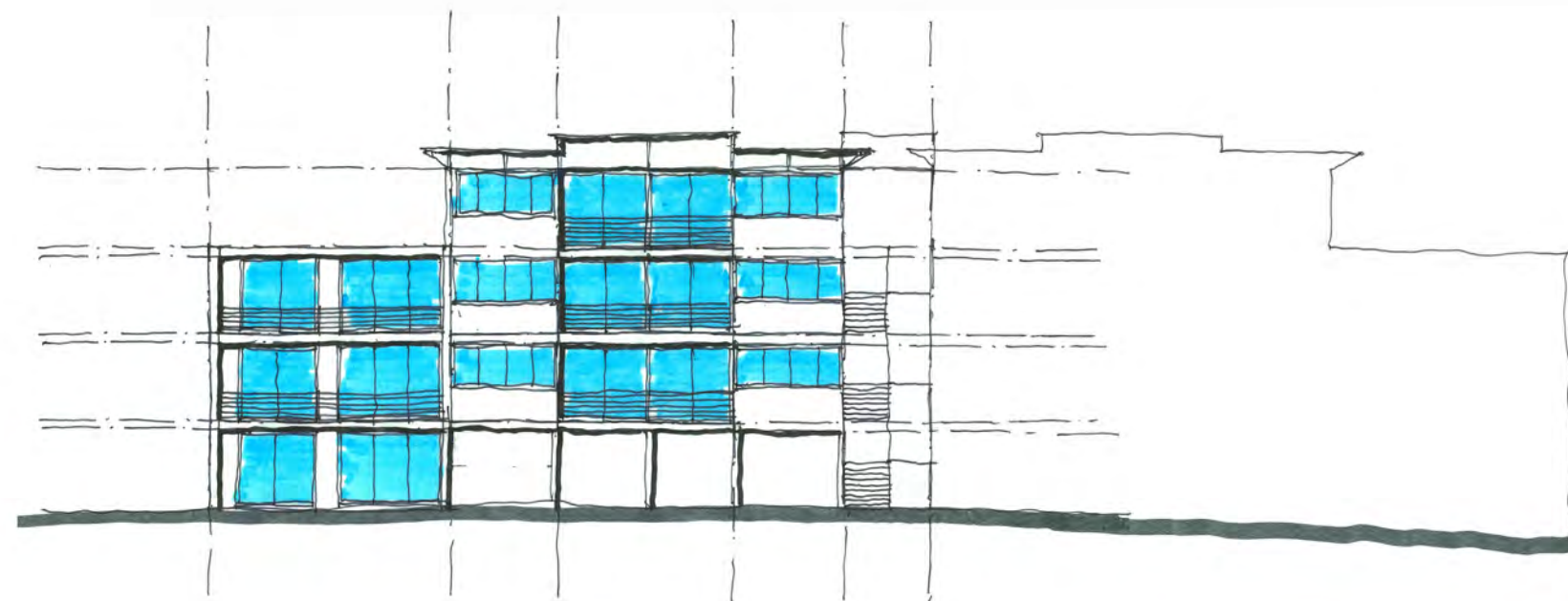
Parking - Surface parking at the rear of the building. Some parking may also be provided in undercroft spaces at ground level.

Private open space - Ground floor apartments will have a small area of defensible space / terrace to be accessible from a living area.

Indicative floor plan 1:250



Indicative front elevation 1:250



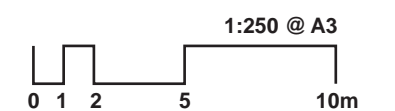
Indicative exterior finishes



Indicative dwelling sizes (exc balconies):

1 bed = 80m²

2 bed = 100m²



8.2 Coastal cluster homes

Description: This dwelling typology provides an alternative to traditional towns houses or attached houses. By breaking down the layout into clusters of 2, 3 and 4 they provide views through the development to natural to the bush and increase the sense of a connection with the surrounding landscape.

Building heights: 2 Storey

Dwelling Size: 3 bed = 120m²

Approx density: 20-30 dw/ha

Construction: Steel or timber frame with suspended composite concrete slab, skillion/vaulted roof.

External materials: Combination of corrugated metal sheet, timber panel cladding.

Sustainability: Passive solar design, locally sourced materials, naturally ventilated, high thermal performance, rain water harvesting, solar PV cells, minimise cut and fill, native drought tolerant species.

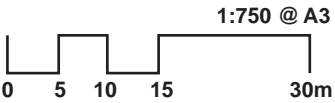
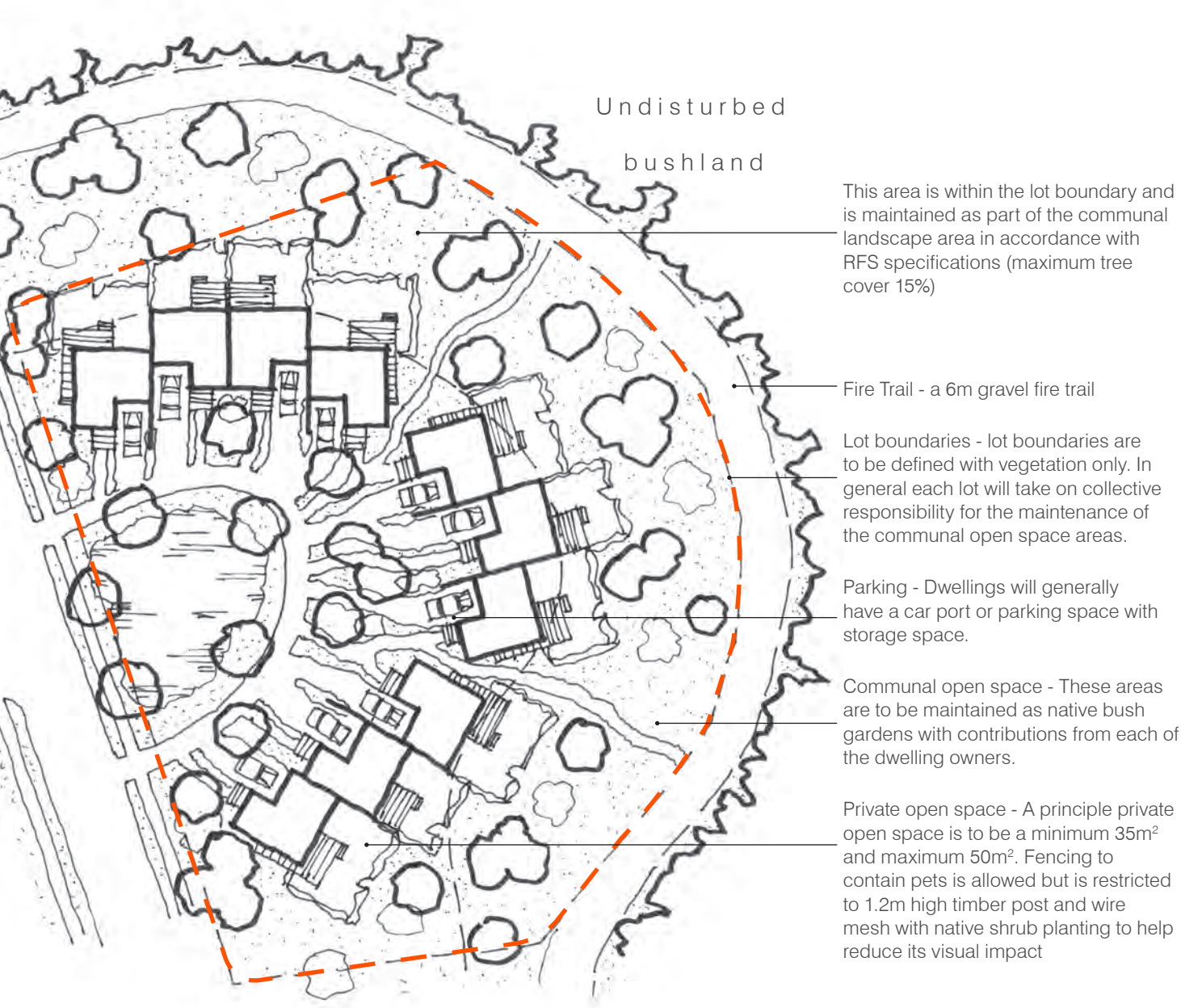


Bundeena masterplan - by Architectus

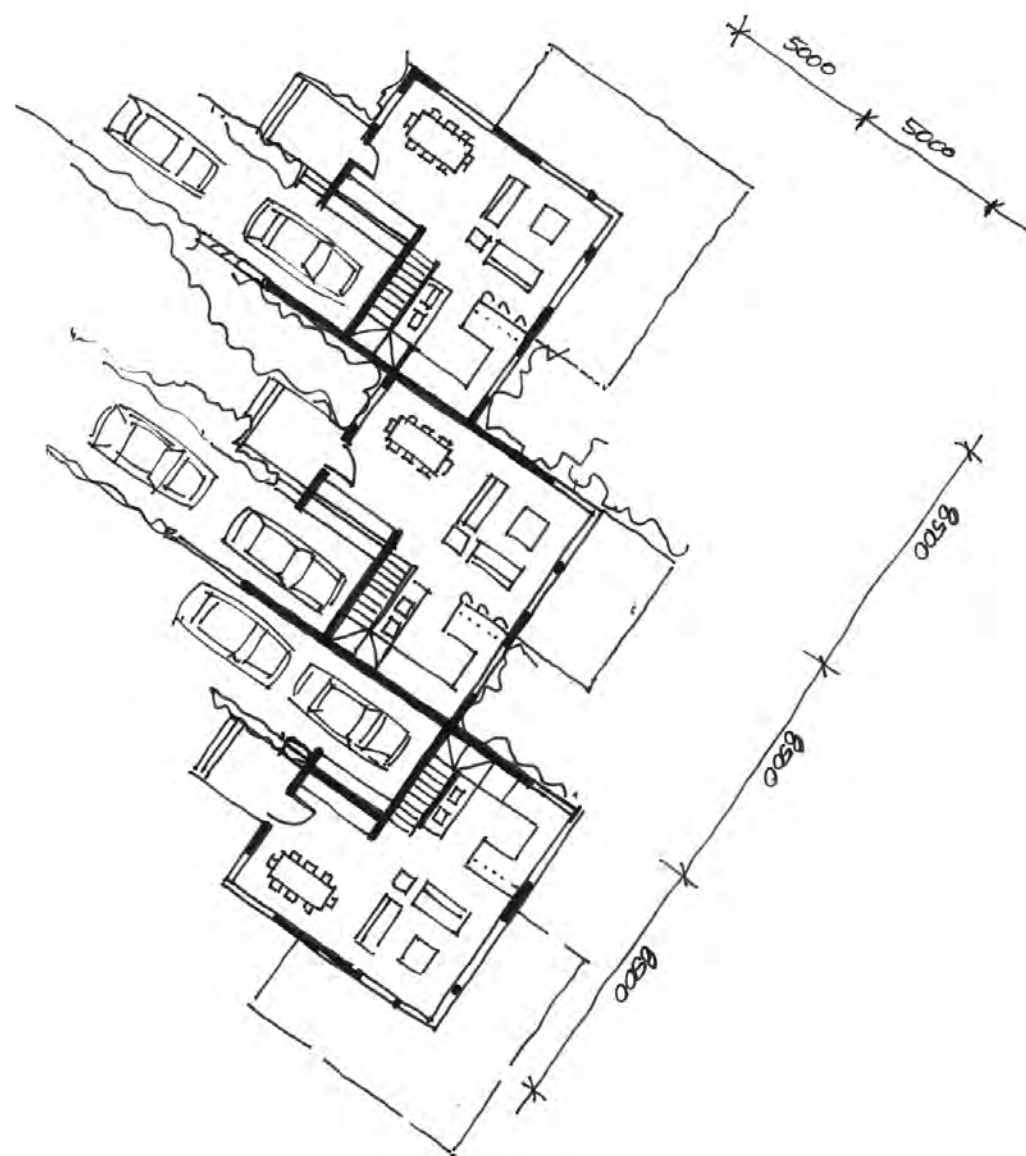


Tubbs view - by Bates Smart

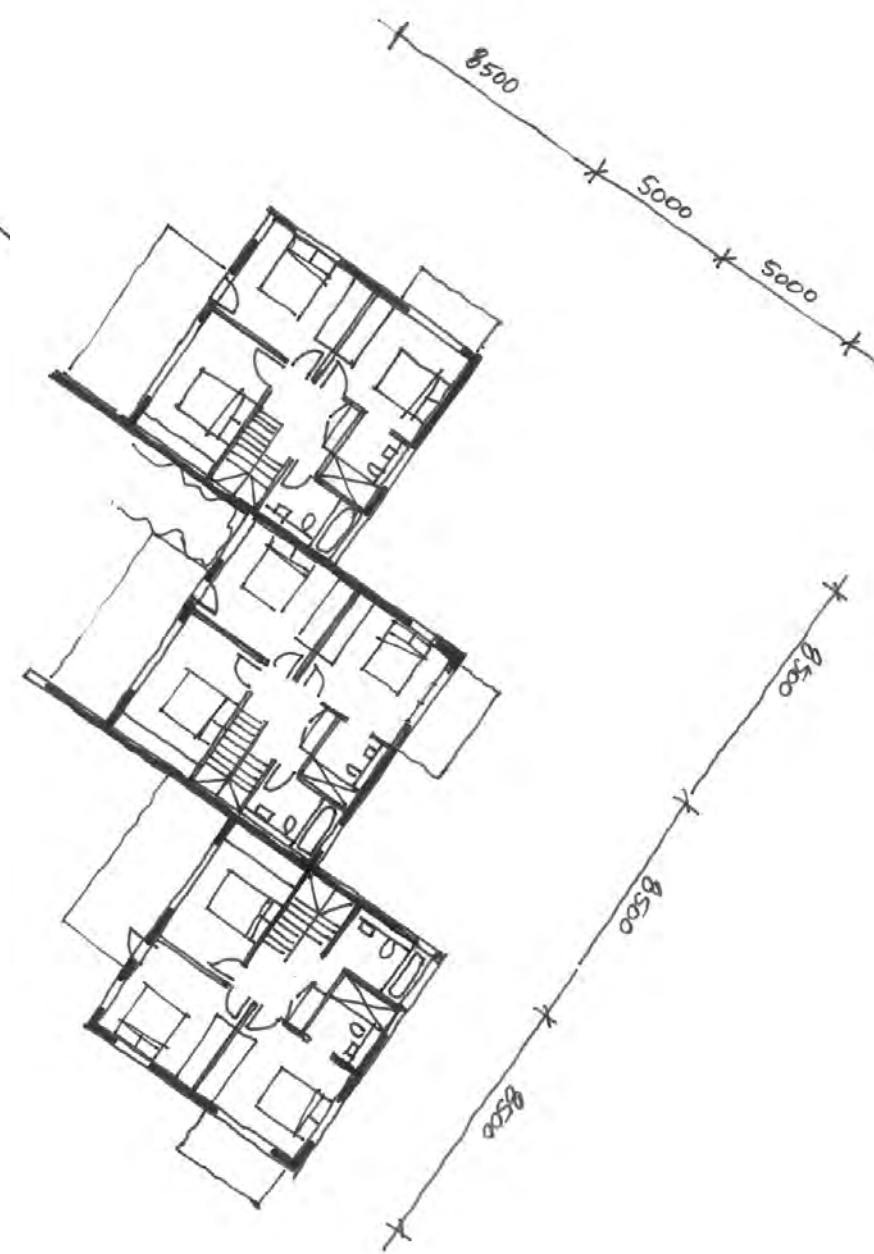
Typical layout



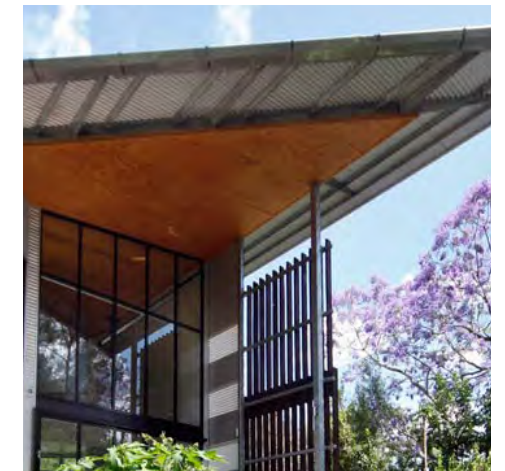
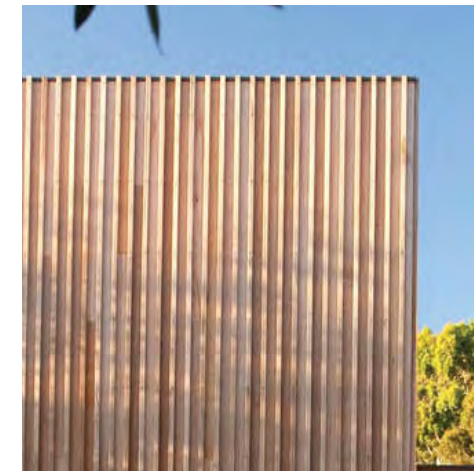
Indicative ground floor plan 1:250



Indicative first floor plan 1:250

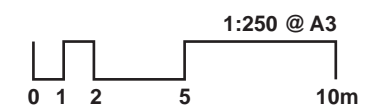


Indicative exterior finishes



Indicative dwelling sizes (exc external space):

3 bed = 110m²



8.3 Single eco-homes

Description:

These homes are intended to be lightweight, climate responsive individual homes set within generous lots that are managed and maintained to contribute to the overall natural characteristics of the estate.

Building heights: 1-2 Storey

Approx density: 10-12 dw/ha

Construction: Steel or timber frame with suspended composite concrete slab, skillion/vaulted roof.

External materials: Combination of corrugated metal sheet, timber panel cladding.

Sustainability: Passive solar design, locally sourced materials, naturally ventilated, high thermal performance, rain water harvesting, solar PV cells, minimise cut and fill, native drought tolerant species.



Murrays Beach - Lake Maquarie

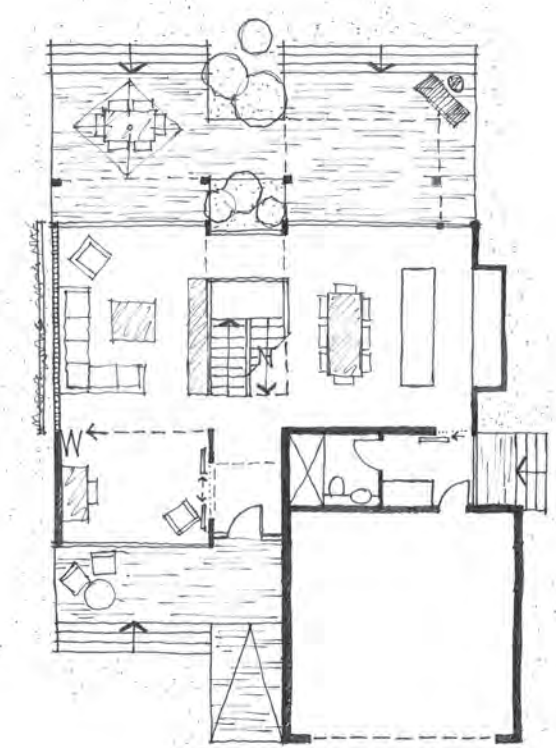


Bush House - by Archterra

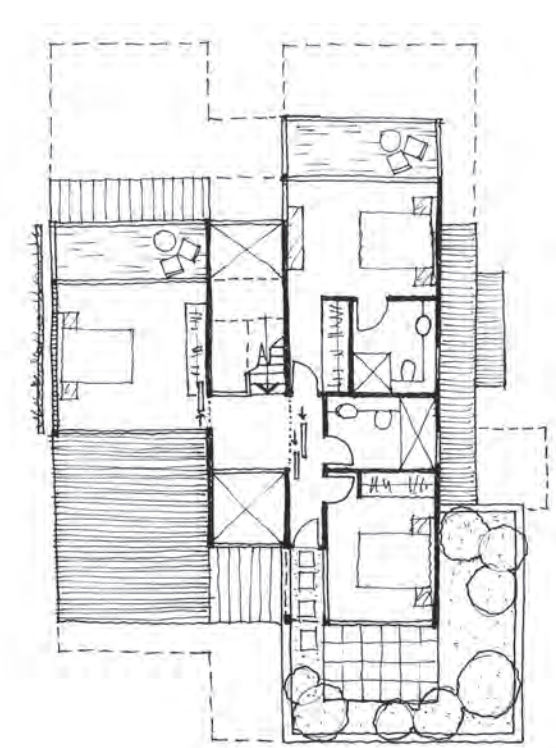


Currawong - Pittwater, NSW - by Architectus

Indicative ground floor plan 1:200



Indicative first floor plan 1:200



Indicative dwelling sizes (exc external space and garage): 3 bed = 160m²

Indicative exterior finishes



8.4 Courtyard homes

Description: This typology provides for a large family home including 4 bedrooms, 3 bathrooms, open plan living space, single garage and an ample rear garden. Dwellings are to be constructed on a zero lot line always on the same side with a 1.5m setback along the opposite boundary. This allows for a side pathway to access the rear garden and improves natural light and ventilation for the dwelling.

Building heights: 2 Storey

Lot Size: 380m² Dwelling Size: 4 Bed 200m²

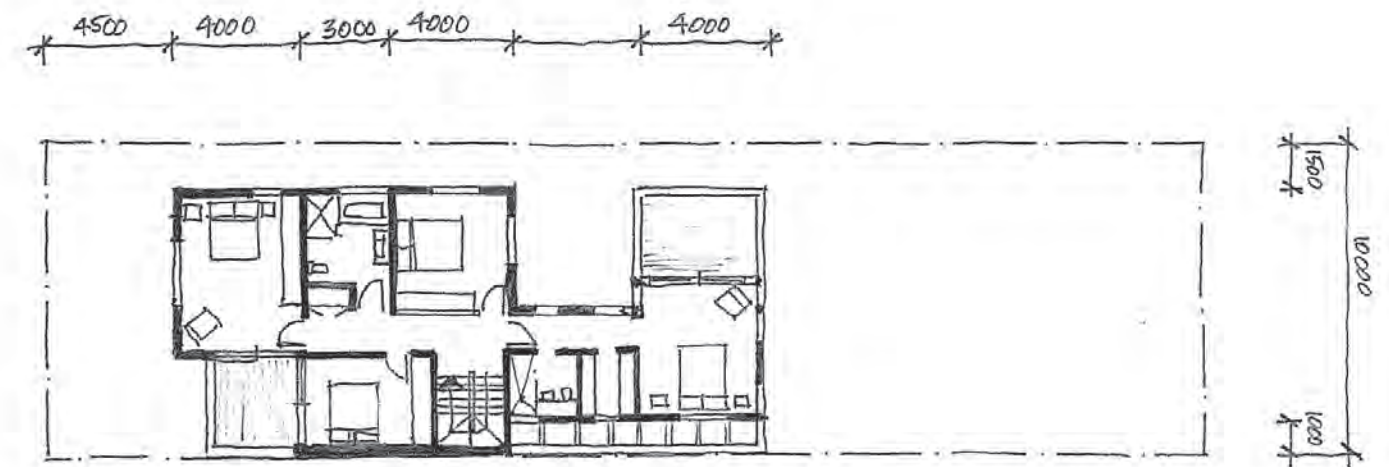
Approx density: 20 dw/ha

Construction: Steel or timber frame on concrete slab, skillion/vaulted roof.

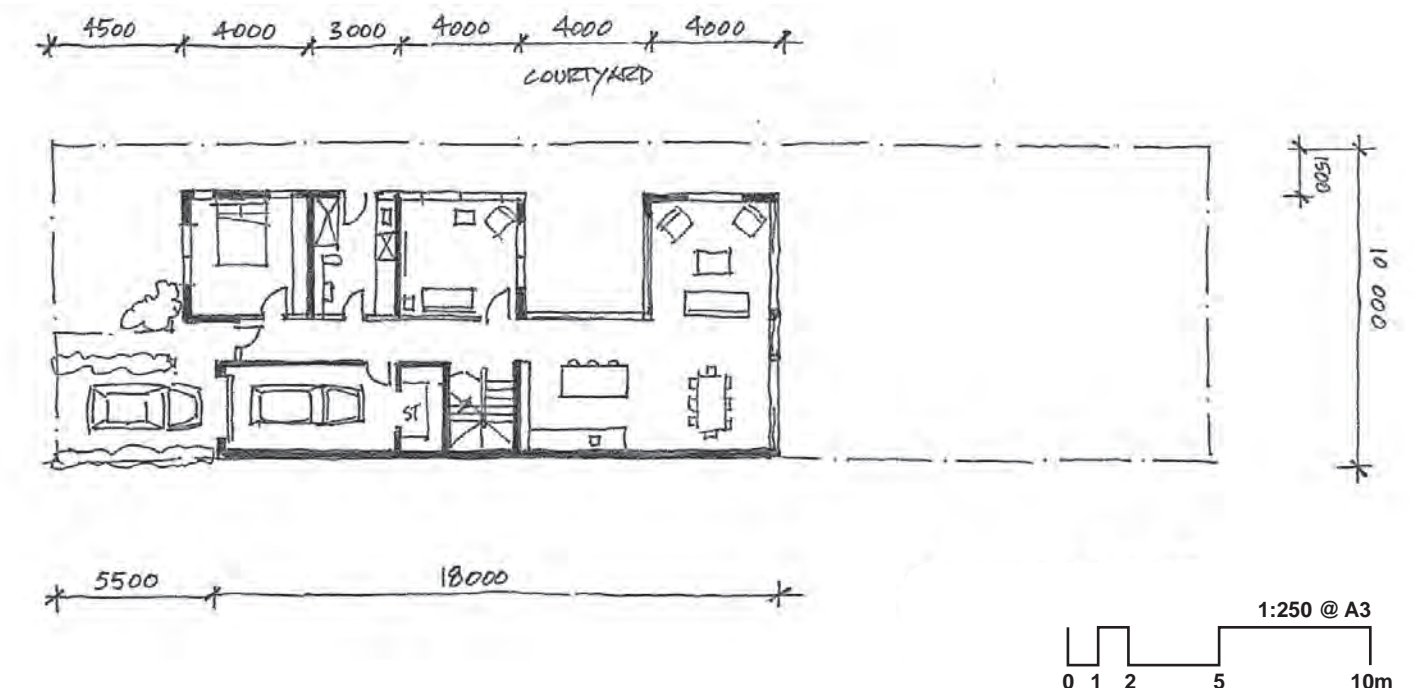
External materials: Combination of corrugated metal sheet, timber panel cladding and rendered masonry.

Sustainability: Passive solar design, locally sourced materials, naturally ventilated, high thermal performance, rain water harvesting, solar PV cells, minimise cut and fill, native drought tolerant planting.

Indicative first floor plan 1:250



Indicative ground floor plan 1:250



Little Bay, NSW



Little Bay, NSW



Example courtyard space

8.5 Townhouses / row houses with ‘fonzie flat’ (rear lane access)

Description: These 3 bedroom homes provide a compact attached dwellings in locations where increased densities are appropriate. The rear lane access allows the front elevation of the house to be free from garage doors and parked cars which promotes good passive surveillance and an attractive street frontage. Above the rear double garage it is possible to have a secondary dwelling or ‘Fonzie Flat’ that provides a self contained studio apartment that can provide additional family or guest accommodation, home occupation or rental return. The ‘fonzie flat’ also activates the laneway increasing safety and security through passive surveillance.

Building heights: 2 Storey

Lot Size: 240m² (varies) Dwelling Size: 3 bed = 150m², 1 Bed Stuidio = 30m²

Approx density: 25 dw/ha

Construction: Steel or timber frame on concrete slab, skillion/vaulted roof.

External materials: Combination of corrugated metal sheet, timber panel cladding and rendered masonry.

Sustainability: Locally sourced materials, naturally ventilated, high thermal performance, rain water harvesting, solar PV cells, minimise cut and fill, native drought tolerant planting.

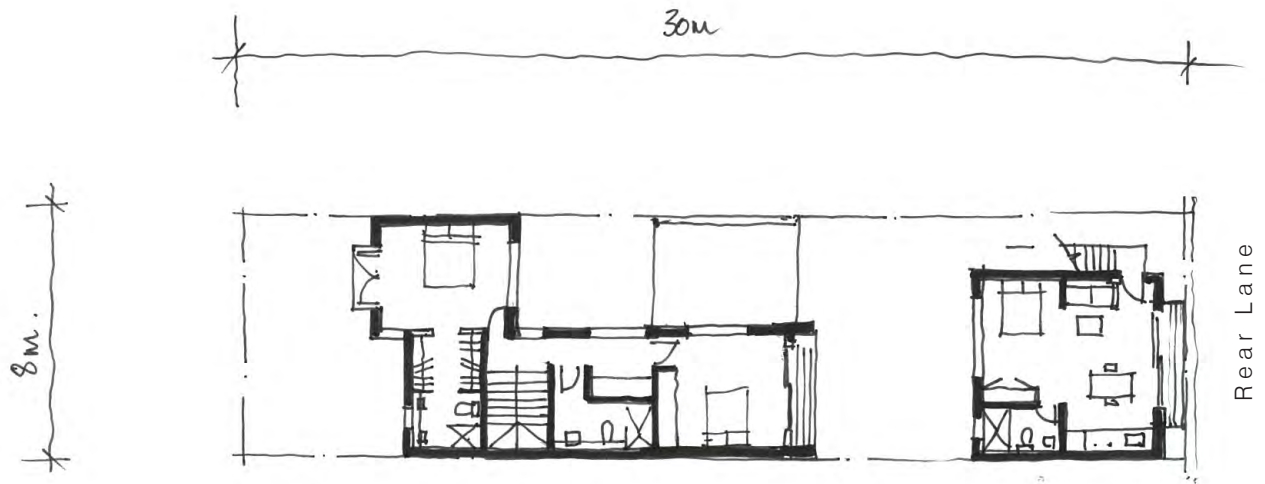


Casuarina shores, showing and example of the relationship between townhouses and fonzie flats.

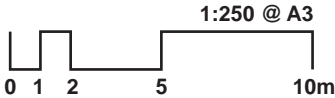
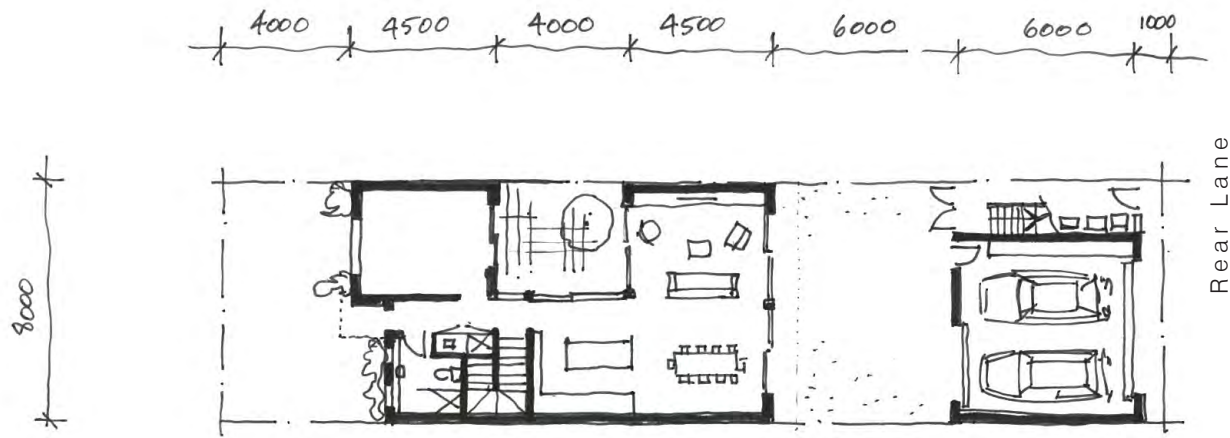


Lake Crackenback

Indicative first floor plan 1:250



Indicative ground floor plan 1:250



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Assessment

Justification and supporting design detail for the master plan have been provided throughout this report, with technical specialist assessments attached under separate covers as part of the Planning Proposal package. This section summarises the key urban design assessment criteria and key elements of technical reports to demonstrate the likely impacts and benefits of the proposal.

9.1 Compliance

Local planning controls

The proposal facilitates housing for a mix of defence members and the public. While housing for defence meets the objectives of the existing SP2 (Defence) zone with respect to land use, it is considered that the proposal would be better facilitated under a R2 Low Density Residential and RE1 Public Recreation zoning to ensure that the future vision for the land is clear.

No height controls are currently applicable to the site.

Coastal Erosion

All dwellings shown in the master plan are west of the coastal hazard line in accordance with Council's policy position.

State Environmental Planning Policy 65 (SEPP 65)

The application of SEPP 65 has been considered in the development of the concept master plan, specifically for the dune apartment typology to which the SEPP would apply.

The dune apartment typology would be capable of complying with SEPP 65 criteria. At this stage of the concept master plan, adequate separation has been allowed between buildings and to lot boundaries, and the depths and widths of building envelopes are sufficient to allow for solar access and cross ventilation.

The indicative layouts have demonstrated a compliance with standards for apartment sizes and configurations, which could be applied across the site.

Private and communal open spaces have been incorporated into the indicative layouts in accordance with SEPP 65 criteria.

The proposed 14m height limit on the parts of the site intended for development is important in ensuring SEPP 65 compliance and design excellence. The 14m height limit ensures that dwellings are not 'squashed' into the landscape, rather allowing flexibility for buildings to sit lightly on the ground, with a smaller floorplate that allows for better solar access and ventilation.

An overly restrictive height limit would be likely to encourage built form with an increased footprint, a poor outcome on such a sensitive site.

9.2 Access and movement

The proposal would increase the opportunity for the local community and visitors to move within and through the site, appreciating both the site's heritage values and filling in a 'missing link' from a coastal walk from Stockton Town Centre to Fern Bay. The landscape strategy proposes walkways that connect the key heritage items with a north-south link along the dunes.

The proposed road network is based on the existing road network in order to allow for staging, minimise disruption to the site and because the roads are important in the appreciation of the site's heritage significance.

A clear street hierarchy has been developed to encourage legibility, wayfinding and a sense of address for each building, as well as supporting the diversity of dwelling forms and characters by offering different characters themselves.

Importantly, no perimeter road is proposed. This enables the development area to softly transition into the areas of higher ecological value, with bushfire risk being managed by an appropriately designed APZ.

All streets have been designed to meet minimum road widths under Council's controls and relevant technical standards, and are intended to be dedicated to Council.

9.3 Character and context

The proposed 1 - 4 storey built form character is consistent with the scale of areas near the site such as the Stockton Town Centre.

Four key elements of the proposal ameliorate the potential impacts of heights up to 14m in the sensitive locations:

- the site topography, which allows for the built form to be nestled into level changes and for heritage items to be clearly visible from key spaces;
- the areas of vegetation, which provide a buffer between development and the adjoining sites, enabling the proposal to be read as

a stand-alone development with a unique character that relates to its surroundings;

- Taller, efficient buildings allows for the site to feasibly developed in a smaller footprint, with a view to retaining as much vegetated area, and areas with high landscape or heritage value, as possible; and

- The proposal facilitates an appropriate setback to key heritage items on the site, enabling views to and from the items from public spaces.

9.4 Issues to be resolved through detailed master planning

The final design and area of public open spaces for dedication should be determined through consultation with Council and the community.

A site-specific DCP, Stage 1 DA or adopted master plan should be developed to lock in key objectives in the master plan for the development of the site. Appropriate flexibility should be allowed to enable new design approaches to be facilitated where they meet objectives.



LEGEND

- 01/ Stockton Centre
- 02/ Cluster Homes
- 03/ Single Eco Home
- 04/ Townhouses
- 05/ Dune Apartments
- 06/ Courtyard Homes
- 07/ Firetrail walking path
- 08/ Community park
- 09/ Adaptive reuse community facility
- 10/ Heritage precinct
- 11/ Stairway
- 12/ Dune boardwalk
- 13/ Landscaped embankment
- 14/ Shared path to Stockton



10.1 Stockton Bridge

**View east from Stockton Bridge**

The entry to Stockton from Kooragang is by the Nelson Bay Road Bridge, which lies to the north east of the site. The view is from a public road and would generally be seen by those travelling in vehicles. The pedestrian pathway is to the centre of the bridge, minimising its potential for views.

The location is considered an important entrance to the Stockton area, but is not a location where the public might go to enjoy the view. It is noted that the view shown is taken from Google Streetview and, while it gives an indication of the potential impact, it sits higher than a normal viewer would.

The concept master plan that may be facilitated by the planning proposal forms part of the overall view without dominating it. The concept master plan would generally retain views from the bridge over the site to the ocean, although this is obstructed at some points by the change in topography and subsequent higher built form.

The concept master plan would retain views from the bridge to the observation tower.



Stockton Bridge – Existing View
Image Source: Google Streetview



Stockton Bridge – Proposed Development View

10.2 Fort Wallace Gun Emplacement Number 1



View north east from the Gun Emplacement Number 1

The view is north east from the Gun Emplacement Number 1 in the centre of the site. The view is taken from standing on top of the gun emplacement itself.

The existing view encompasses the road in the foreground, a steep embankment with vegetation, a flat grassed area, taller trees and the Stockton Centre and the river in the background.

The view is currently inaccessible to the public. However, the proposed concept master plan and associated rezoning is intended to facilitate this area as a heritage park for public enjoyment. The view to and from heritage items on the site is a significant element of the heritage value of the site.

The concept master plan would obstruct the view of the flat grassed area and part of the vegetation surrounding Stockton Centre, but would maintain key views north to the river.



Fort Wallace Gun Emplacement Number 1 – Existing View
Focal Length: 35mm



Fort Wallace Gun Emplacement Number 1 – Proposed Development View

10.3 Fullerton Street North



View south along Fullerton Street
The approach to the site from the north by vehicle is available only through a single access road, known as Fullerton Street. The view is publicly accessible and likely to be viewed as vehicles and pedestrians approach the site from the north, travelling to Stockton Town Centre and ferry.

The existing view comprises Fullerton Street in the centre of the view, running from the foreground to the background. Large trees can be seen lining the road to the view right, set in a grassed area. The view takes in the northern parts of the site, including the existing fence and vegetation.

The concept master plan would result in a small amount of vegetation in the background of the view being obscured and some built form being visible from the road. The built form would not obscure significant heritage items from this view or substantially change the character of the view, with the development mostly screened by the vegetation on the site and set within the topography.



Fullerton Street North – Existing View
Focal Length: 35mm



Fullerton Street North – Proposed Development View

10.4 Fullerton Street South



View north along Fullerton Street

The view is north along Fullerton Street adjacent to the southern-most point of the site. The view would be seen on approach to the site for vehicles and pedestrians travelling north to join Nelson Bay road from Stockton Town Centre.

The existing view comprises a flat grassed area alongside the street, running from the foreground to the background, and vegetation running from foreground to background in the image right. The background is primarily large trees. Some existing development can be seen on the site.

The concept master plan would result in some minor obstruction of vegetation in the background of the view. Dense vegetation and site topography existing on the site would obscure lower built form in the foreground of the view.



Fullerton Street South – Existing View
Focal Length: 35mm



Fullerton Street South – Proposed Development View

10.5 Fort Scratchley



View north from Fort Scratchly to the subject site
The view from Fort Scratchly is highly significant due to its heritage value and public nature, as well as its use as a look out in the area. The view comprises open space, the beach and coastline, the ocean and the Stockton Peninsula in the background.

The subject site forms part of the far background of the view. The concept master plan would not be clearly visible from this location and there is no impact the character or the value of the view.



Fort Scratchley – Existing View
Focal Length: 35mm



Fort Scratchley – Proposed Development View

10.6 Newcastle Ferry Wharf



View north from the Newcastle Ferry Wharf

The Newcastle Ferry Wharf is a key view in the area, being a public and well frequented space with a pleasant view of the ocean and Stockton Town Centre to the north.

The subject site and concept master plan would not be visible from this location.



Newcastle Ferry Wharf – Existing View
Focal Length: 35mm



Newcastle Ferry Wharf – Proposed Development View (Development is not visible from this location)

10.7 Stockton Beach



View west from Stockton Beach

The coastline is a valuable public asset. Due to the current security of the site, the view location is not frequently accessed, but is available to the public when walking along the beach or undertaking recreational activities such as fishing. The concept master plan would facilitate improved access to the beach and would be likely to increase the public use of this location.

The existing view comprises the dunal system with some low vegetation. A small part of the southern gun emplacement can be seen on top of the dunes in the background.

The concept master plan would not be visible from this location, due to the height of the dunes.



Fullerton Road North – Existing View
Focal Length: 35mm



Fullerton Road North – Proposed Development View (Development is not visible from this location)

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Conclusion

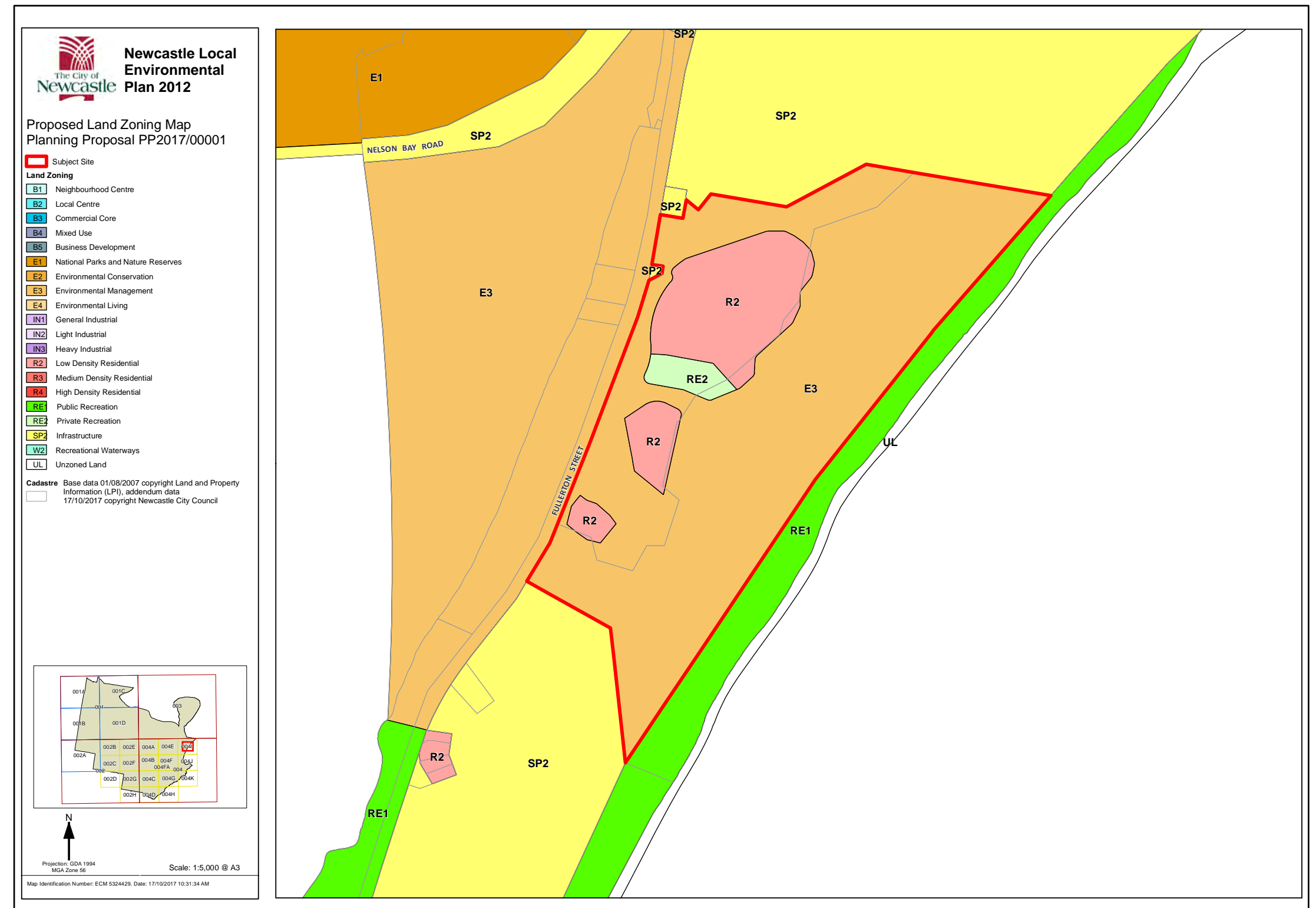
The proposal is the result of engagement with a range of technical specialists, including coastal erosion, traffic, heritage, and archaeology, to develop a master plan that achieves the best practice planning and urban design principles in line with the changing vision for the future of the site.

Having investigated the site and its context in detail, Architectus and Spackman Mossop Michaels are confident that the master plan, further refined and tested in detail, represents the best design and public domain outcome for the site.

11.1 Planning controls

The proposed LEP controls are intended to strike the right balance between development and conservation of the site's significant features. Sensitive ecological communities, heritage items and vulnerable coastal lands are proposed to be protected and enhanced, whilst the flatter, mostly featureless parts of the site are to be made available for housing and community amenities. Through new development, the historic site can be opened up to the public, new open space can be provided and degraded relics and vegetation communities can be restored.

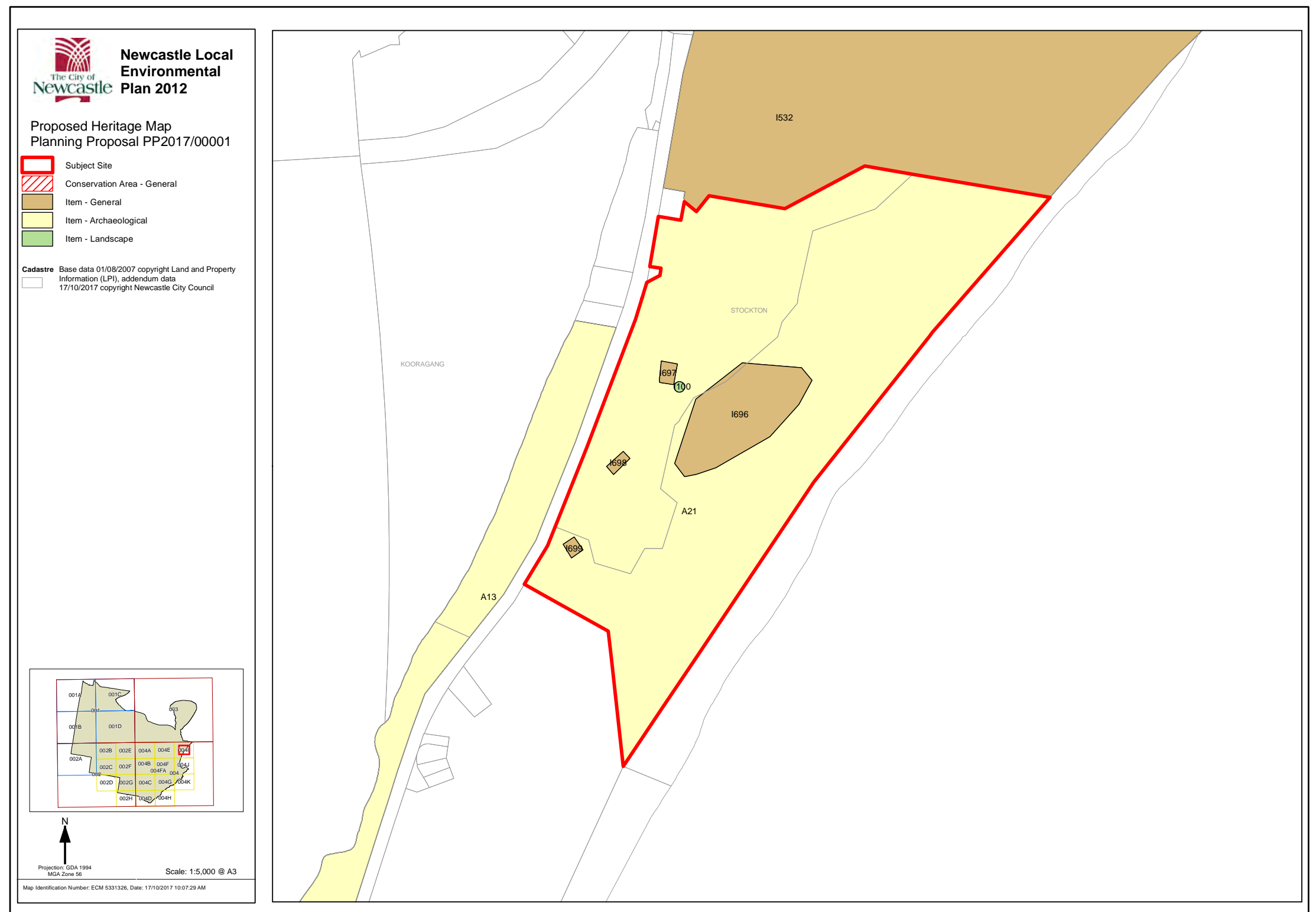
MAP 1 - Proposed Land Zoning Map



MAP 2 - Proposed Height of Buildings Map



MAP 3 - Proposed Heritage Map



MAP 4 - Proposed Lot Size Map



Appendix A

Master plan options

Master plan options

The final recommended master plan was the result of the development and testing of a range of options for the sites development. These are included in the following pages to demonstrate the various benefits and constraints of each plan and highlight the reasoning for the final recommended master plan as set out in this report.

The master plans showed on the following pages are not recommended and are intended only to provide additional information on the urban design process undertaken.

Option One - Working with existing constraints

This layout utilises existing access arrangements as well as some of the existing road alignments.

Perimeter roads create a outward looking community and a clear delineation between development and 'bush' areas.

Development is restricted to the less ecologically sensitive or disturbed areas of the site.

Approximate development mix/yield (indicative only subject to testing)

Type	Area m ²	Density dw/ha	Dwellings
Dune apartments/town houses	6,100	50	30
Medium density coastal clusters	16,500	30	49
Single eco-homes	7,700	10	8
TOTAL	30,300		87

Legend

Dune apartments/town houses	<div></div>
Medium density coastal clusters	<div></div>
Single eco-homes	<div></div>
Public open space	<div></div>
Retained bush/vegetation	<div></div>



Maximising the southern development parcel

This layout is a variation on Option 1 that extends the developable area in two locations to further increase potential yield.

To the north of the site sensitive development of medium density coastal clusters could be located within existing areas of mapped ecological communities,

In the southern portion of the site additional development is shown on the an area of existing isolated vegetation as well as an existing remnant structure.

Approximate development mix/yield (indicative only subject to testing)

Type	Area m²	Density dw/ha	Dwellings
Dune apartments/town houses	6,000	50	30
Medium density coastal clusters	25,000	30	75
Single eco-homes	6,500	10	7
TOTAL	37,500		118

Legend

- Dune apartments/town houses
- Medium density coastal clusters
- Single eco-homes
- Public open space
- Retained bush/vegetation



Master plan options

Breaking down the edges

This layout is a variation on Option 1 that restricts development to these areas outside the mapped ecological communities. It moves the perimeter road inward from the coastal dune boundaries and allows for groups of environmentally designed ‘medium density coastal clusters’ around the perimeter.

By removing the perimeter road and having dwellings set within the coastal vegetation this may help to reduce the sense of a traditional subdivision and create a better synergy with the coastal environment.

Approximate development mix/yield (indicative only subject to testing)

Type	Area m²	Density dw/ha	Dwellings
Dune apartments/town houses	11,500	50	57
Medium density coastal clusters	7,500	30	22
Single eco-homes	9,500	10	9
TOTAL	27,500		88

Legend

Dune apartments/town houses

Medium density coastal clusters

Single eco-homes

Public open space

Retained bush/vegetation



Appendix B

Precedent studies

B

Precedent studies

The Sea Ranch, California, USA



The Sea Ranch Coastal Landscape

Source: <https://noordinaryresort.com/2015/02/27/the-sea-ranch-ca/>

Environment

The Pacific Ocean coastline north of San Francisco features a windswept and rugged landscape. The Sea Ranch covers a section of this coastline approximately 16km in length, straddling Highway One as it winds along the hillside. This landscape is characterised by open meadows between hedgerows of cypress trees planted perpendicular to the coast as buffers to the wind. The vision was for a community of people to sensitively inhabit this place while preserving the quality and character of this environment.



The Sea Ranch Condominium One by Moore Lyndon Turnbull and Whitaker

Source: The Sea Ranch: Qualified Vernacular. Donlyn Lyndon, University of California Berkeley.

Dwellings

This property was purchased in 1964 by Oceanic Properties for the development of a new town. Landscape architect Lawrence Halprin was hired to plan the site based on ecological considerations. Guidelines were established to promote design continuity in developments, beginning with the prototype Condominium One by Moore Lyndon Turnbull and Whitaker. Over time, houses with more suburban formats have become more prevalent, dissolving the strength of the original community clustering intent.

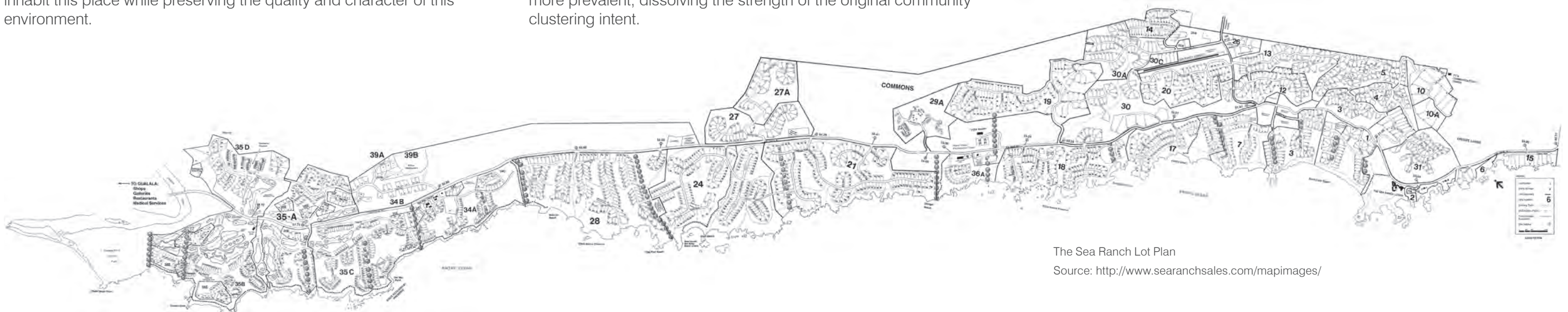


The Sea Ranch Condominium 1 by Moore Lyndon Turnbull Whitaker

Source: <http://ideasgn.com/architecture/condominium-1-sea-ranch-mltw/>

Lessons Learned

Architect and developer Al Boeke has stated that his idea was that “we would respect the land. We would build architecture... that seemed natural to this place.” This concept has been largely upheld by attracting environmentally inspired residents to build within site-specific controls; including a covenant, design principles, and design review process.



The Sea Ranch Lot Plan

Source: <http://www.searanchsales.com/mapimages/>

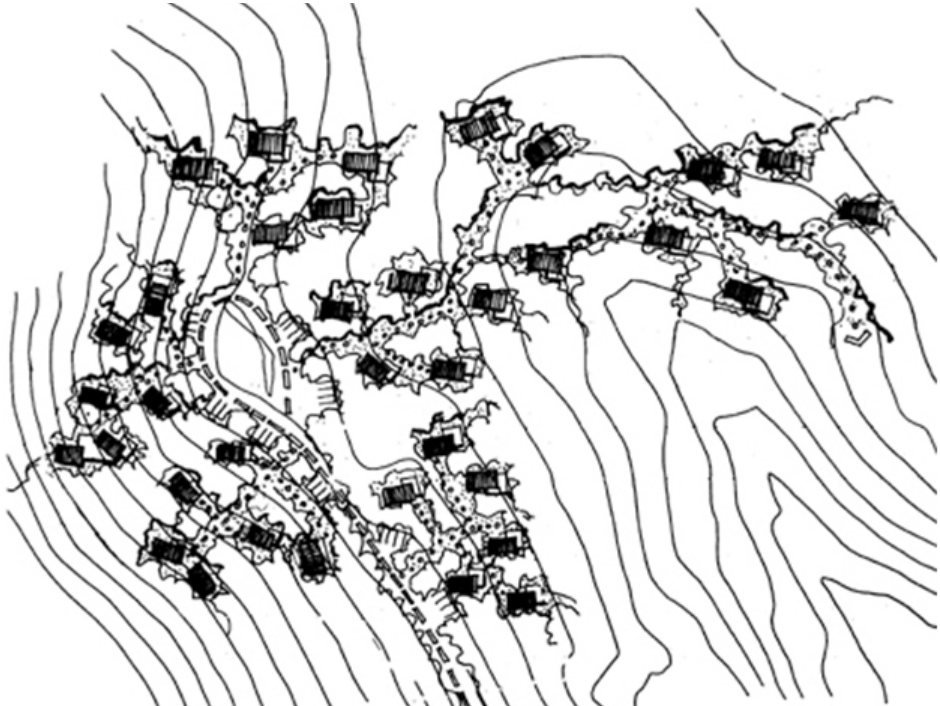
Murray’s Beach



Murray's Beach is located on the Wallarah Peninsula, facing onto Lake Macquarie
Source: Nearmap

Environment

The Wallarah Peninsula is a largely forested area of land between Lake Macquarie to the west and the Pacific Ocean to the east. The North Wallarah Peninsula Master Plan guides development of a series of small suburbs, including the lakeside village of Murray’s Beach. This low density housing development features a environment and community oriented character that integrates it with the coastal landscape.



The houses at Murray's Beach are arranged as clusters in the landscape.
Source: Architectus

Dwellings

Streets and housing lots are designed to be woven into the landscape, with lots sold individually and developed in accordance with a set of design guidelines. A *Design Essentials* document encourages the sensitive siting, scale, expression, and environmental performance of individual houses in harmony with the bush context. For example, houses should be sited along contours to minimise ground works for cut and fill, and placed within designated development envelopes away from existing trees.



The coastal forest landscape predominates throughout the Murray's Beach development.
Source: Architectus

Lessons Learned

The houses at Murray's Beach are successful in expressing a continuity of landscape. The positioning and openings of houses is generally well staggered, allowing space in between for trees. Construction is mostly lightweight, with a harmonious material and colour palette. Private divisions such as solid fences are discouraged, creating a sense of openness throughout the bushland setting.

Generally, earlier constructions in Murray's Beach display a higher level of contextual harmony than more recent projects. Design regulations appear to have been relaxed, with increases in hard surface areas and more solid fencing materials. A system that relies upon design guidelines for quality control is dependent on the rigourousness of the application of development standards.

Precedent studies

Little Bay



The Prince Henry Hospital Pathology Ward 1.
Source: <http://www.princehenrycommunity.com.au/assets/Uploads/images-and-pdfs/>

Environment

Little Bay, to the south-east of Sydney, has been home to the Prince Henry Hospital since 1881. The 1998 consolidation of the Prince Henry and Prince of Wales Hospitals made the Little Bay site available for redevelopment, with master planning by Landcom beginning in 2000. Several large precincts were developed separately, with design guidelines and design review processes to manage design outcomes, heritage conservation and adaptive reuse, housing diversity, and affordable housing provisions.



The Little Bay Master Plan features a wide diversity of housing type.
Source: Randwick DCP 2013

Dwellings

Little Bay has a high diversity of dwelling types; with apartments, terraces, townhouses, and houses. 1% of total dwellings are affordable housing. This variety facilitates community diversity in life stage and family type. There is also a Surf Life Saving Australia office, an Aboriginal Health College, community centres, and a retail precinct, providing local employment, education, and shopping. A variety of high quality public open spaces reinforce the coastal quality of the place and offer recreation opportunities in daily life.



Little Bay displays a successful blend of hertiage, new development, and landscape.
Source: Architectus

Lessons Learned

Little Bay is a highly livable example of new development integrated with the existing place and context. Separate but coherent developments of a range of scales create an attractive aesthetic, while offering opportunities for a range of people to live, work, and play. This has been achieved while conserving the local heritage features and natural coastal character and amenity.



Little Bay apartments, terraces, houses, heritage buildings, and beach.
Source: Nearmap

Lake Crackenback



Houses at Lake Crackenback use forms, materials, and colours in sympathy with the landscape.
Source: <http://www.lanceworkshop.com/portfolio/ski-lodge-13-lake-crackenback/>

Environment

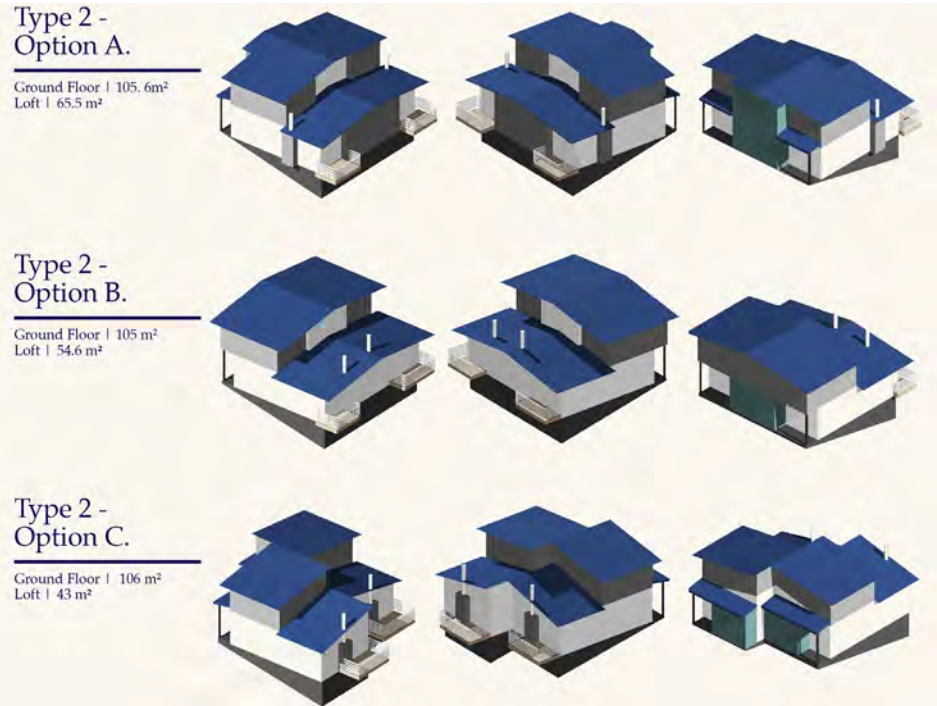
Lake Crackenback is a holiday resort near Bullocks Flat in the NSW Snowy Mountains. A strata plan structure applies to all apartments and chalet-style houses, allowing owners either exclusive use, letting agreements, or shared arrangements for their properties. Meanwhile, a private resort management company operates letting, housekeeping, maintenance, activities, food and beverage operations, and day spa facilities.



The 'Lakeside Chalets' land release restrains building envelopes to enable continuity of existing feature rocks and trees.

Dwellings

A row of apartment blocks face north along the edge of the lake, while houses are dispersed along streets and culs de sac. The land release for the 'Lakeside Chalets' includes a series of twin-key plans to combine architectural homogeneity with some variety. Two rows of houses are located between the lake and the street, with easements through the upper blocks providing access to those below.



Architect-designed house types for the 'Lakeside Chalets' can be amended to suit individual requirements, subject to review by architectural committee.

Lessons Learned

Lake Crackenback displays some degree of environmental sensitivity. Existing groups of trees and rocks are often retained, but are built over in places. The lake edge is manipulated, with infills and some building footings extending into the water. This interrupts the waters edge in an ecological sense, while also restricting access around the lake. This relatively more environmentally intensive development unfortunately places a higher priority on private amenity than public access and enjoyment.

The James Grose-designed post-modern apartments at Lake Crackenback won the Sulman Award for public architecture in 1990.
Source: https://commons.wikimedia.org/wiki/File:Lake_Crackenback.jpg



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