PROPOSED — SITE PRINCIPLE 9

9 LANDSCAPE

Prepared by

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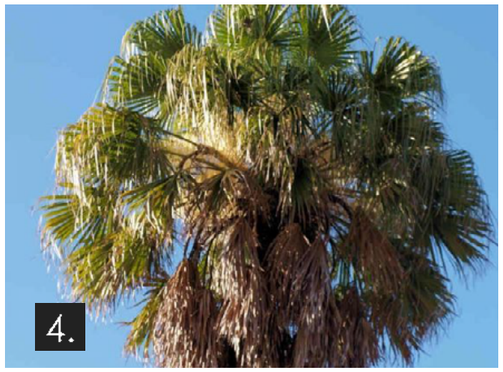
terras landscape architects

Plant Palette 1

The landscape theme consists of two plant palettes. The first planting palette is essentially native plants, typically endemic that would be used for the areas where the site interfaces with the adjoining protected foreshore areas. This will allow the development to blend into the existing landscape and minimise any visual disparity.



.EGEND

1. *Howea forsteriana* [Kentia Palm]
2. *Isolepsis nodosa* [Knobby Club Rush]
3. *Banksia integrifolia* [Coast Banksia]
4. *Livistona australis* [Cabbage Tree Palm]
5. *Asplenium australasicum* [Birds Nest Fern]
6. *Banksia serrata* [Old Mans Banksia]
7. *Pandanus spiralis* [Screw Pine]
8. *Alocasia brisbanensis* [Elaphants Ears]

9 LANDSCAPE

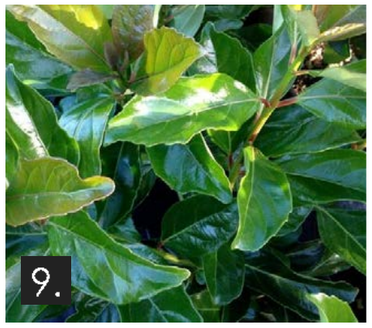
Prepared by

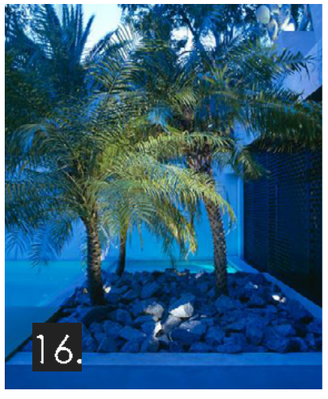
-

terras landscape architects

Plant Palette 2

The second planting palette is a more stylised theme to create using distinctive 'architectural' plant forms that include natives but have a wider range of plant types. All the plants need to be suited to windy exposed conditions with some salt tolerance.





EGEND

9. *Viburnum odoratissimum* [Emerald Lustre]
10. *Hibiscus tiliaceus* 'Rubra' [Bronze Cottonwood]
11. *Arthopodium cirratum* [Renga Lily]
12. *Senecio serpens* [Blue Chalk Sticks]
13. *Furcraea foetida* [Mauritius Hemp]
14. *Philodendron* [Congo Philodendron]
15. *Dioon spinulosum* [Gum Palm]
16. *Phoenix roebelenii* [Pygmy Date Palm]
17. *Alpinia zerumbet* [Shell Ginger]

APPROVED — SITE PRINCIPLE 10

10 ROADS, VEHICULAR ACCESS & PARKING

Provide for adequate, safe and efficient vehicular access to and around the site, ensuring adequate provision of parking.

Objective

To ensure adequate arrangements are in place to access the site, move through the site and park based on the likely traffic volumes and parking generation and accounting also for service vehicles in order to provide for the amenity and convenience of future occupants and visitors to the site and to ensure no unreasonable off site impacts.

Guidelines

A number of external intersections have been identified as requiring upgrading as a result of cumulative traffic associated with other traffic growth or anticipated growth in the locality (and other approvals), in some cases including a component of traffic from the Trinity Point Marina and Mixed Use Development. These are:

- **Macquarie Street and Fishery Point Road (to signal control)**: The RTA has been collecting contributions for this upgrade under a Transport Infrastructure Contributions Deed with each new development that contributes to this intersection. RTA collects monies on a per lot created basis. It is anticipated that RTA will require a proportioned contribution from the Trinity Point Marina and Mixed Use Development, based on a percentage of impact.
- **Fishery Point Road and Station Street (to signal control)**: This intersection upgrade has already been triggered and approved by Council as a requirement for a separate development proposal ('Scarborough Gardens') (DA 687/2007). The works are being undertaken by that developer, with cofounding by Council of 36% of works or $97,200 (whichever is lesser).
- **Fishery Point Road and Morisset Park Road**: This is not currently part of any approved intersection upgrade. Initial traffic analysis outlines that this intersection will need to be upgraded in the future. It is anticipated that Council will require a proportioned contribution from the Trinity Point Marina and Mixed Use Development, based on a percentage of impact.
- **Morisset Park Road and Charles Avenue (to local street roundabout)**: This intersection upgrade has already been triggered and approved by Council as a requirement of Stage 7 of the adjoining residential subdivision (DA 2293/2006). The works are to be undertaken wholly by that developer. In addition, the same approval requires the provision of kerb and gutter on the southern side of Morisset Park Road from the new roundabout to the existing kerb.

Agreement will need to be reached with the relevant road authorities regarding external road upgrades relative to the Concept Plan and future applications.

Figure 101 demonstrates the key access and parking principles for the site. These include:

- Main access to site off Morisset Park Road and along Trinity Point Drive (to be constructed as part of the adjacent residential subdivision).
- Bus stop to be provided and constructed as part of adjacent residential subdivision for dual purpose of general public transport and tourist bus stopping (time limited).
- At grade parking for village piazza area, under raised piazza and built form (see also Principle 12).
- A main loop, low speed, internal grid road system is to be established, providing individual lot access and a highly connected vehicular system to the external road network. Future applications are to consider the need or otherwise for circulation control (i.e. one-way and two-way) and integration of the vehicle and lot function with other streetscape functions – pedestrian, parking and landscape.
- An internal laneway is to be provided to serve as vehicle only access. This includes connection to parking under the built form facing the western site boundary.
- Parking numbers to be provided on site to comply with Lake Macquarie Development Control Plan 1 and AS 3962-2001 (Guidelines for the Design of Marinas). Specifically for the marina (berths, workshop / maintenance, marina operations, management and administration areas and marina lounge / amenities), parking is to be provided at a rate of 0.3 spaces per berth, plus 0.5 per FTE staff member. Additionally, where it is demonstrated that vehicle parking will be used to access a variety of activities within the development, or that DCP 1 rates are inappropriate, the total parking provisions may be reduced.
- A Parking Management Strategy should be prepared to manage parking on site, including during peak events within the marina and piazza.
- The proposed development is to make appropriate provision for service vehicles including the delivery of goods and collection of garbage taking into account swept path requirements of those vehicles.
- The approved road carriageway along the western site boundary is to be investigated for indented parking bays between street trees given the length available due to limited vehicle crossing points.

Figure 101
Vehicular access and parking.

PROPOSED — SITE PRINCIPLE 10

10

ROADS, VEHICULAR ACCESS & PARKING

No change is proposed to the macro scale road network from the approved Concept Plan, which is to provide access across the site as appropriate whilst also ensuring pedestrian safety and amenity for occupants is maintained.

Vehicular access to all areas tourist hospitality precinct is still proposed to be from Trinity Point Drive at the nodal point where Trinity Point Drive turns to the south. A roundabout is proposed at this nodal point and will form the point where tourist hospitality and accommodation parking will separate. One way vehicular access is proposed to the east of this nodal point.

Car parking in the tourist hospitality precinct is located in a podium beneath the landscape garden and the proposed buildings with additional marina parking located at the northern end of the site. This parking is accessed via an access roadway running along the western edge of the site, with a ramp down to the underground car park and the marina parking at grade.

Accommodation parking is also located in a basement, sited beneath the apartment buildings to the south of the tourist hospitality precinct. Access to this parking will be via an internal driveway leading off Trinity Point Drive, with three separate ramps down from this to the underground parking. There is a reduction on the dominance of the road network in the part of the site so as to make way for landscaping.

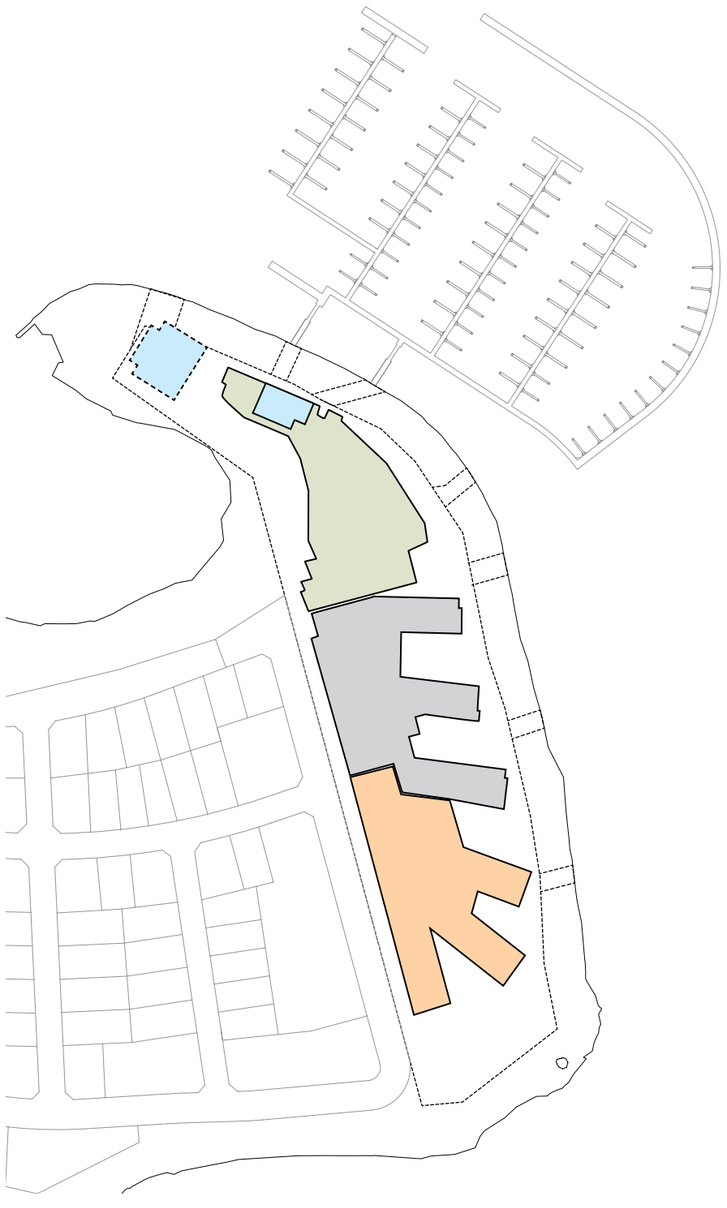
In contrast to the concept plan, this road network maintains the primacy of the pedestrian links across the site, in keeping with the overall philosophy of the site as buildings in a landscape setting.

Refer to the traffic assessment which accompanies this submission.

Figure 102
Vehicular access.

10

ROADS, VEHICULAR ACCESS & PARKING



Indicative Primary Purpose of Parking

- Dual Use (residential and short stay)
- Short Stay
- Tourism & Hospitality
- Marina / Retail and other uses

- Above ground parking.
  Indicative allocation subject to dual use and similar across development phasing

Figure 103
Parking spaces.

APPROVED — SITE PRINCIPLE 11

11 WATER MANAGEMENT

Ensure stormwater runoff is managed to have no impact on the receiving environment.

Objective

To provide preventative measures to ensure no impact on aquatic environment and lake water quality and to provide for water harvesting and re-use opportunity.

Guidelines

- Stormwater Management Plans are to be provided with Future applications, incorporating the following measures:
- Adopt a best practice water sensitive urban design approach, focusing on preventative and source controls where possible.
- Provide rainwater harvesting, permeable pavements and bio-filtration swales as part of overall stormwater strategy (where deemed appropriate). Residential dwellings to achieve water efficiency targets as required by BASIX.
- Incorporate and adopt a range of preventative, containment and treatment measures for stormwater management from the marina workshop and hardstand area. To include a first flush tank and treatment of captured stormwater for reuse/trade waste discharge, and segregation of hardstand surface area into three areas to facilitate waste collection and treatment.
- Provide oily waste recycling tank for wastes from workshop and from oily bilge water from the pump out facility on the marina.
- Fuel storage tanks to be designed according to authority requirements including double skinned tanks.
- Implement a water quality monitoring program during construction and for three years of marina operation.
- Design and install sediment and erosion control structures during construction according to an erosion and sediment control plan.
- Incorporate overland flow paths as necessary.
- All potential contaminants and their collection systems must be located so they are adequately protected from entering the lake during a 1:100 yr flood event, plus sea level rise. This includes but is not limited to things such as fuel, oil separators, first flush tanks and the like.

In addition:

- Consider acid sulphate soils management, in line with a management plan, in design and construction methodologies.
- Consider groundwater implications in design and construction methodologies.

These matters are to be considered in further detail with Future applications.

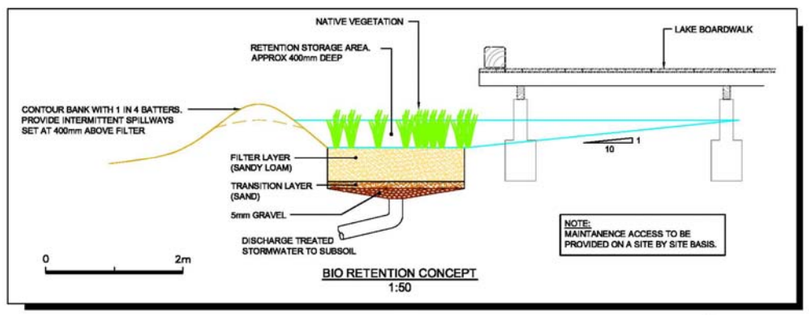


Figure 104
Bio-retention concept diagram.

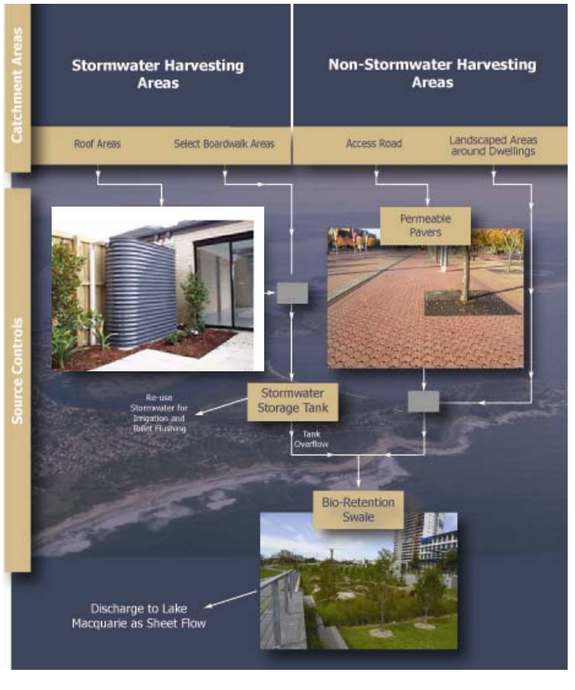


Figure 105
Stormwater treatment train.

PROPOSED — SITE PRINCIPLE 11

11 WATER MANAGEMENT

Broadly, the proposed stormwater management strategy in the approved concept plan is appropriate. Minor amendments to proposed treatment measures have been proposed to enable more efficient treatment of stormwater runoff and increased opportunities for rainwater harvesting.

The proposed modifications reduce the extent of paved surfaces and allows for more landscaping opportunities. The reduced impervious services reduce the impact upon the catchment hydrology and reduce potential sources of waterway pollutants. Additionally source controls including rainwater harvesting, gross pollutant traps and bio-filtration swales have been proposed as part of an overall water quality strategy.

Please refer to the Stormwater and Flooding Modification Plan for further detail.

APPROVED — SITE PRINCIPLE 12

12

FLOODING

Ensure that the proposed buildings consider and design for the effects of flooding.

Objective

Locate buildings above flood level, with flood level to be determined with regard to sea level rise through climate change.

Guidelines

Flood planning levels have been devised taking into account frequency, still water level, wave action, potential climate change impact and design life of various components of the site.

The proposed minimum flood planning levels are:

- Habitable Floor Levels – 2.85m AHD.
- Hardstand Area & Workshop – 1.1m AHD (with electrical wiring above 2.42m AHD).
- Road level and foreshore regrading to protect marina village undercroft parking spaces – 1.60m AHD.
- Marina Structures – 1.60m AHD.

Where necessary, Future applications relating to the village piazza (including undercroft parking area) and marina utility components of the project are to document broad sea level rise adaption measures and strategies available and how they have been, or can be, incorporated. These are to integrate with other principles of this Concept Plan.

Appropriate evacuation strategies and draft evacuation plans are to be prepared and submitted with relevant future applications for village piazza undercroft parking area, village piazza and marina utility buildings and areas.

Comment

Flooding in Lake Macquarie is governed by long duration rainfall events, hence a 2 to 4 day time to peak would be expected. Allowing sufficient time for flood preparation and excavation measures to be undertaken

Adaptive Management in Response to Climate Change

- Habitable floor levels for buildings are to be designed based on the 100 year design life above the 100 year ARI flood level plus 100 year sea level rise allowance.
- Evacuation routes to be defined above the anticipated PMF level in 100 years.
- Adoption of shorter design life for structures with adaptive capability and higher acceptable flood risk such as marina piles, breakwater, boat lift facility, marina access walkways. Piles can be extended to accommodate rising sea levels and therefore flood levels over time.
- Marina hardstand and workshop area – practicalities of purpose dictate lower levels and wet flood proofing is possible. Retrofitting to changes in levels in the future is possible for these land uses.

Figure 106
Extent of current 100 year ARI flood design still water level.

12

PROPOSED — SITE PRINCIPLE 12

FLOODING

All buildings are proposed to be located above design flood levels, consistent with the Council's Flood Information Certificate and includes a 500mm freeboard.

The proposed floor levels comply with the flood levels described in the Flood Plain Risk Management and Flood Certificate. They include:

- Hotel foyer and marina/retail car park: RL 2.36
- Restaurant: RL 3.20
- Tourist hospitality basement carpark: RL 0.8
- Tourist hospitality car park entry: RL 2.82
- Marina office, shops and sales centre: RL 2.36

Please refer to the Stormwater and Flooding Modification Plan for further detail.

APPROVED — SITE PRINCIPLE 13

13 SERVICES & WASTE MANAGEMENT

To provide adequate utility infrastructure including provision for handling waste to cater for the demands of the development.

Objective

Comply with the requirements of utility and waste collection authorities.

Guidelines

- Utility infrastructure including water, sewer, electricity, telecommunications and gas is to be extended to the site.
- Services to be supplied throughout the development.
- Provide adequate on site storage opportunity for waste and recycling streams commensurate with the land use types and provide adequate arrangements for regular collection (including marina).
- All chemical and fuel storages, including storage of wastes (such as oily waste) be designed and operated in accordance with Information Sheets 5 and 6 DECC's Environmental Action for Marinas, Boat sheds and Slipways (June 2007).
- A waste management plan to be prepared to address the building construction and operational phases of development.

PROPOSED — SITE PRINCIPLE 13

13

SERVICES & WASTE MANAGEMENT

As per the approved Concept Plan, Services & waste collection points will be located throughout the site.

Waste for the tourist hospitality precinct will be collected from the loading bay at the northern end of the site, as well internally within the basement car park.

Residential tourist accommodation waste will be collected from the internal street within those precincts, with appropriate storage areas incorporated into site planning. Full details will be provided in waste management plans for specific areas.

APPROVED — SITE PRINCIPLE 14

14 MARINA

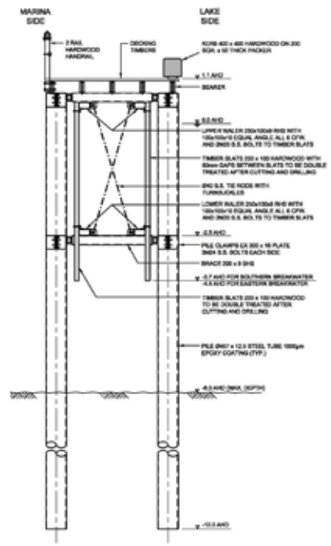
To provide a Marina

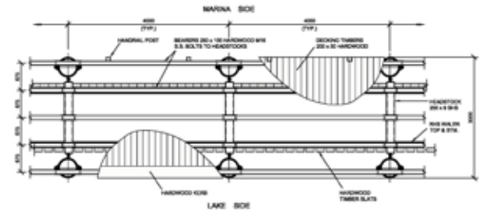
Objective

Having regard to the contextual analysis undertaken, the proposal aims to take advantage of the Lake for the purposes of promoting tourism to the region. This site presents that opportunity, given limited environmental constraints and impacts (no dredging required, no significant impacts on sea grass or marina species and the like) together with the unique chance to combine it with a land based marina and tourism component.

Guidelines

- Stage 1 of the marina will consist of 94 berths with breakwater. A second stage of up to 94 berths may proceed subject to a range of strict assessment triggers to be outlined in any Concept Plan or subsequent approval (see also Principle 19). A boat lift facility and other land based marina functions will also occur without being limited to specific staging of the water-based marina.
- The proposed 188 berth marina being constructed in stages as identified in Figure 96 and being designed to meet AS 3962-2001 "Guidelines for Design of Marinas". The proposed Marina will provide for boats up to a maximum length of 20m. The proposed Marina will be connected to the shore based components in a manner than does not unreasonably restrict public access along the foreshore. Structures, other than the travel lift, crossing the narrow fringing seagrass, to be constructed from timber with aluminium grating.
- The proposed Marina to be protected by an other Breakwall which is to be publicly accessible from the shore in a manner that does not unreasonably restrict access along the foreshore. The breakwater to be designed incorporating fixed timber deck on steel piles with partial depth double skirted timber slats. The partial depth structure is to allow water movement. Part of the southern breakwater closest to the shore is to be open to further enhance movement of water and to prevent sea grass wrack accumulation. The breakwater is to be maintained to prevent sea grass wrack accumulation.
- Marina arms to consist of floating pontoons.
- Provision being made available for approximately 117m length on the inside edge of the breakwall for public day berthing (as part of stage 1) and provision made for occasional berthing of tourist boats on outside eastern edge of the breakwater.\
- Vessel exclusion zone to south of southern breakwater to protect extensive sea grass areas, if required by authorities.
- Berths to be provided with water, power and lighting services.
- Marina to include required fire fighting equipment plus public fuel, sewage pump out (dual bowser) and oily bilge pump out facilities provided within Stage 1. Two double skinned fuel storage tanks, plus oily waste recycling tank to be provided on land, as well as small waste water pumping station.
- No dredging required with marina and boat lift designed to existing water depths, with tubular steel piles used throughout construction to reduce seabed impact.
- Boat lift facility with 2 steel runway beams supported on tubular steel piles, extending approximately 45m into lake, for vessels up to 75 tonnes, 25m length and 8m beam.
- Associated land based facilities including repair and maintenance facility for minor repairs and maintenance (hardstand area and workshops), marina facilities and services and service infrastructure, as well as mixed use development and parking (refer other components of Concept Plan).
- The Hardstand area is to be set above 5 year ARI flood level. Minor filling (to 1.1m AHD) will be required and design is to include a first flush and washdown water collection and treatment system and strict environmental controls.
- A water quality monitoring program is to be developed for the construction phase of the water and land based marina development.
- Construction Environmental Management Plans are to be prepared (water quality, erosion and sediment, noise, acid sulphate soil management and the like).
- Operational Environmental Management Plans are to be prepared, to also include operational management of the facility.
- Landscaping / Re-vegetation to northern and western foreshore past travel lift to screen fencing and hardstand area (refer also Principle 8).
- The proposed marina will provide for boats predominantly up to a maximum length of 20 m with the option to provide up to two berths for power boats between 20-30 m generally in locations as shown in Figure 10b of Principle 14. No dredging is permitted to facilitate the berthing of any vessels.
- Note: The berthing of yachts in excess of 20 m in the locations identified in Figure 10b in Principle 14 may be permitted if it can be demonstrated that these vessels can safely pass through the Swansea Channel.





PROPOSED — SITE PRINCIPLE 14

14 MARINA

To provide a Marina

Objective

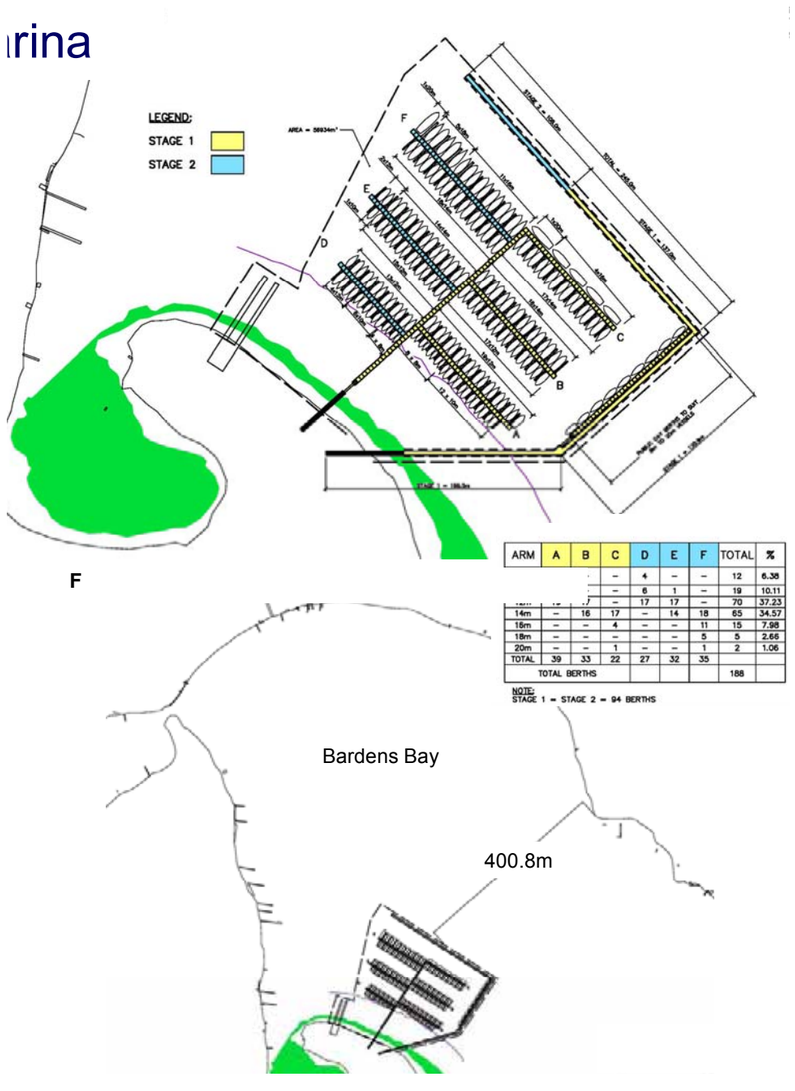
Having regard to the contextual analysis undertaken, the proposal aims to take advantage of the Lake for the purposes of promoting tourism to the region. This site presents that opportunity, given limited environmental constraints and impacts (no dredging required, no significant impacts on sea grass or marina species and the like) together with the unique chance to combine it with a land based marina and tourism component.

Guidelines

- Stage 1 of the marina (divided into substages 1a and 1b) will consist of a maximum of 94 berths with part of the floating breakwater as required. Subsequent stages of up to 94 additional berths may proceed subject to a range of strict assessment triggers to be outlined in any Concept Plan or subsequent approval (see also Principle 19). Other land based marina functions will also occur without being limited to specific staging of the water-based marina.
- The proposed 188 berth marina being constructed in stages (up to 5 stages across the full marina with a 94 berth 'hold point' as defined in the Concept Approval) as conceptually identified in Figure 108 and being designed to meet AS 3962-2001 "Guidelines for Design of Marinas".
- The proposed Marina will provide for boats predominantly up to a maximum length of 20m, with the option to provide up to two berths for boats between 20-30m length generally in locations as shown in Figure 108, and where no dredging is required and where the berth complies with AS 3962 for that vessel
- The proposed Marina will be connected to the shore based components in a manner than does not unreasonably restrict public access along the foreshore. Structures crossing the narrow fringing seagrass, to be constructed with open grating to limit shading impacts.
- The proposed Marina to be protected by an outer floating Breakwater
- The proposed Marina is to include a landward floating boardwalk parallel to the foreshore. That boardwalk and its connections to the foreshore, are to be publicly accessible.
- Marina arms to consist of floating pontoons.
- Provision being for casual public berthing (as part of each stage including temporary provision in Stage 1a) and provision made for occasional berthing of tourist boats on outside eastern edge of the breakwater. This berthing is in addition to the maximum 188 berths of the marina and can be under the care and control of the marina but to be made available for casual public berthing
- Vessel exclusion zone to south of southern breakwater to protect extensive sea grass areas, if required by authorities.
- Berths to be provided with water, power and lighting services.
- Marina to include required fire fighting equipment plus public fuel and sewage pump out within Stage 1a. Double skinned fuel storage tanks to be provided on land.
- Maximum draughts for the fuel facility are to be communicated with marina information and signposted on the wharf.
- No dredging required with marina designed to existing water depths, with tubular steel piles used throughout construction to reduce seabed impact.
- Associated land based facilities including marina facilities and services and service infrastructure, as well as mixed use development and parking (refer other components of Concept Plan, including flood planning). At grade marina carpark forms part of concept approval, replacing the deleted vessel hardstand and repair/maintenance facilities.
- A water quality monitoring program is to be developed for the construction phase of the water and land based marina development.
- Construction Environmental Management Plans are to be prepared (water quality, erosion and sediment, noise, acid sulphate soil management and the like).
- Operational Environmental Management Plans are to be prepared, to also include operational management of the facility.

(Note: In the event of an inconsistency between this Principle and other site principles, this Principle 14 prevails).

14 MARINA



ARM	A	B	C	D	E	F	TOTAL	%
			–	4	–	–	12	6.38
			–	6	1	–	19	10.11
			–	17	17	–	70	37.23
14m	–	16	17	–	14	18	65	34.57
15m	–	–	4	–	–	11	15	7.98
18m	–	–	–	–	–	5	5	2.66
20m	–	–	1	–	–	1	2	1.06
TOTAL	39	33	22	27	32	35		
TOTAL BERTHS							188	

NOTE:
STAGE 1 = STAGE 2 = 94 BERTHS

Figure 107
Concept Marina and Staging

PROPOSED — SITE PRINCIPLE 14

14

MARINA

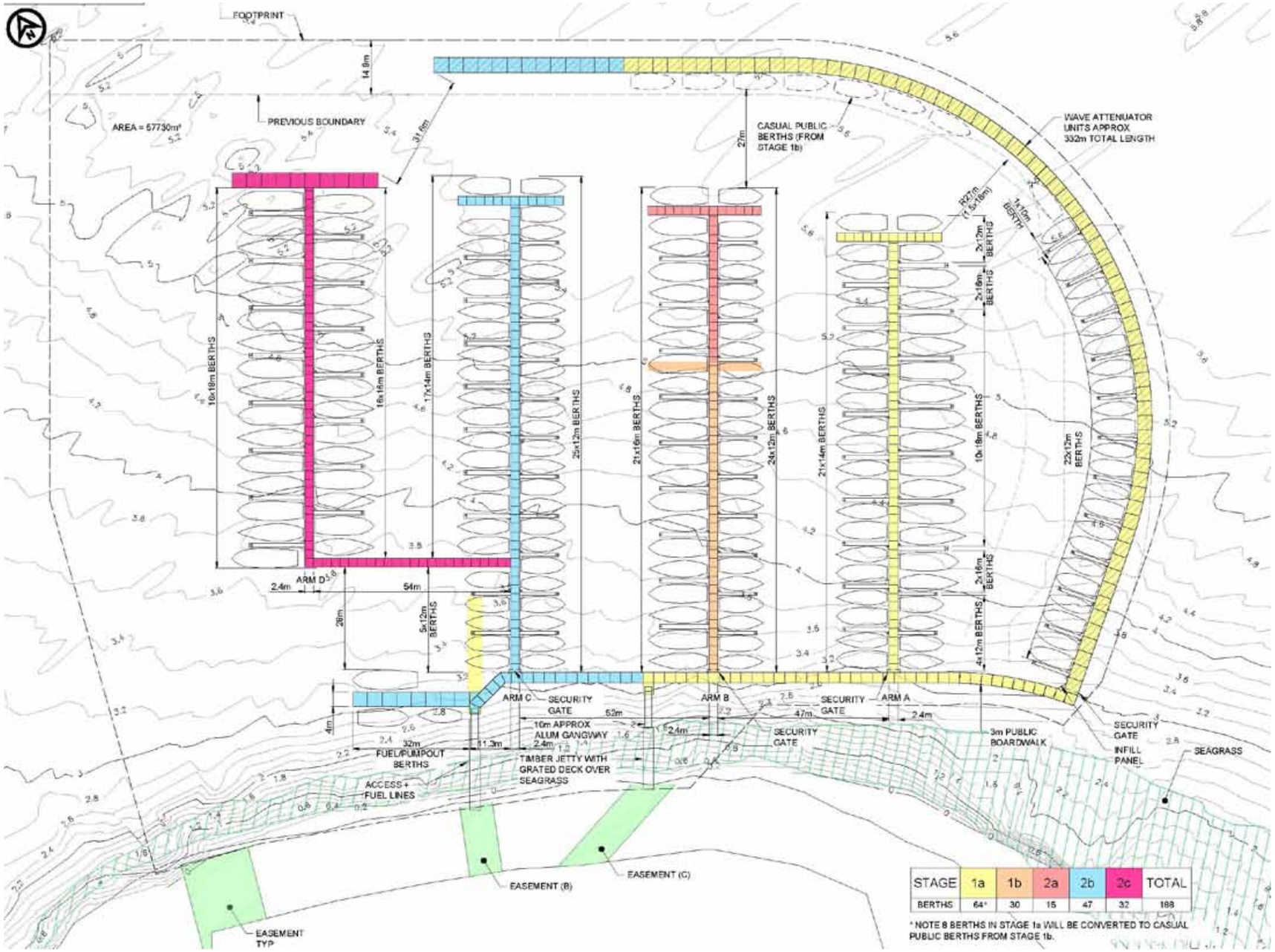
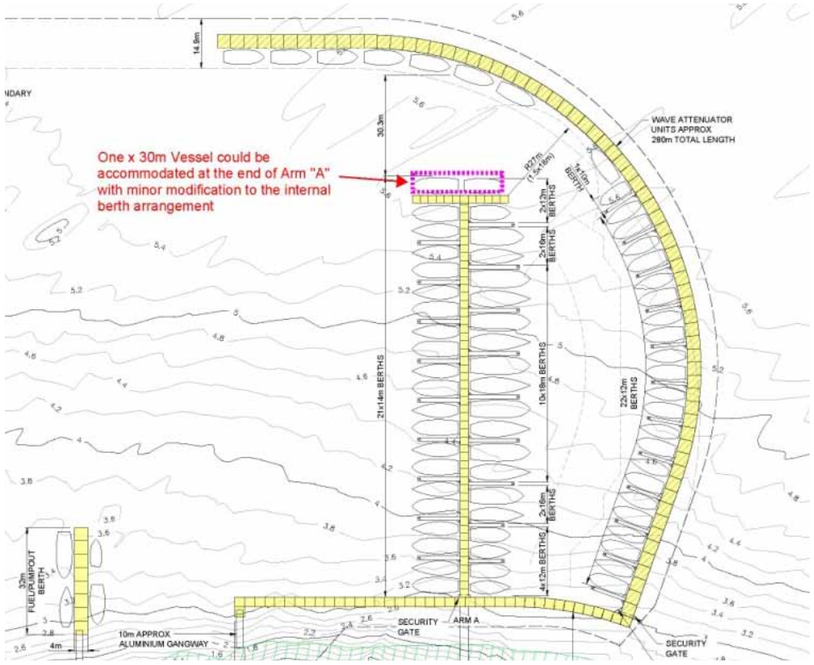
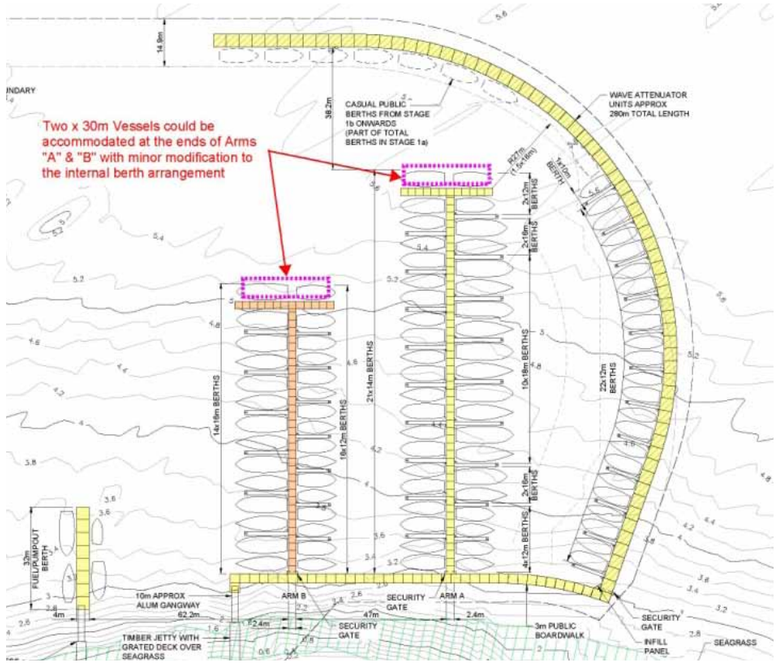


Figure 108
Concept Marina and Staging

MARINA





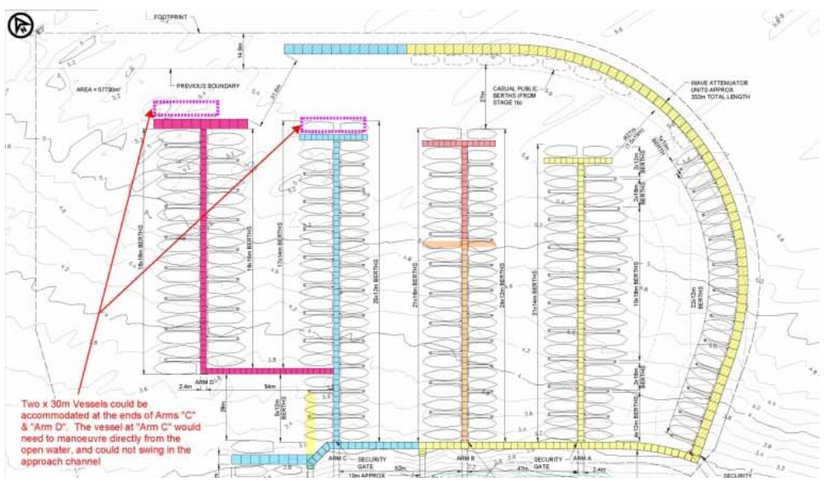


Figure 109
Potential Berths for Vessels 20-30m length across marina staging

APPROVED — SITE PRINCIPLE 16

16

ACOUSTICS

Ensure that the proposed development does not have an unreasonable acoustic impact on the surrounding locality and on future occupants of the site.

Objective

The proposed development to comply with relevant standards for the emission of noise.

Guidelines

- The proposed development is to comply with relevant noise criteria outlined in the ARUP Acoustics report for all aspects of the proposed development (excluding helicopter related criteria which has been removed from this proposal and no longer forms part of this Concept Plan).
- Further detailed acoustic reports demonstrating ability to achieve compliance with the established noise criteria and ameliorative measures to be included with future future applications. This is to include assessment of impacts on the adjoining developing residential estate.
- A Construction Noise and Vibration Management Plan is to be prepared prior to construction activity commencing.
- An Operational Noise Management Plan is to be prepared for relevant components of projects as a condition to subsequent project approval/s.
- The general EPA criterion of background + 5 dB(A) when measured as an Leq level over 15 minutes at any residential boundary is a standard noise criterion used and will apply to this development.
- This background + 5 dB(A) criterion is commonly identified as the EPA's "intrusive noise" criterion and will cover all noise emitted from the operations of the development. The intrusive criterion will cover mechanical plant noise, the marina workshop and handstand area and all operations of the marina.
- Due to the intermittent nature of noise from the construction of the development the EPA's relevant Construction Noise Criteria will be adopted for the development.
- The noise limits for construction noise require extensive noise control measures to be maintained throughout the construction phase of the development with on-going noise and vibration monitoring to occur and the provision of a dedicated noise complaint hotline.
- The use of the marina is covered by the overall intrusive noise criterion. However to address intermittent noise events that may occur at night the EPA's sleep arousal criterion of background + 15 dB(A) when assessed as a L1 (1 minute) level outside any bedroom window, will be applied.
- As part of an overall acoustic control the proponent will be required to produce a Noise Management Plan that provides self imposed noise control measures, including speed restrictions for vessels in the vicinity of the marina.
- To protect the acoustic amenity of existing and future residents with respect to road traffic noise the proponent will be required to introduce noise control measures to obtain compliance with the recommended noise criteria set out in the EPA's Environmental Noise Criteria for Road Traffic Noise document.
- Whilst the Concept Plan has indicated preliminary acoustic concepts for the development and has been modified during the consultation process to address some of the acoustic issues, the actual controls that will be incorporated into the development have yet to be finalised, due to the concept nature of the application.

Comment

Noise assessments which accompany the marina project component (those which are covered by the need for an Environmental Protection Licence) are to specifically provide data analysis on the assertions relating to ambient noise, explain differential between day and evening / night periods, justify vessel sound power levels used, include a sleep disturbance assessment and consider noise from refuelling and sewage / sullage pump out operations.

16

PROPOSED — SITE PRINCIPLE 16

ACOUSTICS

As per the approved concept plan and conditions, all acoustic measures will comply with the relevant codes and will be detailed in DA assessments. Please refer to the acoustic assessment by The Acoustic Group accompanied with this submission.

APPROVED — SITE PRINCIPLE 17

17

SUSTAINABLE DEVELOPMENT

To ensure that the proposed development adopts appropriate sustainability measures.

Objective

The proposed development is to minimise its impact on the environment by adopting sustainable design that includes the built form as well as energy efficiency and greenhouse gas minimisation during the design, construction and operational phase of the development.

Guidelines

- Relevant components of the proposed development being designed to meet the orientation, solar access, sun protection and cross ventilation principles of SEPP 65 and Lake Macquarie DCP 1.
- Relevant components of the proposed development being designed to meet the requirements of Section J of the Building Code of Australia.
- Relevant components of the proposed development meeting the requirements of BASIX and the relevant certificate being included with the project application for each stage.
- The proposed development being designed and operated to minimise the emission of greenhouse gases.
- The proposed development complying with the stormwater harvesting and re-use requirements of Lake Macquarie DCP 1.

PROPOSED — SITE PRINCIPLE 17

17

SUSTAINABLE DEVELOPMENT

The proposal aims to minimise its impact on the environment by adopting the following sustainable design practices:

- Optimising building orientation to maximise access to natural light and sunlight where desired
- The design and incorporation of sun shading elements such as the considered placement of overhangs
- Rainwater harvesting
- Bio-swales
- Maximising cross ventilation through the buildings
- Section J compliance to be achieved at Construction Certificate stage
- The use of low maintenance materials
- Optimising thermal efficiency through the considered selection of materials and finishes
- Extensive landscaping and deep soil throughout the site
- Natural ventilation to the basement car park where possible
- Sustainable disposal and waste management of construction materials

Additionally, all construction will meet the requirements of section J of the NCA, BASIX, and relevant DCPs. Any long stay accommodation will meet the requirements of SEPP 65 in regards to solar penetration, overshadowing and cross ventilation.

Water harvesting and best practice energy efficiency measures will be implemented across the site.

Figure 110
Potential Arrangement of apartments satisfying 3 and 2 hour solar access requirements.

Dual use permanent and short stay residential apartments receiving 3 hour solar access requirements.

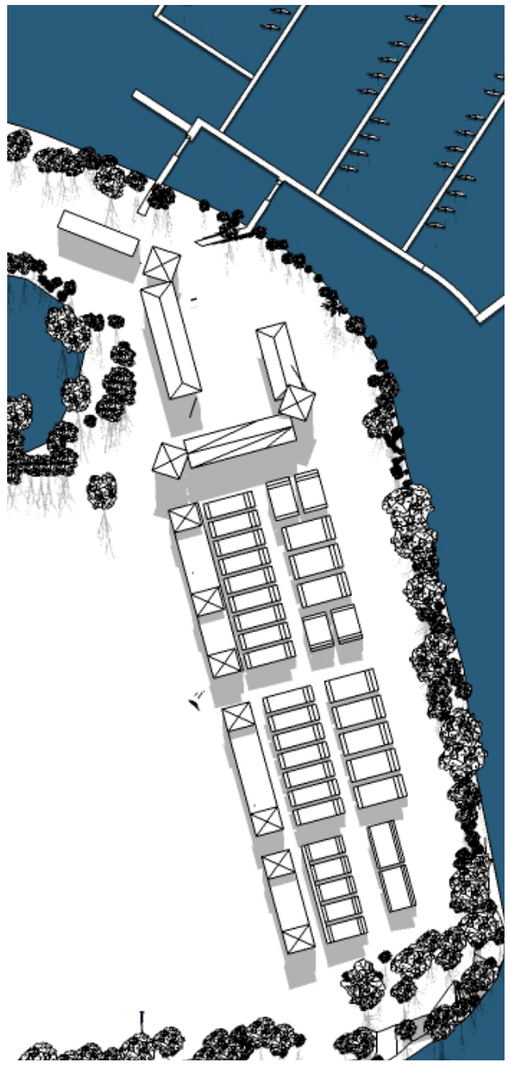
Dual use permanent and short stay residential apartments receiving 2 hour solar access requirements.

17

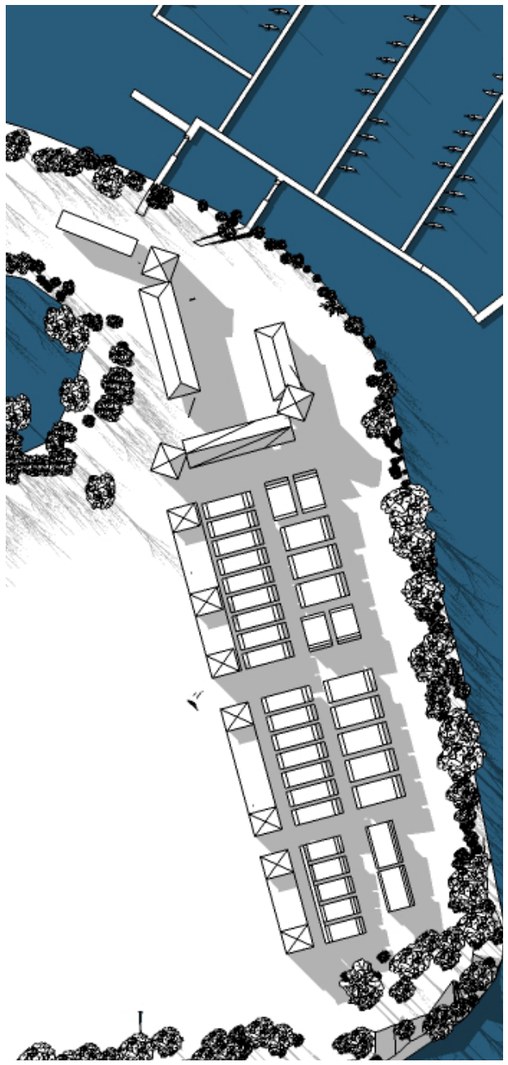
SUSTAINABLE DEVELOPMENT

SHADOW DIAGRAMS - WINTER SOLSTICE

9:00 AM - June 21



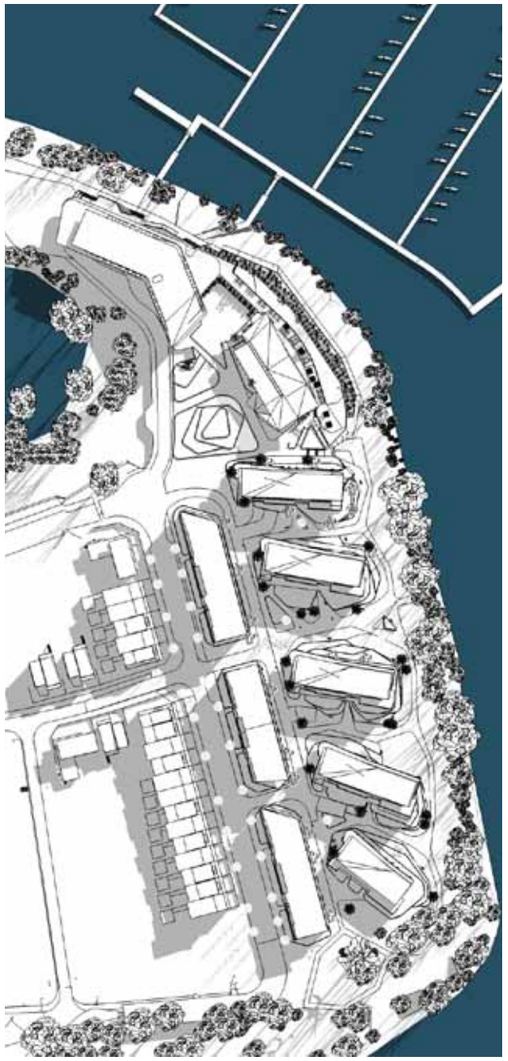
12:00 PM - June 21



3:00 PM - June 21

17 SUSTAINABLE DEVELOPMENT

SHADOW DIAGRAMS - WINTER SOLSTICE



9:00 AM - June 21

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3:00 PM - June 21

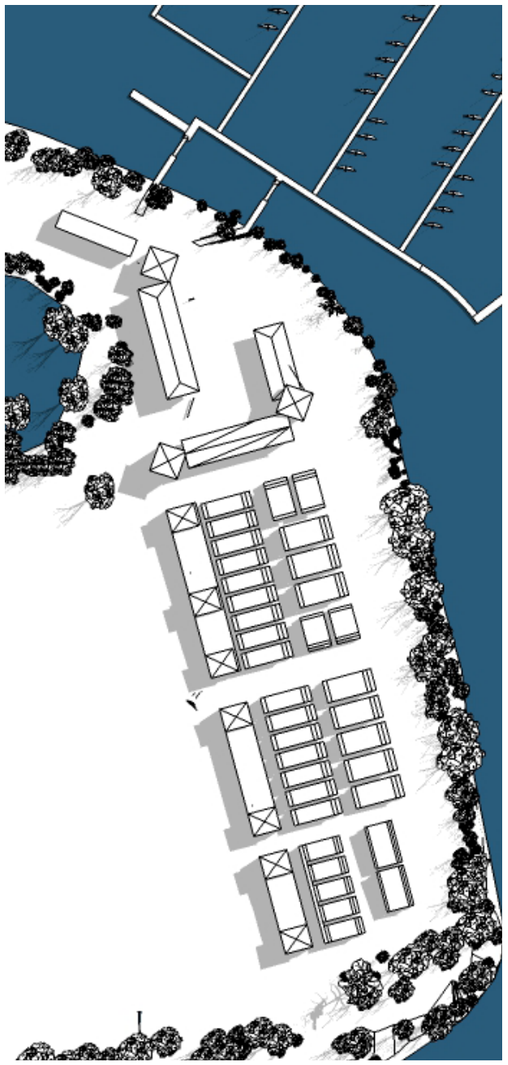
Figure 111
Shadow impact diagrams of proposed concept plan for June 21.

- 77% of apartments recieve 2 hours sunlight between 9am & 3pm to both living areas & private open space
- 73% of apartments recieve 3 hours sunlight between 9am and 3pm to both living areas & private open space
- 10% are south facing single aspect apartments. The north-south orientation of Buildings F, G & H directly addreses Trinity Point Drive and its neighbouringresidential subdivision, limiting the potential to maxmimise north facing apartments to these buildings. Depite this, more than 73% of apartments recieve the requested 3 hours of sunlight.
- All windows will be appropriately glazed as required to achieve energy efficiency, and the location of the apartments within the development will achieve thermal efficiency owing ot the thermal mass of the building.

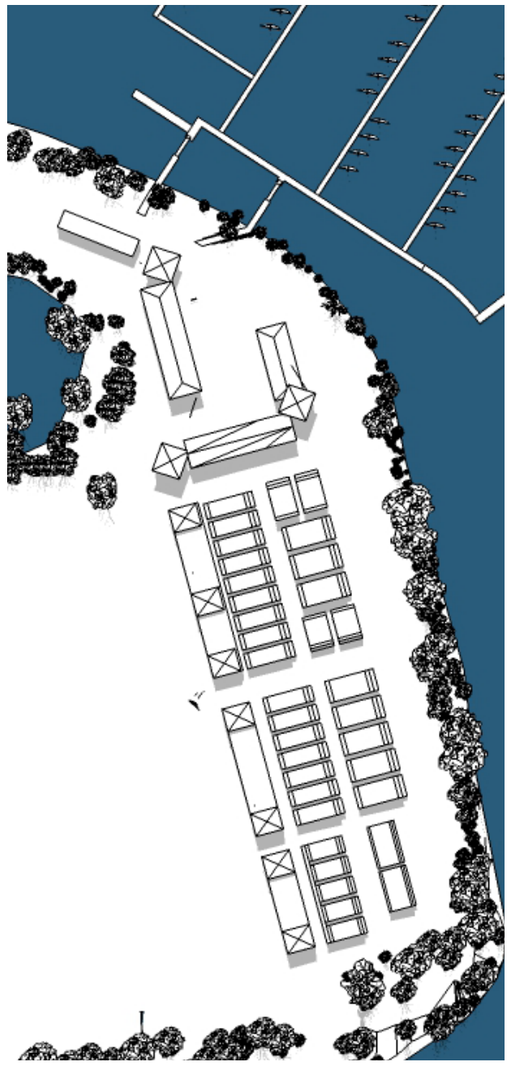
17

SUSTAINABLE DEVELOPMENT

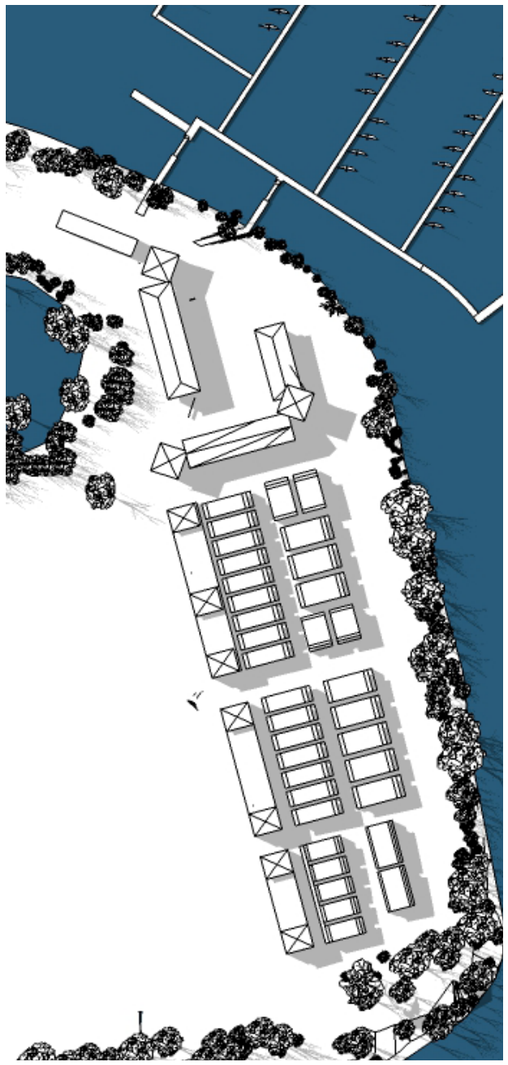
SHADOW DIAGRAMS - EQUINOX



9:00 AM - September 23



12:00 PM - September 23

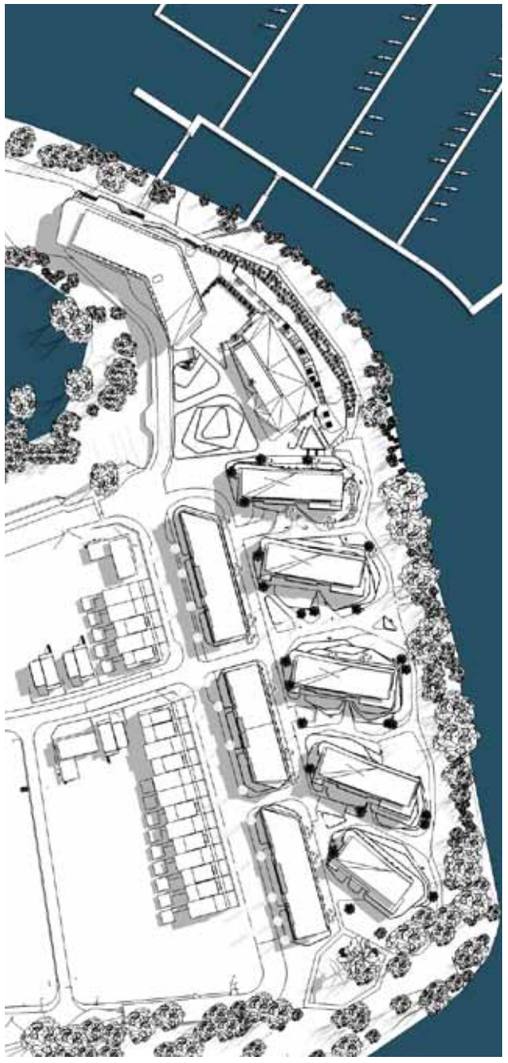


3:00 PM - September 23

17

SUSTAINABLE DEVELOPMENT

SHADOW DIAGRAMS - EQUINOX



9:00 AM - September 23

12:00 PM - September 23

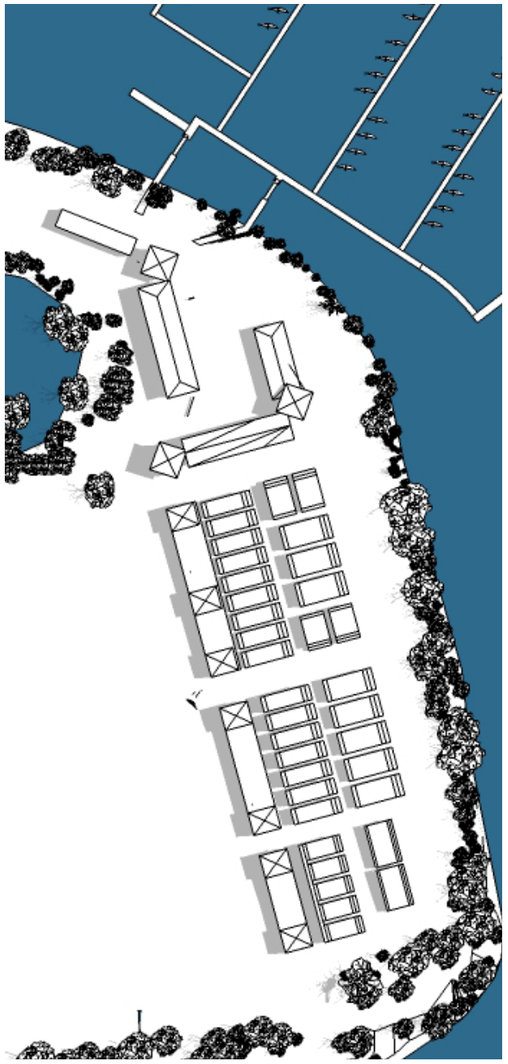
3:00 PM - September 23

Figure 112
Shadow impact diagrams for September 23, (Spring Equinox).

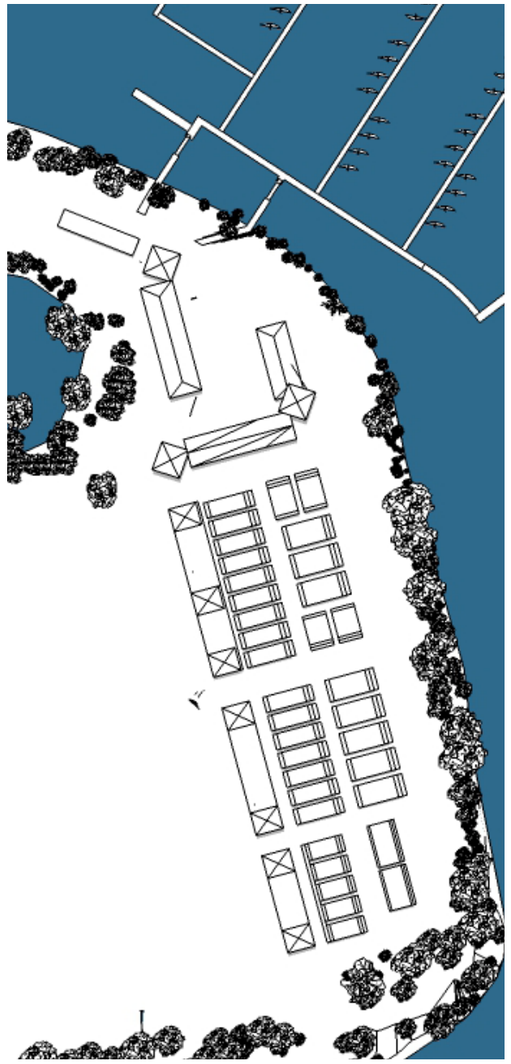
17

SUSTAINABLE DEVELOPMENT

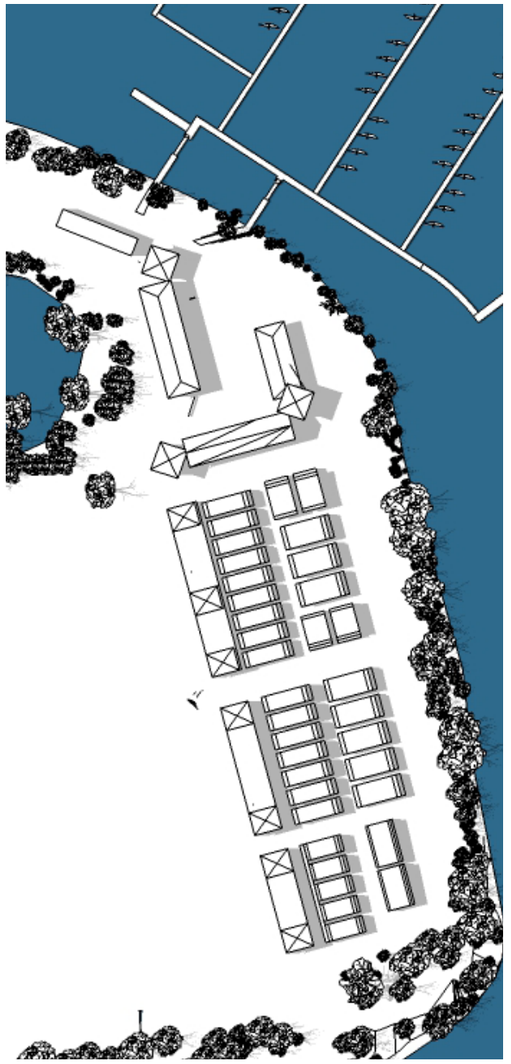
SHADOW DIAGRAMS - SUMMER SOLSTICE



9:00 AM - December 21



12:00 PM - December 21



3:00 PM - December 21

SHADOW DIAGRAMS - SUMMER SOLSTICE

9:00 AM - December 21

12:00 PM - December 21

3:00 PM - December 21

Figure 113
Shadow impact diagrams for December 21.

17 SUSTAINABLE DEVELOPMENT

Figure 114
Potential Arrangement of single and dual aspect apartments on a typical accommodation floor. All apartments achieve cross ventilation.

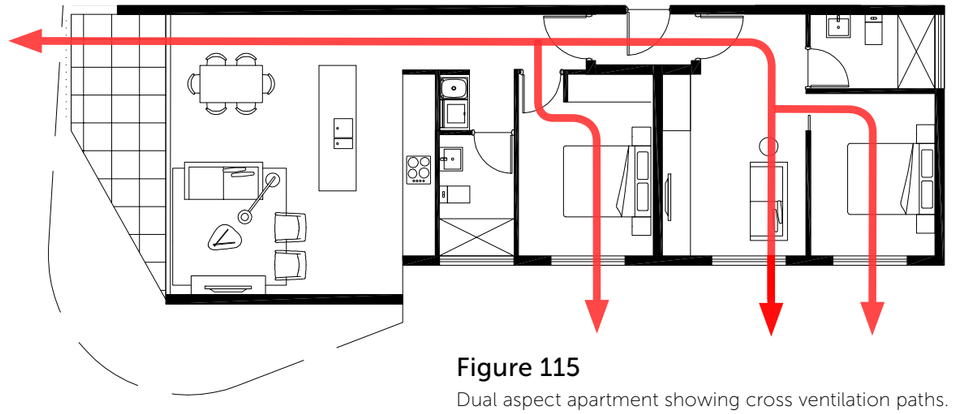
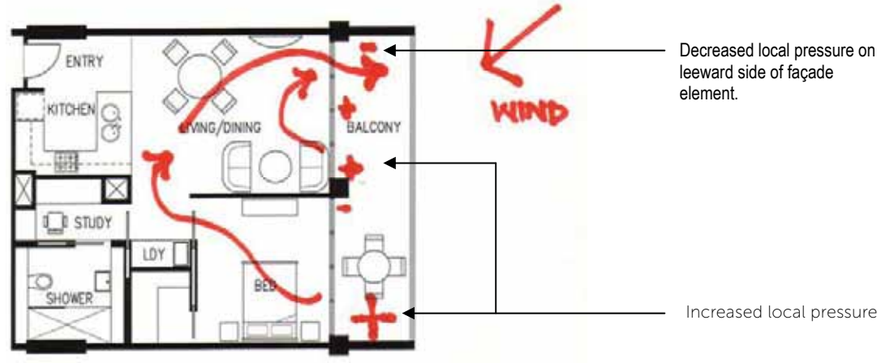


Figure 115
Dual aspect apartment showing cross ventilation paths.



Reference: Steve King, *Optimising ventilation and solar access*, NEERG Seminars.

Figure 116
Single aspect apartments: Variations in facade pressure distribution and resulting ventilation patterns. The illustration is of a south facing one-bedroom unit on an upper floor, subject to southerly summer winds relatively common in Sydney. Cross ventilation is achieved in single aspect apartments through the use of recesses and protrusions in the facade.

APPROVED — SITE PRINCIPLE 18

18 INDIGENOUS & EUROPEAN HERITAGE

To incorporate appropriate Indigenous and European heritage management.

Objective

To minimise impacts on Indigenous and European heritage values and maximise opportunities to reinforce and interpret those values.

Guidelines: Indigenous Heritage

Community Consultation

The ongoing consultation and involvement with the development of the project shall be carried out with the Aboriginal community as represented by the Koompahtoo and Bahtahbah Local Aboriginal Land Councils and the Awabakal Descendants Traditional Owner Aboriginal Corporation and the Awabakal Traditional Owner Aboriginal Corporation as primary stakeholders. Additional stakeholders may be availed of information as requested, and their opinions documented in the Aboriginal Heritage Management Plan.

Aboriginal Cultural Heritage Management Plan (ACHP) and Heritage Interpretation Policy

Development is carried out in accordance with an Aboriginal Cultural Heritage Management Plan and an Interpretation Policy prepared for the whole site the subject of this Concept Plan. It shall be prepared by the proponent.

The Aboriginal Cultural Heritage Management Plan is to be a guiding document that outlines required policies and procedures. The Heritage Interpretation Policy is to be prepared and detailed to enhance the Cultural Heritage Management Plan. They are to be prepared to meet the following criteria:

- Developed in conjunction with the Aboriginal community and be based on historical data, cultural knowledge and archaeological evidence specific to Trinity Point;
- Provide procedures for ongoing Aboriginal consultation and involvement and management of any recorded sites within the Concept Plan area;
- Provide the framework for further archaeological investigations and/or salvage projects prior to impact and provide the framework for identification and management of previously unrecorded sites (excluding human remains);
- Provide a framework for the interpretation of the Aboriginal values and heritage of the site to the general public, for incorporation into overall site interpretation and into development details. This may be presented in different ways including interpretation/history boards, display of artefacts in secure cases near the Village Piazza and local Aboriginal art included within the development's public art / interpretation / landscape strategies.
- Specify policies and actions required to mitigate and manage impacts of the proposal on Aboriginal heritage;
- Provide policies and measures for active conservation of in-situ deposits in the foreshore setback within the Tourist development area where possible;
- Be based on the recommendations of the Insite 'Trinity Point Marina Mixed Use Development Morisset Peninsula NSW, Archaeological Assessment' 30 October 2008;
- Provide measures for providing interpretation within the publicly accessible land of the tourism zone land only to protect the lake foreshore land from additional increased visitation;
- Clarify the proponent's and future owners' responsibilities, financial obligations and commitments to implementing the ACHP and Interpretation Policy;
- Include timeframes for implementation of the developed policies of the ACHP for various stages of the project.

Onsite Heritage Interpretation and Management

The foreshore pathway:

- Provide controlled public access and Heritage Interpretation on site away from the more sensitive south-eastern lake shore, where sensitive aboriginal features have been observed. This is to allow them to remain in-situ without development impact.
- All proposed public access paths/links into the foreshore land are also to be retained within the indicated tourism zone.
- Retain the siting of the proposed foreshore pathway for public access within the Concept

APPROVED — SITE PRINCIPLE 18

18 INDIGENOUS & EUROPEAN HERITAGE

No significant change is proposed to any of the guidelines contained in the approved Concept Plan and consultation unless where appropriate for consistency.

18 INDIGENOUS & EUROPEAN HERITAGE

Plan / tourism zoned land to address community concern about impacts of increased visitation to the sensitive foreshore edge.

Building Setback:

- Retain indicated setback of buildings from Bluff Point to allow for space to enable some preservation of in-situ deposits, and as space for interpretation.

Salvage Excavations

Salvage excavations are to occur where there is potential for intact deposits to remain and where development footprint is to occur. This is to be limited to an additional 50sqm in two x 25sqm excavation areas. Whilst the deposits will not be stratified, the analysis of those excavations in combination with others in the adjoining residential subdivision can provide a landscape analysis of the site for use in the recommended Interpretation Policy. It will add valuable information to the archaeological record of the Lake Macquarie Area.

Earthworks Monitoring

Monitoring of earthworks (top soil stripping and earthworks only) is to be undertaken by the Aboriginal community. Any artefacts found during this monitoring and in the salvage excavations are to be recovered for relocation by the Aboriginal community in accordance with DECC guidelines.

Site Protection

Measures of precaution shall be implemented by the proponent to include precautions within the development proposal to ensure the recorded sites in the lake shore area are not impacted, destroyed or damaged by construction works regardless of future ownership or management of the land.

Guidelines: Non-Indigenous Heritage

Development is carried out in accordance with an adopted Heritage Interpretation Policy and Implementation Plan and for the whole site the subject of this Concept Plan. It is to be prepared by the proponent and is to address the proponents and future owners responsibilities, financial obligations and commitments for implementation of these policies.

Heritage Interpretation Policy

- An Interpretation Policy and Implementation Plan and Management Plan is to be prepared by the proponent and adopted, drawing from the information in past historic research and heritage / archaeological assessments and investigations. The interpretation policy is to provide a framework for interpretation of the European use of the site to the general public, for incorporation into overall site interpretation and into development details.
- Interpretation of the grotto and the stone base sundial near Bluff Point is to be included in this policy and its management strategies.

Earthworks

- Monitoring of particular earthworks is to occur in the southern part of the site in the general area of the Bailey residence to record any peripheral infrastructure.
- A management plan is to specify measures for in-situ conservation and management of the grotto and the stone base sundial near Bluff Point and specify protective measures whilst development is occurring within their vicinity.

Landscaping

Existing cultural plantings near Bluff Point are to be retained and managed. Interpretation of these cultural plantings is to be incorporated. This is to be addressed in the Interpretation Policy.

PROPOSED — SITE PRINCIPLE 18

18 INDIGENOUS & EUROPEAN HERITAGE

No significant change is proposed to any of the guidelines contained in the approved Concept Plan and consultation unless where appropriate for consistency.

APPROVED — SITE PRINCIPLE 19

19

STAGING, SUBDIVISION & MANAGEMENT

To ensure that any staging of the proposal protects key site outcomes.

Objective

To ensure that staging, subdivision, operation and management of the development is orderly.

Guidelines

The main components of the marina is to be developed in two stages, generally as described in Principle 13, being:

1. **Marina Stage One** – 94 private berths on floating arms with jetty connecting to foreshore, fuel and pump out facilities and services, necessary component of breakwater (southern and part eastern) which includes public day berthing area. Stage 1 may also include travel lift, hardstand area and repair / maintenance facility, service facilities (tanks, pumping stations and the like), office, marina lounge and managers residence, plus necessary access and car parking to cater for uses.

2. **Marina Stage Two** – 94 private berths on floating arms, services, additional component of eastern breakwater, and necessary access and car parking to cater for stage two use. It is anticipated that any Concept Plan approval (and subsequent project approvals) will specify the terms and requirements to enable construction of Stage 2 to proceed, which may include: 100% take up of Stage 1 berths; and results of Stage 1 construction and operational management and monitoring plans, and environmental licence performance, including but not limited to water quality monitoring program and sea wrack management and movement.

The above staging of the marina is not sequentially linked to staging of the remaining components of the land use proposal.

The remaining land based components are not subject to definite staging at this Concept Plan step as flexibility is sought. The following principles are to guide staging when it is proposed:

- It is important to create the village piazza in an early stage and some of the activating land uses.
- Staging of development for residential purposes is to be consistent with land use provisions provided within the concurrent LEP amendment for this site – e.g., in a staging sense, the number of residential dwellings is not to exceed the number of tourist accommodation units at any stage.
- Whilst the public pathway, spaces and their improvements will be staged, it is important that each stage provides a temporary pedestrian circulation system back to the public road network until it is replaced by subsequent final works in subsequent stages.

Future applications / Development Applications are to provide details on intended subdivision, titling, operation and management of the development, and link that into management of potential conflicts between on site uses and necessary management of other operational issues such as marina operation, noise management, public domain management and maintenance and the like.

The Concept Plan principles present an integrated design solution for the total site. Their success will be reliant upon a commitment to the design intent in the detail of the development, and a high quality and integrated built form, streetscape and landscape – within individual precincts and built form groupings, and between precincts created by the streetscape grid and public access network and to external interfaces.

It is not however anticipated that the solution must be incorporated into only one development or project application. To facilitate the ongoing integration of the core principles, whilst allowing the project to seek approvals and development of discrete components of the project with a degree of flexibility, the following will be required:

1. A project specific Built Form Code is to be prepared, submitted and assessed prior to or with the first land based development application (i.e. excluding applications for water based marina and/or marina utility areas). All applications will need to be consistent with that code. It is anticipated this code will include such elements as:
   - Desired Character Statement
   - Built form essentials consistent with Concept Plan principles including facades and articulation, roof design, external materials and colours, entrances, driveways and parking, private open space, privacy, solar access and fencing.

   Comment
   Where it is proposed to lodge a Built Form design code, and to avoid ongoing delays in delivering this important project, the proponent requests a condition be placed on the Concept Plan approval requiring the consent authority (presumably Council) to determine the code within two months from lodgment after which time the proponent may submit it to the Department of Planning Director General for determination.

2. The Built Form code can be produced in whole or in part, with parts being Village Piazza area north of Trinity Point Drive extension and balance of area.

OR

3. Alternative to preparing a Built Form code, integrated project / development application/s may be lodged addressing the same relevant design issues as the code. Where an integrated project/development application is lodged for part of the site, the established principles are to be carried through the balance of the site in future intended applications. Overall theming across the site must be tied together through the design of external spaces and landscaping.

   Comment
   Integrated project/development application means an application for development that is for the full extent of development within any part of the site showing buildings, subdivision (if any) and all external spaces fully designed. Figure 106 identifies potential integrated applications.

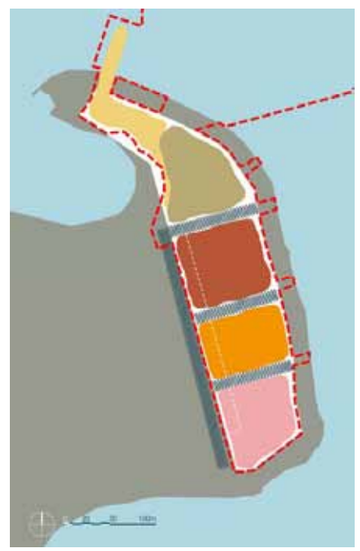


Figure 117
Integrated Applications

19

PROPOSED — SITE PRINCIPLE 19

STAGING, SUBDIVISION & MANAGEMENT

No change is proposed to the principles overall staging envisioned in the approved concept plan for this proposal.

PART C

INDICATIVE OUTCOME

SUMMARY FIGURE

C

INDICATIVE OUTCOME

APPROVED CONCEPT PLAN

C

INDICATIVE OUTCOME

PROPOSED CONCEPT PLAN

TRINITY POINT

MASTERPLAN

PROPOSAL

- Restaurant 250 seats plus up to approx. 200 outdoors (some weather protected)
- Function Room: 300 seats plus ancillary internal open and deck to be divided into multiple functions
- [redacted]
- Lush green lawn and landscape
- [redacted] conference facilities, pool, spa and gym
- Serviced meeting rooms
- Ancillary Marina/Tourism uses such as convenience store, fitness centre, leasing services, tourist operators
- Tourist recreation
- Administration areas
- Chandlery
- Small Marina and Lounge facilities
- [redacted]

[redacted] with maximum 50% to incorporate residential use

LEGEND

- 2 STOREYS
- 3 STOREYS
- 4 STOREYS