Appendix I

Consolidated Mitigation Measures

Ref No.	Mitigation Measures
Design and Operation	
BCA and DDA Capability	
BCA-1	All timber-look external wall elements are to be verified as being non-combustible in accordance with BCA Clause C2D10 for all buildings of Type A and B Construction.
BCA-2	To satisfy BCA Volume 1 C4D3 and BCA Volume 2 H3D3 minimum building setbacks are to comply with the following: • Class 1a ILU villas are to be setback 1.8m from other villas or 900mm setback from side/rear allotment boundaries. • Class 2 ILU apartments or Class 3 Key Worker Mini Manor buildings/cabins (which are Type C Construction) are setback greater than 1.5m from side and rear allotment boundaries and other Class 2 ILU apartments or Class 3 Key Worker Mini Manor buildings/cabins (which are Type C Construction); • Class 5, 6, 9b office/retail/restaurant/community buildings (which are Type C Construction) are setback greater than 3m from side and rear allotment boundaries and other Class 5, 6, 9b buildings (which are Type C Construction); • All Class 2-9 buildings (which are Type A/B Construction) are setback greater than 3m from side and rear allotment boundaries and 6m from other Class 2-9 buildings (which are Type A/B Construction). • Where villas are within 1.8m of other villas the encroachments must be permissible as per ABCB Housing Provisions Part 9.2.9. Where the exposure is a garage/carport to another garage/carport ABCB Housing Provisions Part 9.2.7e and 9.2.7f provide solutions which include the provisions of a 60/60/60 FRL fire resisting wall (as required);
BCA-3	Subject to BCA D2D5 we understand exit travel distances within the Spencer Street Apartment buildings will be addressed under a Fire Engineered Performance Solution and limited as follows: • Exit travel distances will be limited to 30m within the carpark and; • Exit travel distances to a single exit on the level above ground level will be limited to 12m.
BCA-4	The centralised stairway discharges within the BOH area which is enclosed will likely require redesign to create a fire-isolated passageway which discharges directly to road or open space. • Design changes will be adopted regarding the RACF centralised stairway discharge to satisfy BCA D2D12 and/or a Fire Engineered Performance Solution: • This passageway will not be used for occupant egress from ground floor; only the 2 floors above.
BCA-5	A Pumpset enclosure and fire water storage is required as per BCA E1D4/E1D5 & Spec. 17 based on their design and residual pressures and flows associated with the site. Design details will be included (including elevations) of the Pumpset enclosure and fire water storage especially where these are located above ground.
BCA-6	The following BCA Spec. 43 key compliance items are to be validated by the designers: • We have been advised that the RACF building envelope will meet BAL-19 as per BCA Spec. 43 under a DtS solution (noting the overall site is BAL 12.5 based on bushfire consultant's advice). • Access/perimeter roads are to satisfy Spec. 43 S43C14 unless a BSA variation is possible to permit departures to S43C14 including discontinuous perimeter roads; • Location of buildings (within 12m of the RACF unless an FRL is provided to the external wall),

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	• Setback to any allotment boundary or open carparking area/spots (within 10m of the RACF unless an FRL is provided to the external wall); • Refer to Spec. 43 under this report for all design items to be addressed with the Construction Certificate application.			
BCA-7	To satisfy Housing SEPP, Schedule 4 Cl. 2, if the whole of the site has a gradient of less than 1:10, 100% of the dwellings must have wheelchair access by a continuous accessible path of travel (within the meaning of AS 1428.1) to an adjoining public road.			
Flooding				
F-1	Buildings partially within the flood extents are to be designed to resist flood force including buoyancy and debris up to the PMF level.			
Ecologically Sustainable Development				
Sustainability Strategy		**Potential Impact**	**Approach**	**Residual Impact Risk**
ESD-1	Façade configuration	Glazing and building fabric thermal compliance may impact design intent.	Performance analysis to seek optimal window to wall ratio, glazing system selection and potential shading devices.	Performance glazing and potential shading devices may impact project budget.
ESD-2	Solar Photovoltaic on Site Renewables	Capital cost of installing PV systems; structural and spatial requirements.	Coordination with design team to ensure sufficient spatial allocation of appropriate PV capacity. Cost/benefit analysis to determine expected payoff and time value of installed capacity to the business	Actual project payoff for PV may vary from that predicted due to operational factors. Changes in grid energy retail costs may alter the economics of the installation.
ESD-3	Energy metering and monitoring	Lack of meter allocation to significant end uses.	Specify the exact requirement for metering and monitoring in design documents.	Understanding of the monitoring systems.
ESD-4	Material selection	Contamination of existing materials. Methodology of procuring materials and products that are sustainably certified or environmentally friendly.	Undertake a site survey of the existing development to identify if hazardous materials are present and should be disposed appropriately. Specify the requirements for material and product procurement in design documents.	Resource demand in ensuring products procured are sustainably certified or environmentally friendly.
ESD-5	Indoor environment quality	IEQ initiatives inappropriate or impractical for building purpose and space uses.	Analyse the different area functions within the development and determine the most appropriate IEQ	Potential change in the function of areas within the development could

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			initiatives to be implemented.	render IEQ initiatives ineffective.
ESD-6	Biodiversity	Spatial allowance for landscaping optimisation.	Coordinate with the project team to determine how the project can maximise its ecological potential.	Continual resource demand for landscaping maintenance.
ESD-7	Climate Change	Cost of implementing climate change adaptation measures.	Identify potential climate change hazards early in design and incorporate design responses in the design.	Continuous identification of adaptation measures to ensure the development is prepared for climate change impacts.
Geotechnical				
G-1	Further investigation to include as a minimum: • Test pitting and sampling to assess subgrade conditions along the alignment of the proposed roads, general site conditions (cut and fill areas) and to assess the depth of moisture impacted site soils. • Laboratory testing of selected samples from the road alignment to determine subgrade design parameters and plasticity values in lot areas to assist with likely site classifications. • Borehole drilling in areas of deep cuts to assess rock excavatability, particularly surrounding Borehole 45 where very high strength Tonalite was encountered, and foundation parameters.			
Preliminary Site Investigation				
PSI-1	Identified areas of (previously) disturbed ground and fly tipped / dumped materials are to be subject to soil sampling and testing to confirm (or otherwise) an absence of contamination at the site.			
PSI-2	An unexpected finds protocol (UFP) is to be prepared and included as part of the site management plan (or similar document) for any future proposed development. The UFP will detail the process by which any unexpected finds of potential environmental concern (such as localised burials of waste) will be managed.			
Groundwater				
GW-1	Treatment of any extracted groundwater (or stormwater ponding during construction) will be required prior to disposal in accordance with the dewatering management plan. In the long term, consideration could be given to infiltrating any groundwater generated due to the basement.			
GW-2	If the proposed design is amended (i.e., change in location, greater depths of excavation) than currently proposed, a review of the revised design and potentially revision of this report will be required.			
Bushfire				
BF-1	With the exception of the riparian corridor, the entire development site will be designed and maintained as an APZ in accordance with the NSW RFS Standards for Asset Protection Zones and Planning for Bush Fire Protection 2019 with the exception of the 20m riparian area on the western creek.			
BF-2	All buildings will be constructed to comply with BAL-12.5 of the National Construction Code (2019), Australian Standard AS 3959:2018, Construction of buildings in bush fire-prone areas and/or NASH Standard (1.7.14 updated), National Standard Steel Framed Construction in Bushfire Areas – 2014, and Section 7.5 of Planning for Bush Fire Protection 2019 on a prescriptive (deemed to satisfy and/or acceptable solution) basis and/or performance basis.			
BF-3	Electricity and gas supplies through the proposed development will comply with section 6.8c of PBP.			
BF-4	A Bush Fire Emergency Management and Evacuation Plan will be prepared prior to occupation for the proposed development.			

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Engagement	
E-1	The Applicant will provide updates at key milestones, to keep residents and stakeholders informed of project progress.
E-2	The Applicant will maintain clear, accessible two-way communication channels for the community and stakeholders to direct any enquiries to during the planning process and beyond.
E-3	Ahead of construction commencement, the Applicant will prepare protocols to guide timely and transparent updates during the construction process.
Construction Management	
Construction Traffic Management	
CTM-1	A Construction Traffic Management Plan (CTMP) will be prepared for each stage of construction and be submitted to the appropriate authorities for approval ahead of adoption and implementation. The CTMP will outline the guidelines, general requirements and specific procedures to be used for any works that may have an impact on traffic operation and be prepared in accordance with Eurobodalla Shire Council requirements. The primary objectives of the CTMPs will be to: • Maximise public safety. • Minimise disruption to pedestrians, cyclists and motorists. • Ensure construction traffic accesses the arterial network as soon as practicable on route to, and immediately after leaving, the construction site. • Minimise changes to traffic operation and kerbside access. • Minimise construction traffic generation during network peak periods. • Maintain access to properties and businesses. • Work collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts incorporate innovative and improved approaches to minimise the impact of construction traffic.
Acid Sulfate Soil Management	
AM-1	The ASS management procedures listed under the ASSMP will be enacted to minimise the impact of ASS disturbance on the environment during the proposed works.
AM-2	If ASS are encountered, then the ASS management procedures provided herein will be enacted to minimise the impact of ASS disturbance on the environment.
Detailed Site Investigation	
DSI-1	Sampling and analysis of groundwater for TRH be undertaken as part of future groundwater monitoring (for hydrogeological investigations) to obtain and assess representative TRH concentrations in groundwater at the site, and to confirm the expected source as drilling mud, which will dissipate with time.
DSI-2	An unexpected finds protocol (UFP) be prepared and implemented for the case where (unexpected) potential signs of contamination are encountered during excavation works. The UFP will include the requirement to engage an environmental consultant to assess the unexpected find.
DSI-3	If it is determined that 1 tonne or more of alluvial soil along the western drainage depression is to be disturbed (e.g. for a stormwater pipeline or for pedestrian bridge footings), an acid sulfate soil management plan (ASSMP) addressing the considerations of PASS has been prepared by Douglas and should be implemented for the proposed development. It is noted that this part of the site is intended to be kept as a riparian corridor and, therefore, it is possible that the identified PASS may not be disturbed for the proposed development.
Noise – Construction Noise	

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NC-1	As part of development of the detailed design and construction methodology, all reasonable and feasible mitigation measures will be considered, confirmed and implemented to minimise construction noise impacts and to avoid exceedances of the applicable noise goals at adjacent sensitive receivers where practicable. Measures that may achieve this outcome may include, but not limited to the following: • Portable temporary noise screens will be erected adjacent to stationary or long-term static noise sources, or noise generating items, where reasonable and feasible. • Spotters, "smart" reversing alarms, or broadband reversing alarms will be used in place of traditional tonal beeper reversing alarms, particularly on equipment where reversing alarms are frequently in use such as rollers, loaders or compactors. • Noise source controls, such as the use of residential class mufflers, will be used reduce noise from all plant including cranes, excavators and trucks. • The offset distance between noisy plant items and sensitive receivers will be maximised, where reasonable and feasible. • Machinery will be operated in a manner which reduces maximum noise level events such as shaking excavator buckets, dropping materials into trucks from a, height or steel on steel contact. • Construction plant and equipment will be turned off when not in use.
NC-2	Opportunities to reduce exceedances of the applicable construction noise goals through the implementation of administrative controls will be examined, confirmed and implemented where reasonable and feasible. Controls to be considered will include, but not limited to the following: • Environmental awareness training and inductions for site personnel will include noise mitigation techniques/measures to be implemented when on site and accessing the site. • Plant and equipment will be selected based on noise emission levels. • Noise-intensive works will be limited to less sensitive construction hours (i.e. away from early morning and late afternoon periods) as far as practicable, when working in the vicinity of sensitive receivers. • Plant and equipment will be well maintained to ensure that excessive noise is not generated. • Any works undertaken outside standard working hours will be further assessed in accordance with the ICNG and the CNVG-R during detailed design and an Out of hours works protocol will be developed to mitigate any identified impacts.
NC-3	Opportunities to reduce the impacts associated with construction noise levels through the implementation of proactive community consultation will be examined, confirmed and implemented where reasonable and feasible. Controls to be considered will include, but not limited to the following: • Sensitive receivers potentially affected by the works will be notified of the commencement of construction activities at least five days prior to works starting. The notification will inform potentially impacted sensitive receivers of the nature of and duration of works, expected noise levels and contact details of where sensitive receivers can contact can project representatives. • The community will be kept regularly informed of noise intensive activities in the immediate area. • If noise complaints are received, noise monitoring may be undertaken to confirm noise levels at the receiver and a review of construction methodology will be undertaken to identify additional mitigation measures, if required. Additional mitigation measures, where required, such as respite periods have been outlined in Table 8.2 of the Acoustic Report.
NC-4	A detailed construction noise and vibration management plan (CNVMP) shall be prepared by a suitably qualified acoustic engineer prior to construction certification once a construction program has been implemented. The detailed CNVMP shall assess impacts from the confirmed program to the sensitive receivers outlined in Section 2.1 and compare the results against the noise management levels presented in Section 3.2.1. The detailed CNVMP shall incorporate noise mitigation measures presented in this table (NV1 to NV3) if applicable. It should be confirmed in the detailed CNVMP that the Project will not increase road traffic noise by 2 dB.

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NC-5	Where construction is likely to result in vibration levels that exceed relevant criteria at sensitive receivers, mitigation and management will be implemented where practicable and appropriate. This will include (but is not limited to) the following measures: • avoid the use of vibration-intensive plant at distances where human discomfort will result • confirm with affected landowners if there are any additional structures within safe working distances of construction • substitute lower vibration-intensive plant and methods (for example use a smaller machine, lower power settings or alternative equipment) • sequence operations to avoid or minimise concurrent vibration intensive activities • schedule the use of vibration-sensitive equipment during the least sensitive times of the day • inform and consult with potentially affected receivers about upcoming vibration intensive activities.	
NC-6	A detailed construction noise and vibration management plan (CNVMP) shall be prepared by a suitably qualified acoustic engineer prior to construction certification once a construction program has been implemented. The detailed CNVMP shall determine the exact plant/machinery to be used onsite and confirm if the heritage receiver is within the minimum working distance. Continued vibration monitoring may be required at this receiver for the duration of any significant vibration generating plant/machinery.	
Archaeology		
A-1	The Applicant will develop an Aboriginal Cultural Heritage Management Plan (ACHMP). The ACHMP will quantify the exact sites to be impacted, the methods by which they will be managed, and the fate of any artefacts that are recovered before the works. The ACHMP will also provide a protocol for unanticipated finds and the discovery of human skeleteal materials. (examples are provided in recommendation 5.)	
A-2	It is recommended that the following areas be salvaged before commencement of works: a. Areas of moderate subsurface artefact densities within Brae 13 (AHIMS #58-4-1255) must be salvaged before works occur within the study area. b. Salvage via community collection must be undertaken for Moruya South – SU26/L1 (AHIMS #58-4-1201) before works occur within the study area. c. Community collection and a salvage excavation are to be undertaken following the salvage methodology set out in Appendix A of the ACHAR.	
A-3	All Aboriginal objects collected during the anticipated community collection and salvage works will be reburied at a nominated location within the study area and not subject to impact by the proposed works. This location will be determined as part of the ACHMP following Development Consent. If reburial is not possible, then a Care and Control Agreement will be sought in accordance with Section 85A (1)(c) of the NPW Act.	
A-4	In the event that unexpected finds occur during any activity within the study area, all works in the vicinity must cease immediately. The find must be left in place and protected from any further harm. Depending on the nature of the find, the following processes must be followed: a. If human skeletal remains are encountered, all work must cease immediately, and NSW Police must be contacted; they will then notify the Coroner's Office. Following this, if the remains are believed to be of Aboriginal origin, then the Aboriginal stakeholders and Heritage NSW must be notified.	
A-5	It is recommended that IRT continues to inform the Aboriginal stakeholders about the management of Aboriginal cultural heritage within the study area until the SSDA is approved. The consultation outlined as part of this ACHAR is valid for six months and must be maintained by the Applicant for it to support the ACHMP.	
A-6	A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project.	
Trees		

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T-1	Protection measures will be implemented for the trees nominated for retention (as per the Arboricultural Impact Assessment) and installed before initiation of site works (including demolition/excavation) and retained until the landscaping works are required unless otherwise specified.
T-2	All workers related to the construction process and before entering the site will be briefed about the requirements/conditions outlined in this report relative to the zone of protection, measures, and specifications before the initiation of work.
T-3	A project arborist will be nominated, and the stages and related certification or similar documentation will be issued to the principal certifying agent.
Biodiversity	
B-1	**Displacement of resident fauna:** • Any hollow-bearing trees marked for removal will be removed according to a two-stage vegetation clearance protocol to ensure no injury or loss of fauna, where hollow-bearing trees to be inspected immediately prior to removal, by a qualified ecologist. • Any hollow-bearing trees to be removed should be placed in areas of retained vegetation to provide additional fauna habitat. • A BMP and hollow replacement plan may be required to provide replacement hollow habitat in retained vegetation to compensate for this habitat removal and provide habitat for any fauna displace and captured during tree felling. • Any human-made structures, such as the single dwelling within the subject land, to be removed should be inspected prior to removal, by a qualified ecologist, to confirm absence of resident fauna (e.g., roosting microbats). If bats are detected, demolition of structures must be postponed until bats are relocated (preferably through use of passive roost exclusions). • The dam is to be inspected immediately prior to and during decommissioning, by a qualified ecologist. There was multiple nonthreatened species recorded inhabiting the dam including frogs, turtles and eels. Therefore, a dam dewatering plan is to be prepared prior to dam removal.
B-2	**Protection of biodiversity during construction** • A CEMP will be implemented that would include the following subplans or protocols: - VMP that includes retention and improvement of native vegetation within landscaping. - Hollow-bearing tree removal specification. - Vegetation clearance protocol. - Biodiversity Management Plan. - Fauna injury protocol. - Weed Management Plan. - Dam Dewatering Plan.
B-3	**Indirect impacts on native vegetation and habitat** • Appropriate stormwater and erosion controls will be implemented on site to avoid impacts to nearby waterways. • Where appropriate, native vegetation cleared from the subject land should be mulched for re-use on the site, to stabilise bare ground. • Works areas should be wet down to reduce dust generation during construction. • Installation of appropriate exclusion fencing around trees and vegetation to be retained, as well as riparian corridors of the two creeks, to clearly delineate the clearing limits in the subject land: - The radius of the tree protection zone (TPZ) is calculated for each tree by multiplying its diameter at breast height by 12, in accordance with the Standards Australia Committee (2009).

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	- A TPZ should not be less than 2 m, or greater than 15 m, except where crown protection is required (Council of Australian Standards 2009). - This would include appropriate signage such as 'No Go Zone' or 'Environmental Protection Area'. - Identify the location of any 'No Go Zones' in site inductions and a CEMP. - Where the use of exclusion fencing is not appropriate, other methods of tree protection must be employed ina accordance with *AS4970-2009 Protection of Trees on Development Site* (Council of Australian Standards 2009) and the project's Arboricultural Impact Assessment Report (Allied Tree Consultancy 2025). • All material stockpiles, vehicle parking and machinery storage will be located within cleared areas or areas proposed for clearing, and not in areas of native vegetation that are to be retained. • Implement hygiene measures to prevent the spread of weeds and pathogens into the development site, or from the development site into the surrounding locality. • Reduction of impact resulting from external lighting is recommended and can be adapted from Part 4 (good lighting design principles) of the *Dark Sky Planning Guideline* (DPE 2016), including: - Installing light fitting shields with an opaque cover, mounted horizontally across the top of the lighting module. These shielding attachments allow only the downward projection of light. - Direct lights downwards and avoid shining directly onto the public amenities which have the potential to reflreft light skaywards. - Utilise low beam angles that are close to vertical where possible to minimise light glare. • Waste Management Plan to ensure rubbish is not dumped in adjacent retained vegetation or waterways. • VMP for the two creeks and associated riparian corridors to protect creeks from indirect impacts. • Construction works should be restricted to daylight hours. • Implementation and signage of reduced speed limits on access roads associated with the project. • Implementation of temporary stormwater controls during construction to ensure that discharges to the drainage channels are consistent with existing conditions. • Sediment and erosion control measures should be implemented (e.g., silt fences, sediment traps). These should conform to relevant guidelines, should be maintained throughout the construction period and should be carefully removed following the completion of works. 'Frog-friendly' and 'wetland friendly' herbicides such as Roundup Bioactive or Weedmaster DUO would be used for the control of noxious weeds.
B-4	**Adaptive Management of strategies proposed to monitor and respond to impacts on biodiversity values that are uncertain:** • Implementation of an appropriate CEMP during works.