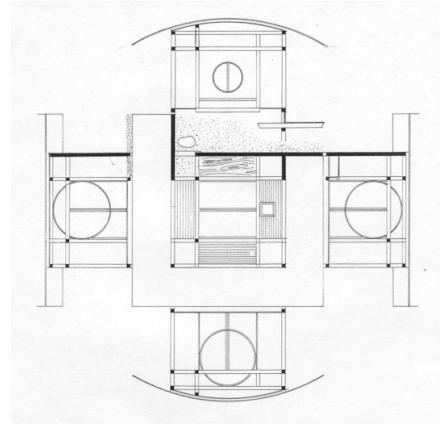


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STATEMENT OF ENVIRONMENTAL EFFECTS

Eco-Tourism Accommodation Cabin Addition to Existing Dwelling House

849 West End Road

Leeka, Flinders Island Tasmania, 7255
Lot 3 - SP 133491

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To be read in conjunction with the Drawings

849 West End Road, Leeka Drawing Number Key

SITE PLAN	DRAWING No	17041101
PLAN & ELEVATIONS	DRAWING No	17041110
SECTIONS	DRAWING No	17041400
ENGINEERING NOTES	DRAWING No	17041002

OVERVIEW

This document details the envisaged environmental effects of the proposed addition of an EcoTourism Accommodation Cabin at 849 West End Road, Leeka , NSW, to the approximately 10.2 Ha site within the local council area of Flinders Council, zoned Rural. There is an existing alloy and timber framed corrugated zincalume clad dwelling with garage and workshop outbuildings and access driveway on the property, with a beach access track to the proposed Cabin site.

The property is an Ocean Frontage Rural allotment with a site area of some 10.2 Ha with a 254m. frontage to West End Beach and a 189 m frontage to West End Road, and a length of 545m on the western boundary. The site being elongated North to South and falling undulatingly down to the West from the road and across the beach dunes to the coastal beachfrontage reserve It is proposed to construct a new single storied corrugated iron roof accommodation cabin for short term holiday rental in addition to the existing dwelling. The new cabin to be located behind the coastal set back zone, 100m from mean high tide mark The new building will occupy an already cleared area of the site on the site of an existing beach access turning area and parking area. The siting of the building responding to the shape and topography of the site, prevailing sunlight and airflows and aligning with the scale and massing of the existing bushland around. It is designed to not break the skyline and will be barely visible from the public areas of the foreshore and inner coastal water and only from a considerable distance.

The new building is designed to take advantage of the natural airflow across the site and to have a strong indoor/outdoor integration and to minimise its aspect from the beach reserve by using a similar roof form and materials to the existing lower profile curved roof buildings in the locality and being a lower single storied form visually separated from the existing building by a considerable distance and intervening topography.

The building will provide a stable temperature through natural ventilation strategies, passive solar control and high levels of insulation. The large deeply shaded west facing openable doors will utilise natural light and thermal gain. The windows facing east and south and north onto the surrounding bushland will provide natural cross ventilation breezeways for the building.

The new building is located behind the beach dune range and the allotment fronts onto the southern end of West End Beach.

The locality has an eclectic range of buildings with many original and interesting building forms. The existing dwelling on the lot uses the same construction system and form as the proposal for the extension, which from any distance will be indistinguishable from the existing building.

As such it is suggested that it constitutes a permissible development for the site.

SITE ANALYSIS

See attached context photos in Appendix A.

The specific proposed site for the extensions is predominantly open cleared area for vehicle turning and parking for beach access surrounded by an area of coastal scrub and heathland regenerating gradually to bush, with copses of heavily tree-ed, dense coastal Casuarina scrubland. The proposed site is on the 100m setback line from mean high tide in line with other recent developments along the area and well to the west of the existing dwelling. The cabin will be stand alone serviced with a new waste water treatment system, solar photovoltaic electrical generation with battery storage, rainwater storage facility and 3G communications system. Access is by the existing all weather driveway which is in reasonable condition winding down from the northern boundary on West End Road past the existing dwelling to the beach access and proposed site. There are significant views of Bass Straight and the outlying islands from the property.

It not envisaged that any neighbouring dwelling or their outdoor recreational areas will be affected by overlooking or with overshadowing from this proposal. The new building will be out of all observable view lines, and neighbouring dwellings are far enough away to be clear of all shadow cast by the proposed new dwelling.

Noise issues are minimal, West End is a quiet Rural Residential area with little through traffic. The bushland alongside the road is to be retained intact as will all native plantings on the lot. Access to the property and proposed site is currently off West End Road from the North and this will be retained.

The site is exposed and prevailing winter winds come across the ocean from the west with occasional blows from the North East. There is good access to any breeze in summer and a natural ventilation strategy using the dramatic topography will be important to achieving an amenable microclimate for the building.

The adjacent bushland poses a significant Bushfire Risk which will need careful assessment and a series of direct design responses to ameliorate the risk. The saltbush, coastal wattle and teatree scrub will burn easily and quickly but without excessive heat and any fire front would rapidly pass over. The downhill flame source is also the coastal side reducing the risk of fire start significantly. The predominance of fire retarding acacia sopheri and other species significantly lower fire spread and intensity risk. The enclosed subfloor alloy frame, composite F/C clad floor panels and zincalume cladding proposed will produce a reasonable fire resistance for the structure. The proximity of the ocean and rocky headland provides a straightforward escape route if required in the event of any significant hinterland bushfire.

From site observations, there is a shallow layer of organic based topsoil over the entire site over some windblown sand over partially exposed sandstone/limestone bedrock with occasional deep pockets of well composted soil. There appears to be a 100-300mm clay subsoil in some areas over a shattered limestone rock strata extending down to bedrock varying between a few hundred mm to possibly more than a metre depth in areas. The site area is predominantly deep sand requiring designed footing systems. The lightweight articulated integrated framing system proposed is

designed to deal with these conditions and has been engineer certified for BCA compliance.

The island climate is mild maritime and exposed to considerable winds from time to time. This is an exposed site with considerable wind exposure and the structure has been designed to deal with these winds following the techniques used in the existing dwelling. Strategies for natural ventilation will be employed to generate stack effects to enable summer cooling and good winter heat transmission through the building.

CONTEXT ANALYSIS

This is an open bushland coastal zone with the proposed building site lying behind the coastal dune zone.

There is an already cleared area with a good quality access track and area for the provision of sewerage management services, water supply and a stand alone off grid solar and battery power system.

HERITAGE ANALYSIS

This site is not considered by Council or the National Trust to have significant heritage value and is not listed on any register of Heritage buildings or sites and is not located within a designated heritage zone.

There are no apparent aboriginal artefacts and there is no record of any indigenous land claim or registration of significance by an aboriginal community on the area.

VISUAL EFFECTS ANALYSIS

The siting of the dwelling is designed to retain the essence of the coastal rural residential and bush nature of the landscape. It is intended that the bulk of the building remains hidden from any nearby vantage points behind the existing treeline and coastal dune range and is located out of sight from the main road, and well away from the existing neighbouring dwellings.

The small end elevation of the building may be visible from the western headland and foreshore and near waters at low tides but this would not have any significant impact on the amenity of beach goers.

EXISTING VEGETATION AND WILDLIFE ANALYSIS

The nature of the locality is essentially coastal bush and larger acreage residential allotments with a plethora of local native trees and shrubland. The adjacent gradually regenerating ex-farmland and coastal reserve enhance the isolated feel of the place. It will be important to maintain the levels of privacy and reduce overlooking from potential neighbouring dwellings whilst enhancing the outlook over the adjacent ocean and over the distant islands to the South and West.

There is extensive native flora and fauna and the area is slowly regenerating from European pasturelands to native Australian coastal scrublands with TeaTree and Coastal Wattle predominating. This pattern is to be continued in this proposal and no native trees or scrubland is to be removed for the building or access way.

GEOTECHNICAL ANALYSIS

The soil profile is varied and pocketed with approximately 100mm of loam organic topsoil with 150-1000mm or more of sandy sub soil over a shattered limestone base at about 1m. to 2m. depth and hard sandstone/limestone bedrock between 4.5m and 6m below the existing surface level at the proposed site. The soil type has been assessed as Class S and the pier footings have been designed to adequately support the construction loads with this foundation type. All new footings are contained within the allotment and are designed to avoid loads passing to neighbouring lots.

Some minor excavation of the site is proposed to allow for finding firm foundations, footings and service trenching for the new building, spoil will be used in the fill areas of the construction site and all excess will be carted for disposal as clean fill on the allotment. All excess material will be retained in the close vicinity of the building and storage will be carefully located and monitored to minimise site disturbance and maximise rehabilitation after construction.

Any useable turf and topsoil will be removed and stored on site in furrows no more than 1m. high or wide. Any found clean subsoils will be stored on site. All excavated rock material will be used as aggregate in backfilling service trenching. It is expected that little or no exporting or disposal of fill or spoil will be required. The subsoil will be used for garden hard landscaping works with topsoil reserved for garden beds.

ACCESS

The existing access off West End Road and down the all weather drive to the coastal area of the property will be retained and enhanced to allow full vehicle access during construction. A number of alternate access tracks are also existing on the property if required. Clearance to allow a minimum access width of 4.0m and space for Bushfire appliances to access and turn around on the site will be required to be provided.

ENVIRONMENTAL NOISE

This is a relatively quiet area with little through traffic. The wind is the major noise producer. There can be considerable low level wind noise from time to time which encroaches on the amenity of the site and will require some response with noise protection strategies.

The bushland areas will be retained intact to create a protective shield to the west which will help to absorb emitted sound. The building is proposed to be well insulated with polywool acoustic batts and SIPS in the floors, walls and ceilings. Well sealed, storm rated doors and highlight windows with 6.38mm laminated glazing are proposed. Consequently negligible sound intrusion problems are anticipated.

ENERGY CONSUMPTION MANAGEMENT

The design incorporates passive solar thermal control strategies including fenestration and building orientation, eave shading, openable breezeway windows, high insulation levels and a layered opening system combined with breezeway strategies to give an effective natural ventilation system. A solar hot water system is already installed and passive heat exchange cooling technologies employed. A fully stand alone Photovoltaic and wind turbine power system are already installed and fully functional supplying all domestic needs. The project uses the following strategies to ensure minimal external energy requirements:

- R3.5 Poly Wool batt and Structural Insulated Panel systems for insulation and effective sealing detailing.
- 6.38mm Laminated Glazing for all windows, highlight glazing and glazed doors
- The use of controllable natural stack ventilation strategies.
- Recognition of prevailing winds and breezes and relevant cross ventilation.
- Wide, varying width eaves positioned to shade the buildings from summer sun and to protect them from winter storms and excessive weathering.
- The use of mass storage Solar Hot Water heating.
- The installation of energy efficient appliances and lighting fixtures
- Ultra low wattage LED lighting systems
- Roof mounted photo-voltaic solar power arrays with battery storage system.

WATER MANAGEMENT

It is estimated that the proposed Ecotourism Accommodation Cabin with an average usage based on two occupants on a part time basis (nominal 65% occupancy) and using a sullage recycling system for irrigation, 5 star rating water use appliances, and low flush WC will require about 90 000 litres of water annually. Water for all purposes will be provided from rainwater collection from the roofs to be held in the existing rainwater storage tanks in the rear of the proposed cabin.

Rain water will be collected from the roof and gutter system and piped to a 22,000 litre rain water holding tank on the south east side of the building. There will be a roof area of about 135 SqM for the new building which will be directed to the rainwater harvesting system. Flinders averages about 850mm per annum with a monthly median of about 75mm giving about 10,125 litres a month and 120,000litres per annum. Pressure will be supplied from an electric transfer pump up to a gravity header tank system.

AAAA (4A) rated dual flush WC system will be installed, together with AAAA (4A) aerated shower fixtures and vanity faucets to ensure minimisation of water usage while maximising resident amenity.

OPERATIONAL WASTE MANAGEMENT

The following strategies will ensure the minimisation of requirements for disposal of waste materials from the ongoing operation of the Residence:

- Organic Kitchen refuse collection and on site composting.
- Packaging collection and sorting for recycling.
- Use of recycled and recyclable minimally packaged products
- Use of biodegradable products wherever feasible.

NATURAL INTERNAL ENVIRONMENTAL CONTROL

The proposed building makes use of controllable/openable doors and windows and ventilation panels around the habitable areas to control internal temperatures through cross flow ventilation and natural stack ventilation. The new building will be fully insulated, with 6.38mm laminated glazing and R 3.5 minimum rating ceiling and wall panels. Screened window openings in the walls are located to collect summer breezes and channel them through the building.

The Passive Solar Design features allow for extensive glazed areas which are provided to the western faces of the building to allow ingress of winter sunlight and solar gain. Ceiling vents provide summer cooling. Wide varying width eaves and verandahs are designed and positioned to provide summer shade and allow winter sun ingress.

ON SITE WASTEWATER TREATMENT SYSTEM

The new cabin addition will be remote from the existing main dwelling and will use a new septic tank and absorption trench system for all blackwater from the kitchen sink, dishwasher and WC and greywater outfall. An alternate Wisconsin Mound type evapo-transpiration bed system may be employed.

All new pipework will be laid out under the floor or underground. See Drainage Diagrams for details.

CONSTRUCTION MANAGEMENT

The following strategies will be employed to minimise the environmental impact of the building process during the construction phase:

The use of off site prefabricated framing system to minimise site intrusion, waste and incidental site damage.

Recycling of all offcuts, excess and left over building materials generated from on site construction

The use of minimal environmental impact materials as assessed by the EcoCost ecological impact rating system;
ie:

- Marine Grade Structural Aluminium Alloy
- Plantation Timber Framing
- Wool/polyester blend non-irritant insulation
- Environmentally Certified sourced Timber Framing
- Corrugated steel sheet roofing maximum coverage for minimal material
- Re-use of excavated material as aggregate for on-site works
- Weathertex composite recycled timber cladding panels
- SIPS composite foam core structural panels

CONSTRUCTION WASTE MANAGEMENT

The following strategies will ensure the minimisation of requirement for disposal of waste materials from the construction works:

- All existing trees and vegetated areas to be securely barricaded to prevent damage to foliage or roots.
- A sullage soakage pit will be excavated on site and lined with filtration mat to allow safe, on site, deep strata dispersal of used water and washing outs. The pit will be cleaned out, backfilled and site made good on completion.
- Excavated material from footings and service trenches and in ground pool excavations to be sorted and stored on the site. Topsoil to be sifted of debris to 32mm grid and re-used in landscaping works. Subsoils to be mixed thoroughly, sifted for organic debris and stored for use in backfilling works.
- All organic debris to be collected, shredded and composted on site for use in landscaping works.
- Render and concrete rubble will be broken up on site, sifted for dust and retained for use in drainage works around the perimeter of the new building and for drainage bedding around underground septic tank and trenches.
- Timber offcuts will be stored in a bin on site for use as firewood or for shredding for mulch chips.
- All metal offcuts will be stored in a bin on site for recycling.
- Wrappings, packaging and binding materials will be sorted and stored on site for recycling through the local recycling programs.
- Dust, dirt and unrecyclable waste materials will be collected and stored in covered bins on site for regular disposal through waste disposal contractors.
- No skips or bins will be used anywhere off the site.
- All site access will be via the existing road and laneway accesses. A drainage barrier will be employed at the main site entrance(s) to catch any waterborne sediment or trafficked material from the works.

RESPONSES TO FLINDERS ISLAND PLANNING SCHEME

Flinders Island Planning Scheme 1994 – 2000 - amended 2012

Lot 3 West End Beach, Leeka, - Flinders Island Tasmania 7255

Requiring Residential Scale Preservation.

Zone	Rural (<i>Rural Environmental</i>)
Locality	Beachfront
Waterfront Setback	100m from High Water Mark
Watercourse Setback	40m from any watercourse
Permitted (with Planning Permit)	Residential House One Accommodation Cabin per lot
Heritage Zone	N/A
Existing Floor Space Ratio	N/A
Permitted Floor Space Ratio	0.4:1
Lot Size	10.2 Ha
Lot Width	188m. West to East
Lot Length	524m. North to South
Existing Floor Area	87 SqM
Proposed Floor Area	138 SqM
Proposed Floor Space Ratio	0.0
Permitted Building Height	8.0m.
Permitted Front Setback	20m.
Permitted Side Setback	20m.
Permitted Rear Setback	20m.
Permitted overall Building Length	24m.
Overall Building Length	16.4m
Longest unbroken wall Length	14.8m.
Ceiling Height above Natural Ground Level	3.8m
Maximum Wall Height	3.5m
Fall Across Site SW to NE	0.5m.
Average slope over site	1-3%

While there are no detailed requirements in the Council Planning Scheme or associated zoning statements which specifically apply to this site, the statements of intent for the zoning of Rural (and zoning of future Rural Environmental in the draft state compliant scheme) and the applicable guidelines provide details for responses. This proposal has been designed to be in keeping with the stated intents for the zone and objectives of the relevant provisions and to fit within the requirements for a Complying Development as designated under the scheme.

This proposal is for a single storied Ecotourism Accommodation Cabin constructed using the ecoshelta e.pod prefabricated building system, as used in similar nearby dwellings on the property and neighbouring lots. Holiday Cabin is a 'Discretionary' use under the FIPS - Amended 2012 Rural Zone Use Table 5.8.5. The existing dwelling has development Consent from Council for use as a short term holiday accommodation venue.

The proposal meets the in-principle objectives of Rural Zoning in that:

The envelope designated ensures minimal visibility of the additions and retains the existing topography and flora intact. The positioning of the building allows for effective natural light penetration, eliminates any overshadowing potential and lessens bulk and scale effects. The forms and masses proposed are in keeping with the general pattern of development for the locality with a number of previously approved examples similar to this proposal within the general locality.

This is a typical remote rural coastal accommodation cabin and the building proposed in this proposal is to be used only for small scale ecotourism accommodation purposes under the currently approval for this operation of the allotment and has been designed in compliance with the relevant provisions of the BCA for health and safety of the occupants.

The existing dwelling is not a listed heritage item nor proximate to any listed heritage items. The general habitation patterns of the area are to be respected and retained in full in this proposal. The building proposed is to the rear of the dune line and well

back from the West End Road and designed to ensure minimal visibility from the beach or road and do not interfere with the preservation of context.

The proposal does not involve subdivision of the land.

The proposed building will not affect the views of any neighbouring dwellings.

The proposal will not result in any overshadowing of any adjacent property or living area windows of the existing building.

The proposal requires no variations to the applicable sections of the Planning Scheme, full compliance is achieved.

The design has been developed in response to the particular features of the site, the context of the neighbourhood and the particular aspirations of the applicants. The location, orientation and form of the building extension is specifically designed to ensure that the dwelling is only to be minimally visible from the main public road or adjacent beachfront reserve and will not be a dominant mass from any existing nearby dwellings. All existing vegetation and boundary fencing is to be retained to ensure significant landscape screening reinforced with further native plantings.

The building is oriented to the west to maximise the available natural light and views. Dense insulation, thermal mass, thick laminated glazing and louvring are specified to enhance the passive solar design principles and natural stack ventilation strategies to ensure the building meets or exceeds the Housing Energy Rating Scheme (HERS) requirements for a 5 Star + Rating. Section 7 compliance with the BCA has been achieved for the project.

The building is designed to occupy an unused cleared area of the allotment some distance from the existing dwelling within the confines of the existing beach access driveway access parking and turning area. The site requires no removal of existing trees, clearing of land or substantial excavation.

The new building works will not break the skyline nor be visible from the beach frontage and are modelled on the forms, materials and structure of the adjacent existing residence. There are a number of examples of residences with similar architectural style in the neighbourhood.

Given the above the building is proposed as a permissible Development for the site.