Appendix E

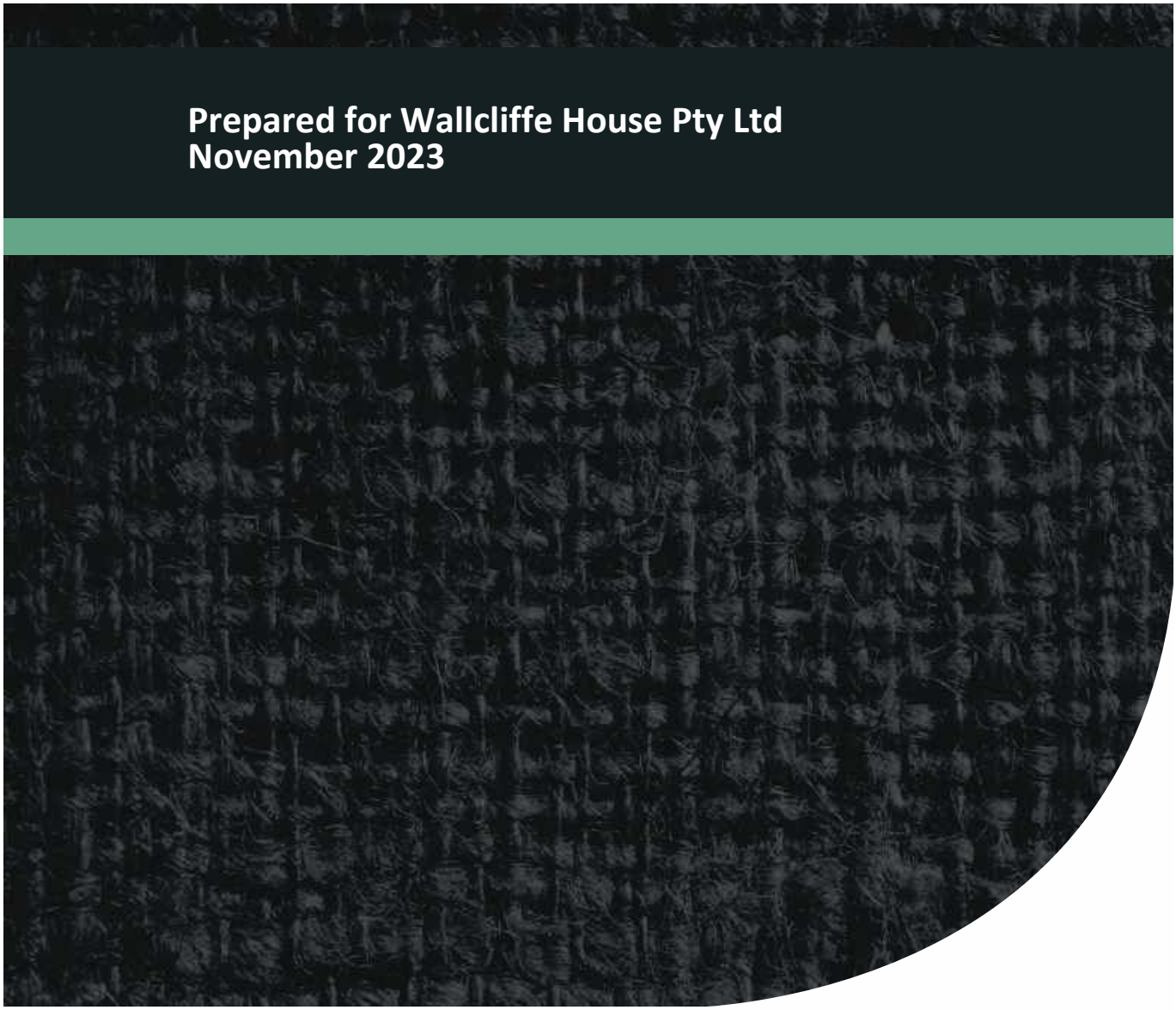
Environmental Assessment Report (Emerge, 2023)

Environmental Assessment Report

Lot 101 (no. 752) Wallcliffe Road, Margaret River

Project No: EP18-128(11)

Prepared for Wallcliffe House Pty Ltd
November 2023



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Executive Summary

This *Environmental Assessment Report* (EAR) has been prepared on behalf of Wallcliffe House Pty Ltd (the proponent) to support the proposed redevelopment of Lot 101 Wallcliffe Road, Margaret River (herein referred to as 'the site') which is located within the Shire of Augusta Margaret River. The proponent is proposing to redevelop the site as a boutique hotel and the development is in line with the proposal put forward as part of the recent scheme amendment. The site is approximately 5.2 ha in size and is located approximately 8 km south-west of the Margaret River townsite. The site is generally bounded by the Margaret River and associated riparian vegetation to the north-west, a nature reserve to the south and existing residential and tourism land uses (including chalet and camping) to the east (which includes the Margaret River rowing club).

The site contains one of the original farms and homesteads built by the Bussell family (referred to as 'Wallcliffe House') with construction of the original buildings commenced in the 1850's, and is known for its Aboriginal, European, and natural values and its landscape with attractive scenery and vegetation values. The buildings within the site were significantly damaged by a bushfire in 2011. It has not been used for residential or tourism purposes since these fires, although the cultivated gardens and grounds surrounding the buildings have continued to be maintained to a high standard over this period.

The site is zoned 'tourism' under the Shire of Augusta Margaret River Local Planning Scheme (LPS) No.1., and the proposed land use is in accordance with the zoning and the requirements of the scheme. It will accommodate up to 25 keys (62 guests) and is seeking to be sensitive and sympathetic to the history of the site and landscape values as part of managing heritage values. This is less keys than that proposed through the scheme amendment process (which was 40 keys). The principles being adopted are based on new buildings being located within the footprint of the existing fire damaged buildings, as well as additional guest cottages and suites, an operations building and wastewater treatment plant, guest and staff parking, an estate management office, a guest spa and supporting utility infrastructure. The existing mature cultivated gardens and areas of remnant vegetation within the site are proposed to be retained, although some modification to this vegetation will be undertaken to support development of the project and management of bushfire risk.

This EAR has been prepared to support the development application and approval process and provides a synthesis of information relating to the environmental features, attributes, and values. It outlines how these environmental values will be managed as part of the development process. The environmental attributes and values relevant to the site are summarised below and include:

- Topography across the site ranges from approximately 2 m Australian Height Datum (AHD) along the western boundary (e.g., closest to Margaret River) to 12 mAHD at its northern extent, 22 mAHD in the south west near the Wallcliffe Cliffs and 64 mAHD at the south eastern extent (e.g. closest to Wallcliffe Road).
- A limestone feature (lithified Tamala Limestone) extends from the south-western portion of the site in a westerly direction and contains shallow caves and a limestone rock face. This feature is generally referred to as the 'Wallcliffe Cliffs'.
- A number of geotechnical investigations undertaken for the site and indicate:

  - The site is generally comprised of sandy soils, including significant zones of very loose and loose sand, overlying limestone rock (and clays in the lower portion of the site closer to the Margaret River), in turn overlying granulite and granite bedrock.
  - No karst features have been identified within 10 m of the subsurface based on the outputs from ground penetrating radar investigations undertaken by Douglas Partners (2022).
- Available regional mapping has not identified the site as having acid sulfate soil (ASS) risk within 3 m of the soil surface and this is supported by the outcomes of the geotechnical investigation. Margaret River, adjacent to the north-western boundary of the site, is identified as having a 'low to moderate risk' of ASS risk within 3 m of the natural soil surface.
- Areas of the site below the 5 m AHD contour may potentially be at risk from coastal processes such as inundation, storm surge or erosion based on the outcomes of the Shire of Augusta Margaret River Coastal Hazard Risk Management and Adaption Plan (CHRMAP).
- The majority of vegetation within the site is highly disturbed and modified ('completely degraded') and was historically cleared to support the previous farming/residential land uses. Approximately 4 ha of the site is cleared and/or planted and is dominated by landscaped gardens that include native and exotic plant species. Small areas of the site contain more intact remnant vegetation in 'degraded' and 'good' condition and show evidence of weed control. In addition:
  - One individual of the priority four species *Banksia sessilis var. cordata* was recorded in the south-eastern corner of the site adjacent to the existing driveway (with other individuals likely to be present, just not recorded). No other threatened or priority flora species were identified within the site.
  - No threatened or priority ecological communities were identified within the site.
- A number of conservation significant fauna species were identified using habitat within the site including osprey, western ringtail possum, the three black cockatoo species (Carnaby's, Baudin's and forest red tailed), with a potential breeding habitat tree in the north-western portion of the site. As part of approved demolition works (P221600) that took place in 2021, an established osprey nest was relocated from the top of the fire damaged house, over to a new purpose-built platform designed especially for the birds, with subsequent successful breeding observed.
- Groundwater monitoring has been undertaken within the site since 2021 and the results indicate that levels range between 0.43 mAHD at the western/ north west boundary adjacent to Margaret River to 3.78 mAHD within the central portion of the site. A groundwater licence is applicable to the site and enables the abstraction of up to 16,500 kL/year of groundwater (GWL207725).
- Margaret River, a major perennial watercourse, is located directly adjacent to the western boundary of the site with the majority of intact riparian vegetation located outside the site. The riparian vegetation associated with Margaret River varies in width, with a small area containing no vegetation. The proponent has recently commenced revegetation work within the riparian vegetation adjacent to the site in accordance with a bed and banks permit (issued by the Department of Water and Environmental Regulation (DWER)) and development approval (issued by the Shire of Augusta Margaret River, P222827). No wetland features have been identified within the site. A soak is present in the north-west portion of the site and is man-made, constructed historically as part of the previous agricultural activities.

- Aboriginal and non-indigenous heritage values have been identified within or nearby to the site. This includes Directory Place Aboriginal Cultural Heritage (ACH) sites 5848 (Cliffs at Wallcliffe) and 4495 (Margaret River) and one Registered Heritage Place (Place 114 - Wallcliffe House and Landscape). Section 18 consent has been granted for potential impacts to the ACH sites.
- Areas of bushfire hazard have been identified outside the site, associated with the existing nature reserve (managed by the Shire) and the Margaret River/Leeuwin Naturaliste National Park to the south and west/north-west respectively.

Based on the environmental values or attributes identified within the site, this EAR provides an environmental management framework to be implemented across the site for the proposed development. As a summary, this includes:

- **Landforms, soils and geology:** no physical disturbance of Wallcliffe Cliffs is proposed as part of the development. Access to the Cliffs (via a previously installed boardwalk) has been removed in recognition of the importance of this feature to the Aboriginal community, as per the Section 18 approval and ongoing consultation. Soil and erosion control measures will be implemented across the site, particularly during construction.
- **Flora and vegetation**: retention of existing remnant native vegetation and the mature cultivated gardens (including trees) is proposed to be maximised as part of detailed design and construction processes. Construction works will be excluded from the Margaret River and associated riparian vegetation as well as Wallcliffe Reserve, minimising impacts on vegetation values. Vegetation to be retained will be clearly identified and managed in accordance with arborist advice, and enhancement of vegetation values will occur through ongoing riparian vegetation and through the landscape design.
- **Native fauna**: impacts to native fauna will be minimal given the limited high-quality habitat within the site. Impacts, where they occur, are expected to be short-term in nature (e.g. during construction) and can be managed through the implementation of fauna management protocols, such as pre-clearing inspections and a fauna spotter being present during works. The potential black cockatoo habitat tree in the north-western portion of the site will be retained, as will the osprey nest which was relocated as part of a previous development approval. Enhancement of habitat values will occur through ongoing revegetation of the riparian vegetation and through the landscape design.
- **Hydrology:** water management within the site will be based on maintaining the existing hydrological regime of the site which includes infiltrating at source and controlling erosion. New buildings are located more than 20 m from the Margaret River, and groundwater separation can be maintained. Groundwater use (primarily to support irrigation) within the site will be managed in accordance with groundwater licence (GWL207725). Wastewater will be managed via an onsite wastewater treatment plant, treating the water to a tertiary quality, and infiltrating onsite. Further detail on the water management requirements are detailed within the WMP (Emerge Associates 2023b).
- **Heritage:** Aboriginal and European heritage will be managed in accordance with the relevant approvals, including an existing Section 18 consent and future Heritage Council requirements. Ongoing consultation with Traditional Owners will be a key component of the project.

- **Bushfire management**: bushfire hazards (classified vegetation) have been identified in the vicinity of the site. Buildings will be constructed in accordance with the determined BAL rating and AS 3959, which includes BAL-40 and BAL-FZ construction and other fire engineering determined requirements. This is as part of responding to the heritage, vegetation, and landscape values within the site. Appropriate vehicle access (which includes turn around areas), onsite shelter and appropriate water supply have been included as part of the proposed development, as outlined in the BMP (Emerge Associates 2023a).

Overall, there are no significant environmental issues or constraints within the site that would preclude the proposed redevelopment of the site. The site is a place with recognised Aboriginal, European, and natural values. The heritage listing for the site identifies the "attractive scenery and vegetation of the landscape" being features that brought settlers to the area, with the views to/from the buildings a key consideration.

The project is seeking to be sensitive and sympathetic to the history of the site and landscape values as part of managing heritage values, particularly the views, remaining plantings, and remnant vegetation. Impacts to landform, native flora and vegetation and conservation significant fauna will be minimal given the sympathetic approach taken by the project, locating buildings within existing cleared/disturbed areas, and enhancing the vegetation values through revegetation and new planting. The water quality of the Margaret River will be protected, based on the water sensitive urban design approach, management of erosion and sedimentation and appropriate management of wastewater with a tertiary quality system. Short-term impacts can be managed through the implementation of vegetation and fauna construction management protocols, as well as landscaping (including new planting and revegetation work already underway in the adjacent foreshore) within the site which will assist with enhancing existing vegetation values.

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Table A1: Abbreviations – General terms

General terms	
ASS	Acid Sulfate Soils
BAL	Bushfire Attack Level
BMP	Bushfire Management Plan
EAR	Environmental Assessment Report
ESA	Environmentally sensitive area
FZ	Flame zone
Key	Refers to the number of lodging units, which may include a lodging unit with multiple rooms as part of a single suite or similar.
MNES	Matters of National Environmental Significance
PEC	Priority ecological community
TEC	Threatened ecological community
WMP	Water Management Plan

Table A2: Abbreviations – units of measurement

Units of measurement	
cm	Centimetre
ha	Hectare
km	Kilometre
m	Metre
m AHD	Metres in relation to the Australian Height Datum
mm	Millimetre

Table A3: Abbreviations – Organisations

Organisations	
BoM	Bureau of Meteorology
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DCCEEW	Department of Climate Change, Energy, the Environment and Water (federal)
DPLH	Department of Planning, Lands and Heritage
DWER	Department of Water and Environmental Regulation
DBCA	Department of Biodiversity, Conservation and Attractions
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
EPA	Environmental Protection Authority
OBRM	Office of Bushfire Risk Management
WALGA	Western Australia Local Government Association
WAPC	Western Australian Planning Commission

Table A4: Abbreviations –Legislation or standards

Legislation	
AS 3959	*Australian Standard 3959-2018 Construction of buildings in bushfire prone areas*
BC Act	*Biodiversity Conservation Act 2016*
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
PD Act	*Planning and Development Act 2005*

Table A5: Abbreviations – Planning terms

Planning terms	
LPS	Local planning scheme
SPP	State Planning Policy
The Guidelines	Guidelines for Planning in Bushfire Prone Areas version 1.4

1 Introduction

1.1 Background

Wallcliffe House Pty Ltd (the proponent) are proposing to redevelop Lot 101 Wallcliffe Road, Margaret River (herein referred to as 'the site') as a boutique hotel. The site is located within the Shire of Augusta Margaret River and is approximately 5.2 ha in size and is found approximately 8 km south-west of the Margaret River townsite, as shown in **Figure 1**. It is generally bounded by the Margaret River and associated riparian vegetation to the north-west, a nature reserve to the south and existing residential and tourism land uses (including chalet and camping) to the east (which also includes the Margaret River rowing club).

The site contains one of the original farms and homesteads built by the Bussell family (referred to as 'Wallcliffe House') with construction of the original buildings commenced in the 1850s. It is known for its Aboriginal, European, and natural values, as well as its landscape with attractive scenery, viewscapes and vegetation values. The buildings within the site were significantly (irreparably) damaged by a bushfire in 2011. The site has not been used for residential or tourism purposes since these fires, although the cultivated gardens and grounds surrounding the buildings have continued to be maintained to a high standard over this period.

MJA Studio have prepared a detailed concept plan to support the redevelopment of the site, which is provided in **Appendix A**.

1.2 Purpose of this report

This *Environmental Assessment Report* (EAR) has been prepared by Emerge Associates to provide a synthesis of information regarding the environmental values and attributes of the site. Specifically, this report:

- Identifies the policy and framework relevant to the development of the site (**Section 2**)
- Identifies the existing environmental values and attributes of the site, including updates since the scheme amendment process (**Section 3**)
- Outlines the environmental management that will be implemented to support development (**Section 3** and **Section 4**)

The EAR is a key supporting environmental document for the development application process, to facilitate the consideration of the relevant environmental values by decision makers and the community and ensure an appropriate management framework is applied.

2 Planning Framework and Proposal

2.1 Shire of Augusta Margaret River Local Planning Scheme No.1

The site is zoned 'tourism (T5)' and 'special area' (Development Contribution Area (DCA1) under the Shire of Augusta Margaret River Local Planning Scheme (LPS) No.1, as shown in **Plate 1**. The 'tourism (T5)' zoning, based on the outcomes of a re-zoning process in 2019, requires the following (as it relates to considering environmental values):

2. *The local government may also approve applications for the following tourist uses: restaurant, tearooms, hotel or guesthouse and chalet limited to a maximum of 40 keys, small bar, spa and activities related to public viewing of the buildings and grounds, where it can be demonstrated that bushfire mitigation measures can be achieved and such uses do not conflict with the heritage values of the site. Exhibition centre, reception centre and conference uses may also be approved on the site, provided the uses are incidental to the predominant use of the land.*
3. *No development shall be approved by the local government unless:*
    a. *It is consistent with the heritage values and integrity of the site;*
    b. *It is consistent with the landscape significance and setting of the site;*
    c. *It is appropriately sited and designed to ensure that fire mitigation measures do not compromise environmental and landscape values.*
    d. *It is set back a minimum of 20m from the property boundary where it abuts the Margaret River (with the exception of existing development, landscape works and essential services).*
    e. *The adjacent foreshore values are appropriately, enhanced, protected and managed.*
5. *Removal of existing vegetation is not permitted without the approval of local government.*
6. *The following documentation is to be prepared and accompany an application for development approval for any tourism-based land use (as outlined in Condition 2):*
    - *A Bushfire Management Plan and associated Bushfire Emergency Evacuation Plan, responding to the detailed design of the proposed development and addressing the requirements of SPP 3.7 and the relevant position statements and guidelines.*

The requirements of the local planning scheme have been considered as part of the development of the design concept for the project, with particular consideration for a sensitive and sympathetic approach consistent with the Aboriginal and European history as well as landscape and natural values, minimising removal of vegetation and utilising the existing cleared areas/historic building footprints as much as possible.

Enhancement of the foreshore values (Condition 3e) has already progressed, with revegetation work being undertaken within the areas containing riparian vegetation in accordance with a bed and banks permit (issued by the Department of Water and Environmental Regulation (DWER)) and development approval (issued by the Shire of Augusta Margaret River, P222827).

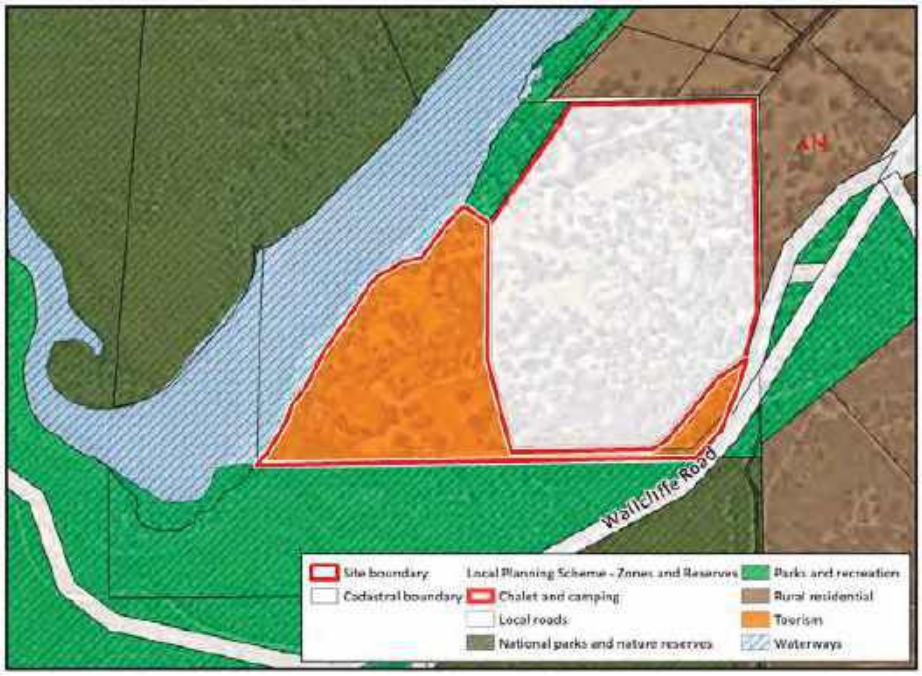

Plate 1: Shire of Augusta Margaret River Local Planning Scheme No.1 (2023)

2.2 Environmental Protection Act 1986

As part of the recent scheme amendment process, the proposal was referred to the Environmental Protection Authority (EPA) by the Shire of Augusta Margaret River under Section 48A of the *Environmental Protection Act 1986* (EP Act). The EPA concluded that the proposal did not require formal assessment under Part IV of the EP Act.

As part of considering the scheme amendment, the EPA provided advice regarding the environmental factor's flora and vegetation, terrestrial fauna, and inland waters. These considerations were factored in as part of the finalised scheme text (outlined above in **Section 2.1**). The project design has also considered the EPA advice in addition to the requirements of the scheme, noting that:

- Impacts to flora and vegetation values have been minimised, with remnant native vegetation retained and also incorporated as part of the landscape design. The approach to bushfire mitigation has been strongly aligned with protecting vegetation values.
- The identified black cockatoo habitat trees will be protected and retained as part of the project, and as part of approved demolition works in 2021 (P221600), the osprey nest within the site was relocated from the top of one of the fire damaged buildings to a new purpose-built platform designed especially for the birds.
- The foreshore area will be enhanced through the revegetation activities already commenced in that area (as discussed above) and will be protected as part of the proposed works and ongoing operation. The setback to new development is in accordance with that agreed through the scheme amendment process.
- Onsite effluent disposal is being addressed consistent with the *Government Sewerage Policy 2019* (DPLH 2019). Detailed investigations have been progressed since the scheme

amendment process to support the development of the wastewater management approach for the site.

2.3 Planning and Development Act 2005

The redevelopment of the site will need to obtain development approval in accordance with the Shire of Augusta Margaret River LPS No.1. This report, along with other supporting documents, has been prepared to support this process.

As part of any development approval, conditions will be applied to the project, which will need to be addressed as part of implementing the project. It is anticipated, that from an environmental perspective, conditions may relate to:

- Vegetation management, including protecting riparian vegetation and trees/vegetation proposed for retention.
- Fauna management and protecting fauna during demolition and construction activities.
- Water management, including protecting water quality within the Margaret River and managing stormwater in accordance with water sensitive urban design principles.
- Bushfire management and implementing the associated management plan.

Following development approval, the proponent will also be required to obtain:

- Building licences, pursuant to the *Building Act 2011* which will also factor in construction in accordance with *Australian Standard 3959-2018 Construction of buildings in bushfire prone areas* (AS 3959).
- A works approval, pursuant to Part V of the *Environmental Protection Act 1986*, for the onsite wastewater treatment plant.
- Department of Health approval, pursuant to the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 for the onsite wastewater treatment plant.

2.4 Proposed development

As indicated, MJA Studio have prepared a concept master plan, detailing the proposed redevelopment of the site. The master plan is provided in **Appendix A**.

The site is intended to be developed as a boutique hotel, which will accommodate up to 25 keys (62 guests) and is intended to be sensitive and sympathetic to the Aboriginal and European heritage of the site, as well as the existing natural and landscape values. The principles being adopted will see new buildings be located within the footprint of the existing fire damaged buildings (which could not be restored as a result of damage from a bushfire in 2011), as well being constructed throughout the site including new additional guest cottages and suites, an operations building and wastewater treatment plant, guest and staff parking, an estate management office, a guest spa and supporting utility infrastructure. The number of keys proposed to be serviced by the project is less than that considered in the scheme amendment process (40 keys), and less than that permitted through the planning scheme (40 keys).

The uses proposed within the site can generally be summarised based on the following broad categories (generally outlined in **Plate 2**):

- Accommodation, associated with a number of Cottages, the Cliff wing, and the River wing.
- Guest facilities including:
  - Food and beverage, associated with Wallcliffe House and the Old Diary.
  - Day uses (for guests), associated with the Spa and Boat Shed.
- Operations and back-of-house, associated with the Operations barn, Estate management and the gatehouse.
- Driveway and vehicle parking.
- Landscaped grounds, including turf, manicured gardens, and managed retained vegetation.

Plate 2: Summary of key buildings/features proposed as part of the development.

The proposed development of the site proposes to be sensitively integrated with the Margaret River, mature cultivated gardens, remnant vegetation and amenity values, while also providing the facilities required for a boutique hotel. It is shaped by design principles, using nature, heritage, materiality, and sustainability as inspiration. It is intended to be designed thoughtfully, built carefully, and inhabited respectfully.

3 Existing Environment

In order to understand the environmental values within or nearby to the site and consider appropriate management responses, Emerge Associates have reviewed a range of information sources, including local and regional reports, databases, mapping, and site-specific investigations. Site specific investigations and of design that have informed the preparation of this report include:

- *Bushfire Management Plan* (Emerge Associates 2023a)
- *Water Management Plan (Emerge Associates 2023b)*
- *Wallcliffe House and Landscape, Margaret River Heritage Impact Statement* (Hocking Heritage 2023)
- *Architectural Design Report* (MJA Studio 2023)
- *Landscape Architecture Development Application Report (See Design Studio 2023)*
- *Engineering Aspects (The Civil Group 2023)*
- *Sustainability Report (Cundall 2023)*
- *Waste Management Plan (Encycle 2023)*
- *Hydrogeological Assessment (Emerge Associates 2022)*
- *Geotechnical Investigation Report* (Douglas Partners 2022)
- *Spring Flora and Vegetation Assessment* (Emerge Associates 2019c)
- *Fauna Assessment* (Harewood 2019a)

3.1 Climate

3.1.1 Outline of values

The climate of the site is described as Mediterranean, with hot, dry summers and moderately wet, mild winters. The majority of rainfall within the region occurs between May and October each year, and on average is between 700 to 1200 millimetres (mm) annually. However, in the last 40 years there has been a marked decrease in rainfall, with a noticeable shift to a drier climate across the south-west of Western Australia (CSIRO 2009).

The closest weather station to the site which records rainfall and temperature data is located in Witchcliffe (Bureau of Meteorology (BoM) station number 9746), situated approximately 11.7 km south-east of the site. Based on weather data collected from 1999 to 2021 at the Witchcliffe station, the local area experiences an average of 965.2 mm of annual rainfall, as detailed in **Table 1** below. Temperature data is also recorded at the Witchcliffe station, indicating the highest a mean maximum temperature of 27.1°C is in February, while the mean minimum temperature of 8.2°C is in August (BoM 2023).

Table 1: Median annual rainfall from 1999 to 2021 at Witchcliffe (station number 9746) (BoM 2023)

Climate parameter	Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Median rainfall (mm)	5.8	6.8	27.3	48.6	123.3	172.7	201.8	161.2	107.6	58.2	32.0	13.6	965.2

3.1.2 Management

There are no specific management considerations in relation to climate, however the changing climate has been considered (and discussed further below) with regard to changing rainfall patterns and ongoing irrigation requirements to support the project.

3.2 Topography

3.2.1 Outline of values

The site has a north-westerly aspect, with elevation ranging from 2 m in relation to the Australian height datum (mAHD) along the western boundary adjacent to Margaret River, to 12 mAHD at its northern extent, 22 mAHD in the south west near the Wallcliffe Cliffs and 64 mAHD at the south eastern extent (e.g. closest to Wallcliffe Road) (DPIRD-072). Topographic contours are shown in **Figure 1**.

3.2.2 Management

There are no management considerations directly in relation to topography, however topography is a consideration in relation to coastal processes and managing erosion, as discussed further below.

3.3 Landform, soils, and geology

3.3.1 Outline of values

The regional geological mapping (*Western Australia 1:50 000 Regolith-Landform Resources Series, Cowaramup – Mentelle first edition 2000*) indicates that the site is underlain by the Leeuwin Complex comprising fresh to weathered granite, while the area immediately to the west of the site (e.g. associated with the Wallcliffe Cliffs) comprise the Spearwood dunal system, described as sand over calcarenite (coarse grained limestone). Soil landscape mapping (compiled by the Department of Primary Industries and Regional Development (DPIRD)) indicates the site is within the 'Gracetown low slopes phase' soil landscape (shown in **Figure 2**) which is described as 'deep yellow brown siliceous sands over limestone' (e.g. Spearwood Sands).

A number of detailed geotechnical investigations (CMW Geosciences 2018; Douglas Partners 2022) have been undertaken across the site and generally indicates that geology and soil aligns with the published regional information. An exception is that the sand of the Spearwood Dunal system extends further into the site, with some areas of the site containing shallow pinnacle limestone with sand.

A limestone feature (lithified Tamala Limestone) extends from the south-western portion of the site in a western direction and contains shallow caves and a limestone rock face. This feature is generally referred to as the 'Wallcliffe Cliffs'. It is located approximately 400 m from the coast and adjoins the site at its western-most boundary (with the total length of the cliffs approximately 250 m). There are a number of caverns, overhangs and caves within the cliffs that have been identified as having a diversity of significant local geological and landscape attributes (Shire of Augusta Margaret River 2018).

3.3.1.1 Karst formations

Karst is encountered all over Australia and the formation and size of karst features is reliant upon a variety of factors including water chemistry, strength of soluble rock and depth to groundwater from the surface. Karst landforms are produced as a result of the dissolution of soluble rock by weakly acidic surface water or groundwater. There are many distinctive landform features that define karst terrains including: sinkholes (dolines), caves, dry valleys, tube structures, vaults and solution flutes (Csaky 2003).

The geotechnical investigations conducted by Douglas Partners (2022) found no karst features were interpreted along the various transects within 10 m of the subsurface, indicating that it is unlikely that there is karst present within the site or a consideration for development.

3.3.1.2 Acid sulfate soils

Acid sulfate soils (ASS) is the name commonly given to naturally occurring soils and sediment containing iron sulphide materials. In their natural state ASS are generally present in waterlogged anoxic conditions and do not present any risk to the environment. When oxidised, ASS produce sulphuric acid, which can pose risks to the surrounding environment, infrastructure, and human health.

The site is not identified as having any risk of ASS based on the available regional mapping prepared by the Department of Water and Environment Regulation (DWER) (DWER 2023). This is supported by the geotechnical investigations (CMW Geosciences 2018; Douglas Partners 2022). Margaret River, adjacent to the north-western boundary of the site, is identified as having a 'low to moderate' risk of ASS within 3 m of the natural soil surface.

Given no disturbance of Margaret River is proposed, ASS is unlikely to be a risk for development within the site.

3.3.2 Management

A key feature requiring management/consideration is the Wallcliffe Cliffs. No physical disturbance of Wallcliffe Cliffs is proposed as part of the development. Direct access to the Cliffs (via a previously installed boardwalk) has been removed in recognition of the importance of this feature to the Aboriginal community, as per the Section 18 approval and ongoing consultation. Development approval was granted by the Shire of Augusta Margaret River for the proponent to redevelop the boardwalk in a different location, as per Planning Approval No. P222827. Works will be progressed in accordance with this approval. This area will be clearly demarcated and unauthorised access will be controlled.

Due to the steepness of the site, and its proximity to the Margaret River, soil and erosion control measures will need to be implemented across the site, particularly during construction, in accordance with the *Shire of Augusta Margaret River Erosion and Sediment Control Local Law 2019* (SAMR 2019). Management measures could include (but are not limited to):

- Minimising areas of the site composed of bare ground as much as possible, particularly in periods of high rainfall.

- Runoff from upstream catchments to be directed away from exposed soils and may include the use of temporary cut-off drains or flow diversion banks.
- Use of temporary sediment control fences and/or temporary sediment trapping devices (sand bags and filter socks) before the Margert River. These features will be designed to prevent flows bypassing them.

This will be documented as part of the engineering detailed design as well as the construction environmental management plan, which will need to be approved by the Shire of Augusta Margaret River.

3.4 Coastal processes

3.4.1 Outline of values

The site is situated approximately 600 m east of the coastline, with the development located adjacent to Margaret River which meanders to the river mouth (for approximately 1.2 km) and is seasonally open to the ocean. The Shire of Augusta Margaret River commissioned the preparation of a *Coastal Hazard Risk Management and Adaption Plan* (CHRMAP) (Shore Coastal 2015) to provide strategic guidance on management and adaptation in key coastal settlements that may be exposed to coastal processes such as storm surge, inundation and erosion.

The CHRMAP (Shore Coastal 2015) considered Prevelly and the areas near the mouth of the Margaret River, and while estuarine flooding for Margaret River was not specifically identified as an issue, Shore Coastal (2015) indicated that assets located below the 5 m AHD contour or at a horizontal distance of 200 m from the coast may be exposed to coastal processes such as storm surge, inundation and erosion in the 100 year planning period.

3.4.2 Management

All new buildings are located more than 200 m from the coast and will also be constructed above the 5 m AHD contour, and therefore it is unlikely that the proposed development will be significantly impacted by coastal storm surge or inundation in the future. No specific management is required to support implementation of the project.

3.5 Flora and vegetation

3.5.1 Outline of values

A detailed flora and vegetation survey (Emerge Associates 2019) has been undertaken across the site and portions of the surrounding reserves in November 2018. the outcomes of the survey have been summarised in the following sections, and a copy is provided in **Appendix B.**

The purpose of the survey was to detail the flora and vegetation characteristics of the site, and in particular determine the presence of conservation significant values such as threatened and priority ecological communities (TECs and PECs), threatened and priority flora and regionally significant vegetation values.

At the federal level, certain listed TECs and threatened flora are protected through the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and are identified as Matters of National Environmental Significance (MNES). Any action likely to have a significant impact on a listed TEC or threatened flora species requires approval from the Commonwealth Minister for the Environment.

At the state level, threatened flora species are listed under sections 19(1) and 26(2) of the *Biodiversity Conservation Act 2016* (BC Act), while TECs are listed under sections 27(1) and 33 of the BC Act. Threatened flora species and TECs are also acknowledged through other state environmental approval processes such as environmental impact assessment pursuant to Part IV of the *Environmental Protection Act 1986* (EP Act) and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

An ecological community under consideration for listing as a TEC, but which does not yet meet survey criteria or has not been adequately defined, or which is rare but not currently threatened, is referred to as a priority ecological community (PEC). Similarly, species of flora which are potentially rare or threatened, or meet the criteria for near threatened, or have recently been removed from the threatened species list are classed as 'priority' flora species. PECs and priority flora are not protected statutorily.

These values are considered further below.

3.5.1.1 Plant communities and threatened and priority ecological communities

The site is largely comprised of non-native vegetation (approximately 4 ha) and is associated with mature cultivated garden and lawn areas. The vegetation within the site has been described as five different 'plant communities' which have been summarised in **Table 2** and shown in **Figure 3**. 'Cleared/planted' is the dominant plant community, while the other identified plant communities are relatively small and align with areas within the site where endemic species were identified in groups**.**

None of the plant communities described within the site (or surrounds) were identified as TECs or PECs.

The aquatic root mat community of the Leeuwin-Naturaliste Ridge Caves are a rare and complex TEC that live in a dark, warm, and wet environment of limestone caves. In these communities, the tree roots from endemic species such as karri, marri or peppermints reach the water in shallow caves and create microscopic fungi. The fungi in return provide a food source for other organisms. None of the Leeuwin-Naturaliste Ridge Caves TECs have been located in proximity to the site, but it is highly unlikely that this TEC occurs within the site due to the historic clearing of vegetation (including the removal of tree roots) and the planting of non-native species and the lack of karst areas within the site.

Table 2: Summary of plant communities (including area (ha)) identified within the site and broader survey area (Emerge Associates 2019b).

Plant community	Description	Area (ha)	
		Site	Additional survey area
AfW	Woodland of *Agonis flexuosus* over open shrubland of *Rhagodia baccata* subsp. *baccata*, *Olearia axillaris* and *Hibbertia cuneiformis* over open mixed forbland and open to closed grassland of weeds. See **Plate 3**.	0.63	0.21
AfSgHcW	Woodland of *Agonis flexuosus* over shrubland of *Spyridium globulosum*, *Hibbertia cuneiformis*, *Templetonia retusa* with vineland of *Hardenbergia comptoniana* and *Muehlenbeckia adpressa* over low shrubland of *Phyllanthus calycinus* over forbland of *Tricoryne elatior* and *Thysanotus arenarius Austrostipa flavescens*. See **Plate 4**.	0.33	2.45
CcAfW	Woodland of *Corymbia calophylla* and *Agonis flexuosus* over shrubland of *Spyridium globulosum, Pteridium esculentum, Rhagodia baccata subsp. baccata* and *Exocarpos sparteus* with vineland of *Hardenbergia comptoniana* and *Muehlenbeckia adpressa* over weeds	0.05	0.42
MhBvTrCS	Low open woodland of *Agonis flexuosus* (resprouting) with closed shrubland of *Melaleuca huegelii, Beyeria viscosa, Acacia cyclops, Diplolaena dampieri, Dodonaea aptera* and *Spyridium globulosum* with vineland of *Hardenbergia comptoniana* and *Muehlenbeckia adpressa* over open forbland of *Tricoryne elatior, *Petrorhagia dubia* and *Thysanotus arenarius*, sparse sedgeland of *Lepidosperma spp.* and sparse grassland *of Austrostipa flavescens* and **Lagurus ovatus*.	0.16	1.96
MrLOF	Low open forest of *Melaleuca rhaphiophylla* over open to closed rush/sedgeland of *Juncus spp.* and *Baumea juncea* over sparse forbland of *Apium prostratum var. prostratum, Lobelia anceps, Samolus repens var. repens* and **Atriplex prostrata*.	0.11	0.79
Cleared/ planted	Modified vegetation comprising weeds with occasional native trees and planted vegetation. See **Plate 5**.	4.01	0.08

*Plate 3: Plant community **AfW** in degraded condition*

*Plate 4: Plant community **AfSgHcW** in good condition.*

Plate 5: Planted landscaped gardens in completely degraded condition.

3.5.1.2 Threatened and priority flora

One individual of the priority four flora species *Banksia sessilis* var. *cordata* was recorded in the south-eastern corner of the site, adjacent to the existing driveway and is shown in **Figure 3**. There are likely to be more individuals of this priority species within the remnant vegetation in the southern portion of the site, and within the adjacent reserve to the south.

No other threatened or priority species were identified within the site.

3.5.1.3 Vegetation condition

Vegetation condition within the site was assessed using methods from Keighery (1994), with descriptions of the vegetation condition ratings provided in **Appendix B.**

The vegetation within the site ranged in condition, with the majority of the site (4.01 ha) identified in 'completely degraded' condition (associated with non-native species such as turf/grasses, and garden areas with planted trees and shrubs). A number of patches of vegetation were identified throughout the site ranging from 'degraded' condition (0.39 ha, reflecting a lack of understorey structure and low species diversity) through to 'good' (0.62 ha) and 'very good' condition (0.28 ha, where moderate species diversity, <20% weed cover and relatively intact vegetation structure was identified). Vegetation condition is shown in **Figure 3**.

Adjacent to the site, within the Margaret River to the north-west and nature reserve to the south, vegetation was identified in 'very good' condition.

A detailed arborist assessment has been undertaken across the site, and document tree health to inform the landscape design (See Design Studio 2023) and retention of existing trees. A number of trees, identified as either weeds and/or in poor health, have been removed from the site in accordance with approvals granted by the Shire of Augusta Margaret River.

3.5.2 Management

A key principle guiding development within the site is to maximise the retention of the existing vegetation values including the mature cultivated gardens and enhancing values wherever possible. Management measures to be implemented as part of demolition and construction of the site include (but are not limited to):

- Where possible, avoid the priority four species *Banksia sessilis* var. *cordata*. It is possible that currently identified individual may need to be removed as part of widening the driveway to address bushfire requirements. More individuals are likely to be present, in the areas of vegetation not being disturbed.
- Utilise existing building footprints to maximise retention of the mature cultivated gardens and existing vegetation.
- Locating development to avoid any large (greater than 500 mm diameter at breast height) remnant native trees wherever possible, particularly with regard to the new vehicle cross-over and new buildings.
- Identification of works exclusion zones on engineering drawings and as part of works on the ground associated with the Margaret River (to the west), the Wallcliffe Cliffs and Wallcliffe Reserve (to the south).
- Identification of tree/vegetation retention areas on engineering drawings and delineation of tree protection zones (TPZ). These will be identified as 'no go zones' or similar and managed in accordance with arborist advice. No go zones/TPZs will be clearly demarcated on the ground, using flagging tape or fencing. No storage of machinery or equipment will be permitted under retained trees/vegetation.
- Where possible, as part of clearing, mulch vegetation in situ and utilise within landscaped areas.

- Revegetation of the riparian vegetation associated with Margaret River. The proponent has already commenced revegetation work within this area, extending outside the site, in accordance with a bed and banks permit (issued by the Department of Water and Environmental Regulation (DWER)) and development approval (issued by the Shire of Augusta Margaret River, P222827).
- Implement hygiene protocols during the clearing and construction process to minimise introduction/spread of weeds and plant pathogens. This will include:
  - Vehicles, machinery, and personnel to be free of mud/soil and plant material upon entering the site. Inspections to be completed prior to works commencing.
  - Minimising clearing and earthworks during wet conditions.
  - Using landscaping species not identified as weeds.

Clearing/modification of the existing vegetation within the site will be required as part of implementing the proposed development, particularly with regard to the construction of a new cross-over and the gatehouse area (and associated back of house operations) in the southern portion of the site, as well as that associated with bushfire risk management in/around the bush cottages, however overall these impacts will be minor. The management measures will be documented within a construction environmental management plan to support demolition and construction activities within the site and will be approved by the Shire of Augusta Margaret River.

3.6 Terrestrial fauna

3.6.1 Outline of values

A fauna survey has been undertaken within the site and broader survey area and included a targeted western ringtail possum survey in addition to a targeted black cockatoo habitat assessment. A copy of the fauna assessment is provided in **Appendix C** and the outcomes summarised in the section below.

Fauna species that are considered to be rare or under threat warrant special protection under state and/or federal legislation. At a federal level, fauna species may be listed as 'threatened' pursuant to the EPBC Act and any action likely to have a significant impact on a listed threatened species requires approval from the Commonwealth Minister for the Environment.

At a state level, fauna species listed as 'threatened' under section sections 13, 19 and 26(2) of the BC Act. In addition to this, the Department of Biodiversity Conservation and Attractions (DBCA) maintains a list of priority fauna species which, while not considered threatened under the BC Act and therefore not protected directly, involve some concern over their long-term survival.

The outcomes of the fauna survey (Harewood 2019) indicate that the areas of remnant vegetation and cultivated gardens within the site are likely to provide habitat for conservation significant fauna species, with evidence of their presence observed for a number of the species however the habitat is not considered to be 'high-quality'. A summary of the conservation significant fauna species that were observed or may potentially occur within the site or surrounds have been summarised in **Table 3**.

Table 3: The presence of conservation significant fauna species within the site and surrounds (Harewood 2019).

Species	Conservation status			Habitat present		Evidence of presence	
	BC Act	EPBC Act	DBCA List	Site	Surrounds	Site	Surrounds
Baudin's black cockatoo *(Zanda baudinii)*	Endangered	Endangered	-	✓	✓	✓	✓
Carnaby`s black cockatoo *(Zanda latirostris)*	Endangered	Endangered	-	✓	✓	✓	✓
Forest red-tailed black cockatoo *(Calyptorhynchus banksii naso)*	Vulnerable	Vulnerable	-	✓	✓	✓	✓
Eastern osprey *(Pandion haliaetus)*	Migratory	Migratory	-	✓	✓	✓	✓
Western ringtail possum (*Pseudocheirus occidentalis*)	Critically endangered	Critically endangered	-	✓	✓	✓	✓
Pouched lamprey *(Geotria australis)*	-	-	Priority 3	✕	✓	✕	✕
Peregrine falcon *(Falco peregrinus)*	Other specially protected	-	-	✓	✓	✕	✕
Masked owl (SW population) (*Tyto n. novaehollandiae)*	-	-	Priority 3	✓	✓	✕	✕
Black bittern (*Ixobrychus flavicollis*)	-	-	Priority 2	✕	✓	✕	✕
Australian little bittern (*Ixobrychus dubius)*	-	-	Priority 4	✕	✓	✕	✕
South-western brush-tailed phascogale *(Phascogale tapoatafa wambenger)*	Conservation dependent	-	-	✓	✓	✕	✕
Quenda ((*Isoodon fusciventer*)	-	-	Priority 4	✕	✓	✕	✕
Western false pipistrelle *(Falsistrellus mackenziei)*	-	-	Priority 4	✕	✓	✕	✕
Water rat, rakali (*Hydromys chrysogaster)*	-	-	Priority 4	✕	✓	✕	✕

Of the fauna species identified in **Table 3**:

- The presence of western ringtail possum throughout the site was identified through scats, dreys and identification of individuals during the nocturnal component of the survey, with the location of these observations shown in **Figure 4**. Almost all vegetation within the site can be considered habitat of some type for the western ringtail possum and may be used for refuge, foraging and/or dispersal.

- Foraging evidence of the three black cockatoo species (Carnaby's, Baudin's and forest red-tailed) was identified within site in the form of chewed marri nuts and pine cones in two areas, as shown in **Figure 5**, however overall the extent of quality foraging habitat within the site is limited. Three potential trees that could be used as breeding habitat (e.g., with a diameter at breast height ≥ 500mm) were identified in the survey area, with only one of the trees identified within the site. None of the trees were identified to contain hollows suitable for breeding and no evidence of breeding activity was observed. No roosting trees were identified.
- An osprey nest was identified near the northern-most boundary of the site and an individual observed resting on one of the buildings during the survey, and subsequent to the survey established a nest on top of one of the fire-damaged buildings. As part of approved demolition works (P221600) that took place in 2021, the osprey nest was relocated from the top of one of the fire damaged buildings to a new purpose-built platform designed especially for the birds. The new location of the nest is shown in **Figure 5**. Observations of the osprey indicate it is breeding successfully from the new nest location.
- No water rats were observed within the site or surrounds as part of the fauna survey (Harewood 2019), although it is noted that the dense swampy vegetation (e.g., riparian vegetation) associated with the Margaret River would be suitable habitat for the species. Anecdotal evidence provided by local Aboriginal people supports this and indicates water rats are present and utilise the riparian vegetation.
- Similarly, while no quenda were observed, the fauna survey (Harewood 2019) noted that the dense swampy vegetation associated with the Margaret River (e.g., the riparian vegetation) would be considered suitable habitat for the species and may be used.

While fauna species of conservation significance were identified utilising the site, the site is considered to have overall low biodiversity value from a fauna perspective (when compared to surrounding nature reserves and the Margaret River).

3.6.2 Management

Impacts to native fauna will be minimal given the long-term retention of the majority of remnant native vegetation within the site, particularly the potential black cockatoo habitat trees in the north-west portion of the site. However, impacts to fauna are possible as part of the demolition and construction activities, and in addition to the vegetation protection measures, fauna management will include (but is not limited to):

- Identification of works exclusion zones on engineering drawings and as part of works on the ground associated with the Margaret River (to the west), the Wallcliffe Cliffs and Wallcliffe Reserve (to the south).
- Identification of tree/vegetation retention areas on engineering drawings and delineation of tree protection zones (TPZ). These will be identified as 'no go zones' or similar and managed in accordance with arborist advice. No go zones/TPZs will be clearly demarcated on the ground, using flagging tape or fencing. No storage of machinery or equipment will be permitted under retained trees/vegetation.
- Where possible, as part of clearing, mulch vegetation in situ and utilise within landscaped areas.
- Revegetation of the riparian vegetation associated with Margaret River, already outlined above.

- Implementation of fauna management protocols by an experienced fauna specialist under a valid license from the Department of Biodiversity, Conservation and Attractions (DBCA). This would include fauna trapping and relocation prior to clearing if required (particularly for western ringtail possum), pre-clearing fauna inspection and having a fauna spotter present during clearing activities.
- Ensuring the project is maintained in a clean and tidy manner to ensure feral and other species are not attracted to the site. Waste material is to be disposed of appropriately through waste services and/or to licenced landfill during construction and as part of ongoing operation.

Clearing/modification of the existing vegetation within the site will be required as part of implementing the proposed development and will be the main impact to fauna species. The short-term potential impacts associated with this (e.g. during construction) can be managed as part of the development process through implementation of fauna management protocols. In the long-term fauna will still be able to persist across the site given the extensive landscaping (existing and proposed) and connection to broader vegetated areas. The management measures will be documented within a construction environmental management plan to support demolition and construction activities within the site and will be approved by the Shire of Augusta Margaret River.

3.7 Other biodiversity considerations

3.7.1 Outline of values

3.7.1.1 DBCA managed lands

DBCA has tenure of or interests in numerous areas of land across the state for a range of purposes. Tenure categories include national parks, nature reserves, conservation parks, marine parks, marine nature reserves, marine management areas, section 5(1)(g) reserves, state forest and timber reserves. These areas are mapped within the *Legislated Lands and Waters* (DBCA-011) and *Lands of Interest* (DBCA-012) datasets. The *Legislated Lands and Waters* (DBCA-011) dataset includes lands subject to the following legislation: the *Conservation and Land Management Act 1984* (CALM Act 1984), *Swan and Canning Rivers Management Act 2006* (SCRM Act) and lands identified under the *Land Administration Act 1997* (LA Act). The *Lands of Interest* (DBCA-012) dataset includes all other lands of which DBCA is recognised as the manager but is not vested under any act. These lands comprise of crown land and freehold land which DBCA has been acknowledged by the Department of Planning, Lands and Heritage (DPLH) as the responsible agency.

DBCA managed lands in the vicinity of the site include land to the west of the Margaret River (and including the portion of the river to the west and south west of the site) and south of the site and Wallcliffe Road, all of which forms part of the Leeuwin-Naturaliste National Park (R8428), as shown in **Figure 6**.

3.7.1.2 Shire managed conservation reserves

The land directly to the south of the site is vested with the Shire of Augusta-Margaret River as an A-class nature reserve, R41545 (Wallcliffe Reserve) (Shire of Augusta-Margaret River 2018), as shown in **Figure 6**. Wallcliffe Reserve contains the majority of the feature 'Wallcliffe Cliffs' which contain a number of caverns, overhangs and caves as discussed in **Section 2.1.2**. Due to increased degradation

from recreational use and its Aboriginal significance, public access to the cliff caves were prohibited by the Shire of Augusta Margaret River in 2018 (Shire of Augusta-Margaret River 2018).

A separate cave is known to be present close to the south of the site within Wallcliffe Reserve, and approximately 150 m from the Wallcliffe Cliffs (Shire of Augusta-Margaret River 2018). However, the exact location of the cave is not identified in publicly available mapping. This cave was previously accessed for tourism purposes but this cave was gated to prevent access following the preparation of the *Wallcliffe Cave Management Plan (2002-2012)* (Shire of Augusta-Margaret River 2002).

3.7.1.3 Ecological linkages

Ecological or biodiversity linkages are described as areas of native vegetation which provide a corridor or linkage (typically linear) between patches of vegetation to allow movement of flora and fauna and their genetic material through the landscape, helping to maintain metapopulations. Ecological linkages are often continuous or near-continuous as the more fractured a linkage is, the less ease flora and fauna have in moving within the corridor (Alan Tingay and Associates 1998).

The South West Biodiversity Project has identified and mapped regional ecological linkages (based on areas of vegetation being located in the vicinity of others), resulting in the identification and mapping of the South West regional ecological linkages (Molloy *et al.* 2009).

There are no mapped ecological linkages within the site. Three regional ecological linkages (Nos 107, 108 and 109) meet to the west of the site, associated with the Margaret River, and generally extend to the north and south of the site aligned with Leeuwin-Naturaliste National Park. The general location of the ecological linkages are shown in **Figure 6**.

3.7.1.4 Environmentally sensitive areas

'Environmentally sensitive areas' (ESAs) are prescribed under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and have been identified to protect native vegetation values of areas surrounding significant, threatened, or scheduled flora, vegetation communities or ecosystems. Exemptions under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* do not apply within ESAs. However, exemptions under Schedule 6 of the *Environmental Protection Act 1986* (EP Act) still apply, including any clearing in accordance with a subdivision approval under the *Planning and Development Act 2005* (a recognised exemption under the Schedule 6 of the EP Act, such as the *Bush Fires Act 1954*).

No ESAs are identified within the site. One ESA is located directly to the south of the site and adjacent to the northern bank of the Margaret River. This ESA is large and extends to the north, south-west and south-east of the site over approximately 2,518 square kilometers (km^2) and is generally aligned with Leeuwin-Naturaliste National Park. The extent of the ESA in proximity to the site is shown in **Figure 6**.

3.7.2 Management

No removal of native vegetation or development works are proposed within the DBCA or Shire management lands to the west or south respectively. Works boundaries will be clearly defined within engineering drawings and demarcated on the ground, as outlined within **Section 3.5.2**.

As outlined previously, the proponent has commenced revegetation activities within the foreshore area adjacent to the Margaret River in accordance with a bed and banks permit (issued by the Department of Water and Environmental Regulation (DWER)) and development approval (issued by the Shire of Augusta Margaret River, P222827). This has included weed control and planting within the foreshore area, and repair of an existing limestone retaining wall adjacent to the foreshore area .

The relevant management measures will be documented within a construction environmental management plan to support demolition and construction activities within the site and will be approved by the Shire of Augusta Margaret River.

3.8 Hydrology

3.8.1 Outline of values

3.8.1.1 Groundwater

A review of the Water Register (DWER 2019) indicates the site is found within the Busselton-Capel Groundwater Area and the Cape to Cape North subarea. This groundwater subarea is composed of two aquifers, the surficial and fractured rock, both of which rely on rainfall for recharge.

Groundwater levels have been monitored at various locations across the site since 2021 and are shown in **Plate 6**. No groundwater was observed at MW05 and MW06 and have therefore not been subject to ongoing monitoring.

Plate 6: Groundwater monitoring locations (MW designation) within the site.

The groundwater monitoring results have been summarised in **Table 4**, and demonstrate that groundwater levels vary in depth across the site, and are generally shallowest closest to the Margaret River within the western portion of the site. Groundwater levels are influenced by the River

and become higher moving further up the hill and away from the River, following the localised topography. Separation between the natural soil surface and groundwater increases at the same time. Depth to groundwater was measured to be up to 5 m furthest from the river.

Table 4: Summary of groundwater monitoring results.

Monitoring well	Minimum groundwater level (m AHD)	Maximum groundwater level (m AHD)
MW01	0.43	2.43
MW02	0.90	2.48
MW03	1.48	2.73
MW04	2.62	3.78

A hydrogeological assessment was completed for the site (Emerge Associates 2022), to support consideration of whether groundwater could be sustainably abstracted as part of the ongoing hotel use. The investigations determined that a localised aquifer existed within the western portion of the site and has a resource of 69,298 kilolitres (kL) that is recharged at a rate of approximately 22,079 kL/year, based on the lower range of rainfall assessed.

A groundwater licence is applicable to the site and enables the abstraction of up to 16,500 kL/year of groundwater (GWL207725). This is based on detailed hydrogeological investigations that have been undertaken to understand the conditions underpinning the site. The use of groundwater will be guided by a Groundwater Operating Strategy (GOS) that was approved by Department of Water and Environmental Regulation (DWER) in 2022.

3.8.1.2 Surface water

A review of the Water Register (DWER 2023) indicates that the site is located within the 'Busselton Coast' surface water area and 'Lower Margaret' subarea.

No surface water features have been identified within the site, however the Margaret River, a major perennial watercourse, is located directly adjacent to the western boundary of the site. While the topography of the site would direct runoff towards the Margaret River, runoff from the majority of rainfall events is expected to infiltrate at source within the sandy layer of soils in the site. Major rainfall events (e.g. 1% annual exceedance probability (AEP) event) may result in localised sheet flow due to the steep slope of the site. The location of Margaret River is shown on **Figure 6**.

The portion of the Margaret River adjacent to the site forms part of the lower reaches of the river, with the river mouth (where it connects with the Indian Ocean) located approximately 1.2 km west of the site (based on the meandering river channel). Margaret River retains a diversity of habitats including pools, riffles, cascades, low flow channels, floodplains, and backwaters as well as flora, fauna, and aquatic (fish, invertebrates etc.) values.

Riparian vegetation values associated with the Margaret River are largely located outside the site boundary, within an area of land located between the site and the main waterbody. Remnant riparian vegetation is described as being dominated by *Melaleuca rhaphiophylla* and associated sedges and rushes (Nature Conservation Margaret River Region 2018). This description was supported by the findings of the flora and vegetation survey completed by Emerge Associates (2019).

The width of the riparian vegetation adjacent to the site varies between 0 m and 25 m, with a small portion of the site having direct access to Margaret River via an existing small cleared beach. As previously outlined, the proponent has commenced revegetation activities within the foreshore, as part of protecting and enhancing the existing values.

3.8.1.3 Wetlands

No wetlands of international importance (e.g. Ramsar wetlands) or geomorphic wetlands (as mapped within the federal Department of Environment and Energy Protected Matters Search Tool and the DBCA maintained *Geomorphic Wetlands Leeuwin Naturaliste Ridge and Donnybrook to Nannup* (DBCA-043) and *Geomorphic Wetlands South West (DBCA-040)* databases respectively) have been identified within the site or in close proximity.

A soak is present in the north-west portion of the site and is man-made and not a wetland, constructed historically as part of the previous agricultural activities.

3.8.1.4 Onsite wastewater treatment and disposal

The proposed project is not able to connect to the reticulated sewerage network, and accordingly onsite wastewater treatment is proposed. Package wastewater treatment plants (WWTPs) are extremely common for premises outside of the Water Corporation licence areas as well as remote/regional locations and mine camps and can treat domestic strength wastewater to a treated effluent suitable for basic liquid effluent disposal methods (such as low exposure risk recycled water reuse applications). They are commonly used in the Shire of Augusta Margaret River where development is outside the main townsites.

The *Government Sewerage Policy* (DPLH 2019) provides a best practice approach to the provision of onsite effluent treatment and disposal in WA and should be undertaken in accordance with *Australian/New Zealand Standard 1547 On-site domestic wastewater management* (Standards Australia and Standards New Zealand 2012) (AS 1547-2012)). The *Government Sewerage Policy* (DPLH 2019) recommends that on-site systems not be located within 100 m of a waterway or significant wetlands without treatment and, depending upon the system, will require between 0.6 m and 1.5 m vertical separation to groundwater. The policy notes that smaller setbacks to waterways may be considered where the reduced setbacks will not have a significant impact on the environment or public health. The Government Sewerage Policy (DPLH 2019) indicates that when seeking a reduced setback, secondary treatment systems with nutrient removal would be required, as well as the approval of governing agencies (e.g. DWER, DBCA, Department of Health and/or the local government authority (e.g. Shire of Augusta Margaret River).

The WWTP is proposed to be located near the Gatehouse, while the infiltration areas for the system will be located near the Operations Barn, more than 100 m from Margaret River. The infiltration areas are shown in **Plate 7**. The WWTP proposed to support the project will be accompanied by an effluent polishing plant to provide further filtration and treatment of the effluent. This is in addition to what is provided with secondary treatment systems (which under the *Government Sewerage Policy 2019* are generally considered the better approach to managing wastewater). The polishing plant includes membrane filtration and chemical dosing to remove phosphorous from the WWTP

effluent. Membrane filtration also removes a high fraction of viruses, pathogens, and other microorganisms. This is further detailed within the WMP (Emerge Associates 2023b).

Plate 7: Proposed location of infiltrations areas for the WWTP, as documented within the WMP (Emerge Associates 2023b)

3.8.2 Management

A Water Management Plan (WMP) (Emerge Associates 2023b) has been prepared to support the development within the site and provides the framework for actions and measures to address groundwater, surface water (stormwater), water conservation and wastewater. The overall objective for the integrated water cycle management of the project is to maintain the pre-development hydrological regime. Management will be based on:

- **Potable water supply** – there is an existing connection to potable water provided by the Water Corporation which will be upgraded and utilised for the proposed project. Water efficient fixtures and appliances will be utilised throughout to minimise water use, and measures are considered further in the WMP (Emerge Associates 2023b) and Sustainability Report (Cundall 2023).
- **Wastewater servicing** –an onsite wastewater treatment plant will be utilised and will be based on a tertiary level of treatment and infiltration onsite of treated water. The WMP includes a site and soil evaluation to support the proposed wastewater servicing approach, and to demonstrate that the site can comply with the intent of *Australian Standard 1547:2012 Onsite Domestic Wastewater Management* (SAI Global 2012) (AS 1547). This is discussed further below.
- **Non-potable water supply** – will be supplied by groundwater, which has historically been used for irrigation purposes within the site and is extracted from the superficial/fractured rock aquifer beneath the site. The project has secured a groundwater licence (GWL207725), and the use of groundwater will be guided by the licence and the approved Groundwater

Operating Strategy (GOS). Waterwise gardening principles will be applied a part of the implementation of the landscape design, including improving the soil, hydrozoning, designing and scheduling irrigations systems efficiently, mulching/using hardscape materials, minimising disturbance to the existing gardens and using waterwise species.

- **Surface water management** – which will adopt an at source infiltration approach, consistent with the historical approach to water management within the site.
- **Groundwater** – management will be passive and will avoid interaction with underlying groundwater levels. Groundwater quality will be improved by removing historical agricultural uses, and by addressing surface water quality using a water sensitive urban design approach, which mimics natural processes at the surface and at source.
- **Flood protection** – to be addressed by ensuring that buildings are located above the elevation identified to be higher risk (e.g. above 5 mAHD).

With regard to the management of wastewater, as outlined, a package wastewater treatment plant (WWTP) with an effluent polishing plant will be implemented within the site. The approach to wastewater management is detailed within the WMP (Emerge Associates 2023b), however key considerations include:

- **Spatial location of the wastewater management system**. The infiltration areas for the system are located more than 100 m horizontally from the Margaret River, and in an area where the depth to groundwater is greater than 1.5 m (Emerge Associates 2023b). The distance of the wastewater management system from the Margaret River and the depth to groundwater are compliant with the required separation from water resources and groundwater as outlined in the *Government Sewerage Policy 2019*.
- **Management of water quality**. A range of features are proposed as part of the system to achieve high nutrient removal to ensure no impacts on the Margaret River. This includes: being designed to manage the maximum daily generation of wastewater (24 kL/day) based on 100 % occupancy; adding an effluent polishing plant and use of engineered soil media within the infiltration areas to reduce phosphorus output; using membrane filtration to minimise total suspended solids; and providing buffer storage and backup electricity to manage potential downtime and/or maintenance periods (Emerge Associates 2023b).

The effluent quality that will be produced from the wastewater treatment system will result in effluent output that is of a higher quality than that generated from typical utility-operated wastewater treatment plants in Western Australia, meaning a wide range of disposal methods are available for consideration. The WWTP will incorporate operation and maintenance agreements with equipment vendors to ensure that the system operates reliably to a high standard suited to the project and as required by current legislation. It will also be subject to a works approval, pursuant to Part V of the *Environmental Protection Act 1986* (through the DWER) due to its size (24 kL/day), as well as Department of Health approval, pursuant to the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.

Overall, the WMP (Emerge Associates 2023b) provides detailed criteria for the implementation of the project and detailed design, to ensure that the water management objectives proposed can be satisfied, and that an integrated water cycle management and best practice water sensitive urban design approach can be achieved.

3.9 Heritage

3.9.1 Outline of values

3.9.1.1 Aboriginal heritage

In Western Australia, Aboriginal cultural heritage is currently managed pursuant to the *Aboriginal Cultural Heritage Act 2021*[1]. The DPLH maintain the Aboriginal Cultural Heritage Inquiry System (ACHIS), which is a directory containing locations and information about Aboriginal Cultural Heritage (ACH) in the state.

Brad Goode & Associates, Consulting Anthropologists and Archaeologists, were appointed by the proponent to undertake an Ethnographic Aboriginal Heritage Survey of the site (Brad Goode and Associates 2021). Two ACH were identified in the site and include:

- Directory Place 4495-Margaret River, which includes the river system, its major tributaries, and associated banks. It is a mythological site originally reported to have once contained a Waugal. It was also further reported to be associated with a mythological narrative of a dreamtime ancestor known as Wooditch who was responsible for making the Wooditchup or Margaret River with his magic wand.
- Directory Place 5848 Cliffs at Wallcliffe is described as a mythological site that also contains artefacts and rock shelters. The mythological component of this site is reported to be associated with the Wooditch narrative which relates how two mythological being are "buried side by side at Wallcliffe where a pile of stones marks their graves". The Wallcliffe area is known as Wainilyinup or 'dying place' in association with this mythology. The publicly mapped extent of these features are shown in **Figure 7**. In 2016 skeletal remains of Ngungargoot were repatriated from the Western Australia Museum and reburied in an undisclosed location within Directory Place 5848 Cliffs at Wallcliffe mapped extent but is not within the site.

Consultation was held with twelve representatives of the South West Boojarah Indigenous Land Use Agreement (ILUA) group on 24 March 2021 and 6 August 2021. During this consultation it was determined that there were no new ethnographic sites located within the survey area. The Traditional Owners supported the proposed works.

A Section 18 application pursuant to the *Aboriginal Heritage Act 1972* (which was in affect at the time) was made, and consent was granted by the Minister based on a number of conditions. These are detailed within the *Wallcliffe House and Landscape, Margaret River Heritage Impact Statement* (Hocking Heritage 2023). Section 18 approval obtained under the previous *Aboriginal Heritage Act 1972* is still valid under the *Aboriginal Cultural Heritage Act 2021*.

[1] In August 2023, the WA Government announced that the ACH Act would be repealed and replaced by an amended version of the *Aboriginal Heritage Act 1972* (AH Act). At the time of writing, this change to the statutory framework is yet to be legislated.

3.9.1.2 Non-Indigenous heritage

In order to determine the actual or potential presence of sites or features of non-indigenous heritage significance within the site, a review of readily available information at a federal, state, and local government level was undertaken to determine if any of the following occur within the site:

- World Heritage Sites
- National Heritage Places
- Commonwealth Heritage Places
- Sites listed in the State Register of Heritage Places
- Sites listed in the Shire of Augusta Margaret River Heritage Register.

The entire site is identified as a state and local registered heritage place, namely Place No. 114 – Wallcliffe House and Landscape.

'Wallcliffe House and Landscape' is described as containing areas of varying significance with Aboriginal, European, and natural values identified, and include visual amenity, associated with the original views and vista that have changed little since European settlement, and the construction of Wallcliffe House and Dairy in the 1850's by Alfred and Ellen Bussell.

The *Wallcliffe House and Landscape, Margaret River Heritage Impact Statement* (Hocking Heritage 2023) notes that the Statement of Significance for the property has not been altered since the 2011 bushfire, to reflect the loss of Wallcliffe House and the Diary, however the significance of the site is still relevant with regard to the landscape values, plantings, and views. It can be referred to for more detail on the heritage values.

3.9.2 Management

3.9.2.1 Aboriginal heritage

The proposed development and ongoing operation of the site will be implemented in accordance with the Section 18 approval and ongoing consultation with the Traditional Owners. Activities that will be undertaken include:

- Representatives of the South West Boojarah Indigenous Land Use Agreement (ILUA) group being present during ground disturbing works.
- Revegetation of the riparian area associated with Margaret River. These works have already commenced, as outlined previously.
- Reporting impacts on any Aboriginal site, including results of any monitoring.

A holistic approach to interpretation of the heritage values will be undertaken to ensure that all aspects of the history and significance of the site will be recognised and celebrated in appropriate ways.

3.9.2.2 European heritage

The proponent understands the heritage significance of the site and has proposed a development that will construct an interpretation of Wallcliffe House and reconstruct the Dairy building, together with a series of detached buildings that complement the design of Wallcliffe House and are respectful of the natural landscape setting (Hocking Heritage 2023). Further detail is provided within the *Wallcliffe House and Landscape, Margaret River Heritage Impact Statement* (Hocking Heritage 2023), however as part of the demolition and construction process, the proposed development is proposed to be supported by:

- Interpretation Strategy, which will detail a number of themes and storylines and how these will be considered as part of development. A draft strategy is included in the *Wallcliffe House and Landscape, Margaret River Heritage Impact Statement* (Hocking Heritage 2023).
- Archaeological Management Plan, which will detail the procedures appropriate for the site and how these should be implemented.

These plans (and any other requirements) will be submitted to the Heritage Council for approval and implemented as part of demolition, construction, and operation.

3.10 Other land use considerations

3.10.1 Outline of values

3.10.1.1 Historic and existing land uses

A review of available historical aerial imagery indicates that a majority of the site was cleared of native vegetation prior to 2004 (Landgate 2023). As outlined previously, the site was historically used to support one of the original farms and homesteads built by the Bussell family with construction of the buildings commenced in the 1850's, most notably Wallcliffe House and the Diary. The site was home to a number of large buildings and ancillary buildings (built in the early 2000s), as well as a significant manicured garden and has supported agricultural, residential and tourism land uses since the 1850's.

The site has not been used for residential or tourism purposes since the 2011 Margaret River bushfire significantly damaged the original Wallcliffe House and Diary and the majority of its ancillary buildings. The buildings constructed in the early 2000s (the 'Chaney buildings') have been demolished and removed from the site as part of a planning approval granted by the Shire of Augusta Margaret River. The Boatshed, gardens and grounds have continued to be maintained to a high standard since the 2011 bushfire and form an integral part of the proposed redevelopment of the site.

3.10.1.2 Potential site contamination

A review of the DWER *Contaminated Sites Database* (DWER 2023) did not identify any registered contaminated sites within or in proximity to the site, and previous land uses are not likely to have resulted in contamination.

A review of the Department of Defence Unexploded Ordinance (UXO) search tool did identify two potential UXO occurrences within the local area. These are detailed within **Table 5** below.

Table 5: UXO occurrence within and nearby the site (DoD 2019)

UXO Area	ID no.	Description	UXO Category
Margaret River (WA)	908	A live fire mortar shoot was conducted in 1944. Cow Rock was used by RAAF for high explosive bombing practices during WWII.	Slight Occurrence
Cape Mentelle (WA)	858	RAAF aircraft used Cow Rock Island (approximately 1.5 km west of Cape Mentelle) as a bombing target during WWII.	Other

The Department's advice on UXO area ID no. 908 is that '*all land usage and development, within these areas, may continue without further UXO investigation or remediation*', and the advice for UXO ID no. 858 is that *'these sites have been included for general information purposes only. Defence makes no recommendations in regards to this category'* (DoD 2023). It is unlikely that UXOs are located within the site given the site was developed at the time of the identified testing periods (so is unlikely to have been subject to bombing) and the extent of ground-disturbing works that have occurred in the site since the 1940s.

3.10.2 Management

There are no specific management requirements in relation to historic and existing land uses or site contamination. The management of the heritage values has been summarised in **Section 3.9.2**.

3.11 Bushfire hazard

3.11.1 Outline of values

The entire site is designated as a 'bushfire prone area' in the state *Map of Bush Fire Prone Areas* (OBRM 2021).

A Bushfire Management Plan (BMP) (Emerge Associates 2023a) has been prepared to support the proposed development application and considers the potential mitigation and management of bushfire risks in accordance with SPP 3.7 (WAPC 2015), the *Guidelines for Planning in Bushfire Prone Areas Version 1.4* (the Guidelines) (DPLH & WAPC 2021) as well as *Australia Standard 3959-2018 Construction of buildings in bushfire-prone areas* (AS 3959). It is based on the approach detailed and supported through the scheme amendment process.

The proposed uses are permitted within the site based on the zoning under the Shire of Augusta Margaret River LPS No. 1. Importantly for the site, the existing environmental, heritage and landscape values within and surrounding the site are imperative to the proposed tourism

development and therefore the management of bushfire risk has been balanced with protecting and maintaining these values.

The bushfire hazards (associated with areas of 'classified vegetation') likely to affect the development are shown in **Figure 8**, and are largely associated with areas of:

- Existing forest vegetation adjacent to the north-west boundary of the site, associated with the riparian vegetation values of the southern bank of the Margaret River. This includes areas of vegetation within and adjacent to the site, associated with the Margaret River;
- Forest and scrub vegetation associated with the Leeuwin-Naturaliste National Park to the south-east of the site (on the opposite side of Wallcliffe Road) and north-west of the site (adjacent to the northern bank of the Margaret River);
- Scrub and forest vegetation associated with Wallcliffe Reserve immediately south of the site; and
- Woodland and forest vegetation near the entrance to the site in neighbouring landholdings.

Importantly for this site, the vegetation and landscape values are an intrinsic part of understanding and celebrating its heritage value and realising the tourism potential of the site and are therefore proposed to be protected and where possible enhanced. Constructing to a higher building standard, such as BAL-40 or BAL-FZ, is considered an appropriate means to minimise impacts on these values (in particular clearing of existing remnant native vegetation) whilst improving the resilience of the proposed reconstructed and new buildings.

3.11.2 Management

Overall, the outcomes of the BMP developed for the site demonstrate that the management/ mitigation measures can satisfy the requirements of SPP 3.7 and the Guidelines and the precautionary principle by:

- Providing appropriate separation between bushfire hazards and proposed habitable buildings to achieve a bushfire attack level (BAL) rating of BAL-29, or where this is not possible based on protecting existing heritage, environment, and landscape values, increasing the construction standard of the buildings (e.g. BAL-40 or BAL-FZ) in accordance with AS 3959. Given the high level of fuel load management within the site and surrounds, the majority of the site will be subject to a BAL rating of BAL-19 or BAL-12.5. The site will be subject to a high level of management based on the existing landscape values (which includes mature cultivated gardens that are irrigated and regularly subject to weed control and removal of dead material) and type of development (boutique hotel).
- The proposed development having appropriate direct access to Wallcliffe Road, which is an existing public road that meets public road standards. This road connects to Prevelly to the west and Margaret River townsite (via Caves Road) to the east. Attendance is not expected to exceed 100 persons at any one time. Evacuation from the site is the preferred option if it is safe to evacuate. If it is not safe to evacuate, a shelter building is proposed at the site (Wallcliffe House). The design will be certified (prior to operation of the facility) by a fire engineer in compliance with the *Design and Construction of Community Bushfire Refuges Handbook* (ABCB 2014), to provide tenability and safety for all occupants in a bushfire event. The internal private driveway is able to satisfy the requirements of the Guidelines, and in

particular achieves the minimum horizontal clearance (6 m-wide) and provides suitable turn around areas for fire appliances with an internal loop road network proposed.

- Water supply for fire-fighting purposes being addressed through the existing hydrants along Wallcliffe Road (which will be within 600 m of the proposed habitable buildings). Water supply is also proposed to be supplemented through the provision of additional static water supply within the site, close to Wallcliffe Road.

It is acknowledged that while Wallcliffe House (and associated buildings) were largely destroyed by the 2011 Margaret River bushfire, this was largely as a result of embers entering the roof structures and burning the buildings from the inside out. AS 3959 did not exist at the time the previous buildings were constructed, and therefore building protection against the mechanisms of bushfire attack was not incorporated in the previous buildings. The buildings will be constructed based on their determined BAL rating in accordance with AS 3959 and the requirements of the *Building Act 2011*, increasing building resilience to the mechanisms of bushfire attack compared to the previous buildings which were constructed prior to AS 3959 being a requirement.

The BMP will be implemented as a condition of approval, and building construction will be addressed as a requirement of building licence.

4 Summary of Management Implementation Requirements

A summary of how the proposed development responds to the environmental values and attributes discussed in **Section 3** has been provided in **Table 6** below**.** Key management areas within the site are shown on **Figure 9**.

Table 6: Summary of management implementation requirements.

Factor	Summary of key management measures
Landform and karst formations	• Prepare and implement a Construction Environmental Management Plan (CEMP) (to be prepared as a condition of approval), which will exclude works from the portion of Wallcliffe Cliffs within the site and include soil erosion and sedimentation protocols. • Respond to geotechnical design recommendations a part of detailed design. .
Flora and vegetation	• Maximise the retention of vegetation within the site through the sensitive location of buildings and use of appropriate construction techniques. • Prepare and implement a CEMP (as a condition of approval), which will outline protocols for identifying tree/vegetation retention areas; for hygiene management (introduction of disease and weeds); exclusion of works from the Margaret River and associated riparian vegetation (unless associated with approved foreshore works). • Where construction occurs in the vicinity of retained trees/vegetation, protect trees/vegetation in accordance with arborist (or other professional) advice. Areas of retained vegetation and the Margaret River foreshore are shown on **Figure 9**.
Native Fauna	• Maximise the retention of vegetation within the site through the sensitive location of buildings. • Retain and protect identified potential black cockatoo habitat trees, shown on **Figure 9**. • Retain and protect the relocated osprey nest, shown on **Figure 9**. • Prepare and implement a CEMP (as a condition of approval), which will outline protocols for fauna management, such as exclusion areas associated with vegetation retention; pre-clearing fauna checks; having a fauna spotter present during vegetation clearing and ensuring the site is maintained in a clean and tidy manner.
Hydrology	• Prepare and implement a CEMP (as a condition of approval), which in particular will exclude works from the Margaret River and associated riparian vegetation. • Prepare and implement detailed design addressing the requirements of the WMP (Emerge Associates 2023b). • Implement wastewater treatment and disposal in accordance with the WMP (Emerge Associates 2023b) and relevant approvals (Environmental Protection Act 1986 and the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.
Heritage	• Undertake activities in accordance with the Section 18 consent. • Prepare and implement an Interpretation Strategy and Archaeological Management Plan, or other plans as required by the Heritage Council.
Bushfire	• Implement the approved Bushfire Management Plan, including addressing siting and design, vehicle access and water supply. • Update, maintain and implement the Bushfire Emergency Evacuation Plan. • Construct and maintain new habitable buildings in accordance with AS 3959, fire engineering requirements and the assessed/certified bushfire attack level (BAL) rating. • Provide additional static water supply, which can be used as a community resource. • Implement and maintain the site (where indicated) to achieve low threat in accordance with Section 2.2.3.2 of AS 3959, shown on **Figure 9**. This includes being selective of the areas where fuel load management occurs and using increased bushfire construction standards to improve building resilience.

5 Conclusions

This EAR has been prepared on behalf of the proponent (Wallcliffe House Pty Ltd) to support the redevelopment of Lot 101 Wallcliffe Road, Margaret River (the site) in accordance with the concept plan provided in **Appendix A.**

In addition to the preparation of this EAR, Emerge Associates have prepared or commissioned the following documents to support the proposed development approval:

- *Bushfire Management Plan* (Emerge Associates 2023a), including bushfire emergency evacuation plan
- *Water Management Plan* (Emerge Associates 2023b)
- *Spring Flora and Vegetation Assessment* (Emerge Associates 2019b)
- *Fauna Assessment* (Harewood 2019b)

Based on the environmental values or attributes identified within the site, this EAR provides an environmental management framework (detailed in **Section 3**) to be implemented within the site as part of development. It is relevant to note that the proponent recognises that the ongoing management of Aboriginal and European heritage values is important, and this has been addressed separately by Hocking Heritage Studio (2023). The proposed management of the identified environmental values/attributes include:

- **Landforms, soils, and geology:** no physical disturbance of Wallcliffe Cliffs is proposed as part of the development. Access to the Cliffs (via a previously installed boardwalk) has been removed in recognition of the importance of this feature to the Aboriginal community, as per the Section 18 approval and ongoing consultation. Soil and erosion control measures will be implemented across the site, particularly during construction.
- **Flora and vegetation**: retention of existing remnant native vegetation and the mature cultivated gardens (including trees) is proposed to be maximised as part of detailed design and construction processes. Construction works will be excluded from the Margaret River and associated riparian vegetation as well as Wallcliffe Reserve, minimising impacts on vegetation values. Vegetation to be retained will be clearly identified and managed in accordance with arborist advice, and enhancement of vegetation values will occur through ongoing riparian vegetation and through the landscape design.
- **Native fauna**: impacts to native fauna will be minimal given the limited high-quality habitat within the site. Impacts, where they occur, are expected to be short-term in nature (e.g. during construction) and can be managed through the implementation of fauna management protocols, such as pre-clearing inspections and a fauna spotter being present during works. The potential black cockatoo habitat tree in the north-western portion of the site will be retained, as will the osprey nest which was relocated as part of a previous development approval. Enhancement of habitat values will occur through ongoing revegetation of the riparian vegetation and through the landscape design.
- **Hydrology:** water management within the site will be based on maintaining the existing hydrological regime of the site which includes infiltrating at source and controlling erosion. New buildings are located more than 20 m from the Margaret River, and groundwater separation can be maintained. Groundwater use (primarily to support irrigation) within the

site will be managed in accordance with groundwater licence (GWL 207725). Wastewater will be managed via an onsite wastewater treatment plant, treating the water to a tertiary quality, and infiltrating onsite. Further detail on the water management requirements are detailed within the WMP (Emerge Associates 2023b).

- **Heritage:** Aboriginal and European heritage will be managed in accordance with the relevant approvals, including an existing Section 18 consent and future Heritage Council requirements. Ongoing consultation with Traditional Owners will be a key component of the project.
- **Bushfire management**: bushfire hazards (classified vegetation) have been identified in the vicinity of the site. Buildings will be constructed in accordance with the determined BAL rating and AS 3959, which includes BAL-40 and BAL-FZ construction and other fire engineering determined requirements. This is as part of responding to the heritage, vegetation, and landscape values within the site. Appropriate vehicle access (which includes turn around areas), onsite shelter and appropriate water supply have been included as part of the proposed development, as outlined in the BMP (Emerge Associates 2023a). A bushfire emergency evacuation plan has been prepared for the site.

Overall, there are no significant environmental issues or constraints within the site that are not able to be managed appropriately as part of the proposed redevelopment and would preclude the project from implementation after development approval has been obtained.

The site is a place with recognised Aboriginal, European, and natural values. The heritage listing for the site identifies the "*attractive scenery and vegetation of the landscape*" being features that brought settlers to the area, with the views to/from the buildings a key consideration. The project is seeking to be sensitive and sympathetic to the history of the site and landscape values as part of managing heritage values, particularly the views, remaining plantings, and remnant vegetation. Impacts to landform, native flora and vegetation and conservation significant fauna will be minimal given the sympathetic approach taken by the project, locating buildings within existing cleared/disturbed areas, and enhancing the vegetation values through revegetation and new planting. The water quality of the Margaret River will be protected, based on the water sensitive urban design approach, management of erosion and sedimentation and appropriate management of wastewater with a tertiary quality system. Short-term impacts can be managed through the implementation of vegetation and fauna construction management protocols, as well as landscaping (including new planting and revegetation work already underway in the adjacent foreshore) within the site which will assist with enhancing existing vegetation values.

6 References

6.1 Legislation

Aboriginal Cultural Heritage Act 2021

Aboriginal Heritage Act 1972

Biodiversity Conservation Act 2016

Building Act 2011

Bush Fires Act 1954

Contaminated Sites Act 2003

Environmental Protection Act 1986

Environment Protection and Biodiversity Conservation Act 1999

Environmental Protection (Clearing of Native Vegetation) Regulations 2004

Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974

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Western Australian Planning Commission and Department of Fire and Emergency Services (WAPC and DFES) 2017, *Guidelines for Planning in Bushfire Prone Areas Version 1.3*, Western Australia. December 2017.

6.3 Online references

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Figures

Figure 1: **Site Location and Topographic Contours**

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F40

Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	19/10/2023

N

0 100 200
Metres

Scale: 1:5,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

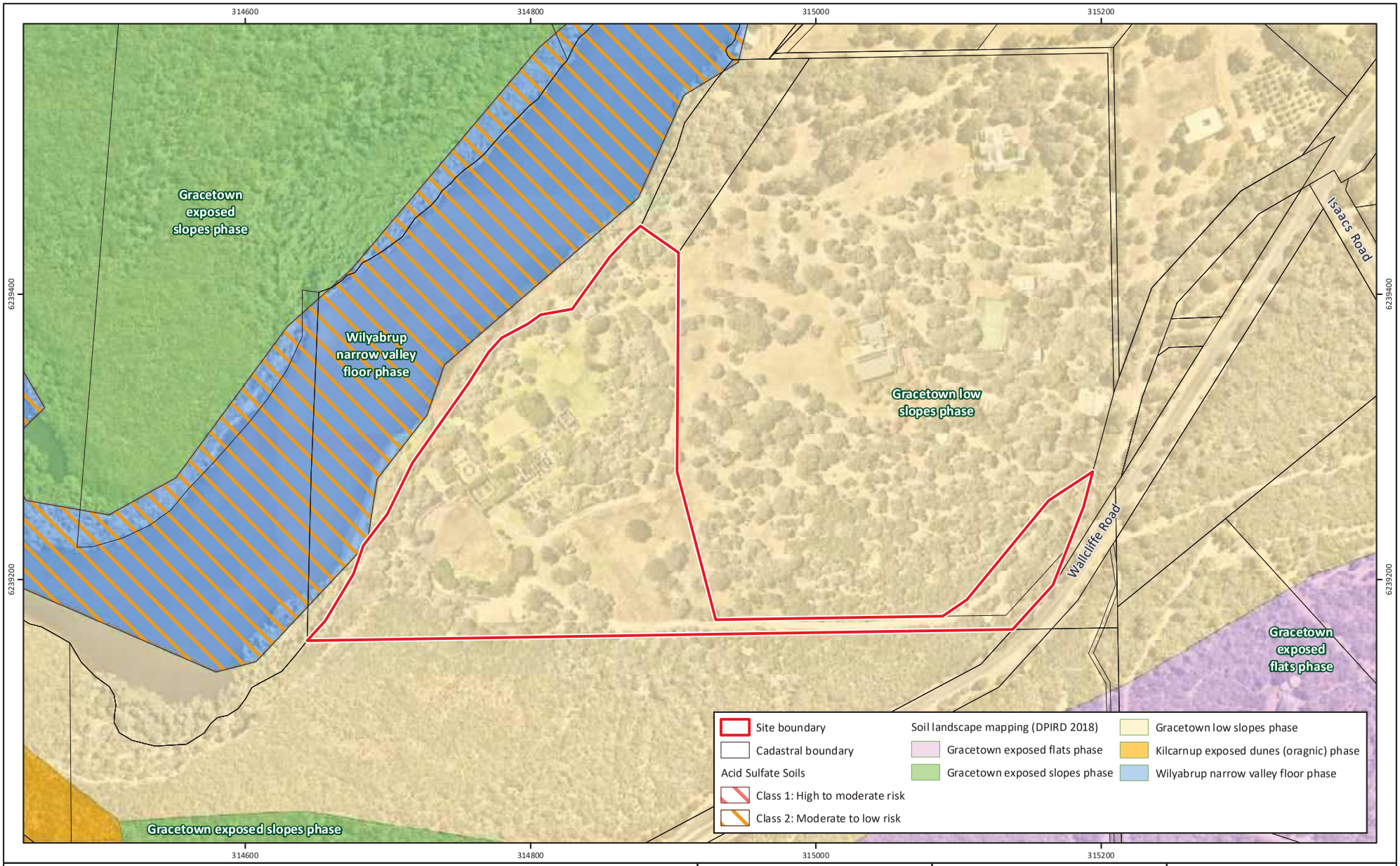

Figure 2: **Soil Landscape Mapping**

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F41

Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 50 100 150
Metres

Scale: 1:3,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

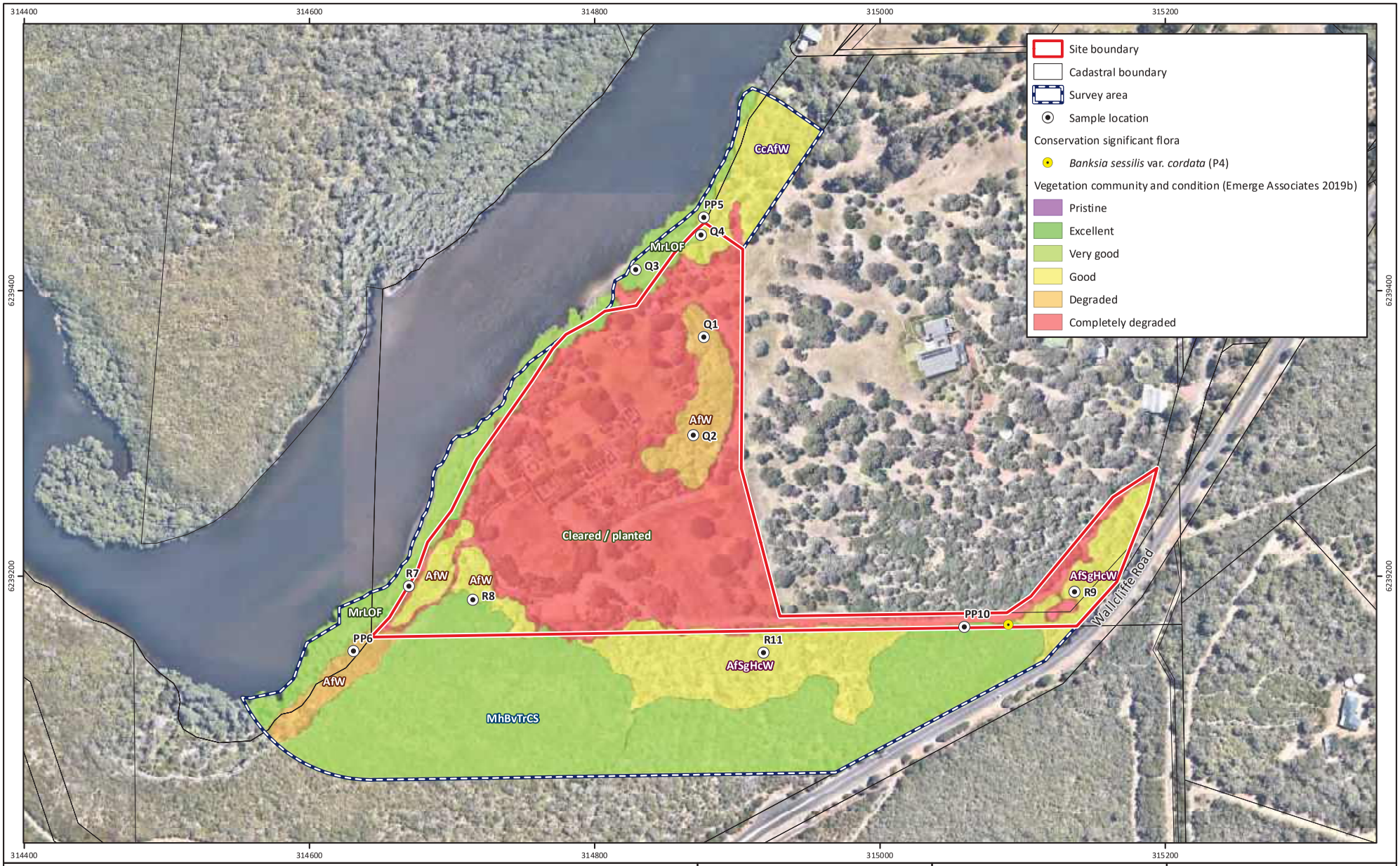

Figure 3: **Plant Communities and Vegetation Condition**

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F42

Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	19/10/2023

N

0 50 100 150
Metres

Scale: 1:3,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

Figure 4: Possum Observations

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F43

Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 50 100 150
Metres

Scale: 1:3,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

Figure 5: Avian (Bird) Observations

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F44

Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 50 100 150
Metres

Scale: 1:3,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

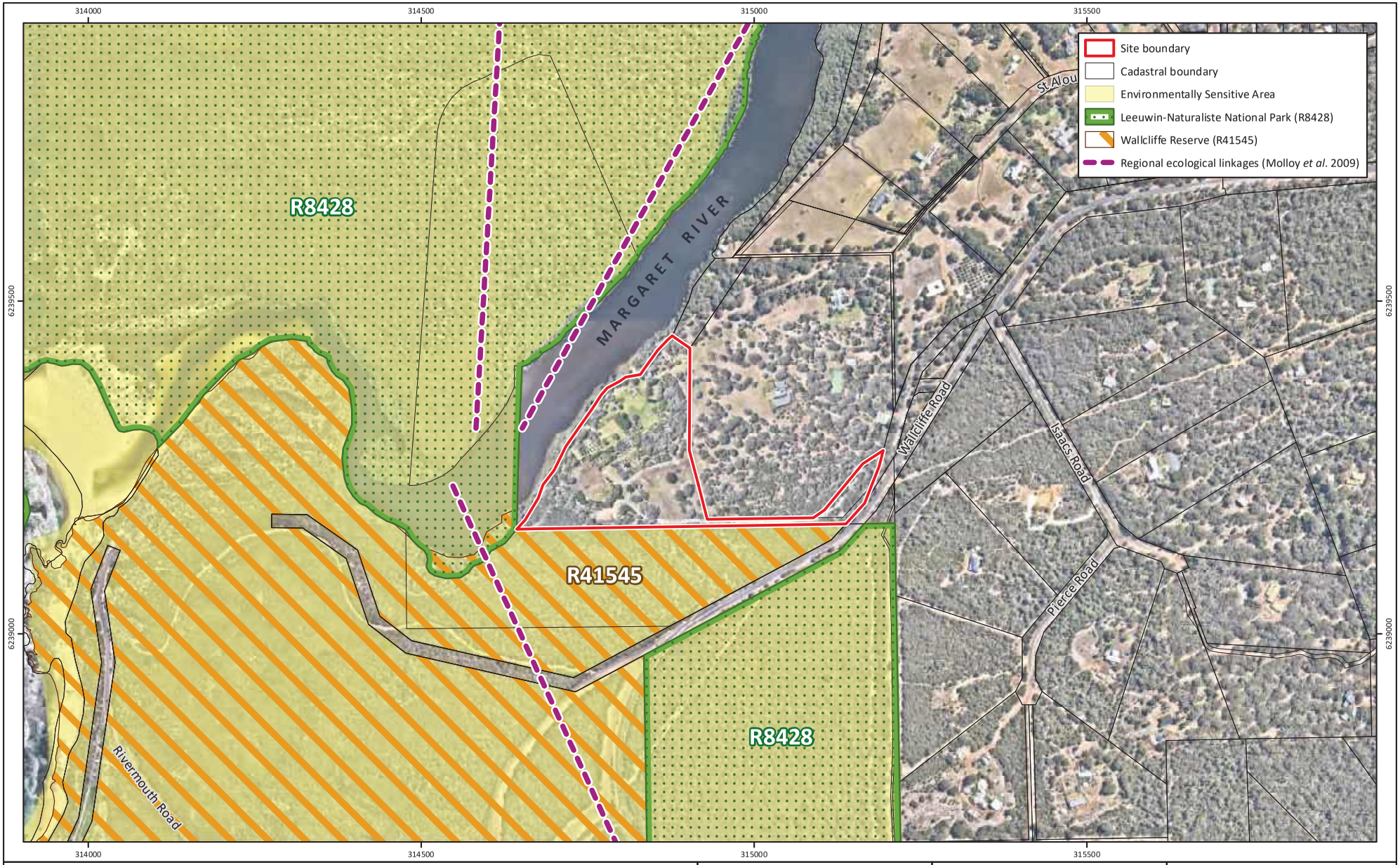

Figure 6: Environmental Features

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:	**EP18-128(11)--F45**
Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 100 200 300
Metres

Scale: 1:7,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

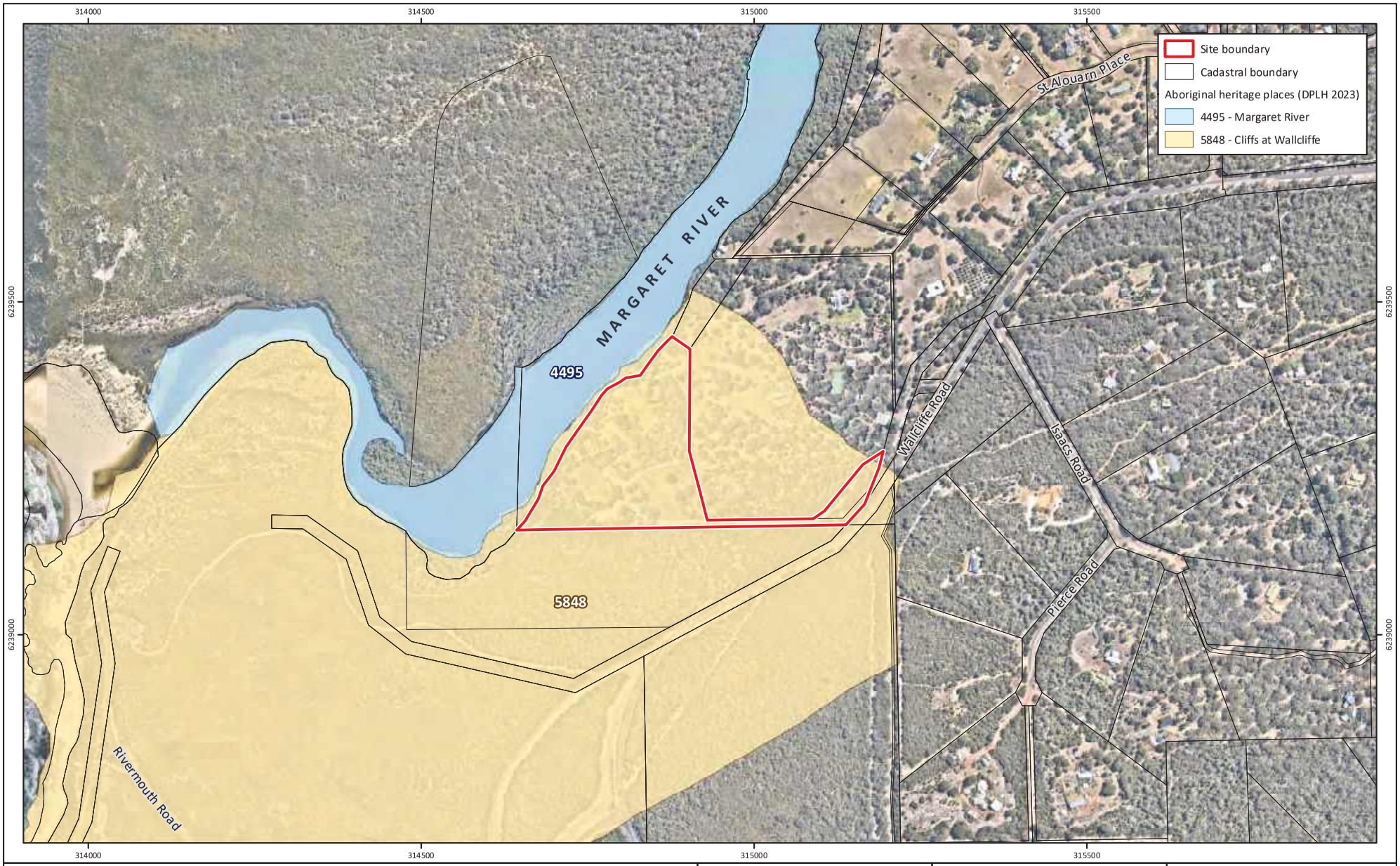

Figure 7: Aboriginal Heritage Values

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F46

Drawn:	GAR
Date:	03/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 100 200 300
Metres

Scale: 1:7,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

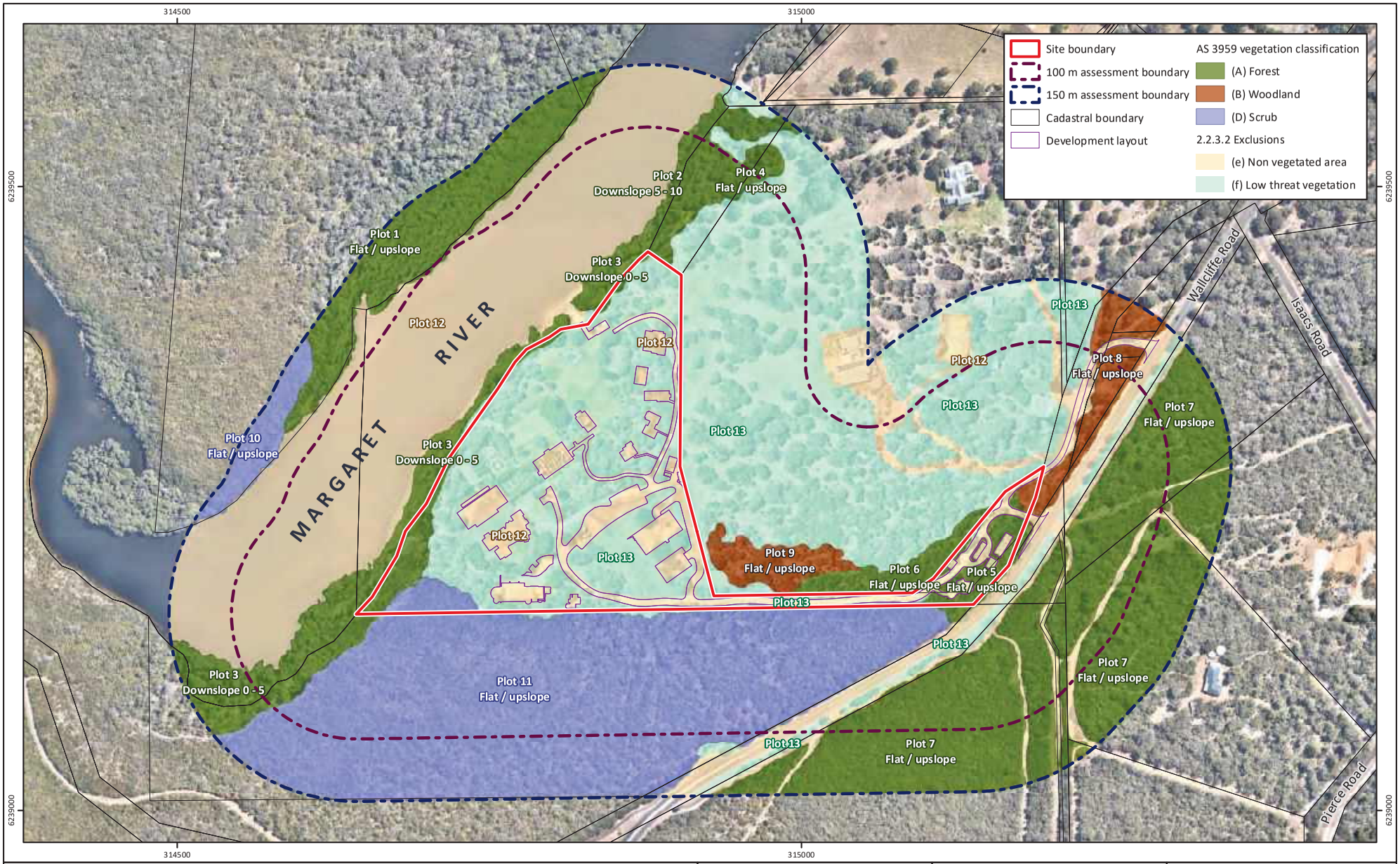

Figure 8: **AS 3959 Vegetation Classifications**

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F47

Drawn:	GAR
Date:	18/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 80 160
Metres

Scale: 1:4,000@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

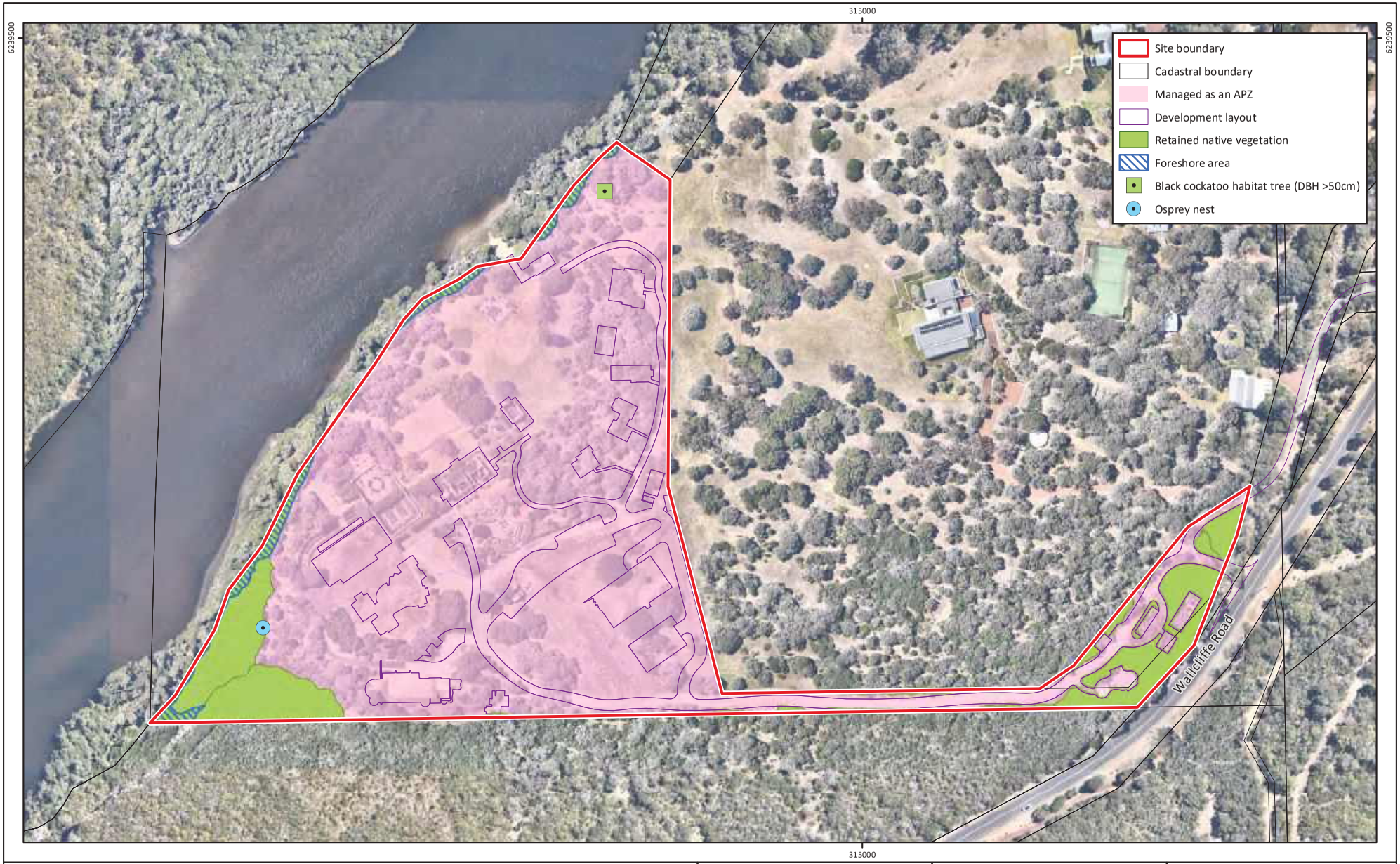

Figure 9: Key Management Features

Project:	Environmental Assessment Report Lot 101 (no. 752) Wallcliffe Road, Margaret River
Client:	Wallcliffe House Pty Ltd

Plan Number:
EP18-128(11)--F49

Drawn:	GAR
Date:	18/10/2023
Checked:	LSW
Approved:	KK
Date:	20/10/2023

N

0 50 100
Metres

Scale: 1:2,500@A4

GDA 1994 MGA Zone 50

emerge ASSOCIATES

Appendix A

Concept Master Plan (MJA Studio 2023)

MJA STUDIO

T +61 8 9388 0333 | www.mjastudio.net

REV.	DATE	AMENDMENT
A	18.08.23	INTERIM CONSULTANT ISSUE
B	15.09.23	INTERIM CONSULTANT ISSUE
C	04.10.23	ISSUE FOR INFORMATION
D	02.11.23	ISSUE FOR DA

PROJECT MANAGER:	THE LANDSMITH COLLECTION
TOWN PLANNING:	TAYLOR BURRELL BARNETT
LANDSCAPE:	PAUL BANGAY / SEEDESIGN
HERITAGE:	HOCKING HERITAGE
ENVIRONMENTAL:	EMERGE ASSOCIATES
CIVIL:	THE CIVIL GROUP
TRAFFIC:	TRANSCORE
WASTE:	ENCYCLE
SUSTAINABILITY:	CUNDALL
CULTURAL:	BRAD GOODE & ASSOCIATES

CLIENT

THE LANDSMITH COLLECTION

PROJECT

WALLCLIFFE HOUSE

PROJECT ADDRESS

752 WALLCLIFFE ROAD (LOT 101)
MARGARET RIVER, WA

PROJECT STATUS

DEVELOPMENT APPLICATION

PROJECT NUMBER

18126

NORTH

SCALE

1:1500 @ A3

0 7.5 15 34.5

DRAWING

PROPOSED MASTER PLAN

DRAWING NO.	DRAFTER	CHECKED	REV.
DA1.04	HBW	MM	D