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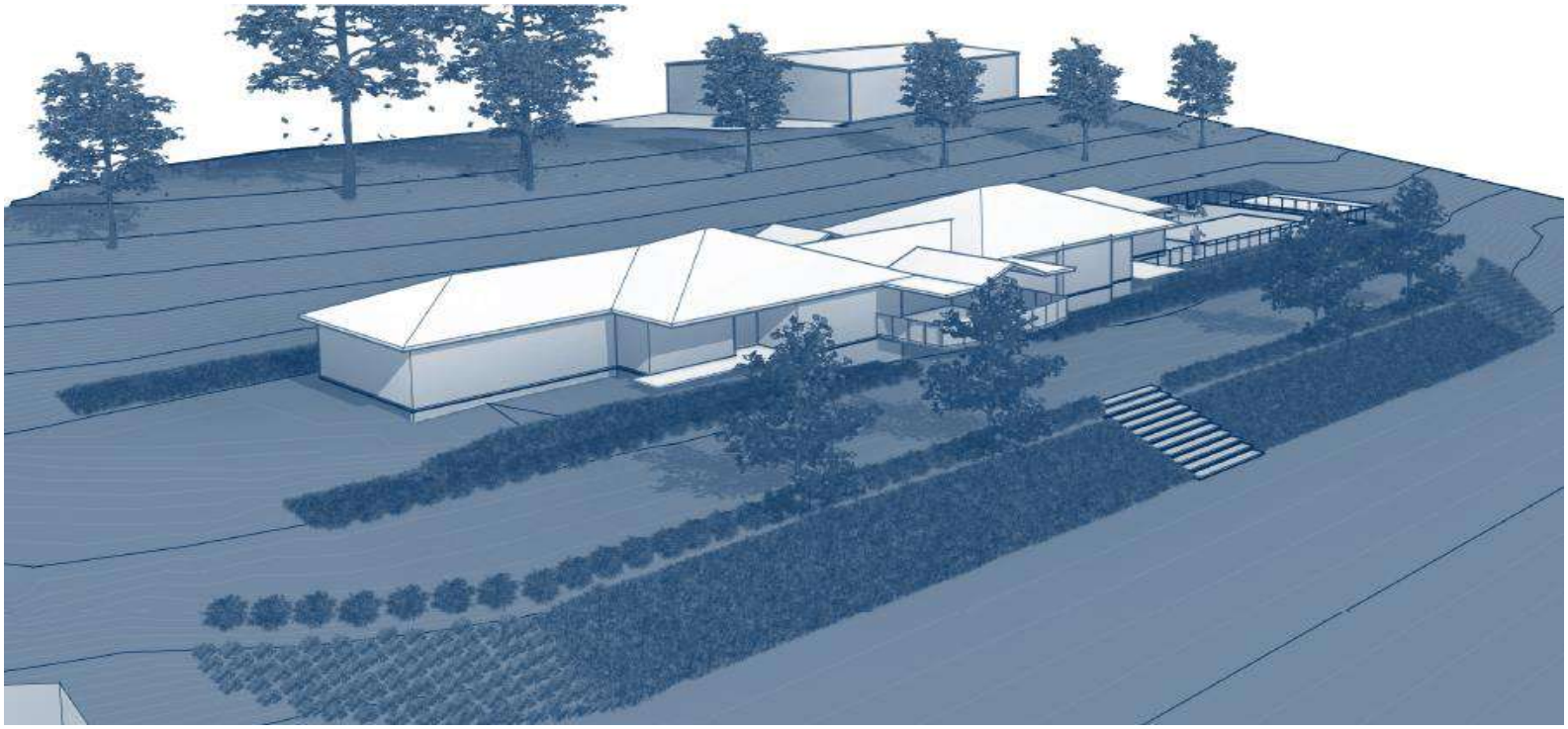

Planning Submission

50 Lilliput Lane, Pakenham

Version 1 – February 2025

Application for Planning Permit:

Earthworks and associated vegetation removal

Planning Scheme:	Cardinia
Zone:	Green Wedge Zone – Schedule 2 (GWZ2)
Overlays:	Environmental Significance Overlay – Schedule 1 (ESO1)
	Bushfire Management Overlay (BMO)

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Executive Summary

Introduction

This Report has been prepared on behalf of the landowner in support of the proposal at **50 Lilliput Lane, Pakenham** *(the subject site).*

Earthworks and vegetation removal are proposed for the subject site.

What the permit seeks

Earthworks and vegetation removal for the subject site.

Planning permit triggers:

Clause 35.05 – Green Wedge A Zone – Schedule 2 (GWAZ2)

A planning permit is required pursuant to GWZ for:

- Buildings and works associated with a Section 2 use (dwelling)

Clause 42.01 – Environmental Significance Overlay, Schedule 1 (ESO1)

- Vegetation Removal
- Buildings and works

Project team

Planning	Nepean Planning Consultants
Design	3D Design
Arboricultural	Greenwood Consulting

Conclusion

This report addresses the key relevant planning considerations and concludes that the proposed use appropriately respond to the relevant Victorian Planning Provisions and Local Planning Policy Framework, and is entirely worthy of Council support.

Prepared by:

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Version		
Version	Date	Details
1	February 2025	Original Version (Draft)

Contents

1 THE PROPOSAL

Earthworks are proposed to create some lawn area adjacent to our clients existing dwelling.

Vegetation removal associated with the earthworks is also proposed. The proposed works will require the removal of the existing gravel driveway, southern retaining wall of the house and the relocation of the water tanks.

As shown on the Site Plan, steps are proposed on the northern boundary to provide connectivity between the two lawns proposed.

Figure 1 – Site plan extract

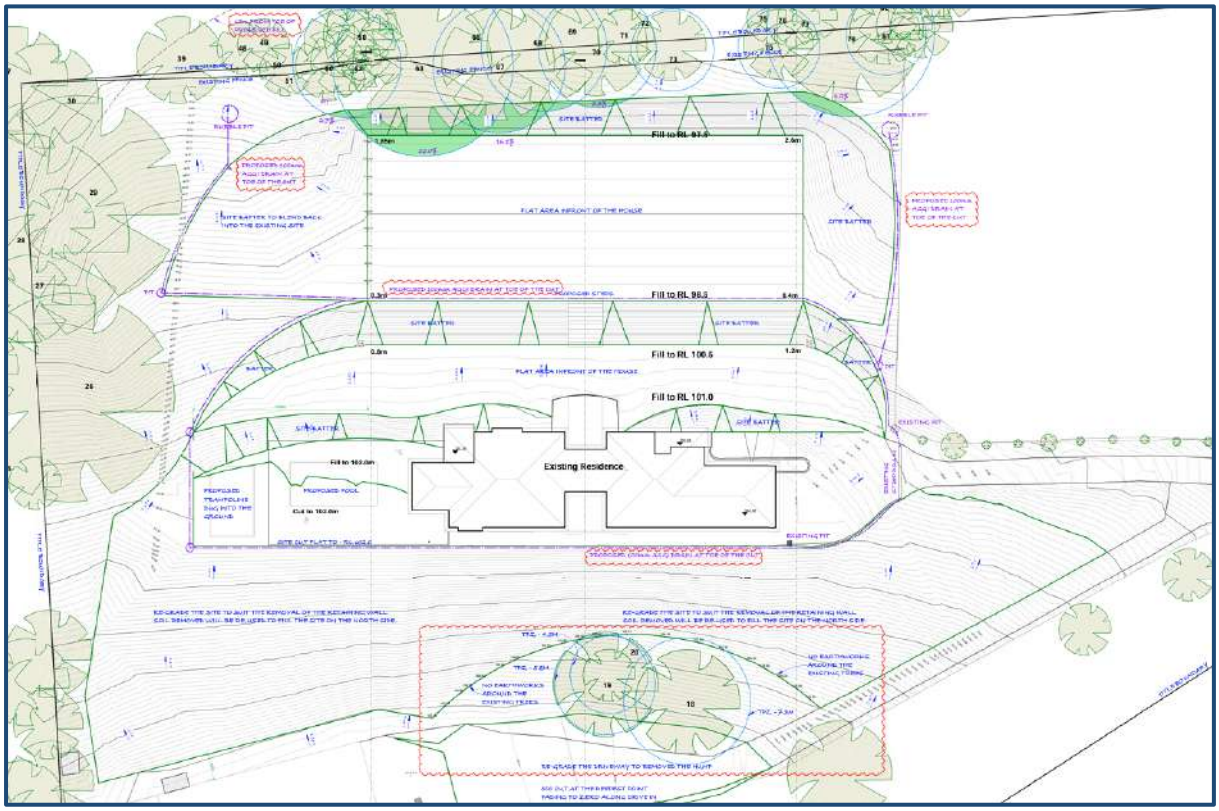


Figure 2 – 3D Render of proposed earthworks and planting

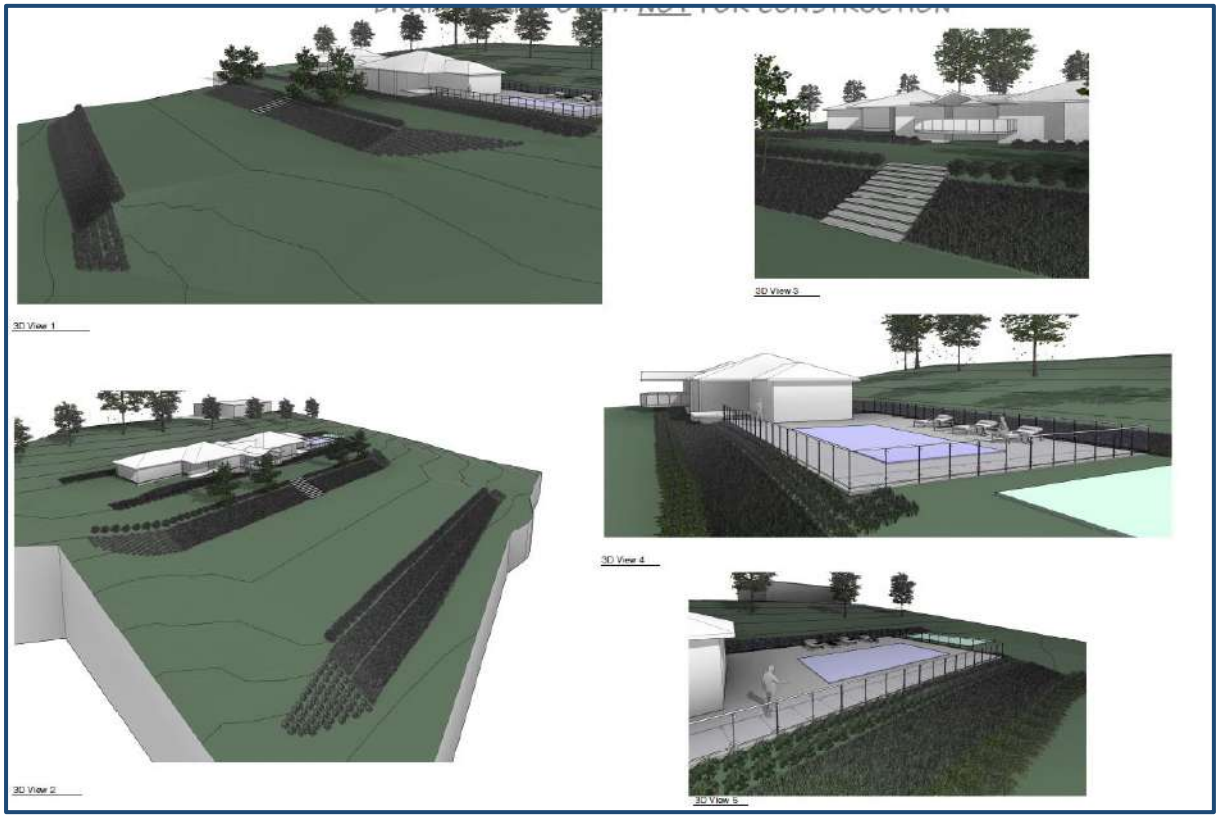
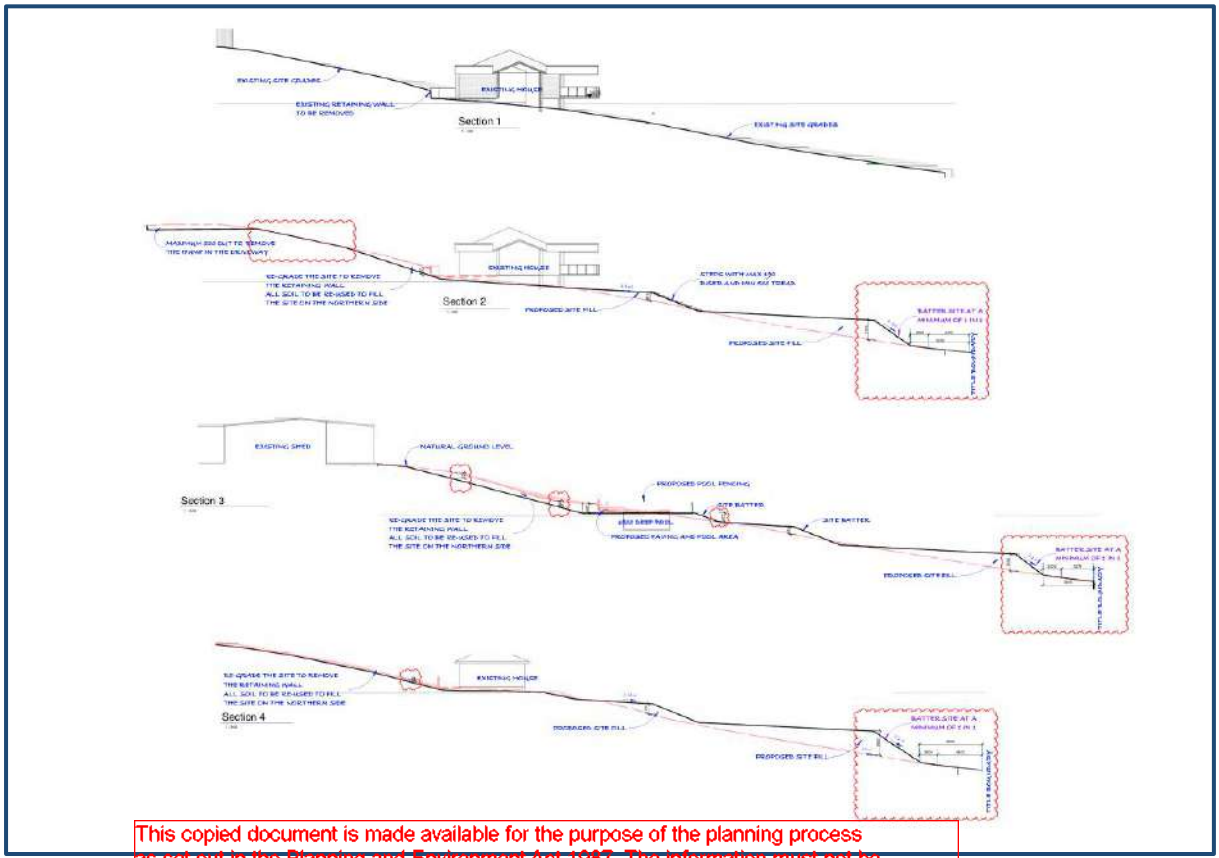


Figure 3 – Sections of proposed earthworks. Section 1 shows the current slope of the land.

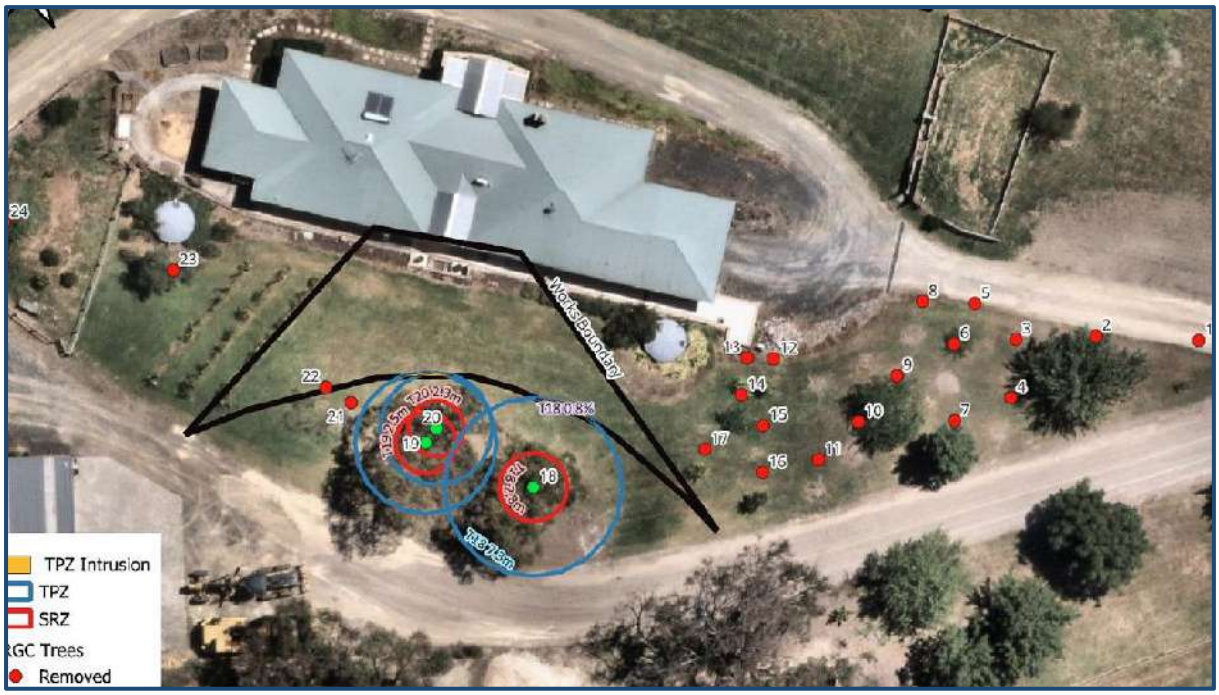


Vegetation Removal

Vegetation removal is proposed to facilitate the proposed re-grading of the site. We refer Council to the Arborist Report prepared by Greenwood Consulting, where the extent of vegetation removal is outlined. Details of the trees proposed for removal are included in the Submission. Compensatory replanting is shown in the concept Landscape Plan.

The vegetation proposed for removal is planted garden species, generally exotic species.

Figure 4 – vegetation removal plan extract



Other matters

We feel it prudent to draw attention to a number of other, relevant matters associated with the proposal:

- The vast majority of the proposed earthworks are less than 1m; and therefore do not trigger a permit pursuant to ESO1. We acknowledge that there is a potential permit trigger under the Green Wedge Zone "which change the rate of flow or the discharge point of water across a property boundary". We submit that there is no permit trigger in relation to this matter. The topography of the land is not altered with respect to the fact that the slope will still be from the south down toward the north, so the flow of water will not be altered.
- The proposed pool does not require permission as it is exempt pursuant to Clause 62.02-1.
- The trampoline does not require permission.
- There is no intention to use the northern lawn for any other purpose than for recreational needs *i.e.* there will be no tennis court, or any other works in this area.

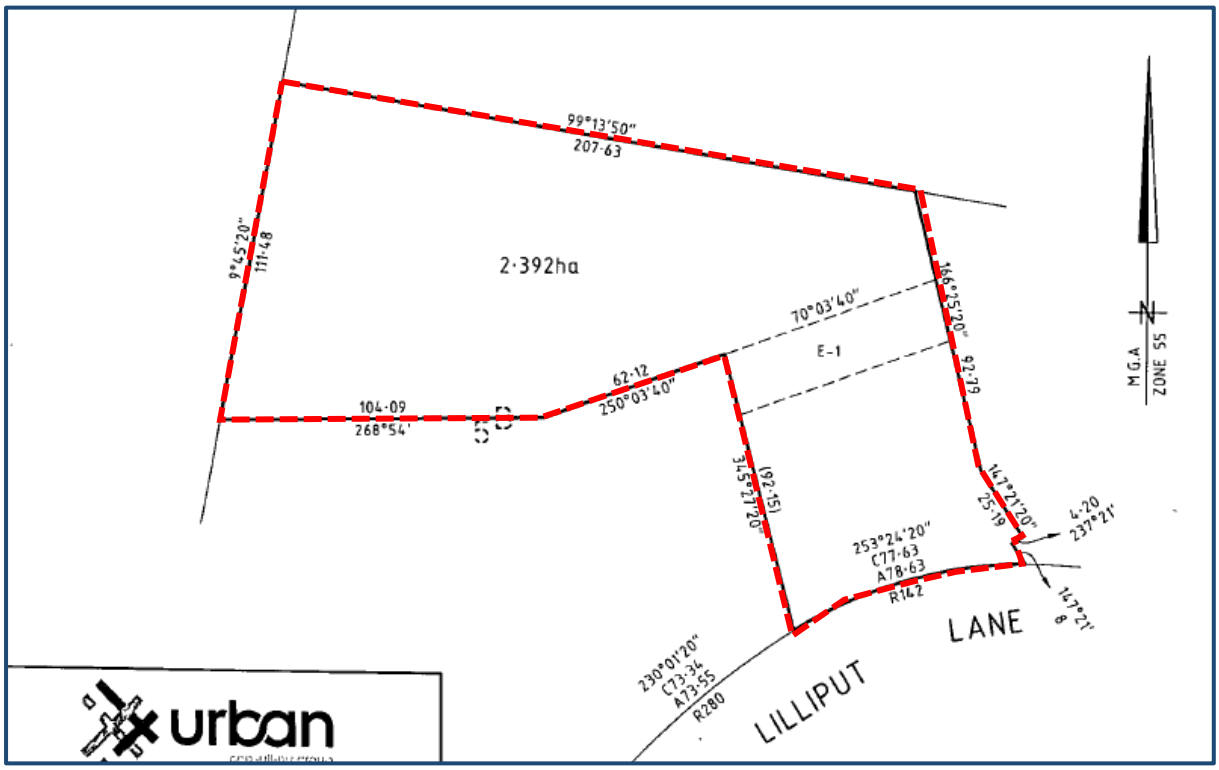
2 THE SUBJECT SITE

2.1 Title encumbrances

The subject site is known as **Land in Plan of Consolidation 370839J**, contained within **Volume 11086 Folio 820**.

There is an easements on site, however it is not located in proximity to the proposed earthworks.

Figure 5 – Extract Plan of Subdivision



The land is affected by two Section 173 Agreements, which are X234211E and AD203776G. Below we discuss these agreements:

Section 173 Agreement X234211E:

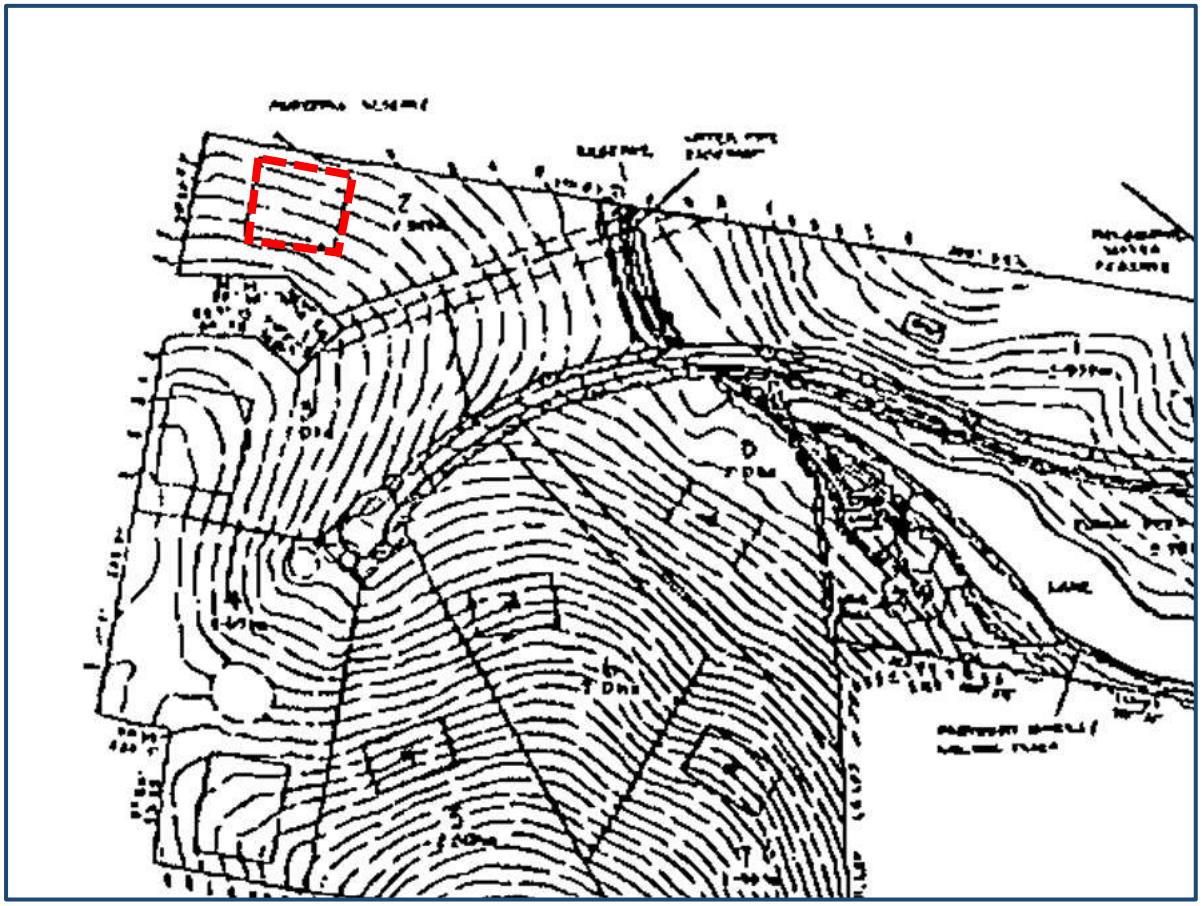
This Agreement includes requirements during the subdivision process, including landscaping, construction of a bridle path, construction of shelters, parking areas etc within the public open space area, now known as Lilliput Lane Reserve. These are 'subdivision' obligations' not relevant to this application.

There are further obligations for individual land owners including:

- a 'single dwelling' restriction
- height requirements for any structure (7.50m);
- waste water controls; and works being contained within the designated building envelopes.

The building envelope for the subject site is represented below.

Figure 6 – building envelope (extract from Section 173 Agreement X234211E



Importantly the restrictions include a Clause to confirm that variations are available "with the permission of the responsible authority":

6. Development Restrictions

6.1 The responsible authority may permit a minor variation to the position or configuration of the building envelope provided the responsible authority is satisfied that the variation will not have an adverse impact on the landscape qualities or amenity of the area.

6.2 Except with the permission of the responsible authority no development is permitted outside the building envelope except for minimum works necessary to provide a vehicle access way between the property frontage and the building envelope, reticulated services and boundary fences of post and wire construction in a conventional rural character.

We are seeking the permission of the Responsible Authority as we 'may' be conducting works outside the envelope.

Due to the unprecise representation of the building envelope it is somewhat unclear if we encroach beyond the envelope, but we draw attention to the fact the envelope extends toward the northern boundary, where our works are primarily proposed; and where the effluent disposal field already exists. On this basis; and for the reasons discussed in this submission we say that if there is any encroachment outside the envelope it should be supported by Council as the works are generally consistent with the envelope and certainly will not cause an "adverse impact on the landscape qualities or amenity of the area".

Section 173 Agreement AD203776G:

This Agreement relates to requirements for the subdivider and Melbourne Water and isn't relevant to this application.

2.2 The site

The 2.392 ha property is on the western side of Lilliput Lane, a lane that provides connectivity to Army Road.

The property currently contains a dwelling sited towards the rear of the property, as well as a shed further to the southwest of the property.

The land falls steeply by 14.6 metres from the top of the site (north) to the bottom of the site (south).

Scattered trees are found through the centre of the site, with a more substantial stand of native, canopy trees sited on the boundary.

Figure 6 – Aerial view looking southwest toward the existing dwelling and shed on site.

Figure 7 - Looking toward the northern boundary of the site where native vegetation surrounding the land is shown.

Figure 8 - Facing south towards dwelling from site boundary.

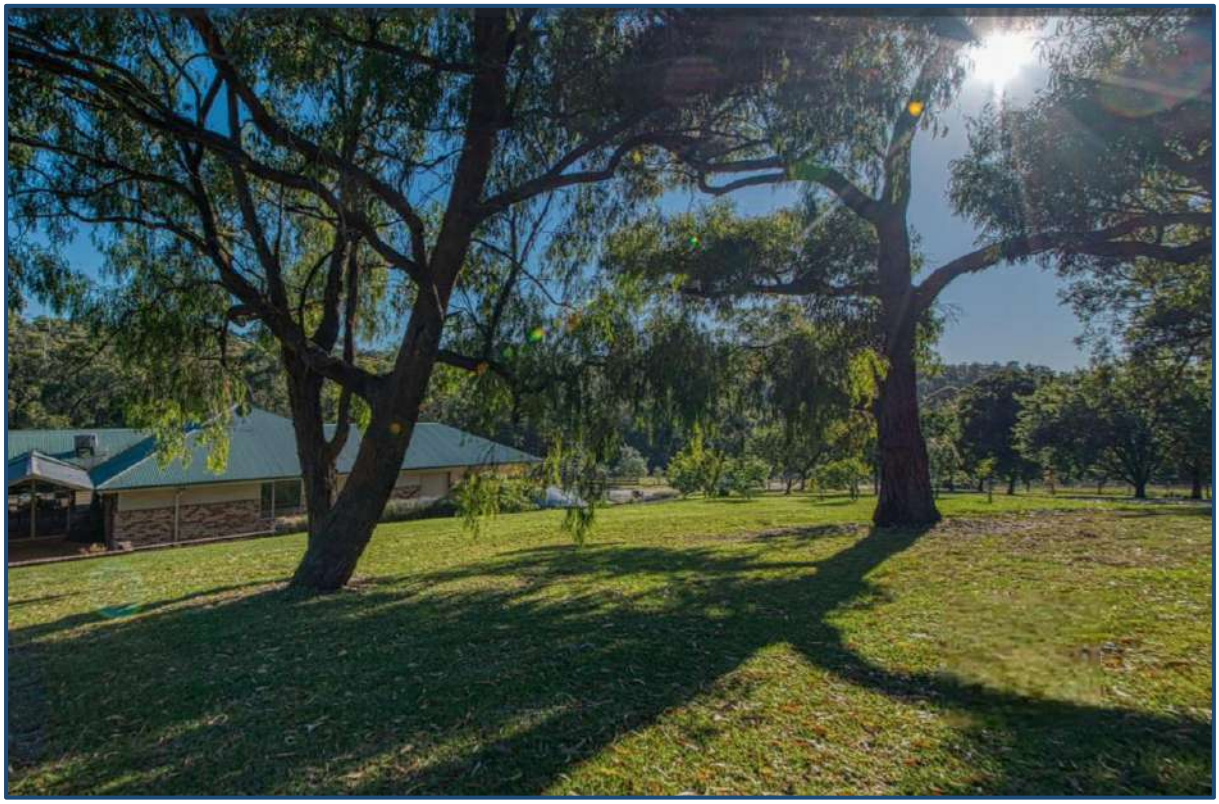


Figure 9 - Aerial view of subject site facing southwest.

Figure 10 – Looking southwest towards dwelling and shed.

3 SITE CONTEXT

3.1 Surrounding character

The subject site is located on Lilliput Lane, a residential lane serving nine (9) properties. Lilliput Lane was created as a rural residential subdivision, with the expectation that each property would be developed with a dwelling.

Surrounding land uses are mainly residential. Below we describe a number of the surrounding uses:

North – Vacant Land

Vacant mostly vegetated rural property shown with dashed red line

South – 49 Lilliput Lane Pakenham

Modest centrally sited 2ha property used for rural residential living

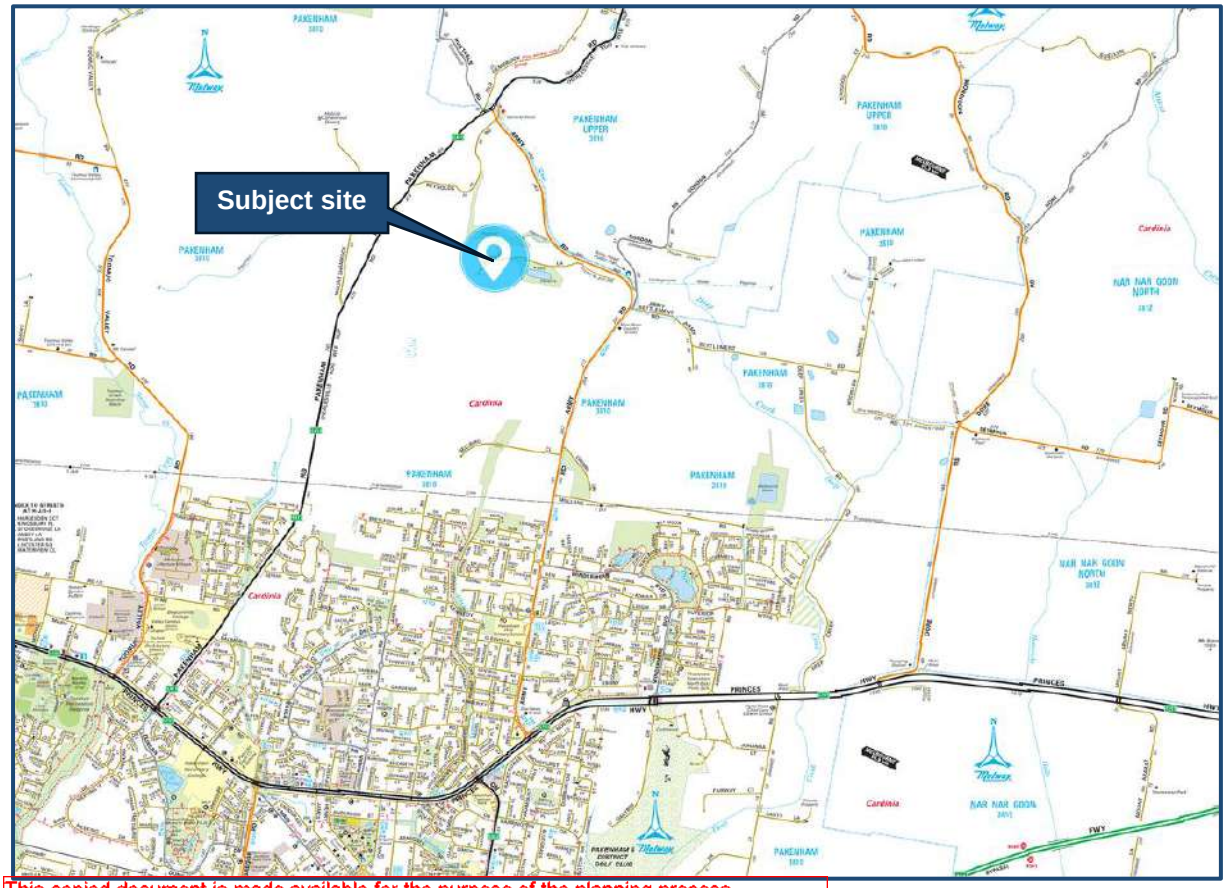
South – Lillyput Lane Reserve

3 (three) Hectare dam used as a fishery for rainbow trout and recreational reserve. There is also a public bbq area.

West – 414 Pakenham Road, Pakenham

10ha property, developed with a northern sited dwelling, two dams, a workshed and horse paddocks.

Figure 10: Melway extract



4 PLANNING PROVISIONS

The subject site is included within the Cardinia Planning Scheme and is affected by the following planning provisions, zone and controls:

4.1 PLANNING POLICY FRAMEWORK (PFF)

Relevant PPF Provisions
Clause 13.07-1S Land Use Compatibility
Clause 14 Natural Resource Management
Clause 14.01-1S – Protection of agricultural land
Clause 12.01-1S – Protection of biodiversity
Clause 22.05 – Western Port Green Wedge Policy

5 CONSIDERATION

Upon review of the Cardinia Planning Scheme and permit triggers, we say the following key questions are required for consideration:

- **Does the proposal have support in Planning Policy?**
- **Is the proposed activity on the land (earthworks and vegetation removal) going to detrimentally impact the amenity of any person?**
- **Is the site suitably located to support the proposed land use?**
- **Does the proposal respond to the purpose of the Green Wedge Zone?**

Below we respond to these matters.

5.1 Does the proposal have support in Planning Policy?

The reoccurring objectives of relevant planning policies seek to:

- *Ensure the strategic planning and land management of each green wedge area to promote and encourage its key features and related values.*
- *Support development in the green wedge that provides for environmental, economic and social benefits.*
- *Protect areas of environmental, landscape and scenic value.*
- *Protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts*
- *Assess land capability.*

- *Protect existing landscape values and environmental qualities such as water quality, native vegetation, biodiversity and habitat.*

Clause 14.01-1S, Protection of Agricultural Land:

Objective

To protect the state's agricultural base by preserving productive farmland.

Strategies

Identify areas of productive agricultural land, including land for primary production and intensive agriculture.

Consider state, regional and local, issues and characteristics when assessing agricultural quality and productivity.

Avoid permanent removal of productive agricultural land from the state's agricultural base without consideration of the economic importance of the land for the agricultural production and processing sectors.

Protect productive farmland that is of strategic significance in the local or regional context.

Protect productive agricultural land from unplanned loss due to permanent changes in land use.

Prevent inappropriately dispersed urban activities in rural areas.

Protect strategically important agricultural and primary production land from incompatible uses.

Limit new housing development in rural areas by:

- *Directing housing growth into existing settlements.*
- *Discouraging development of isolated small lots in the rural zones from use for dwellings or other incompatible uses.*
- *Encouraging consolidation of existing isolated small lots in rural zones.*

Identify areas of productive agricultural land by consulting with the Department of Energy, Environment and Climate Action and using available information.

In considering a proposal to use, subdivide or develop agricultural land, consider the:

- *Desirability and impacts of removing the land from primary production, given its agricultural productivity.*
- *Impacts on the continuation of primary production on adjacent land, with particular regard to land values and the viability of infrastructure for such production.*
- *Compatibility between the proposed or likely development and the existing use of the surrounding land.*
- *The potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.*
- *Land capability.*
- *Avoid the subdivision of productive agricultural land from diminishing the long-term productive capacity of the land.*
- *Give priority to the re-structure of inappropriate subdivisions where they exist on productive agricultural land.*

- *Balance the potential off-site effects of a use or development proposal (such as degradation of soil or water quality and land salinisation) against the benefits of the proposal.*

Clause 13.07-1S Land use capability seeks to ensure that use or development of land is compatible with adjoining and nearby land uses, whilst protecting community amenity.

Objective

To protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.

Strategies

- *Ensure that use or development of land is compatible with adjoining and nearby land uses*
- *Avoid locating incompatible uses in areas that may be impacted by adverse off-site impacts from commercial, industrial and other uses.*
- *Avoid or otherwise minimise adverse off-site impacts from commercial, industrial and other uses through land use separation, siting, building design and operational measures.*
- *Protect commercial, industrial and other employment generating uses from encroachment by use or development that would compromise the ability of those uses to function safely and effectively.*

Clause 14.01-2S Sustainable agricultural land use

Objective

To encourage sustainable agricultural land use.

Strategies

- *Ensure agricultural and productive rural land use activities are managed to maintain the long-term sustainable use and management of existing natural resources.*
- *Support the development of innovative and sustainable approaches to agricultural and associated rural land use practices.*
- *Support adaptation of the agricultural sector to respond to the potential risks arising from climate change.*
- *Encourage diversification and value-adding of agriculture through effective agricultural production and processing, rural industry and farm-related retailing.*
- *Assist genuine farming enterprises to embrace opportunities and adjust flexibly to market changes.*
- *Support agricultural investment through the protection and enhancement of appropriate infrastructure.*
- *Facilitate ongoing productivity and investment in high value agriculture.*
- *Facilitate the establishment and expansion of cattle feedlots, pig farms, poultry farms and other intensive animal industries in a manner consistent with orderly and proper planning and protection of the environment.*

- *Ensure that the use and development of land for animal keeping or training is appropriately located and does not detrimentally impact the environment, the operation of surrounding land uses and the amenity of the surrounding area.*

Clause 12.01-1S – Protection of biodiversity

Objective

To protect and enhance Victoria's biodiversity.

Strategies

- *Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.*
- *Strategically plan for the protection and conservation of Victoria's important areas of biodiversity.*
- *Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:*
- *Cumulative impacts.*
- *Fragmentation of habitat.*
- *The spread of pest plants, animals and pathogens into natural ecosystems*
- *void impacts of land use and development on important areas of biodiversity.*
- *Consider impacts of any change in land use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites; including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention) and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).*
- *Assist in the identification, protection and management of important areas of biodiversity.*
- *Assist in the establishment, protection and re-establishment of links between important areas of biodiversity, including through a network of green spaces and large-scale native vegetation corridor projects.*
- *Support land use and development that contributes to protecting and enhancing habitat for indigenous plants and animals in urban areas.*

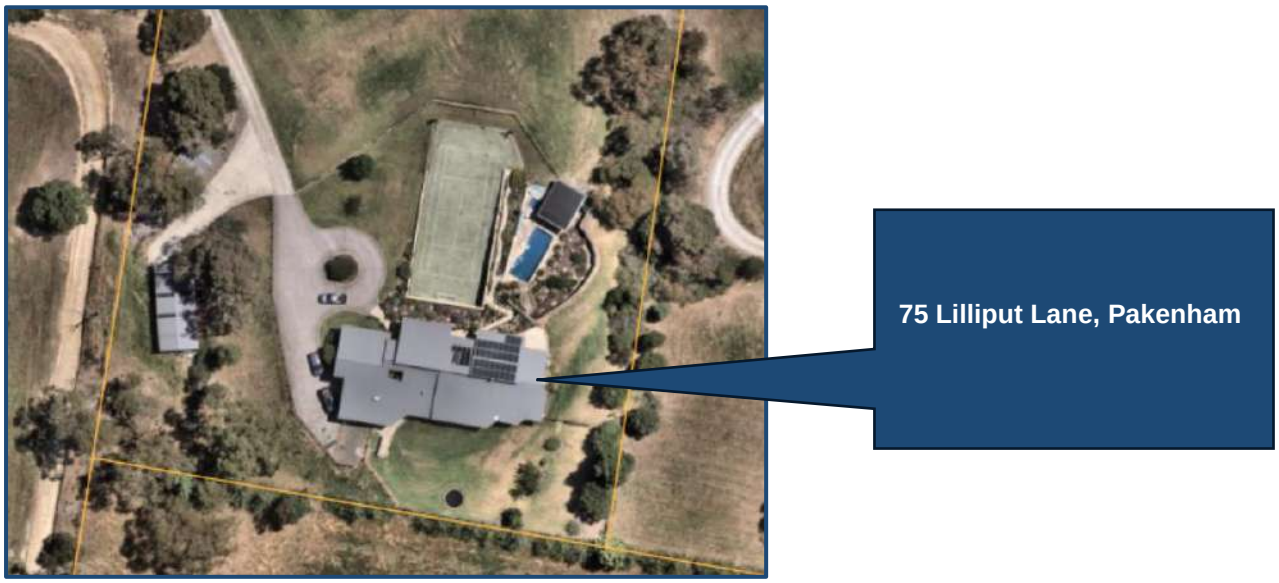
Policy response

We expect the matter that requires closest consideration by Council is whether the proposed changes inhibit agricultural use of the land and whether or not the proposal has an impact on biodiversity.

Protection of Agricultural Land

There are numerous Policies, referenced above, that seek to ensure the proposed works do not detrimentally impact viable agricultural land on the subject site and on surrounding properties. In response we draw Council's attention to the size of the property, being only 2.392 hectares in size.

The subject site and surrounding properties to the south and east are within an enclave of land that is essentially rural residential living. A high proportion of properties are developed in a manner that results in a far larger domestic footprint than what is proposed on the subject site, as per below:



222 Army Road, Pakenham

50 Bellbird Close, Pakenham

We acknowledge the objectives of the Green Wedge Zone do not support rural residential living; but we are not proposing works that will alter the use of the land or the opportunities for the land.

The primary works are occurring to the north of the dwelling. This is where the effluent disposal field is located and therefore not an area of the property that could accommodate agricultural enterprise of any type.

The remaining area of the subject site, to the east of the dwelling will be unimpacted by the works and therefore if someone did seek to pursue an agricultural enterprise this proposal does not undermine that opportunity.

Protection of Vegetation

The removal of vegetation is necessary to facilitate the proposed earthworks. However, this has been carefully assessed by a qualified Arborist. The arborist assessed all trees within the vicinity of the works, with the following summary of conclusions provided:

- No neighbouring trees will be compromised as a result of the works. The project arborist considered all works in the vicinity of neighbouring trees, including the stand of trees on the adjoining property to the north.

Figure 11 – arborist report extract, showing neighbouring trees and associated TPZ's

- The arborist was entirely comfortable that the works will not detrimentally impact these trees.
- Below we summarise the findings of the arborist assessment:

    - The following seven (7) trees (**Trees 18-20, 62, 68, 70 and 78**) will incur an impact of Low from the proposed development. The TPZ intrusion for the proposed earthworks for these trees has been calculated at less than 10% (Figure 3, 4 and 5). Under the AS 4970 this is considered to be a minor intrusion, therefore these trees are likely to remain viable from the proposed development.

- **Tree 67** is a mature Eucalyptus dives (Broad-leaved Peppermint) that exhibits Fair health and Poor structure and has a Useful Life Expectancy of 30 - 60 years. It is located on an adjoining property and has a retention value of High. This tree has a DBH of 63 cm, an SRZ of 2.8 m, a TPZ of 7.6 m and a construction impact of Moderate.
  The TPZ intrusion for Tree 67 has been calculated at 13.5% which is considered to be a Moderate intrusion for this tree (Figure 2).
  However, this tree will remain viable provided that the construction impact could be reduced from Moderate to Low by improving the growing conditions between the proposed batter and retained trees on the adjoining property.
  Mulching and irrigation will assist the tree during the construction phase. Figure 2: Tree 67 TPZ intrusion of 13.5% Irrigation should be maintained for 3 years.
  Even though the intrusion for this tree has been calculated at **Moderate we believe that the impacts will be Low** as there is no excavation (cut) within the TPZ of these trees that will significantly impact the roots of the retained trees. The tree roots will not be restricted and be able to exploit the new soil volume from the proposed batter. Excavation deeper than 0.1 metres below existing grade or compaction must be avoided within the TPZ for this tree.

- **Tree 63** is a mature Eucalyptus ovata (Swamp Gum) that exhibits Fair health and Fair structure and has a Useful Life Expectancy of 30 - 60 years. It is located on an adjoining property and has a retention value of High.
  This tree has a DBH of 86 cm, an SRZ of 3.3 m, a TPZ of 10.3 m and a construction impact of Moderate. The TPZ intrusion for Tree 63 has been calculated at 20.1% which is considered to be a Moderate intrusion for this tree (Figure 1).
  However, this tree will Figure 1: Tree 63 TPZ intrusion of 20.1% remain viable provided that the construction impact could be reduced from Moderate to Low by improving the growing conditions between the proposed batter and retained trees on the adjoining property.
  Mulching and irrigation will assist the tree during the construction phase. Irrigation should be maintained for 3 years. Even though the intrusion for this tree has been calculated at Moderate **we believe that the impacts will be Low** as there is no excavation (cut) within the TPZ of these trees that will significantly impact the roots of the retained trees.
  The tree roots will not be restricted and be able to exploit the new soil volume from the proposed batter. Excavation deeper than 0.1 metres below existing grade or compaction must be avoided within the TPZ for this tree.

- The following Seventy-four (74) **trees (Trees 25-61, 64-66, 69, 71-77, 79-104) will incur no impact** from the proposed development.

Below is a further summary of the on-site and neighbouring vegetation in the vicinity of the proposed works:

- 104 trees were assessed, with 24 proposed for removal;
- Of the 24 trees proposed for removal:
  - 14 were considered to have very low retention value;
  - 5 were considered to have low retention value;
  - 5 were considered to have moderate retention value (see extract below).

ID:	Genus / Species:	Retention Value:	Retained?:	Construction Impact:	Location:	SRZ:	TPZ:	Height / Trunk (cm):
1	Prunus serrulata	Very low	Removed	High	Site	1.6	2	2/16
2	Pyrus calleryana	Moderate	Removed	High	Site	2.1	3.5	7/91
3	Prunus persica	Very low	Removed	High	Site	1.6	2	2/13
4	Morus alba	Very low	Removed	High	Site	1.6	2	2/16
5	Malus sp.	Very low	Removed	High	Site	1.6	2	2/35
6	Malus domestica	Very low	Removed	High	Site	1.6	2	3/35
7	Pyrus communis	Moderate	Removed	High	Site	1.8	2.5	9/66
8	Prunus persica	Very low	Removed	High	Site	1.6	2	2/38
9	Malus sargentii	Low	Removed	High	Site	1.7	2	3/53
10	Ginkgo biloba	Low	Removed	High	Site	1.6	2	5/28
11	Malus domestica	Low	Removed	High	Site	1.6	2	3/35
12	Citrus reticulata	Very low	Removed	High	Site	1.6	2	2/16
13	Citrus limon	Very low	Removed	High	Site	1.6	2	2/9
14	Malus domestica	Very low	Removed	High	Site	1.6	2	2/19
15	Malus domestica	Very low	Removed	High	Site	1.6	2	1/16
16	Pyrus communis	Very low	Removed	High	Site	1.6	2	2/16
17	Citrus limon	Very low	Removed	High	Site	1.6	2	1/16
18	Eucalyptus cypellocarpa	Moderate	Retained	Low	Site	2.8	7.3	11/192
19	Eucalyptus dives	Moderate	Retained	Low	Site	2.5	5.8	11/151
20	Eucalyptus cypellocarpa	Moderate	Retained	Low	Site	2.3	4.6	10/119
21	Eucalyptus caesia 'Silver Princess'	Low	Removed	High	Site	1.6	2	7/22
22	Eucalyptus caesia 'Silver Princess'	Very low	Removed	High	Site	1.6	2	4/6
23	Olea europaea	Low	Removed	High	Site	1.6	2	5/31
24	Eriobotrya japonica	Very low	Removed	High	Site	1.6	2	2/16

A number of recommendations were provided within the arborist The arborist report provided recommendations, including mulching and irrigation between the trees and the edge of batter. This recommendations has been adopted and the plans annotated accordingly. As discussed, the edge of

the batter was also setback further from the northern boundary to respond to the recommendations originally provided by the arborist.

Further to the above:

- A comprehensive replanting plan has been developed by a qualified landscape professional. This plan ensures that the number of trees and shrubs removed will be replaced with appropriate native species, maintaining or enhancing the ecological value of the site.
- The replanting strategy will contribute to the local biodiversity by using species that support local wildlife and improve the ecological connectivity of the area, such as the planting of seven (7) Gippsland Manna Gum trees.

We are also conscious that Council had shown concerns about the proposed removal of trees 18-20. Whilst we feel the removal of these trees was justified, we have amended the proposal whereby these trees will now be retained, accordingly there are no established, native trees.

Why is this work proposed?

The current slope of the property is too steep for functional lawn areas, limiting the usability of the land. The proposed earthworks will create two level lawn areas, improving the functionality and aesthetic appeal of the property. This modification will:

- Enhance the liveability and usability of the site for the occupants, as there is no flat area around the house for outdoor activities.
- Provide safe and accessible outdoor spaces.
- Be designed in a manner that minimizes erosion and soil instability, with appropriate engineering controls (e.g., retaining walls, drainage systems) to ensure long-term stability.

Figure 16 – Example for proposed planting on slope between the two lawns.

Grasses are proposed for planting on the slope between the two lawns. Four (4) Ornamental pear trees will be planted on this slope. Council should note that Seven (7) Gippsland Manna Gum trees will be planted throughout the site, ensuring that an appropriate amount of native trees are replanted, complimented by pear trees. Advanced planting details are shown on the Landscape Plan.

Further to the above, there is some need to regrade the land to the north of the dwelling. Currently overland water flows funnel down the alignment of the driveway; pooling directly north of the dwelling and then being dispersed across the effluent disposal field, resulting inundation of the effluent disposal field.

Figure 17 – overland water flows down the driveway (to be removed and regarded)

Figure 18 – overland water flows , spilling across septic field (red)

5.2 Is the proposed activity on the land going to detrimentally impact the amenity of any person?

The proposed earthworks and vegetation removal have been carefully designed to ensure they are not obtrusive and do not have any detrimental impact on the rural landscape values of the area. The following points demonstrate how the proposal respects and preserves the character of the rural landscape:

Minimal Impact on Neighbouring Amenity

The creation of two lawn areas will not introduce any structures or elements that are out of character with the rural setting. The lawns will be landscaped with native grasses and plants, maintaining a natural appearance.

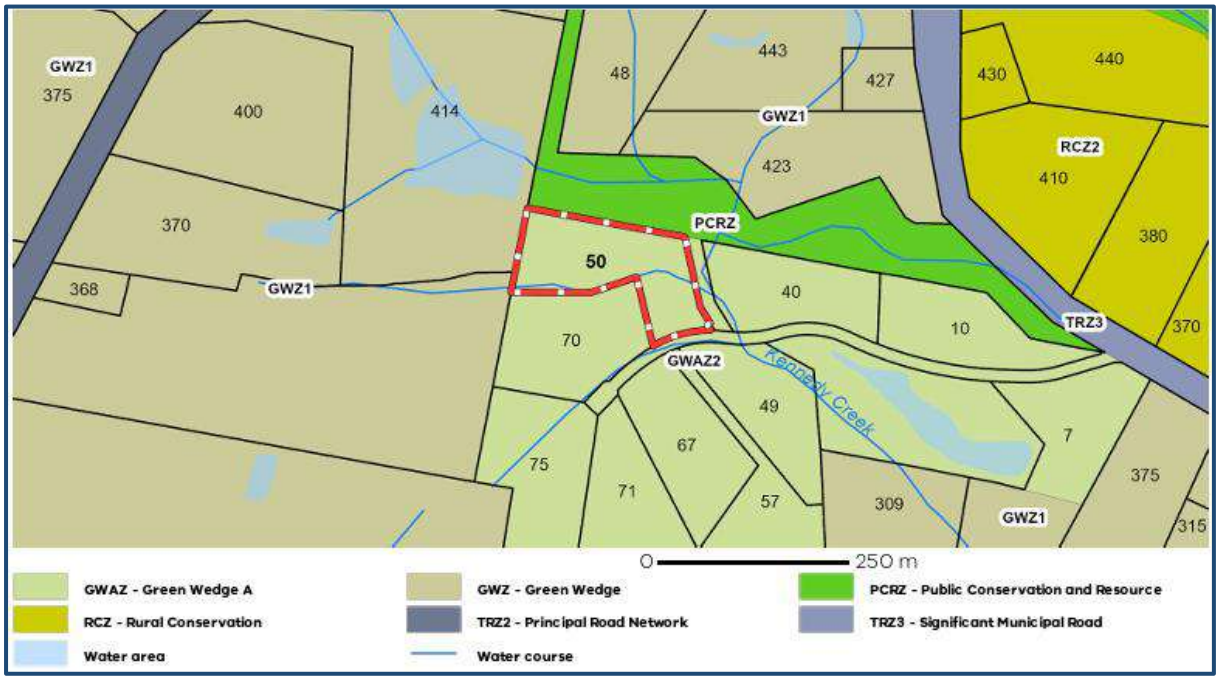
The gravel driveway on the northern side of the dwelling will be removed and reinstated with the proposed works. The existing gravel driveway that serves the shed will be re-gravelled. There is existing access to the house from a driveway on the eastern section of the dwelling, so the northern driveway is no longer necessary.

There are no properties proximate to the dwelling where the proposed works will be seen, given that the northern lot is vacant, and the western and southern boundaries are heavily screened by vegetation. Despite this, the proposed works will improve the aesthetics of the property and are not envisioned to have a negative visual impact.

As previously stated above, engineering measures are in place to manage stormwater runoff, reducing the risk of erosion and sedimentation.

Figure 19 – nearest dwellings circled in red (Nearmap satellite imagery taken on 01/02/25)

5.3 Do the works respond to the Objectives and Decision Guidelines of the Green Wedge A Zone – Schedule 2?



As established at the start of this Report, earthworks are a permit trigger under the Green Wedge A Zone – Schedule 2. Below we respond to the relevant Purpose and Decision Guidelines of the GWZ (Clause 35.05-6) to demonstrate that the proposed earthworks are appropriate on the subject site:

Purpose

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To provide for the use of land for agriculture.*
- *To protect, conserve and enhance the biodiversity, natural resources, scenic landscapes and heritage values of the area.*
- *To ensure that use and development promotes sustainable land management practices and infrastructure provision.*
- *To protect, conserve and enhance the cultural heritage significance and the character of rural and scenic non-urban landscapes.*
- *To recognise and protect the amenity of existing rural living areas.*

Decision Guidelines

General Issues

- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *Any Regional Catchment Strategy and associated plan applying to the land.*
- *The capability of the land to accommodate the proposed use or development, addressing site quality attributes including soil type, soil fertility, soil structure, soil permeability, aspect, contour and drainage patterns.*

- *How the use or development relates to agricultural land use, rural diversification and natural resource management.*
- *Whether the site is suitable for the use or development and whether the proposal will have an adverse impact on surrounding land uses.*
- *The need to protect the amenity of existing residents.*
- *The need to minimise adverse impacts on the character and appearance of the area or features of architectural, scientific or cultural heritage significance, or of natural scenic beauty or importance.*
- *The potential for accommodation to be adversely affected by vehicular traffic, noise, blasting, dust and vibration from an existing or proposed extractive industry operation if it is located within 500 metres from the nearest title boundary of land on which a work authority has been applied for or granted under the Mineral Resources (Sustainable Development) Act 1990.*

Rural Issues

- *The maintenance of agricultural production and the impact on the local rural economy.*
- *The need to prepare an integrated land management plan.*
- *The impact on the existing and proposed rural infrastructure.*
- *The potential for the future expansion of the use or development and the impact of this on adjoining and nearby agricultural and other land uses.*
- *Protection and retention of land for future sustainable agricultural activities.*

Design and Siting Issues

- *The need to minimise adverse impacts of the siting, design, height, bulk, colours and materials to be used on major roads, landscape features and vistas.*
- *The location and design of existing and proposed infrastructure services including gas, water, drainage, telecommunications and sewerage facilities which minimise the visual impact on the landscape.*
- *The location and design of existing and proposed roads and their impact on the landscape and whether the use or development will require traffic management programs.*
- *The need to locate and design buildings used for accommodation to avoid or reduce the impact from vehicular traffic, noise, blasting, dust and vibration from an existing or proposed extractive industry operation if it is located within 500 metres from the nearest title boundary of land on which a work authority has been applied for or granted under the Mineral Resources (Sustainable Development) Act 1990.*

General Issues

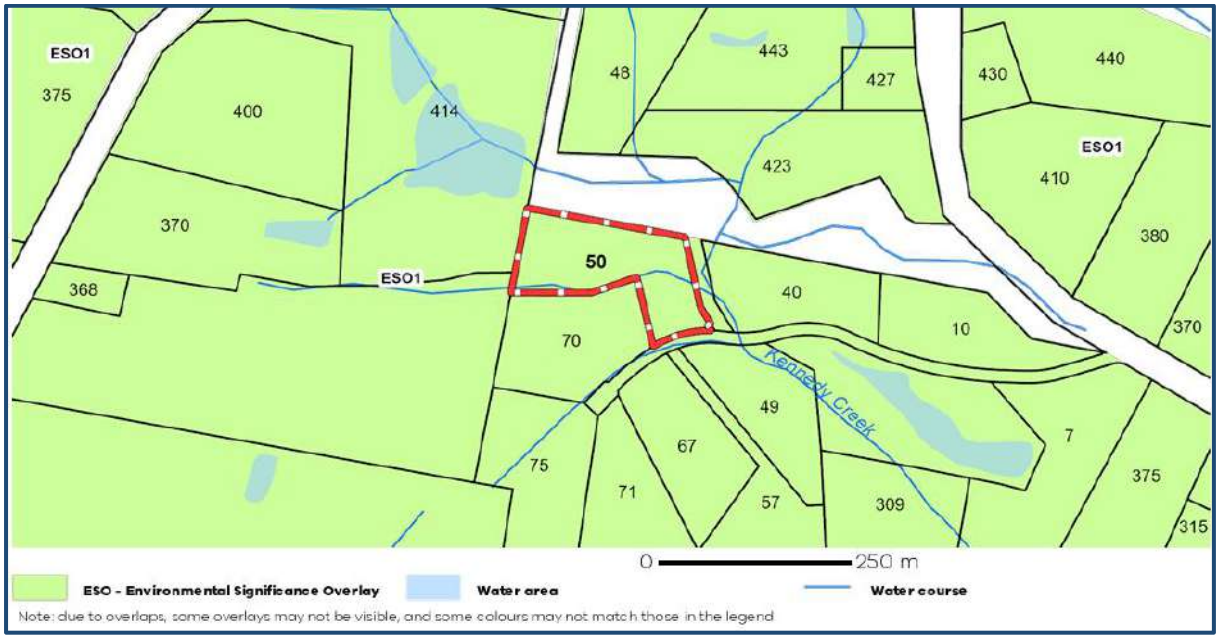
All soil excavated on the land will be re-used to fill the site on the northern side. Should more soil be required, soil most suited to the site will be sourced. Pitts and ag lines will be installed to appropriate specifications to ensure the proposed works do not affect drainage and ensure the soil remains permeable.

All earthworks will be undertaken in a manner that will minimise soil erosion and adhere to Construction Techniques for Sediment Pollution Control (EPA 1991) and any exposed areas of soil will stabilised to prevent soil erosion, to the satisfaction of Council.

Rural issues

As stated in the previous section of this Report, the proposed works do not inhibit the agricultural; capabilities of the land. Should the land be used for future agricultural pursuits, opportunity still remains, the amendment to the slope of the land means the land will be easier to manage and maintain across a broad range of agricultural sectors. The proposal will have no impact on existing rural infrastructure.

5.1 Do the proposed works respond to the Objectives and Decision Guidelines of the Environmental Significance Overlay – Schedule 1 (ESO1)?



A permit is required for buildings and works pursuant to ESO1 (Northern Hills). A permit is also required for vegetation removal.

Below we respond to the Environmental Objectives to be Achieved and Decision Guidelines of the ESO1 (Clause 42.01-5) to demonstrate the proposed earthworks and associated vegetation removal are appropriate.

Environmental Objective to be Achieved

- *To protect and enhance the significant environmental and landscape values in the northern hills area including the retention and enhancement of indigenous vegetation.*
- *To ensure that the siting and design of buildings and works does not adversely impact on environmental values including the diverse and interesting landscape, areas of remnant vegetation, hollow bearing trees, habitat of botanical and zoological significance and water quality and quantity.*
- *To ensure that the siting and design of buildings and works addresses environmental hazards including slope, erosion and fire risk, the protection of view lines and maintenance of vegetation as the predominant feature of the landscape.*
- *To protect and enhance biolinks across the landscape and ensure that vegetation is suitable for maintaining the health of species, communities and ecological processes, including the prevention of the incremental loss of vegetation.*

Decision Guidelines

The following decision guidelines apply to an application for a permit under Clause 42.01, in addition to those specified in Clause 42.01 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- *Whether the removal of any vegetation has been avoided and/or minimised.*
- *The Land Capability Study for the Cardinia Shire (February 1997).*
- *The protection and enhancement of the natural environment and character of the area.*
- *The retention, protection and enhancement of remnant vegetation and habitat, and the need to plant vegetation along waterways, gullies, ridgelines and property boundaries.*
- *The impact of any buildings and works on areas of remnant vegetation, and habitat of botanical and zoological significance and threatened species.*
- *The impact of proposed buildings and works on the landscape character of the area, including prominent ridgelines and significant views.*
- *Whether the siting, height, scale, materials, colours and form of the proposed buildings and works have been designed to have the least visual impact on the environment and landscape.*
- *The availability of other alternative sites, alternative building designs or alternative construction practices for the proposed buildings and works that minimise cut and fill and would better meet the environmental objectives of this schedule, having regard to the size and topography of the land, retention of vegetation and the form and nature of the proposed buildings and works.*
- *Measures to address environmental hazards or constraints including slope, erosion, drainage, salinity and fire.*
- *The protection of waterways and water quality through the appropriate management of effluent disposal, erosion and sediment pollution.*

As outlined earlier in this Report, appropriate measures have been implemented to prevent soil erosion and ensure that drainage systems remain unaffected.

Following recommendations from Council's meeting, the scope of earthworks was revised to preserve Tree 18, 19, and 20—three mature native Eucalyptus trees at the south of the site, each standing between 10 and 11 metres in height.

The original Plans also proposed fill that would encroach the TPZ of several trees on the northern boundary. The Arborist Report recommended that the extent of fill on the northern boundary is reduced by 2 metre to reduce the extent of encroachment of the TPZ of all affected trees on the northern boundary.

6 CONCLUSION

As demonstrated within this report, the proposed earthworks and vegetation removal results in an orderly planning outcome that is responsive to the objectives of the Cardinia Planning Scheme and is entirely worthy of support.

A.C. Geotechnical.

Land Capability Assessment

50 Lilliput Lane, Pakenham

Report Number: 24140

A.C. Geotechnical.

Distribution

Land Capability Assessment
50 Lilliput Lane, Pakenham

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For and on behalf of
A.C. Geotechnical Pty Ltd
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P.O Box 539
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Accreditation	Land Capability Assessment for On-site Wastewater Management Certificate CET, 2015
Experience	10 years' experience in geotechnical engineering and environmental assessments, with a focus on wastewater management across all states of Australia.

Edition	Description	Date
001	First Edition	07/05/2024

1. SUMMARY:

The following summary table should be read in conjunction with the entire report.

Designs wastewater load	4 Bedroom dwelling	750 L/day
	4 Bedroom Dwelling + 1 bedroom DPU	1050 L/day
Soils characteristics	Horizon A	Horizon B
Soil category	3b Loam	3b Loam
Indicative permeability	0.5-1.5 m/d	0.5-1.5 m/d
Critical site features	• Waterway north of site. • Potential high wastewater load. • Moderate slope. • High annual rainfall.	

Minimum treatment requirements	Primary	
Disposal system	Suitability	Area required - 4 bedroom dwelling
Absorption trenches	Suitable	125 m
Subsurface Irrigation	Suitable	330 m^2
ETA Beds	Suitable	95 m^2
Mound	Suitable	60 m^2
Wastewater can be sustainably disposed to land		Yes

A.C. Geotechnical.

Table of Contents

2. INTRODUCTION:

A.C. Geotechnical Pty Ltd (AC) have been engaged to undertake a Land Capability Assessment (LCA) for 50 Lilliput Lane, Pakenham.

The objectives of the assessment was to determine the following:

- Sub-surface ground profile and geological setting.
- The depth to groundwater (if encountered).
- The permeability of the soil profile.
- The capability of the site to sustainably manage wastewater within the allotment boundaries.
- A management program that should be put into place to minimise health and environmental impacts of on-site wastewater management, including the impact on surface water and groundwater.

2.1 Proposed Development:

It is proposed to install a new septic system to replace a failure system. This assessment has been completed for the existing four bedroom dwelling with an option to connect a single bedroom dependant person unit (DPU) to the system in the future.

3. SITE DESCRIPTION:

3.1 Site Location:

The subject site is located on the north side of Lilliput Lane. The site is surrounded by similar size properties, the assumed land use of these properties is summarised in **Table 3.1**.

Table 3.1 -Surrounding land use

North	Low density residential
South	Low density residential
East	Low density residential
West	Low density residential

3.2 Site Topography and Condition:

The site contains a single storey brick veneer dwelling and multiple outbuildings. The site has a gentle to moderate slope down to the north. The existing septic system consist of a primary treatment septic tank with disposal via absorption trenches located on the north side of the dwelling. It is understood from discussions onsite that the existing trenches had failed.

Vegetation on the site comprises open turf and scattered trees.

Site photographs are included in **Appendix B.**

3.3 Key Site Information:

A summary of site characteristic and wastewater loading are included in **Table 3.3**.

Table 3.3 -Key site features

Site Address	50 Lilliput Lane, Pakenham
Owner/Applicant	[redacted]
Local Council	Cardinia
Zoning	Green Wedge (GWAZ)
Total Land Area	Approximately 2.39 ha
Domestic Water Supply	Reticulated/Tank
Design Wastewater Load (Litres/Day)	EPA Code of practice - Onsite Wastewater Management (2016) Household with full water reduction fixtures: 150 L / person / day. Persons = no. bedrooms + 1 Existing dwelling - 4 + 1 = 5 persons Additional DPU – 1 + 1 = 2 persons **Design wastewater load.** Existing dwelling: 750 L / day Existing dwelling & DPU: 1050 L / day
Design Organic Material Load	EPA Code of practice - Onsite Wastewater Management (2016) 60 g per person per day Existing dwelling :300 g/day Existing dwelling & DPU :420 g/day
Availability of sewer	Sewer is not likely to become available to this area in the near future
Groundwater Quality	Groundwater is classified as Brackish (1000 - 3500 mg/L TDS) www.vvg.org.au
Water Table	Local registered bores in the area suggest the ground water is held approximately 20-50 m below the surface
Climate	Average annual rainfall 1009 mm
Flood Potential	Outside a 1 in 100-year flood event
Water Catchment Area	N/A
Proximity to Waterways	Creek and dam north of property boundary
Vegetation	Pasture grasses, scattered trees
Exposure	Generally open
Slope	Gentle to moderate slope down to the north
Landform	Hills
Erosion Potential	negligible
Surface Drainage	Good
Rocks and Rock Outcrop	none

3.4 Site Geology:

According to the Geological Survey of Victoria, the site is in an area of Devonian aged metamorphic . An extract from GeoVic 3 is included in **Figure 3.4**.

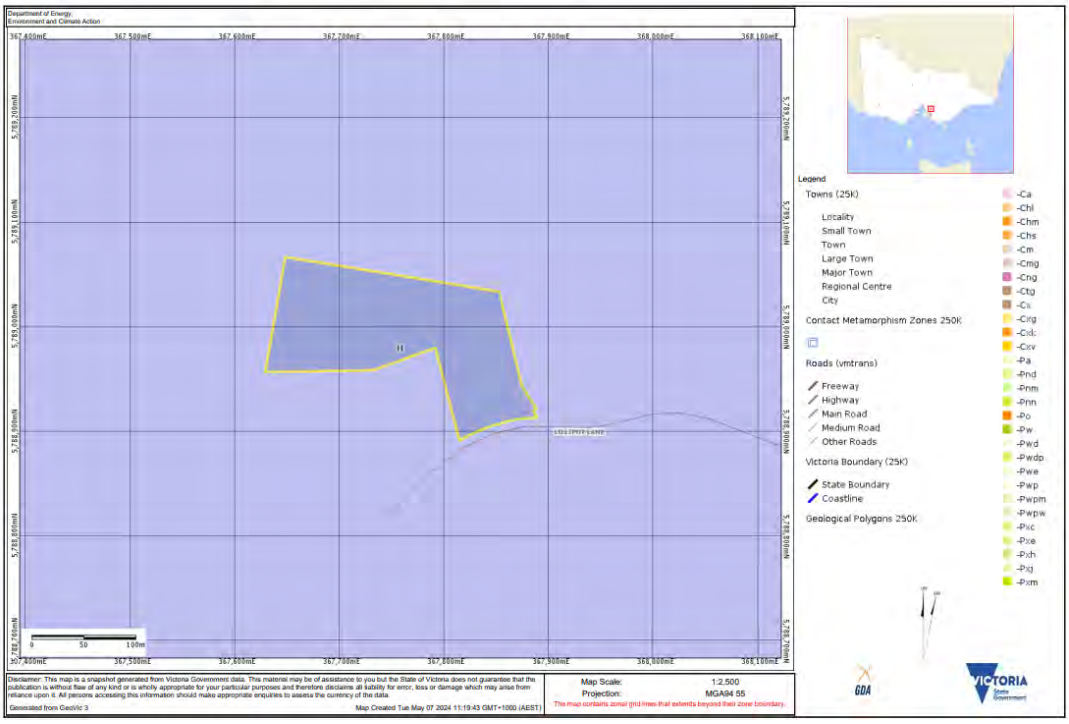


Figure 3.4 Extract of Geological from GeoVic 3

4. SOIL ASSESSMENT AND CONSTRAINTS:

4.1 Soil Profile:

The soil profile encountered during the investigation consisted of pale yellow/brown silt overlaying weathered siltstone rock.

No groundwater was encountered during this investigation. No abnormal moisture conditions were identified through this assessment.

Borelogs are included in **Appendix C.**

4.2 Site Exposure:

A general assessment of the site exposure is as follows:

The site is exposed to the prevailing winds. The proposed effluent disposal area is generally exposed to sun and wind all year round.

4.3 Soil Assessment:

Laboratory analysis on each sample collected included the following:

- Texture Analysis using ribboning technique.
- Modified Emerson Analysis.
- Electrical Conductivity.
- pH analysis.

A summary of the analysis is included in Table 4.3

Table 4.3 -Summary of soil assessment

BORE HOLE 1	**SAMPLE DEPTH: 200mm**	**SAMPLE DEPTH: 600mm**
SOIL ASSESSMENT (AS1547-2012)	**SOIL HORIZON: A**	**SOIL HORIZON: B**
Soil Colour	Pale yellow/brown	Pale yellow/brown
Soil Texture	Loam	Loam
Coarse Fragments (%)	None	None
Soil Structure	Weak	Weak
Soil Dispersion	Non-dispersive	Non-dispersive
Soil Permeability	0.5-1.5 mm/d	0.5-1.5 mm/d
Soil Category	3b	3b
pH 1:5 Ratio Electronic Method	6.32	6.61
Electrical Conductivity	0.060 dS/m	0.070 dS/m
Salinity Hazard	Non-saline	Non-saline

Figure 4.3 Laboratory Analysis

4.4 Field Assessed Permeability:

Insitu permeability testing with a constant head permeameter have been undertaken on multiple site in the local area**,** in accordance with AS 1547-2012 using the constant-head test method. The field assessed permeability was calculated using the Talsma-Hallam constantly maintained head of water equation identified in AS 1547-2012.

$$K_{sat} = \frac{4.4\ Q\ [0.5\sinh^{-1}(H/2r) - \sqrt{\{(r/H)^2 + 0.25\}} + r/H]}{2\pi H^2}$$

Where:
K_{sat} = saturated hydraulic conductivity of the soil in cm/min.
4.4 = correction factor for a systematic under-estimate of soil permeability in the mathematical derivation of the equation.
Q = rate of loss of water from the reservoir in cm^3/min.
H = depth of water in the test hole in cm.
r = radius of the test hole in cm.

A summary of permeability results are included in T**able 4.4**. Permeability Calculations are included in **Appendix D**.

Table 4.4 -Summary of insitu permeability

	Constant Head Permeability
Indicative permeability (K_{sat})	1.28 m/day

Note: The results in the table above are based on average readings taken from the test holes.

The corresponding Ksat value of 1.28 L/day in EPA Onsite Wastewater Management – Code of Practice Publication No. 891.4 July 2016 Appendix A Table 9 is category 3 (loam soil).

4.5 Critical site Features:

The critical site features are:

- Waterway north of site.
- Potential high wastewater load.
- Moderate slope.
- High annual rainfall.

5. LAND CAPABILITY ASSESSMENT MATRIX:

Table 5.1 and **Table 5.2** includes a Land Capability Assessment (LCA) matrix in accordance with EPA Publication 746.1. The LCA has been developed for the whole site however soils information relates to soils within the vicinity of the proposed Land Application Area (LAA).

Table 5.1 -Land capability assessment matrix - Site

Land Features	Land Capability Class Rating					Site Rating	Comments	Mitigation
	Very Good (1)	Good (2)	Fair (3)	Poor (4)	Very Poor (5)			
		General Characteristics						
Site drainage	No visible signs of dampness	Moist soil but no standing water		Visible signs of dampness i.e. water tolerant plants	Water ponding on surface	1	No abnormal moisture conditions	N/A
Runoff	None	Low	Moderate	High	Very High	2	Low runoff potential	Minimum setback distances can be achieved
Flood / inundation potential (yearly return exceedance)	Never		< 1 in 100	>1 in 100 to < 1 in 20	> 1 in 20	1	No flood potential	N/A
Proximity to water courses	> 60 metres			< 60 metres		1	Greater than 60 m	N/A
Slope (%)	0 - 2	2 - 8	8 – 12	12 – 20	> 20	3	Moderate slope down to the north	Trench systems to run parallel with contours of the slope

Landslip	No potential for failure		Low potential for failure	High potential for failure	Present or Past Failure	1	Negligible landslip potential	N/A
Groundwater table (m) seasonal watertable depth	>5.0	2.5 – 5.0	2.0 – 2.5	1.5 – 2.0	<1.5	1	Groundwater held between 20-50 m below the surface	
Rock Outcrops (% of land surface containing rocks >200mm)	0%	<10%	10-20%	20-50%	>50%	1	None	N/A
Erosion Potential	No erosion potential	Minor	Moderate	High	Severe erosion potential	1	Negligible erosion potential	Maintain current level of surface cover where practical
Exposure	High sun and wind exposure		Moderate	Low sun and wind exposure		1	High exposure to sun and wind, north facing slope	N/A
Landform	Hill crests, convex side slopes and plains		Concave side slopes and foot slopes		Floodplains and incised channels	1	Hills	N/A
Vegetation Type (land application area)	Turf or pasture				Dense Forest	1	Turf	N/A
Fill	No Fill present		Fill Present			1	No fill encountered	N/A
Rainfall (mm/yr)[2]	<450	450 - 650	650 – 750	750 - 1000	>1000	5	Average annual rainfall of 1009 mm	LAA size to be determined by water balance calculations
Pan evaporation (mm/yr)[3]	>1500	1250 - 1500	1000 – 1250	-	<1000	3	Annual evaporation OF 1063.4 MM	LAA size to be determined by water balance calculations

Table 5.2 -Land capability assessment matrix - Soils

Soil Profile Characteristics								
Profile depth	>2.0m	1.5–2.0m	-	1.0–1.5m	<1.0m	4	Deep soil profile	N/A
Shrinkage* (%)	Low <4%	Moderate 4-12%	High 12-20%	Very High >20%		1	Low plasticity silt soils	N/A
Permeability* (m/d)	0.15–0.30	0.08–0.15 0.30-0.60	0.06-0.08 0.60-1.50	- 1.50-2.00	<0.06 >2.00	4	Loam soils	LAA size to be determined by water balance calculations
Soil Permeability Category [1]	2 and 3	4		5	1 and 6	2	Loam soils	LAA size to be determined by water balance calculations
Coarse fragments* (%)	<10	10-20	20-40		>40	1	<10%	N/A
Emerson Test* (dispersion / slaking)	4,6,8	5	7	2,3	1	1	Non-dispersive	N/A
Electrical Conductivity (Ece) (dS/m)	<0.3	0.3-0.8	0.8-2.0	2.0-4.0	>4.0	1	Non-saline	N/A
pH	6-8		4.5-6		<4.5, >8	1	Neutral soils	N/A

[1] Source: AS1547-2012
[2] Source BOM station – Beaconsfield Upper (086261)
[3] Source BOM station – Scoresby Research Institute (086104) 2019
* Relevant to soil layer(s) associated with wastewater application

6. MANAGEMENT PROGRAM:

The onsite wastewater system design and management program must suit the capability of the site and will consider the proposed development. The following sections discuss the inputs used to assess the suitability and requirements of EPA approved land based systems. Detailed design for the system is beyond the scope of this study.

6.1 Treatment System:

Primary treatment of all wastewater is considered suitable for disposal to land at this site, however some land application methods require secondary treatment of wastewater to operate sustainably and efficiently.

If secondary treatment of wastewater is preferred at this site, the two most common options capable of achieving the desired performance are, aerated wastewater treatment systems (AWTS) and single pass sand filters. A summary of these systems is outlined below.

6.1.1 Aerated Wastewater Treatment System (AWTS):

AWTS are pre-fabricated or pre-engineered treatment systems designed to treat small wastewater flows. They are tank-based systems that typically employ the following processes:

- Settling of solids and flotation of scum in an anaerobic primary chamber.
- Oxidation and consumption of organic matter through aerobic biological processes.
- Clarification – secondary settling of solids; and
- Disinfection prior to disposal.

Good maintenance of AWTS (e.g. removal of sludge) is essential to ensure a consistently high level of performance. By law, AWTS are required to be serviced quarterly by an approved maintenance contractor.

6.1.2 Sand Filters:

Sand filters provide advanced secondary treatment to water that has already undergone primary treatment in a septic tank or similar device. They contain approximately 600mm depth of filter media (usually medium to coarse sand, but other media can be incorporated) within a lined excavation containing an underdrain system. Selection of the filter media is critical, and a carefully designed distribution network is necessary. A dosing well and pump is normally used to allow periodic dosing. Depending on the desired level of treatment, sand filters can be single pass or may incorporate partial recirculation.

6.2 Treatment System Location:

Based on requirements of EPA 891.4, above-ground and in-ground treatment systems must comply with the same setback distances to building footings and boundary fences as land application systems.

6.2.1 Septic Tank Sizing:

The minimum septic tank size should be 4,000 L.

6.3 Land Application:

A range of possible land application systems have been considered, such as absorption trenches/beds, evapotranspiration/absorption (ETA) beds, mound systems and sub-surface irrigation. AS1547:2012 outlines factors affecting the construction and operation of common land application systems and a guide to selecting a system taking into consideration site features, subsurface soil conditions and identified constraints. The suitability of EPA approved land based systems are discussed in **Table 6.3.**

Table 6.3 Land Application System

Land Application	Description	Site Suitability
Absorption Trenches	Trenches are the most common type of land application system and are generally used on lots which are reasonably flat and where water soaks into the soil readily in all weather conditions. Commonly, distribution pipes, self-supporting arch trenching or box trenching are laid in trenches filled with aggregate/rock. Effluent then soaks into the surrounding soil.	Suitable
ETA Beds	Beds are shallower forms of trenches. Because beds have smaller sidewall area compared with trenches, the absorption provided by sidewall loading is reduced. This is compensated for by reducing the design loading rate.	Suitable
Mound System	A mound system permits the absorption area to be sited in a location where the natural water table or impermeable rock approaches the ground surface. The mound is filled with medium-grade sand to provide suitable filtering before intercepting the natural soils. A pump/siphon dosing system distributes effluent uniformly through a bed of aggregate placed at the top of the mound. The sand media in the mound system acts as a secondary treatment system, removing the need for a separate sand filter or AWTS	Suitable
Sub-surface Irrigation	Subsurface drip irrigation requires secondary treated effluent dosing lines buried in the topsoil at shallow depth. Irrigation systems operate by both soil absorption and evapotranspiration from plants/trees	Suitable

6.3.1 Disposal systems:

Water balance modelling has been undertaken to calculate the minimum size of the LAA. The water balance takes into account the average annual rainfall, evaporation data, the daily effluent load, the design irrigation/loading rates for secondary treated effluent, the seasonal crop factor and the retained rainfall. The water balance model is designed so that the land application area is based upon a depth of saturated soil (i.e. water stored within indicative soil porosity) that meets the upper limits of acceptance for each land application method. The water balance must ensure that the soil can sustain growth during the summer months. The design system parameters used for the water balance calculations are summarised in **Table 6.3.1**.

Table 6.3.1 Design System Parameter

Treatment system	Application System	DIR / DLR	Runoff coefficient	Maximum storage depth
Primary treatment	Absorption trenches	10		
Secondary treatment	ETA Beds	10	25%	0 mm
	Mound System*	16	25%	0 mm
	Sub-surface irrigation	4.0	25%	0 mm

* Mound disposal system incorporates a secondary treatment sand media, removing the requirement for a separate secondary treatment system

6.4 Land Application Outputs:

Minimum Land Application Area (LAA) sizing for each application method was calculated using water balance calculations. LAA sizing calculations are included in **Appendix D**. The minimum required disposal area for each system is summarised in **Table 6.4**.

Table 6.4 Required Land Application Area (LAA)

Dwelling Size	4 Bedroom Dwelling	4 Bedroom Dwelling + 1 bedroom DPU
Wastewater output	750 L / day	1050 L / day
Disposal System	**Minimum LAA required**	**Minimum LAA required**
Absorption trenches	125 m (0.6 m wide trenches)	175 m (0.6 m wide trenches)
Subsurface irrigation	330 m^2	460 m^2
ETA Beds	95 m^2	130 m^2
Mound	60 m^2	75 m^2

6.5 Designated Area:

The Land Application Area (LAA) shall be located in a designated area to enhance evapotranspiration and shall:

- Not be used for purposes that compromise the effectiveness of the system or access for maintenance.
- Be used only for effluent application.
- Have boundaries clearly delineated by appropriate vegetation or other type of border.
- Have no run-off seepage or effluent beyond the designated area.

The site plan in **Appendix A** presents several potential areas suitable for LAA placement as well as setback areas from site features which must be maintained. Please note that the final LAA placement is the responsibility of the owner and should be included in a detailed design providing the minimum LAA and setback distances are maintained.

The required LAA will be smaller than that marked on the site plan. An appropriately sized LAA, as discussed in **Section 6.4,** must be located entirely within the area nominated on the site plan.

Setback distances for primary and secondary treated wastewater disposal are included in **Section 6.6.1**.

6.5.1 Setback Distances:

The minimum setback distances for primary and secondary treated wastewater are summarised in **Table 6.6.1.** The proposed LAA must adhere to these minimum setback distances.

Table 6.6.1 Minimum Setback Distances

Landscape feature or structure	Setback distance (m) (primary treated wastewater)	Setback distance (m) (secondary treated wastewater)
Building		
Wastewater field up-slope of building	6	3
Wastewater field down-slope of building	3	1.5
Wastewater field up-slope of cutting/escarpment	30	15
Allotment boundary		
Wastewater field up-slope of Allotment boundary	6	3
Wastewater field down-slope of Allotment boundary	3	1.5
Services		
Water supply pipe	3	1.5
Wastewater field up-slope of potable supply channel	300	150
Wastewater field down-slope of potable supply channel	20	10
Gas supply pipe	3	1.5
In-ground water tank	15	7.5
Stormwater drain	6	3
Recreational areas		
Children's grassed playground	6	3
In-ground swimming pool	6	3
Surface water – up-slope of		
Waterway, non-potable creeks, dams, channels	60	30
Groundwater bores		
Category 2b to 6 soils	40	20

6.6 Monitoring, Operation and Maintenance:

The septic tank is de-sludged every 3 years; however, this frequency may vary depending on the following conditions.

- whether the tank is an adequate size for the daily wastewater flow
- the composition of the household and personal care products
- the amount of organic matter, fat, oil and grease washed down the sinks
- the use of harsh chemicals such as degreasers
- overuse of disinfectants and bleaches
- the use of antibiotics and other drugs, especially dialysis and chemotherapy drugs
- whether any plastic or other non-organic items are flushed into the tank.

After pump-out, tanks must not be washed out or disinfected. They should be refilled with water to reduce odours and ensure stability of plumbing fixtures. A small residue of sludge will always remain and will assist in the immediate re-establishment of bacterial action in the tank.

To ensure the treatment systems function adequately, residents must:

- Use soapy water (made from natural unscented soap), vinegar and water or bi-carbonate of soda and water to clean toilets and other water fixtures and fittings.
- Read labels to learn which bathroom and laundry products are suitable for septic tanks. Generally plain, noncoloured, unscented and unbleached products will contribute to a well-functioning septic tank.
- Use detergents with low levels of salts (e.g. liquid detergents), sodium absorption ratio, phosphorus and chlorine (see www.lanfaxlabs.com.au).
- Wipe oils and fats off plates and saucepans with a paper towel and dispose of in the kitchen compost bin.
- Use a sink strainer to restrict food scraps entering the septic system.
- Ensure no structures such as pavements, driveways, patios, sheds or playgrounds are constructed over the tank or absorption trench area.
- Ensure the absorption trench area is not disturbed by vehicles or machinery.
- Engage a service technician to check the sludge and scum levels, pumps and alarms annually.
- Keep a record of the location of the tank and the trenches and all maintenance reports (including the dates of tank pump-outs, tank inspections and access openings) and ensure the service technician sends a copy of the maintenance report to the local Council.
- Have the tank desludged when the combined depth of the scum and sludge is equal to the depth of the middle-clarified layer.

Indications of failing septic tanks and soil absorption trenches

- Seepage along effluent absorption trench lines in the soil.
- Lush green growth down-slope of the soil absorption trench lines.
- Lush green growth down-slope of the septic tank.
- Inspection pits and/or the soil absorption trenches consistently exhibiting high water levels.
- Soil absorption trench lines become waterlogged after storms.
- General waterlogging around the land disposal area.

- Presence of dead and dying vegetation (often native vegetation) around and down-slope of the land disposal areas.
- A noxious odour near the tank and the land disposal area.
- Blocked water fixtures inside the house, with sewage overflowing from the relief point.
- High sludge levels within the primary tank (within about 150 mm of inlet pipe).
- Flow obstructed and not able to pass the baffle in the tank.
- The scum layer blocking the effluent outflow.

6.6.1 Storm Water Management:

All stormwater must be disposed of to the legal point of discharge.

Note: An agricultural drain (AG) must be installed on the high side of the wastewater envelope. The drain is to be installed a minimum of 100mm into the naturally occurring clay soils and allow sufficient fall to intercept and drain all overland and subsurface run-off to a legal point of discharge. If a legal point of discharge cannot be obtained, the drainage line may discharge directly to the surface soils, a minimum distance of 10 metres beyond the wastewater disposal area.

7. CONCLUSIONS:

From this investigation it is concluded that the use of an on-site wastewater treatment and disposal system is environmentally sustainable if the recommendations made in this report are followed.

8. REFERENCES:

- Environmental Protection Authority – Guidelines for Environmental Management Code of Practice – Onsite Wastewater Management, July 2016 ~ Publication 891.4
- Municipal Association Victoria (MAV) January 2014, Model Land Capability Assessment Framework
- Australian/New Zealand Standard AS/NZS 1547-2012 – On-site domestic wastewater management.
- A.C. Geotechnical Pty Ltd - Field and Laboratory data (where applicable) collected and recorded.
- Environmental Protection Authority - “Code of Practice - Septic Tanks”, March 1996” ~ Publication 451.
- Environmental Protection Authority, Information Bulletin- “Land Capability Assessment for onsite Domestic Wastewater Management”, March 2003 ~ Publication 746.1.

Notes

1. LAA must be setback a minimum of 6.0 m from the north boundary.
2. LAA area must be setback a minimum of 3.0 m from the low side of any structure
3. LAA area must be setback a minimum of 60 m from the waterway to the north of the property.
4. The above distances can be halved for disposal of secondary treated wastewater.
5. Minimum setback distances are outlined in **Section 6.6.1.**
6. The actual disposal system will be significantly small than the LAA indicated.
7. The disposal system must be located entirely within the indicated LAA.

A.C. Geotechnical.

Not to Scale

Investigation locations are approximate

Legend

Investigation Location

Suitable disposal area

Attachment A: Site Plan

50 Lilliput Lane

Pakenham

Appendix B

Site Photographs

A.C. Geotechnical.

Appendix C

Borelog

Borehole Record BH01

A.C. Geotechnical.

Project Number	24140	Date	29/04/2024
Project	Land Capability Assessment	Drilling Method	HA
Location	50 Lilliput Lane, Pakenham Upper	Logged	AC

Depth (m)	Description	
0.20	SILT: (ML): Dark brown, firm, moist, minor organics.	
0.20	SILT (ML): Pale yellow/brown, firm, moist.	Disturbed sample - 0.2 m
		Disturbed sample - 0.6 m
1.40	SILTSTONE: Extremely weathered, extremely low strength, pale yellow/brown, moist.	
2.00	Borehole terminated - target depth achieved	

A.C. Geotechnical.

Appendix D

Constant Head Calculations & Water Balance

INSITU CONSTANT HEAD PERMEABILITY

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	[redacted]	**Date:**	7/05/2024
Client:			

INPUT DATA

	Borehole			Reservoir	
Borehole diameter	100	cm	**Diameter**	97	mm
Borehole Depth	500	cm	**Base area**	295.4426	mm2
Water level from surface	250	cm			
Depth of water in hole	250	cm			

FIELD DATA

	Test 1	Test 2	Test 3	Test 4	
Time intervals (min)	Water depth in reservoir				
Initial Depth	200	200	200	200	
5					
10					
15					
20	130	107	93	96	**Average**
Q (cm2/min)	103.40491	137.380809	158.061791	153.630152	**138.1194155**
Ksat (cm/min	0.066459166	0.088295749	0.101587582	0.098739332	**0.088770457**
Ksat (m/d)	0.957011987	1.271458782	1.46286118	1.42184638	**1.278294582**

ABSORPTION TRENCH SIZE CALCULATIONS

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	[redacted]	**Date:**	7/05/2024
Client:			

INPUT DATA	
Daily flow allowance (per person	150 L
Daily wastewater volume	750 L
Effluent quality	Primary
Soil texture	Loam
Soil structure	Weak
Soil category	3b
Indicative Permeability	0.5-1.5 Ksat
Design Loading Rate	10 mm/d

ABSORPTION TRENCHES

L = Q / (DLR x W)

Where:

L = length of trench

Q = Design daily flow in L/day

DLR = Design Loading rate in mm/d

W = width of trench in m

Width of trench	0.6 m	Width of trench	1 m
Length =	**125 m**	**Length =**	**75**

WATER BALANCE
ETA BEDS

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

INPUT DATA		
Daily flow allowance (per person	150	L
Daily wastewater volume	750	L
Effluent quality	Secondary	
Effective rainfall	0.75	%
Soil texture	Loam	
Soil structure	Weak	
Soil category	0.5-1.5	
Indicative Permeability	0.5-1.5	Ksat

ETA BEDS		
DLR	10	mm/d
Porosity	40	%
Maximum Storage Depth	0	mm

Crop Factor - standard pasture	0.85	0.85	0.85	0.6	0.6	0.6	0.6	0.6	0.6	0.85	0.85	0.85	
crop factors -Lucene	0.95	0.9	0.85	0.8	0.7	0.55	0.55	0.65	0.75	0.85	0.95	1	
Crop factor - Shade	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Crop factor - woodlot	1	1	1	1	1	1	1	1	1	1	1	1	

Rainfall Data	Beaconsfield Upper (086261)
Evaporation Data	Scoresby Research Institute (086104)

Parameter	**Unit**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
Days in month		31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall (mm)		65.6	61.9	69.5	81.3	89.1	88.4	89.1	96.3	98.4	97.9	92	79.5	1009
Evaporation (mm)		164.4	125.3	109.7	73	46.4	26	34.9	50.2	70.9	97.1	124.4	141.1	1063.4
Output														
Evapotranspiration (mm)		139.74	106.51	93.245	43.8	27.84	15.6	20.94	30.12	42.54	82.535	105.74	119.94	828.54
Percolation (mm)		310	280	310	300	310	300	310	310	300	310	300	310	3650
Total Output (mm)		449.74	386.51	403.25	343.8	337.84	315.6	330.94	340.12	342.54	392.54	405.74	429.94	4478.5
Inputs														
Effective Rainfall (mm)		49.2	46.425	52.125	60.975	66.825	66.3	66.825	72.225	73.8	73.425	69	59.625	756.75
Application Rate (mm)		244.74	221.05	244.74	236.84	244.74	236.84	244.74	244.74	236.84	244.74	236.84	244.74	2881.6
Total Inputs (mm)		293.94	-386.5	296.86	297.82	311.56	303.14	311.56	316.96	310.64	318.16	305.84	304.36	3638.3
Storage Calculations														
Waste Loading (mm)		400.54	340.08	351.12	282.83	271.02	249.3	264.12	267.9	268.74	319.11	336.74	370.31	
Volume of Wastewater (mm)		23250	21000	23250	22500	23250	22500	23250	23250	22500	23250	22500	23250	273750
Cumulative Storage (mm)		0	0	0	0	0	0	0	0	0	0	0	0	
Area													**95**	**m2**
Width													**3**	**m**
Length													**19**	**m**

WATER BALANCE
SUBSURFACE IRRIGATION

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

INPUT DATA		
Daily flow allowance (per person	150	L
Daily wastewater volume	750	L
Effluent quality	Secondary	
Effective rainfall	0.75	%
Soil texture	Loam	
Soil structure	Weak	
Soil category	3b	
Indicative Permeability	0.5-1.5	Ksat

SUBSURFACE IRRIGATION		
DLR	4	mm/d
Porosity	45	%
Maximum Storage Depth	0	mm

Crop Factor - standard pasture	0.85	0.85	0.85	0.6	0.6	0.6	0.6	0.6	0.6	0.85	0.85	0.85	
crop factors -Lucene	0.95	0.9	0.85	0.8	0.7	0.55	0.55	0.65	0.75	0.85	0.95	1	
Crop factor - Shade	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Crop factor - woodlot	1	1	1	1	1	1	1	1	1	1	1	1	

Rainfall Data	Beaconsfield Upper (086261)
Evaporation Data	Scoresby Research Institute (086104)

Parameter	**Unit**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
Days in month		31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall (mm)		65.6	61.9	69.5	81.3	89.1	88.4	89.1	96.3	98.4	97.9	92	79.5	1009
Evaporation (mm)		164.4	125.3	109.7	73	46.4	26	34.9	50.2	70.9	97.1	124.4	141.1	1063.4
Output														
Evapotranspiration (mm)		139.74	106.51	93.245	43.8	27.84	15.6	20.94	30.12	42.54	82.535	105.74	119.94	828.54
Percolation (mm)		124	112	124	120	124	120	124	124	120	124	120	124	1460
Total Output (mm)		263.74	218.51	217.25	163.8	151.84	135.6	144.94	154.12	162.54	206.54	225.74	243.94	2288.5
Inputs														
Effective Rainfall (mm)		49.2	46.425	52.125	60.975	66.825	66.3	66.825	72.225	73.8	73.425	69	59.625	756.75
Application Rate (mm)		70.455	63.636	70.455	68.182	70.455	68.182	70.455	70.455	68.182	70.455	68.182	70.455	829.55
Total Inputs (mm)		119.65	-218.5	122.58	129.16	137.28	134.48	137.28	142.68	141.98	143.88	137.18	130.08	1586.3
Storage Calculations														
Waste Loading (mm)		214.54	172.08	165.12	102.83	85.015	69.3	78.115	81.895	88.74	133.11	156.74	184.31	
Volume of Wastewater (mm)		23250	21000	23250	22500	23250	22500	23250	23250	22500	23250	22500	23250	273750
Cumulative Storage (mm)		0	0	0	0	0	0	0	0	0	0	0	0	
Land area required													**330**	**m2**

WATER BALANCE
MOUND SYSTEM

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

INPUT DATA

Daily flow allowance (per person	150	L
Daily wastewater volume	750	L
Effluent quality	Secondary	
Effective rainfall	0.75	%
Soil texture	Loam	
Soil structure	Weak	
Soil category	3b	
Indicative Permeability	0.5-1.5	Ksat

MOUND SYSTEM

DLR	16	mm/d
Porosity	40	%
Storage Depth	0	mm

Crop Factor - standard pasture	0.85	0.85	0.85	0.6	0.6	0.6	0.6	0.6	0.6	0.85	0.85	0.85	
crop factors -Lucene	0.95	0.9	0.85	0.8	0.7	0.55	0.55	0.65	0.75	0.85	0.95	1	
Crop factor - Shade	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Crop factor - woodlot	1	1	1	1	1	1	1	1	1	1	1	1	

Rainfall Data	Beaconsfield Upper (086261)
Evaporation Data	Scoresby Research Institute (086104)

Parameter	**Unit**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
Days in month		31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall (mm)		65.6	61.9	69.5	81.3	89.1	88.4	89.1	96.3	98.4	97.9	92	79.5	1009
Evaporation (mm)		164.4	125.3	109.7	73	46.4	26	34.9	50.2	70.9	97.1	124.4	141.1	1063.4
Output														
Evapotranspiration (mm)		139.74	106.51	93.245	43.8	27.84	15.6	20.94	30.12	42.54	82.535	105.74	119.94	828.54
Percolation (mm)		496	448	496	480	496	480	496	496	480	496	480	496	5840
Total Output (mm)		635.74	554.51	589.25	523.8	523.84	495.6	516.94	526.12	522.54	578.54	585.74	615.94	6668.5
Inputs														
Effective Rainfall (mm)		49.2	46.425	52.125	60.975	66.825	66.3	66.825	72.225	73.8	73.425	69	59.625	756.75
Application Rate (mm)		387.5	350	387.5	375	387.5	375	387.5	387.5	375	387.5	375	387.5	4562.5
Total Inputs (mm)		436.7	-554.5	439.63	435.98	454.33	441.3	454.33	459.73	448.8	460.93	444	447.13	5319.3
Storage Calculations														
Waste Loading (mm)		586.54	508.08	537.12	462.83	457.02	429.3	450.12	453.9	448.74	505.11	516.74	556.31	
Volume of Wastewater (mm)		23250	21000	23250	22500	23250	22500	23250	23250	22500	23250	22500	23250	273750
Cumulative Storage (mm)		0	0	0	0	0	0	0	0	0	0	0	0	
Basal Area													60	m2

NUTRIENT BALANCE

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	[redacted]	**Date:**	7/05/2024
Client:			

Nitrogeb Balance -Nitrogen		
Hydraulic Loading	750	l/day
Effluent N concentration	25	mg/l
Daily N loading	18750	mg/day
Annual N loading	6843750	mg/year
Denitrification loss	20	%
Denitrification loss	5475000	mg/year
Total annual N loading	5.475	kg/year
Plant uptake	220	kg/ha/year
Minimum area for uptake	**249**	**m2**

cal.

ABSORPTION TRENCH SIZE CALCULATIONS

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	[redacted]	**Date:**	7/05/2024
Client:			

INPUT DATA	
Daily flow allowance (per person	150 L
Daily wastewater volume	1050 L
Effluent quality	Primary
Soil texture	Loam
Soil structure	Weak
Soil category	3b
Indicative Permeability	0.5-1.5 Ksat
Design Loading Rate	10 mm/d

ABSORPTION TRENCHES

L = Q / (DLR x W)

Where:

L = length of trench

Q = Design daily flow in L/day

DLR = Design Loading rate in mm/d

W = width of trench in m

Width of trench	0.6 m	Width of trench	1 m
Length =	**175 m**	**Length =**	**105**

WATER BALANCE
ETA BEDS

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

INPUT DATA		
Daily flow allowance (per person	150	L
Daily wastewater volume	1050	L
Effluent quality	Secondary	
Effective rainfall	0.75	%
Soil texture	Loam	
Soil structure	Weak	
Soil category	0.5-1.5	
Indicative Permeability	0.5-1.5	Ksat

ETA BEDS		
DLR	10	mm/d
Porosity	40	%
Maximum Storage Depth	0	mm

Crop Factor - standard pasture	0.85	0.85	0.85	0.6	0.6	0.6	0.6	0.6	0.6	0.85	0.85	0.85	
crop factors -Lucene	0.95	0.9	0.85	0.8	0.7	0.55	0.55	0.65	0.75	0.85	0.95	1	
Crop factor - Shade	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Crop factor - woodlot	1	1	1	1	1	1	1	1	1	1	1	1	

Rainfall Data	Beaconsfield Upper (086261)
Evaporation Data	Scoresby Research Institute (086104)

Parameter	**Unit**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
Days in month		31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall (mm)		65.6	61.9	69.5	81.3	89.1	88.4	89.1	96.3	98.4	97.9	92	79.5	1009
Evaporation (mm)		164.4	125.3	109.7	73	46.4	26	34.9	50.2	70.9	97.1	124.4	141.1	1063.4
Output														
Evapotranspiration (mm)		139.74	106.51	93.245	43.8	27.84	15.6	20.94	30.12	42.54	82.535	105.74	119.94	828.54
Percolation (mm)		310	280	310	300	310	300	310	310	300	310	300	310	3650
Total Output (mm)		449.74	386.51	403.25	343.8	337.84	315.6	330.94	340.12	342.54	392.54	405.74	429.94	4478.5
Inputs														
Effective Rainfall (mm)		49.2	46.425	52.125	60.975	66.825	66.3	66.825	72.225	73.8	73.425	69	59.625	756.75
Application Rate (mm)		250.38	226.15	250.38	242.31	250.38	242.31	250.38	250.38	242.31	250.38	242.31	250.38	2948.1
Total Inputs (mm)		299.58	-386.5	302.51	303.28	317.21	308.61	317.21	322.61	316.11	323.81	311.31	310.01	3704.8
Storage Calculations														
Waste Loading (mm)		400.54	340.08	351.12	282.83	271.02	249.3	264.12	267.9	268.74	319.11	336.74	370.31	
Volume of Wastewater (mm)		32550	29400	32550	31500	32550	31500	32550	32550	31500	32550	31500	32550	383250
Cumulative Storage (mm)		0	0	0	0	0	0	0	0	0	0	0	0	
Area													**130**	**m2**
Width													**3**	**m**
Length													**26**	**m**

WATER BALANCE
SUBSURFACE IRRIGATION

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

INPUT DATA		
Daily flow allowance (per person	150	L
Daily wastewater volume	1050	L
Effluent quality	Secondary	
Effective rainfall	0.75	%
Soil texture	Loam	
Soil structure	Weak	
Soil category	3b	
Indicative Permeability	0.5-1.5	Ksat

SUBSURFACE IRRIGATION		
DLR	4	mm/d
Porosity	45	%
Maximum Storage Depth	0	mm

Crop Factor - standard pasture	0.85	0.85	0.85	0.6	0.6	0.6	0.6	0.6	0.6	0.85	0.85	0.85	
crop factors -Lucene	0.95	0.9	0.85	0.8	0.7	0.55	0.55	0.65	0.75	0.85	0.95	1	
Crop factor - Shade	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Crop factor - woodlot	1	1	1	1	1	1	1	1	1	1	1	1	

Rainfall Data	Beaconsfield Upper (086261)
Evaporation Data	Scoresby Research Institute (086104)

Parameter	**Unit**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
Days in month		31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall (mm)		65.6	61.9	69.5	81.3	89.1	88.4	89.1	96.3	98.4	97.9	92	79.5	1009
Evaporation (mm)		164.4	125.3	109.7	73	46.4	26	34.9	50.2	70.9	97.1	124.4	141.1	1063.4
Output														
Evapotranspiration (mm)		139.74	106.51	93.245	43.8	27.84	15.6	20.94	30.12	42.54	82.535	105.74	119.94	828.54
Percolation (mm)		124	112	124	120	124	120	124	124	120	124	120	124	1460
Total Output (mm)		263.74	218.51	217.25	163.8	151.84	135.6	144.94	154.12	162.54	206.54	225.74	243.94	2288.5
Inputs														
Effective Rainfall (mm)		49.2	46.425	52.125	60.975	66.825	66.3	66.825	72.225	73.8	73.425	69	59.625	756.75
Application Rate (mm)		70.761	63.913	70.761	68.478	70.761	68.478	70.761	70.761	68.478	70.761	68.478	70.761	833.15
Total Inputs (mm)		119.96	-218.5	122.89	129.45	137.59	134.78	137.59	142.99	142.28	144.19	137.48	130.39	1589.9
Storage Calculations														
Waste Loading (mm)		214.54	172.08	165.12	102.83	85.015	69.3	78.115	81.895	88.74	133.11	156.74	184.31	
Volume of Wastewater (mm)		32550	29400	32550	31500	32550	31500	32550	32550	31500	32550	31500	32550	383250
Cumulative Storage (mm)		0	0	0	0	0	0	0	0	0	0	0	0	
Land area required													**460**	**m2**

WATER BALANCE
MOUND SYSTEM

A.C. Geotechnical.

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

INPUT DATA

Daily flow allowance (per person	150	L
Daily wastewater volume	1050	L
Effluent quality	Secondary	
Effective rainfall	0.75	%
Soil texture	Loam	
Soil structure	Weak	
Soil category	3b	
Indicative Permeability	0.5-1.5	Ksat

MOUND SYSTEM

DLR	16	mm/d
Porosity	40	%
Storage Depth	0	mm

Crop Factor - standard pasture	0.85	0.85	0.85	0.6	0.6	0.6	0.6	0.6	0.6	0.85	0.85	0.85	
crop factors -Lucene	0.95	0.9	0.85	0.8	0.7	0.55	0.55	0.65	0.75	0.85	0.95	1	
Crop factor - Shade	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Crop factor - woodlot	1	1	1	1	1	1	1	1	1	1	1	1	

Rainfall Data	Beaconsfield Upper (086261)
Evaporation Data	Scoresby Research Institute (086104)

Parameter	**Unit**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
Days in month		31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall (mm)		65.6	61.9	69.5	81.3	89.1	88.4	89.1	96.3	98.4	97.9	92	79.5	1009
Evaporation (mm)		164.4	125.3	109.7	73	46.4	26	34.9	50.2	70.9	97.1	124.4	141.1	1063.4
Output														
Evapotranspiration (mm)		139.74	106.51	93.245	43.8	27.84	15.6	20.94	30.12	42.54	82.535	105.74	119.94	828.54
Percolation (mm)		496	448	496	480	496	480	496	496	480	496	480	496	5840
Total Output (mm)		635.74	554.51	589.25	523.8	523.84	495.6	516.94	526.12	522.54	578.54	585.74	615.94	6668.5
Inputs														
Effective Rainfall (mm)		49.2	46.425	52.125	60.975	66.825	66.3	66.825	72.225	73.8	73.425	69	59.625	756.75
Application Rate (mm)		434	392	434	420	434	420	434	434	420	434	420	434	5110
Total Inputs (mm)		483.2	-554.5	486.13	480.98	500.83	486.3	500.83	506.23	493.8	507.43	489	493.63	5866.8
Storage Calculations														
Waste Loading (mm)		586.54	508.08	537.12	462.83	457.02	429.3	450.12	453.9	448.74	505.11	516.74	556.31	
Volume of Wastewater (mm)		32550	29400	32550	31500	32550	31500	32550	32550	31500	32550	31500	32550	383250
Cumulative Storage (mm)		0	0	0	0	0	0	0	0	0	0	0	0	
Basal Area													75	m2

NUTRIENT BALANCE

Project Address:	50 Lilliput Lane	**Project Number:**	24140
Location:	Pakenham Upper	**Date:**	7/05/2024
Client:	[redacted]		

Nitrogeb Balance -Nitrogen		
Hydraulic Loading	1050	l/day
Effluent N concentration	25	mg/l
Daily N loading	26250	mg/day
Annual N loading	9581250	mg/year
Denitrification loss	20	%
Denitrification loss	7665000	mg/year
Total annual N loading	7.665	kg/year
Plant uptake	220	kg/ha/year
Minimum area for uptake	**348**	**m2**

cal.

Appendix E

Property Reports

PROPERTY REPORT

From www.land.vic.gov.au at 02 May 2024 06:15 AM

PROPERTY DETAILS

Lot and Plan Number:	**Plan PC370839**
Address:	**50 LILLIPUT LANE PAKENHAM 3810**
Standard Parcel Identifier (SPI):	**PC370839**
Local Government Area (Council):	**CARDINIA**
Council Property Number:	**1490650300**
Directory Reference:	**Melway 315 G9**

www.cardinia.vic.gov.au

SITE DIMENSIONS

All dimensions and areas are approximate. They may not agree with those shown on a title or plan.

Area: 23919 sq. m (2.39 ha)
Perimeter: 786 m
For this property:
Site boundaries
Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

8 overlapping dimension labels are not being displayed

Calculating the area from the dimensions shown may give a different value to the area shown above

For more accurate dimensions get copy of plan at Title and Property Certificates

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**South East Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**AUSNET**

STATE ELECTORATES

Legislative Council:	**EASTERN VICTORIA**
Legislative Assembly:	**PAKENHAM**

PLANNING INFORMATION

Property Planning details have been removed from the Property Reports to avoid duplication with the Planning Property Reports from the Department of Transport and Planning which are the authoritative source for all Property Planning information.

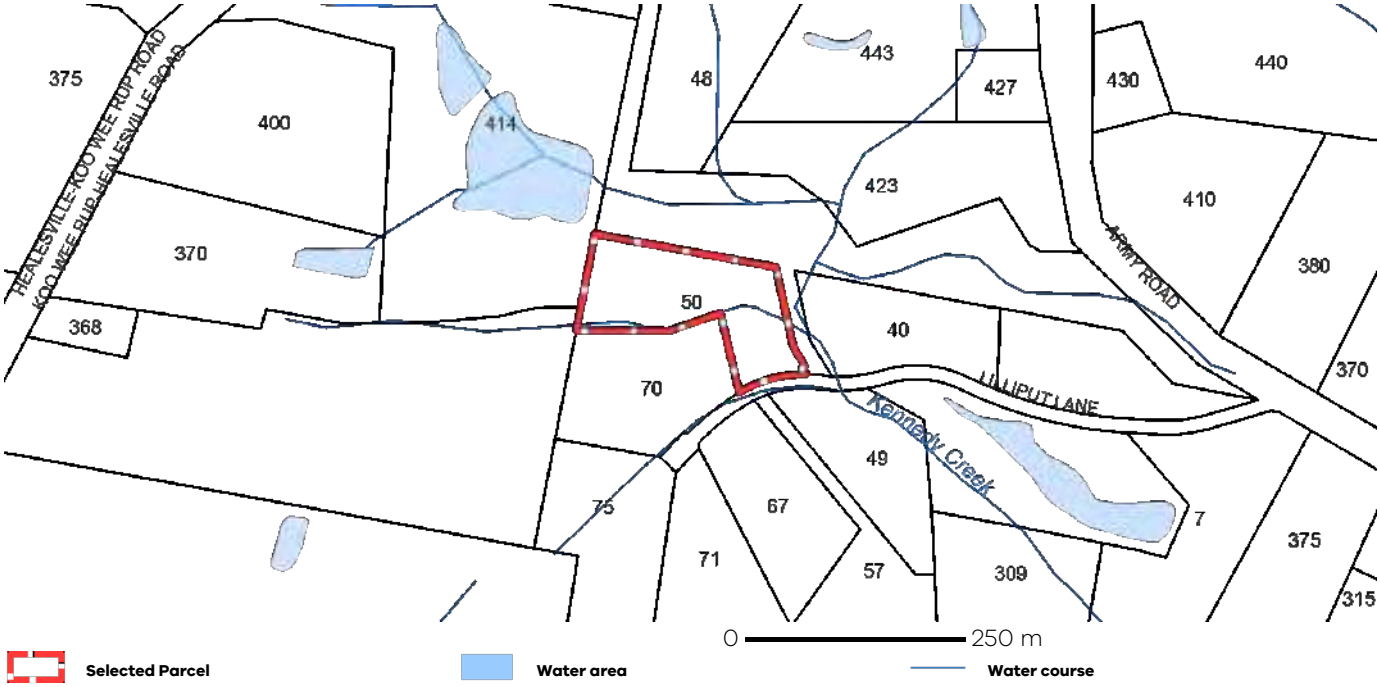
The Planning Property Report for this parcel can found here - Planning Property Report

Planning Property Reports can be found via these two links
Vicplan https://mapshare.vic.gov.au/vicplan/
Property and parcel search https://www.land.vic.gov.au/property-and-parcel-search

PROPERTY REPORT

Energy, Environment and Climate Action

Area Map



PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

From www.planning.vic.gov.au at 02 May 2024 06:16 AM

PROPERTY DETAILS

Lot and Plan Number:	**Plan PC370839**
Address:	**50 LILLIPUT LANE PAKENHAM 3810**
Standard Parcel Identifier (SPI):	**PC370839**
Local Government Area (Council):	**CARDINIA** www.cardinia.vic.gov.au
Council Property Number:	**1490650300**
Planning Scheme:	**Cardinia** Planning Scheme - Cardinia
Directory Reference:	**Melway 315 G9**

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**South East Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**AUSNET**

STATE ELECTORATES

Legislative Council:	**EASTERN VICTORIA**
Legislative Assembly:	**PAKENHAM**

OTHER

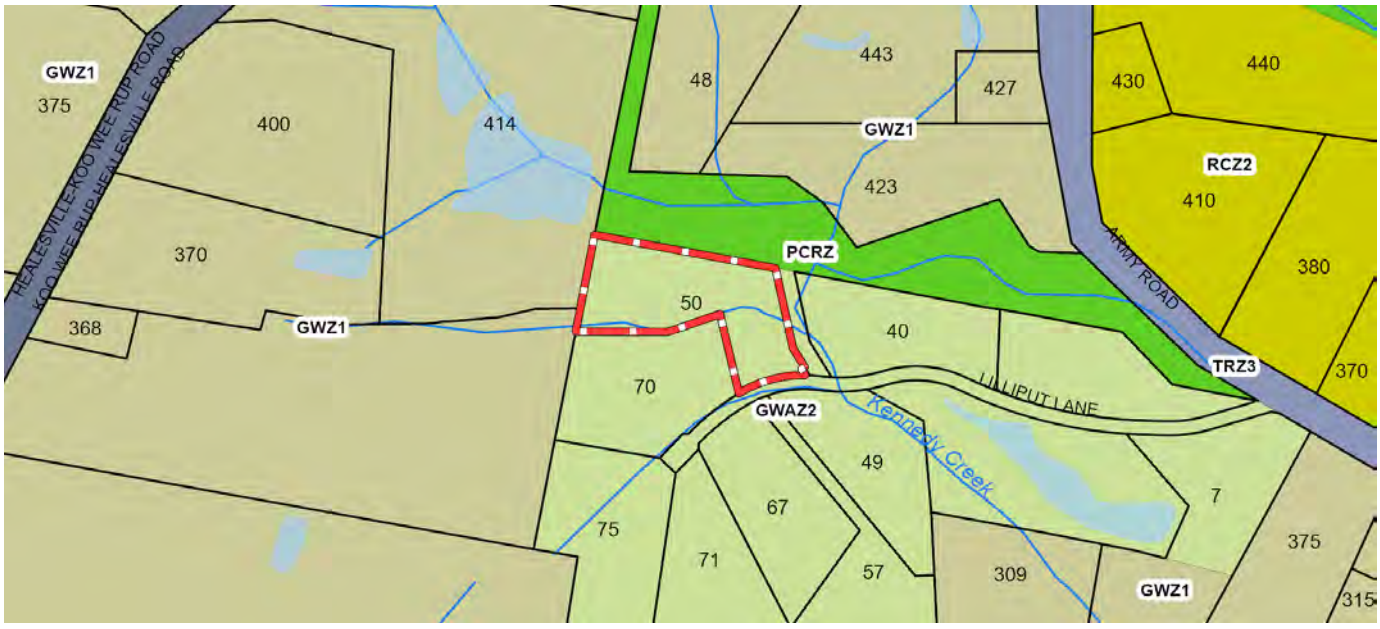
Registered Aboriginal Party:	**Bunurong Land Council Aboriginal Corporation**

View location in VicPlan

Planning Zones

GREEN WEDGE A ZONE (GWAZ)

GREEN WEDGE A ZONE - SCHEDULE 2 (GWAZ2)



GWAZ - Green Wedge A

GWZ - Green Wedge

PCRZ - Public Conservation and Resource

RCZ - Rural Conservation

TRZ2 - Principal Road Network

TRZ3 - Significant Municipal Road

Water area

Water course

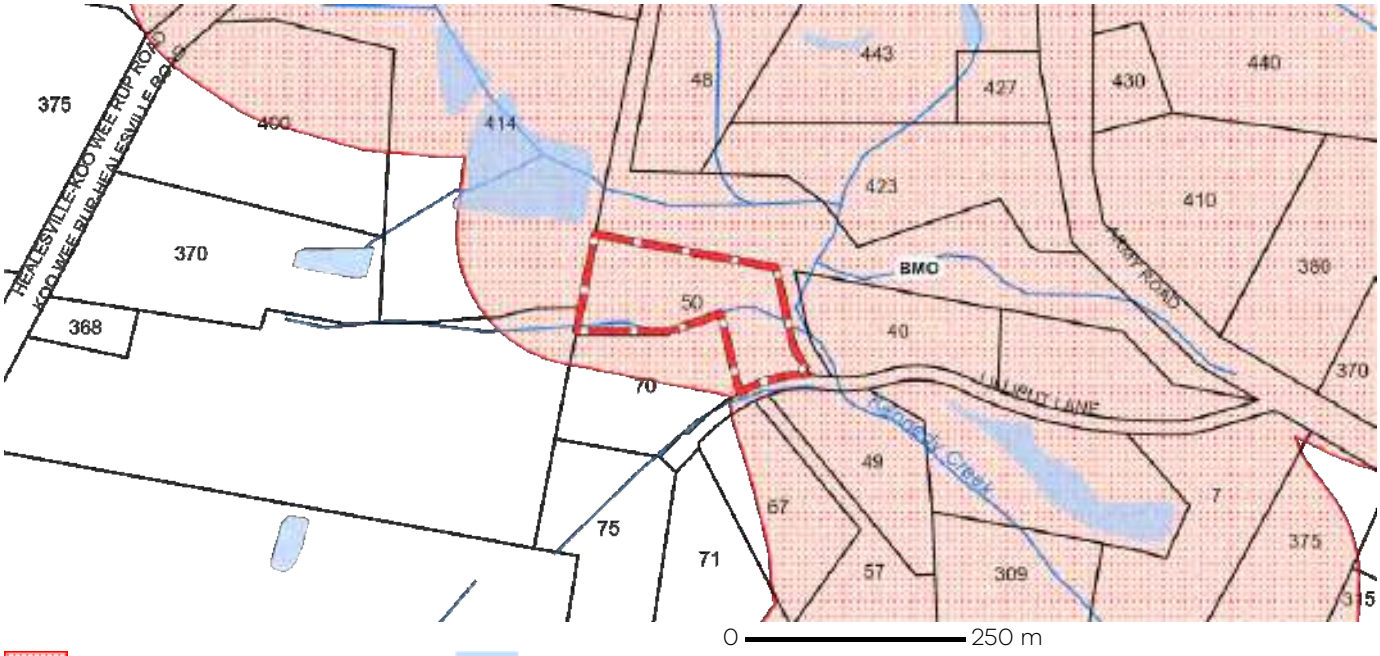
Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Planning Overlays

BUSHFIRE MANAGEMENT OVERLAY (BMO)



BMO - Bushfire Management Overlay | Water area | Water course

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)

ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1 (ESO1)

ESO - Environmental Significance Overlay | Water area | Water course

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

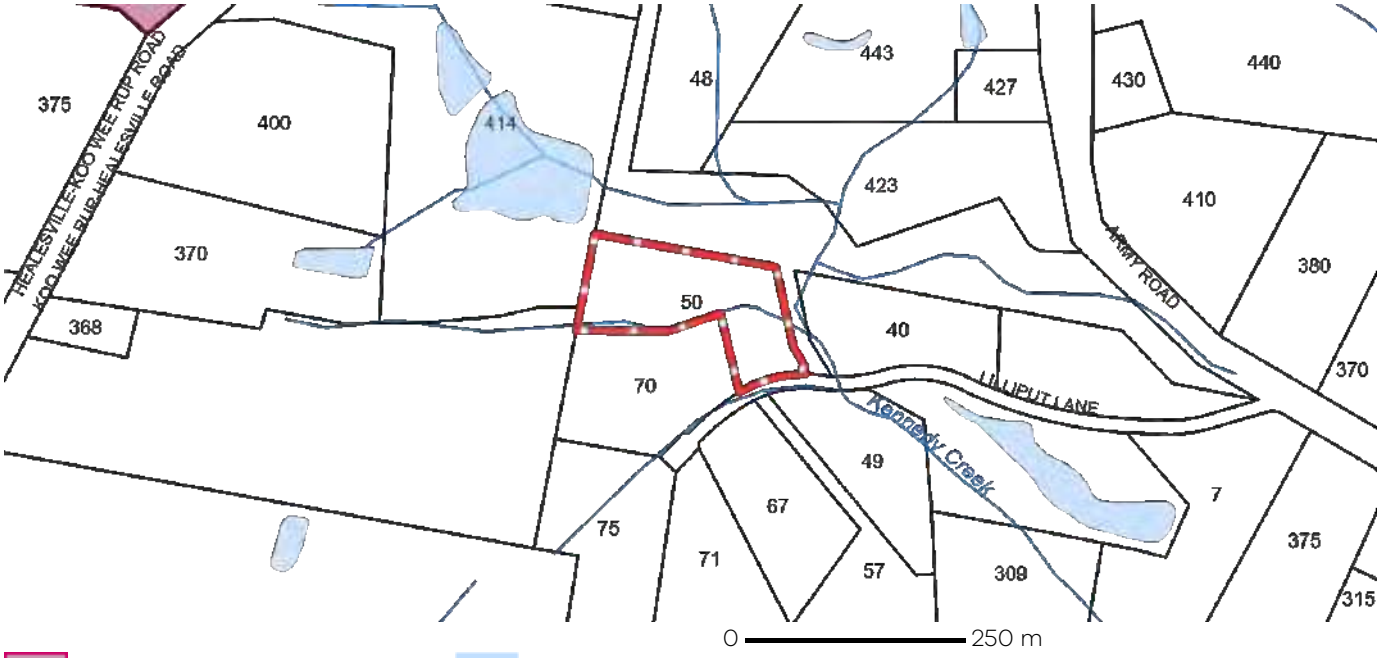
Environment, Land, Water and Planning

Planning Overlays

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

HERITAGE OVERLAY (HO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Areas of Aboriginal Cultural Heritage Sensitivity

All or part of this parcel is an 'area of cultural heritage sensitivity'.

'Areas of cultural heritage sensitivity' are defined under the Aboriginal Heritage Regulations 2018, and include registered Aboriginal cultural heritage places and land form types that are generally regarded as more likely to contain Aboriginal cultural heritage.

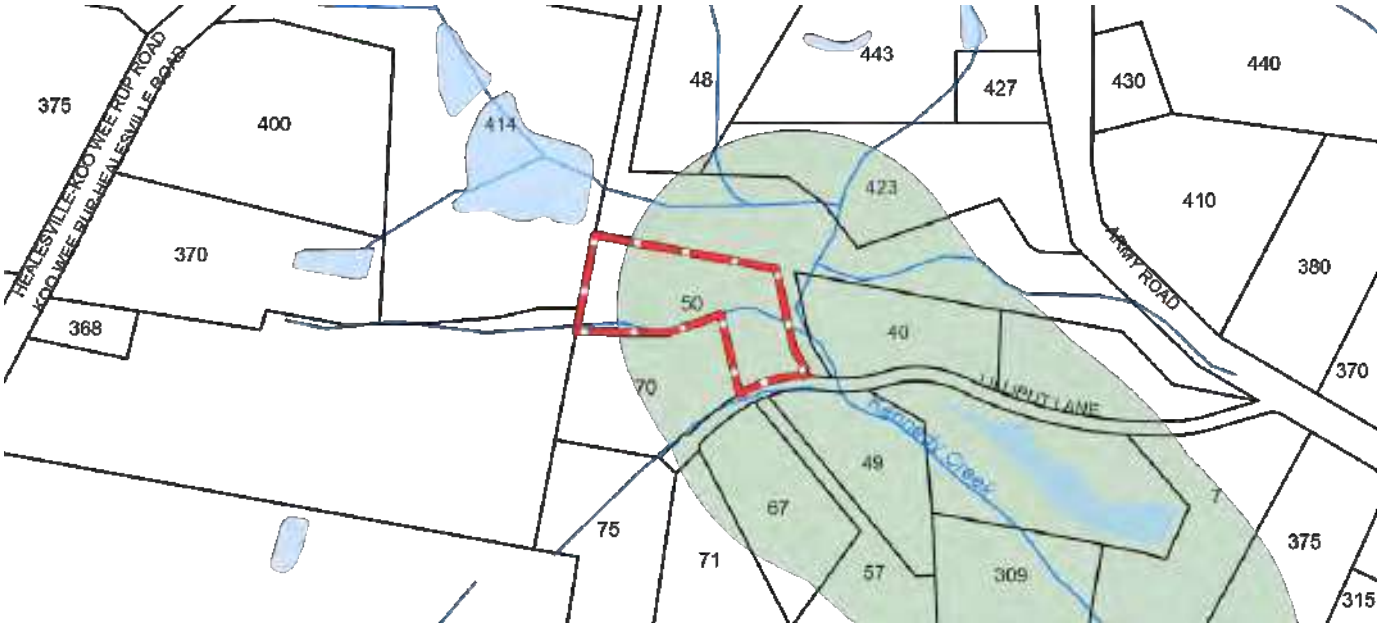
Under the Aboriginal Heritage Regulations 2018, 'areas of cultural heritage sensitivity' are one part of a two part trigger which require a 'cultural heritage management plan' be prepared where a listed 'high impact activity' is proposed.

If a significant land use change is proposed (for example, a subdivision into 3 or more lots), a cultural heritage management plan may be triggered. One or two dwellings, works ancillary to a dwelling, services to a dwelling, alteration of buildings and minor works are examples of works exempt from this requirement.

Under the Aboriginal Heritage Act 2006, where a cultural heritage management plan is required, planning permits, licences and work authorities cannot be issued unless the cultural heritage management plan has been approved for the activity.

For further information about whether a Cultural Heritage Management Plan is required go to
http://www.aav.nrms.net.au/aavQuestion1.aspx

More information, including links to both the Aboriginal Heritage Act 2006 and the Aboriginal Heritage Regulations 2018, can also be found here - https://www.aboriginalvictoria.vic.gov.au/aboriginal-heritage-legislation



PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Further Planning Information

Planning scheme data last updated on 7 December 2023.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.
This report provides information about the zone and overlay provisions that apply to the selected land.
Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.***
It does not include information about exhibited planning scheme amendments, or zonings that may abut the land.
To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit https://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

PLANNING PROPERTY REPORT

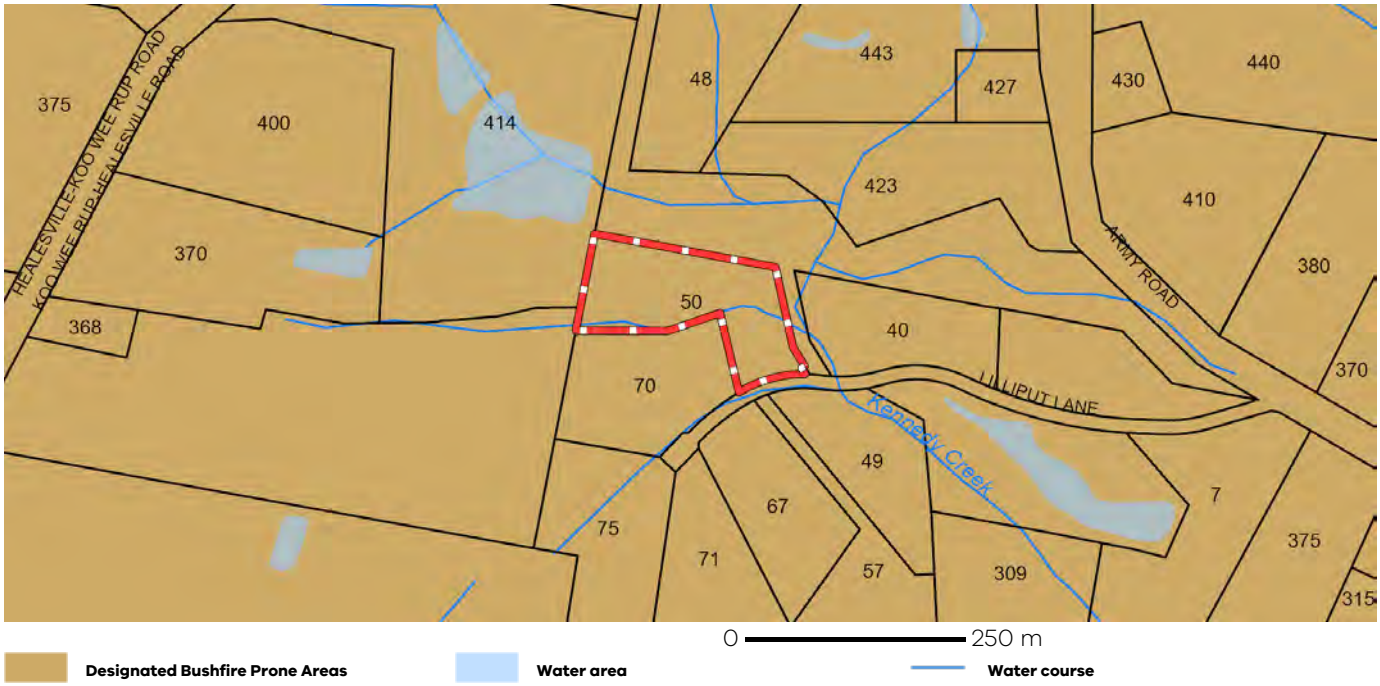
Environment, Land, Water and Planning

Designated Bushfire Prone Areas

This parcel is in a designated bushfire prone area. Special bushfire construction requirements apply to the part of the property mapped as a designated bushfire prone area (BPA). Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.



Designated BPA are determined by the Minister for Planning following a detailed review process. The Building Regulations 2018, through adoption of the Building Code of Australia, apply bushfire protection standards for building works in designated BPA.

Designated BPA maps can be viewed on VicPlan at https://mapshare.vic.gov.au/vicplan/ or at the relevant local council.

Create a BPA definition plan in VicPlan to measure the BPA.

Information for lot owners building in the BPA is available at https://www.planning.vic.gov.au.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au. Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au. For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au.

Native Vegetation

Native plants that are indigenous to the region and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule

To help identify native vegetation on this property and the application of Clause 52.17 please visit the Native Vegetation Information Management system https://nvim.delwp.vic.gov.au/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

APPROVED PLAN
PLANNING AND ENVIRONMENT ACT 1987
PAKENHAM PLANNING SCHEME
PERMIT No. ...
SHEET ... OF ...
SIGNED ...
CARDINIA SHIRE
DATE ...

original effluent disposal location

**moving to original approved location

MUNICIPAL RESERVE

WATER DRAINAGE EASEMENT

MELBOURNE WATER RESERVE

ARMY ROAD

LAKE

PUBLIC OPEN SPACE 3.96ha

Shed

House

1 4.0 ha

2 2.17ha

3 2.12ha

4 2.6ha

5 2.06ha

6 2.11ha

7 2.81ha

8 2.0ha

9 2.0ha

Proposed Bridle/ Walking Track (3.0m)

1:2500

0 20 40 60 80 100 metres

Building Envelope

Effluent dispersement area

* Building Envelopes reduced to 50m x 30m with retaining structure on the high side to ensure slope stability and minimum disturbance to the surrounding area.

WATSONS PTY. LTD.
CHARTERED ENGINEERS
LICENSED SURVEYORS
TOWN PLANNERS

August 1990
Ref 33799

CARDINIA SHIRE COUNCIL

385 ARMY ROAD, PAKENHAM

PROPOSED SUBDIVISION

30th October 2024

Cardinia Shire Council
Planning Department
PO Box 7
PAKENHAM VIC 3810

To whom it may concern,

Proposal: Proposed Landscape Works
Applicant: 3D Design Group
Client: Carson Batty & Kate Flintoff
Address: 50 Lilliput Lane, PAKENHAM 3810
Lot: Plan PC370839
Zone: Green Wedge A Zone (GWAZ2)
Overlays: Bushfire Management Overlay (BMO)
Environmental Significance Overlay (ESO1)

Please see attached application for a Planning Permit at the above address. A description of the works is detailed below:

Project description:

Proposed Landscape works including Vegetation Removal & Site Works, proposed pool & in-ground trampoline as detailed on Drawing Issue Town Planning Rev A dated 15.10.24. The triggers for a planning permit under the ESO are ***"Construct or carry out works & Remove, destroy or lop any vegetation".***

Please see the attached drawing detailing the proposal. A detailed description of the works is provided below:

Both the existing house and shed were built with site cuts that were simply cut and pushed the soil forward which ultimately created some odd-shaped (steeper) topography. At the rear of the house, there is an existing 1.0m high retaining wall, which is showing its age. The site has no flat areas usable for recreational purposes. It is generally too steep for a young family to play outside and enjoy. There is some inappropriate vegetation with moderate retention value and most have no retention value.

The proposal is to remove the existing vegetation in the area shown and the removal of the retaining wall from behind the house. This will allow the owner to regrade the site to achieve a nicer grade and rear yard. In this area it is intended to replant with seven (7) Gum trees, replacing what has been removed. There is a gravel driveway that wraps around the house, this will be removed for the most part to be re-instated as landscape.

The soil from the regrading at the rear is to be moved to the front of the house (north) to create two (2) flat areas, to be used for the day-to-day recreation of the owners. These areas will be planted with turf, hedges, and some ornamental trees. The owner is looking for a more formal outdoor space. There will be new steps to link the two flat areas. The flat areas have some fall away from the house and batters at 1 in 2. It is not anticipated the owner will need much additional soil to fill the site, there will be a need to bring in some quality topsoil.

On the West side of the existing house, there is a proposed swimming pool (1.8m deep) and an in-ground trampoline (1.2m deep). This area has some new paving and landscape proposed.

This proposal has no impact on adjoining properties and will improve the landscape and livability of the property.

Attachments:

Cover Letter – 3D Design Group;
Current Copy of Title;
Architectural Drawings – Site Context Plan 1:500, Site Context Plan 1:200, Site Demolition Plan, Site Works Plan, Landscape Plan, Sections, 3D Views– 3D Design Group.

Please let us know if you require any additional information.

Kind Regards,

18th March 2025

Cardinia Shire Council
Planning Department – Lori Zhang
PO Box 7
Pakenham Vic 3810

Dear [redacted]

Application No: T240561
Property No: 1490650300
Address: PC370839 V11086 F820, 50 Lilliput Lane, Pakenham VIC 3810
Proposal: Development of the land for a dwelling and buildings and works to extend an existing shed

I refer to the above planning permit application, and more specifically your request for further information dated 27th November 2024. Please find attached a detailed response to this request.

If you have any further queries regarding this matter, please do not hesitate to call me on 5941 4717.

We thank you for your cooperation on this matter.

Kind regards,

[redacted]

Further Information Required:	
Further Information Required	**Response**
1. Outstanding Fees Council's records show an outstanding amount of application fees of $1,106.40	1. Additional application fee paid 18.03.25, refer to receipt number 4753215.
2. Written statement regarding how the proposal complies with Section 173 Agreement X234211E and AD203776G.	2. Refer to Planning Submission report prepared by Nepean Planning Consultants Version 1 – February 2025
3. Town planning report in regard to how the proposal is generally in accordance with the PPF, LPPF, the Zone and Overlays, and particular provisions.	3. Refer to Planning Submission report prepapred by Nepean Planning Consultants Version 1 – February 2025
4. Earthworks: 4.1 Total volume of the soil from the proposed site cut and fill (cubic metres). In addition, whether additional soil will be required to be brought in onto the subject site, if so, please identify the source of the soil and provide an assessment by a suitably qualified person to ensure all fill is uncontaminated, including details of on-site management. 4.2 Details of proposed measures to stabilise earthworks (fill) both during and following works in a way that will minimise soil erosion, minimise contamination of adjacent land, waterways and/or floodplains.	4. Refer below: 4.1 Refer to Architectural Drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A03 Site Works Plan 4.2 Refer to Architectural Drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A05 Sections
5. A Site Environmental Management Plan (SEMP) prepared by a suitably qualified professional. The SEMP must address all environmental risks and include: 5.1 Temporary stormwater management (during construction) including sediment control. 5.2 Provision of pollution and contamination controls including noise and dust. 5.3 Location of stockpiles and stockpile management. 5.4 Location of site office and facilities. 5.5 Equipment, materials and goods management. 5.6 Tree protection zones, trees to be retained and trees to be removed. 5.7 Haulage routes to/from the site. 5.8 Proposed truck access routes within the site.	5. We request the requirement for a SEMP be a condition of the Planning Permit as this is a large expense at this stage.

6. Written statement addressing: 6.1 Details of the existing use of the land, including details of any Agricultural use occurring on the subject site and how the existing use of the land meet the purposes of Green Wedge A Zone. 6.2 The purposes of the existing two (2) water tanks. Please specify how the relocation of water tanks will ensure the allotment still complies with requirements in Clause 35.05-2. 6.3 Whether the proposal earthworks will change the rate of flow or the discharge point of water across a property boundary and increase the discharge of saline groundwater. If so, how the saline groundwater will be managed. 6.4 Why the proposed earthworks are necessary. 6.5 Why removal of three (3) Victorian Native Trees are unavoidable. Additional written explanation of the steps that have been taken to avoid and minimise the removal of vegetation where possible. 6.6 Whether the proposal will cause negative impact on the Kennedy Creek.	6. Refer below 6.1 Refer to Planning Submission report prepared by Nepean Planning Consultants Version 1 – February 2025 6.2 The Existing water tanks are being re-located and represents no change to the existing conditions. 6.3 We has shown on the site works plan additional drainage around the earthworks. This we maintain and improve the existing overland flow. 6.4 Refer to Planning Submission report prepared by Nepean Planning Consultants Version 1 – February 2025 6.5 Refer to Planning Submission report prepared by Nepean Planning Consultants Version 1 – February 2025, Page 27 – native vegetation removal no longer proposed 6.6 No impact
7. Amended planting schedule on the landscape plan showing the quantity of property Japonical Buxus.	7. Refer to Architectural Drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A04 Landscape Plan
8. Amended site plan drawn to scale and show the following: 8.1 Location of any hollow bearing trees, if applicable. 8.2 Dimensions of the proposed site cut. 8.3 Setbacks from the proposed earthworks to all boundaries. 8.4 Legend with two different colours clearly showing the location of proposed site cut and site fill.	8. Refer below: 8.1 No hollow bearing trees have been identified on site 8.2 Refer to Architectural Drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A03 Site Works Plan 8.3 Refer to Architectural Drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A03 Site Works Plan 8.4 Refer to Architectural Drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A03 Site Works Plan
9. Amended section plans drawn to scale and show the following: 9.1 The title boundaries. 9.2 Consistent dimensions of the proposed site fill on Section Plan 2 and 4.	9. Refer below: 9.1 Refer to Architectural drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A05 Sections 9.2 Refer to Architectural drawings prepared by 3D Design Group Issue Rev B dated 20.12.24, Sheet A05 Sections
10. Amended arborist report showing any vegetation within 15m of the earthworks including areas of cut and fill, and battering. This must include any trees	10. Refer to Arboricultural Construction Impact Assessment prepared by Greenwood Consulting P/L dated 12 March 2025.

on neighbouring property such as those along the northern boundary. An ecological assessment of all impacted vegetation as per the application requirements of the Clause 42.01 Environmental Significant Overlay – Schedule 1.	
11. An environmental assessment report prepared by a suitably qualified person and to the satisfaction of the responsible authority, providing all application requirements of Clause 52.17 and 6.4.1 of the *Guidelines for the removal, destruction and lopping of native vegetation DELWP 2017* (the Guidelines): 11.1 Information about the native vegetation to be removed, including: 11.1.2 A description of the native vegetation to be removed that includes: 11.1.1 The assessment pathway and reason for the assessment pathway. This includes the location category of the native vegetation to be removed. 11.1.2 A description of the native vegetation to be removed that includes: • whether it is a patch or a scattered tree (or both) • the extent (in hectares) • the number and circumference (in centimetres measured at 1.3 metres above ground level) • of any large trees within a patch • the number and circumference (in centimetres measured at 1.3 metres above ground level) • of any scattered trees, and whether each tree is small or large • the strategic biodiversity value score • the condition score • if it includes endangered Ecological Vegetation Classes • if it includes sensitive wetland or coastal areas. 11.1.3 Maps showing the native vegetation and property in context and containing: • scale, north point and property boundaries • location of any patches of native vegetation and the number of large trees within the patch proposed to be removed • location of scattered trees proposed to be removed, including their size	11. Refer to Planning Submission report prepared by Nepean Planning Consultants Version 1 – February 2025, page 27 that states: *We are also conscious that Council had shown concerns about the proposed removal of trees 18-20. Whilst we feel the removal of these trees was justified, we have amended the proposal whereby these trees will now be retained, accordingly there are no established, native trees.* The removal of native vegetation is no longer proposed so a response to Item 11 is no longer required.

11.1.4 The offset requirement, determined in accordance with section 5 of the Guidelines, that will apply if the native vegetation is approved to be removed. 11.2 Topographic and land information relating to the native vegetation to be removed, showing ridges, crests and hilltops, wetlands and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion, as appropriate. This may be represented in a map or plan. 11.3 Recent, dated photographs of the native vegetation to be removed. 11.4 Details of any other native vegetation approved to be removed, or that was removed without the required approvals, on the same property or on contiguous land in the same ownership as the applicant, in the five year period before the application for a permit is lodged. 11.5 An avoid and minimise statement. The statement describes any efforts to avoid the removal of, and minimise the impacts on the biodiversity and other values of native vegetation, and how these efforts focussed on areas of native vegetation that have the most value. The statement should include a description of the following: • Strategic level planning – any regional or landscape scale strategic planning process that the site has been subject to that avoided and minimised impacts on native vegetation across a region or landscape. • Site level planning – how the proposed use or development has been sited or designed to avoid and minimise impacts on native vegetation. • That no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal. • Appropriately replace and/or compensate the loss of vegetation, if required. 11.6 A copy of any Property Vegetation Plan contained within an agreement made pursuant to section 69 of the *Conservation, Forests and Lands Act 1987* that applies to the native vegetation to be removed. 11.7 Where the removal of native vegetation is to create defendable space, a written statement explaining why the	

removal of native vegetation is necessary. This statement must have regard to other available bushfire risk mitigation measures. This statement is not required when the creation of defendable space is in conjunction with an application under the Bushfire Management Overlay. 11.8 If the application is under Clause 52.16, a statement that explains how the proposal responds to the Native Vegetation Precinct Plan considerations at decision guideline 8. 11.9 An offset statement providing evidence that an offset that meets the offset requirements for the native vegetation to be removed has been identified, and can be secured in accordance with the Guidelines. A suitable statement includes evidence that the required offset: • is available to purchase from a third party, or • will be established as a new offset and has the agreement of the proposed offset provider, or • can be met by a first party offset.	
12. If the application falls in the Detailed Assessment Pathway, additional information below is required: 12.1 A site assessment report of the native vegetation to be removed, including: • A habitat hectare assessment of any patches of native vegetation, including the condition, extent (in hectares), Ecological Vegetation Class and bioregional conservation status. • The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any large trees within patches. • The location, number, circumference (in centimetres measured at 1.3 metres above ground level) and species of any scattered trees, and whether each tree is small or large. 12.2 Information about impacts on rare or threatened species habitat, including: • The relevant section of the Habitat importance map for each rare or threatened species requiring a species offset. • For each rare or threatened species that the native vegetation to be removed is habitat for, according to the Habitat importance maps:	12. As per Item 11

• the species' conservation status • the proportional impact of the removal of native vegetation on the total habitat for that species • whether their habitats are highly localised habitats, dispersed habitats, or important areas of habitat within a dispersed species habitat. Note: A report from DELWP systems and tools contains information required to address this application requirement. More information about meeting the information requirements to support an application to remove, destroy or lop native vegetation is available on the DELWP website at: http://environment.vic.gov.au/native-vegetation.	

Preliminary Assessment Comments	
A preliminary assessment of the application has been undertaken and the following comments are provided for your consideration: **1. Vegetation** The removal of three indigenous trees seems entirely avoidable by scaling back earthworks on site. Clause 52.17 Native vegetation and Clause 42.01 Environmental Significant Overlay both require development to avoid and minimise impacts to native vegetation, Council's Environment Department encourages the applicant to demonstrate how this will be achieved and to explore how earthworks can be minimised on site to avoid the removal of the three (3) indigenous trees. The proposal also did not appropriately respond to the objectives of Green Wedge A Zone as it does not protect and enhance the biodiversity of the area, including the retention of indigenous vegetation and fauna habitat. The current reasons for vegetation removal are not acceptable and the proposed vegetation removal is very unlikely to be supported. **2. Earthwork** Council holds strong concerns about the potential adverse impacts caused by the earthwork near the northern boundary which is a significant area of native vegetation. Earthworks within the TPZ of native trees and vegetation can result in the destruction of vegetation through impacts to roots and degrade native vegetation, particularly when it is uphill of vegetation by increasing soil disturbance and erosion and increasing sediment deposition on vegetation which creates conditions for weeds to grow and may kill or depress native vegetation. The scale of the proposed earthworks is considered to be very significant and is unlikely to be supported. The proposal did not employ alternative construction practices that minimise cut and fill, which would better meet the environmental objectives, having regard to the topography of the land and retention of vegetation. The proposal does not protect and enhance the natural environment and character of the area. The current reasons provided for the location and scale of the earthworks are not acceptable. It is highly encouraged to reduce the scale and area of the proposed earthwork and battering to be outside the TPZ of trees and other native vegetation. **3. Land use**	1. The proposal has been amended whereby these trees will be retained. 2. As demonstrated within the Planning Submission Report prepared by Nepean Planning Consultants the Arborist Report recommended that the extent of fill on the northern boundary is reduced by 2 metres to reduce the extent of encroachment of the TPZ of all affected trees on the northern boundary. The edge of the batter has subsequently been set back further from the northern boundary to respond to the recommendations provided by the arborist. 3. As demonstrated within the Planning Submission Report prepared by Nepean Planning Consultants it should be noted that the subject property is only 2.392 hectares in size and the the subject site and surrounding properties to the south and east are within an enclave of land that is essentially rural residential living. We are not proposing works that will alter the use of the land or the opportunities for the land. The primary works are occurring to the north of the dwelling. This is where the effluent disposal field is located and therefore not an area of the property that could accommodate agricultural enterprise of any type. The remaining area of the subject site, to the east of the dwelling will be unimpacted by the works and therefore if someone did seek to pursue an agricultural enterprise this proposal does not undermine that opportunity. 4. Noted 5. Noted

Clause 35.05 Green Wedge A Zone strongly support the protection and retention of land for future sustainable agricultural activities. Clear evidence is required to demonstrate how the existing use of the land relates to agricultural land use, rural diversification, and how the proposed earthworks will improve (or at an absolute minimum, not reduce) the agricultural viability of the land. The information requested within this letter will provide further clarity regarding this. 4. Please note, this application has been internally referred to relevant departments. If a referral response identifies any concerns with the proposal or that further information is required, you will be advised in due course. 5. Please note, a subsequent review will be conducted once all information is submitted which may raise additional further information items. It is recommended that the application be revised to address these comments, and/or include a written response to them. Revising the application at this stage is likely to result in the application process being more efficient and may mitigate future concerns from relevant parties. If the application is not revised accordingly, it will be processed in its current form and may be subject to future changes through conditions of any planning permit, or may be recommended for refusal.	

NORTH

Existing Site Plan

1 : 500

Notes:

OWNER and/or BUILDER to check and verify all dimensions, site levels, grades, roof pitches, etc prior to commencing any works.

Report any discrepancies to 3D Design Group for directions prior to ordering materials and start of building works.

Do not scale drawings, written dimensions are to take precedence over scaled drawings.

Revision: B

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response

3D DESIGN GROUP
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Title:	Site Context 1 to 500
Job:	Proposed Earth Works
Name:	Carson Batty
Address:	50 Lilliput Lane, Pakenham

Design:	BE	Sheet Size:	A1
Drawn:	BE	Scale:	1 : 500
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Date:	16.8.2024	Revision:	B
Dwg No:	24-028	Sheet No:	A00

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NORTH

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THE EXISTING SITE GENERALLY DRAINS DOWN HILL WITH NO FORMED SPOON DRAINS OR SIMILAR

THERE IS NO FLAT AREA AROUND THE HOUSE FOR COMFORTABLE OUTDOOR ACTIVITIES

OPORTUNITY TO REMOVE THE CIRCULAR DRIVEWAY AND IMPROVE THE LANDSCAPE

LIMITED ACCESS FROM THE HOUSE TO THE OUTDOOR GARDEN SPACES

Existing House

WATER TANKS TO REMOVED

THERE IS AN EXISTING 1.0M RETAINING WALL THAT CAN BE REMOVED AND THE SIDE REGRADED TO IMPROVED THE OVERALL SITE GRADES

WATER TANKS TO REMOVED

GRAPED TO BE REMOVED

GRAPE VINES

GRAPE VINES

GRAPE VINES

EXISTING VEGETATION TO BE REMOVED TO ALLOW FOR THE RE-GRADING OF THE SITE AND NEW LANDSCAPING

EXISTING SITE HAS BEEN CUT AND THE OVER BURDEN PUSHED FORWARD OF THE EXISTING SHED THIS RESULTS IN STEEPER CONTOURS ACROSS THE SITE

Section A05

THE SITE HAS A HUMP IN THE DRIVEWAY THAT CAN BE REMOVED FOR A BETTER RESULT

EXISTING CONCRETE PAVING

EXISTING GRAVEL DRIVEWAY

EXISTING GRAVEL DRIVEWAY

Existing Shed

Existing Site Plan

1 : 200

Revision: B

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response

3D DESIGN GROUP
Shop 8, 42 Main Street, Pakenham, Vic, 3810.
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Title:	Site Context
Job:	Proposed Earth Works
Name.	Carson Batty
Address:	50 Lilliput Lane, Pakenham

Design:	BE	Sheet Size:	A1
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Checked:	BE	Issue:	P-1
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GRAVEL DRIVEWAY TO BE REMOVED

EXISTING PAVING TO BE REMOVED

GRAVEL DRIVEWAY TO BE REMOVED

EXISTING FENCING TO BE REMOVED

WATER TANK TO BE REMOVED

GRAPE VINES TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED TO ALLOW THE RE-GRADING OF THE SITE

GRAVEL DRIVEWAY TO BE REMOVED

EXISTING RETAINIG WALL TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED TO ALLOW THE RE-GRADING OF THE SITE

WATER TANK TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED TO ALLOW THE RE-GRADING OF THE SITE

Existing House

Existing Shed

Section 1
A05

1.0 - Site Demolition Plan

1 : 200

Revision: **B**

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response

3D DESIGN GROUP
Shop B, 42 Main Street, Pakenham, Vic. 3810.
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Job:	**Proposed Earth Works**
Name:	**Carson Batty**
Address:	**50 Lilliput Lane, Pakenham**

Design:	**BE**	Sheet Size:	**A1**
Drawn:	**BE**	Scale:	**1 : 200**
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Date:	**16.8.2024**	Revision:	**B**
Dwg No:	**24-028**	Sheet No:	**A02**

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NORTH

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SITE FILL

SITE CUT

Cut Volume - 1288.0 m³
Fill Volume - 2026.0 m³

Import Fill - 738 m³
All imported fill to be certified as None Contaminated

15m FROM TOE OF PROPOSED FILL

TITLE BOUNDARY

EXISTING FENCE

PIT

RUBBLE PIT

SITE BATTER

Fill to RL 97.5

1.85m

2.6m

22.0%

16.1%

PROPOSED 100mm AGGI DRAIN AT TOE OF THE CUT

FLAT AREA INFRONT OF THE HOUSE

SITE BATTER TO BLEND BACK INTO THE EXISTING SITE

PROPOSED STEPS

Fill to RL 98.5

0.3m

0.4m

SITE BATTER

Fill to RL 100.5

0.8m

1.2m

BATTER

Fill to RL 101.0

Fill to 102.0m

Cut to 102.0m

Existing Residence

PROPOSED TRAMPOLINE DUG INTO THE GROUND

PROPOSED POOL

SITE CUT FLAT TO - RL 102.0

EXISTING PIT

EXISTING STORM DRAIN

RE-GRADE THE SITE TO SUIT THE REMOVAL OF THE RETAINING WALL SOIL REMOVED WILL BE RE-USED TO FILL THE SITE ON THE NORTH SIDE.

TPZ - 4.5M

TPZ - 5.8M

TPZ - 7.3M

NO EARTHWORKS AROUND THE EXISTING TREES

RE-GRADE THE DRIVEWAY TO REMOVED THE HUMP

500 CUT AT THE DEEPEST POINT FADING TO ZERO ALONG DRIVE IN BOTH DIRECTIONS

Existing Shed

Section 3 A05

Section 4 A08

Section 4 A05

1.0 - Site Works Plan

1 : 200

Revision: C

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response
C	17.4.25	Further Information

3D DESIGN GROUP
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Address:	50 Lilliput Lane, Pakenham

Design:	BE	Sheet Size:	A1
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Dwg No:	24-028	Sheet No:	A03

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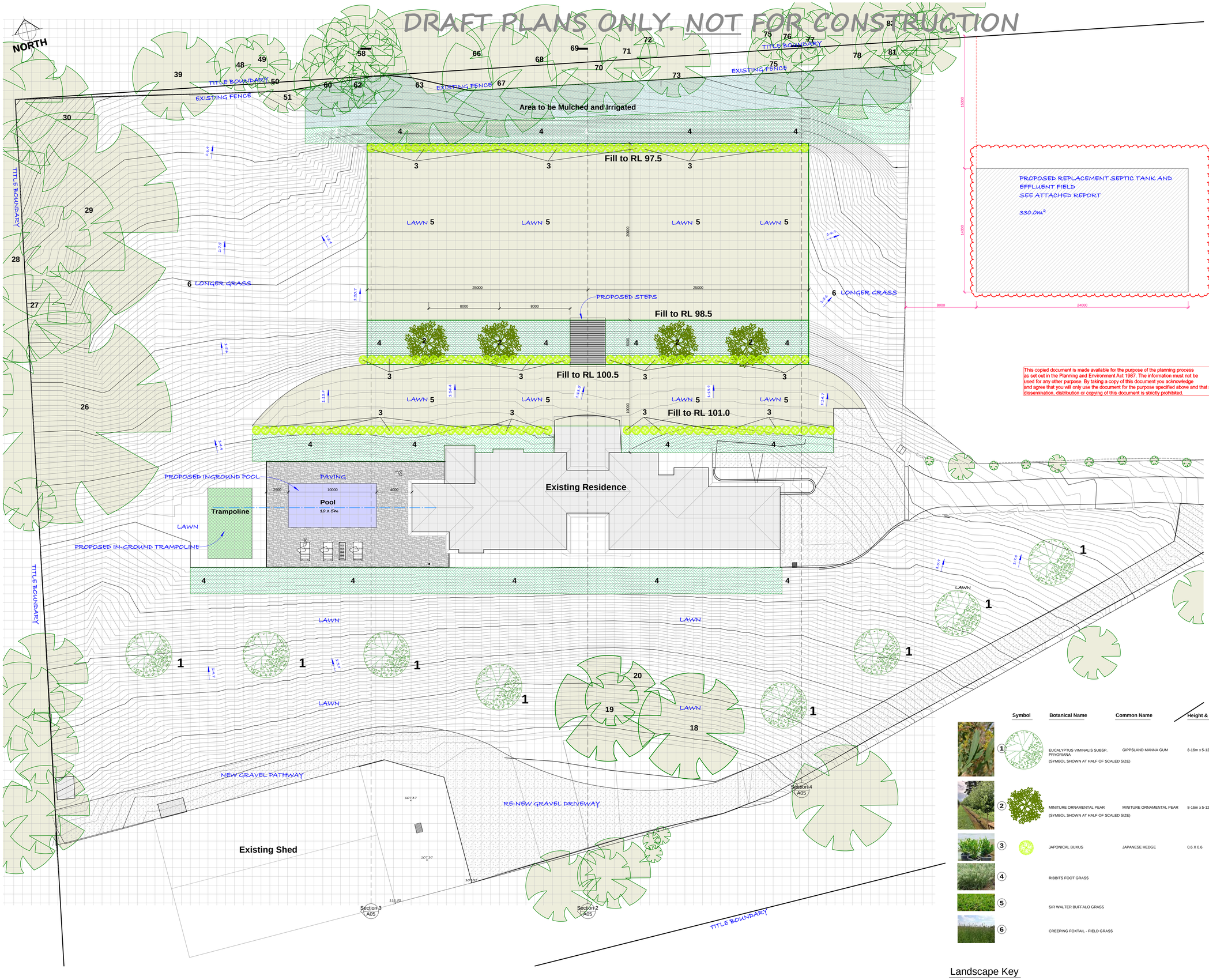
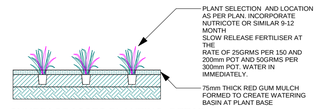
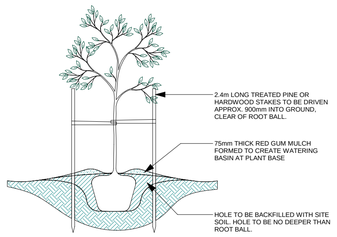


1.0 - Landscape Plan

1 : 200



SHURB/ GRASSES PLANTING DETAIL



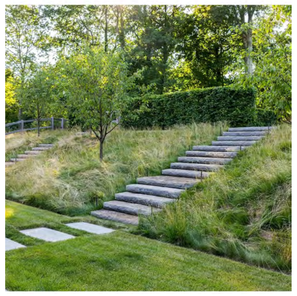
ADVANCED PLANTING DETAIL

General Landscaping Notes:

1. ALL GARDEN BEDS TO BE FILLED AND CONTOURED WITH SUITABLE TOP SOIL.
2. ALL GARDEN BEDS TO BE COVERED WITH 75mm OF PINE BARK OR ENVIRO MULCH.
3. ALL PLANTS THAT REQUIRE STAKING ARE TO BE STAKED WITH 3 TREATED PINE OR HARDWOOD STAKES.
4. WATERING SYSTEM IS TO BE INSTALLED BY OWNER IF REQUIRED..
5. ALL TIMBER FRAMING IS TO BE TREATED PINE WITH TOP CAPPING AND PLINTH BOARD.
6. POSTS ARE TO BE TREATED PINE OR CONCRETE.
7. 75mm TREATED PINE EDGING OR JARRAH EDGING AROUND GARDEN BEDS.
8. ALL PAVING AREAS TO BE LAID ON A FLEXIBLE BASE CONSISTING OF 75 - 100mm CRUSHED ROCK, 20 - 25mm BEDDING SAND. SECURE CONCRETE EDGES. PAVER CHOICE TO BE MADE BY OWNER.
9. ALL STONED AREAS TO BE 100 - 150mm COMPACTED DEPTH.
10. ALL DRAINAGE - AG LINES, PITTS TO BE INSTALLED TO APPROPRIATE SPECIFICATIONS.
11. TURFED OR SEEDED AREAS TO BE LAID ON PROPER BEDDING MATIEIAL 'TOP SOIL' 100 - 150mm DEPTH.
12. ALL RETAINING WALLS TO BE BUILT TO PROPER SPECIFICATIONS.

Landscape Notes

1 : 100



Landscape Key

1 : 120

	Symbol	Botanical Name	Common Name	Height & Spread	Quantity	Pot Size
	1	EUCALYPTUS VIMINALIS SUBSP. PRYORIANA (SYMBOL SHOWN AT HALF OF SCALED SIZE)	GIPPSLAND MANNA GUM	8-16m x 5-12m	7	ADVANCED
	2	MINITURE ORNAMENTAL PEAR (SYMBOL SHOWN AT HALF OF SCALED SIZE)	MINITURE ORNAMENTAL PEAR	8-16m x 5-12m	4	ADVANCED
	3	JAPONICAL BUXUS	JAPANESE HEDGE	0.6 X 0.6	155	100MM POT
	4	RIBBITS FOOT GRASS				
	5	SIR WALTER BUFFALO GRASS				
	6	CREEPING FOXTAIL - FIELD GRASS				

Revision: C

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response
C	17.4.25	Further Information

3D DESIGN GROUP
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Title:	Landscape Plan
Job:	Proposed Earth Works
Name.	Carson Batty
Address:	50 Lilliput Lane, Pakenham

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NORTH

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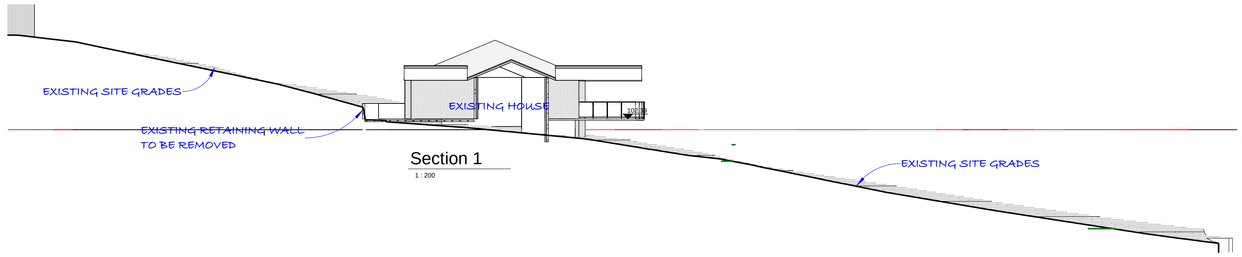
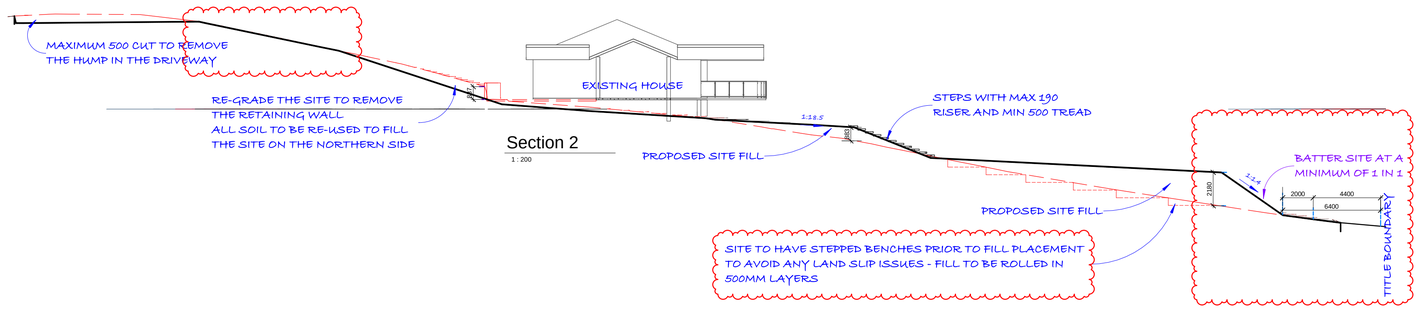
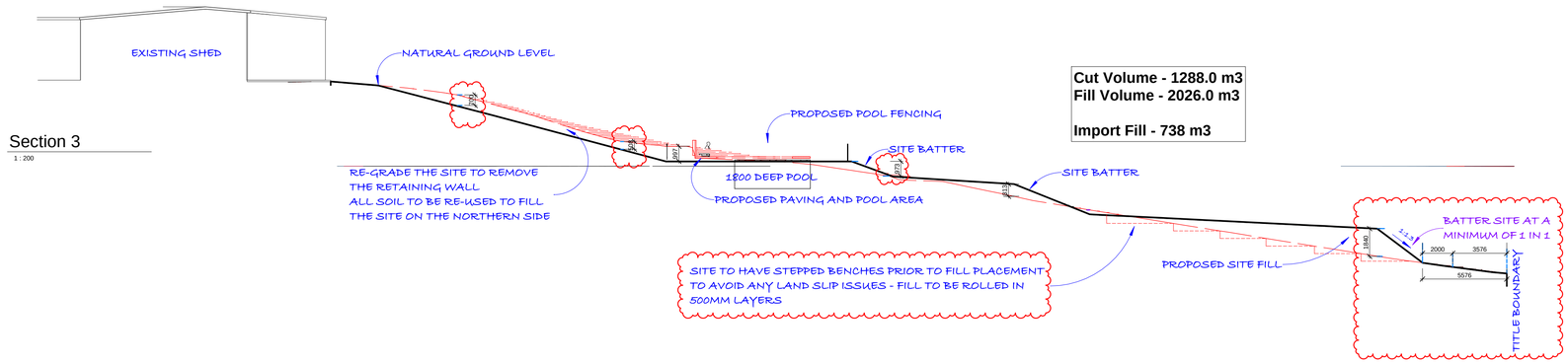


Section 1
1 : 200



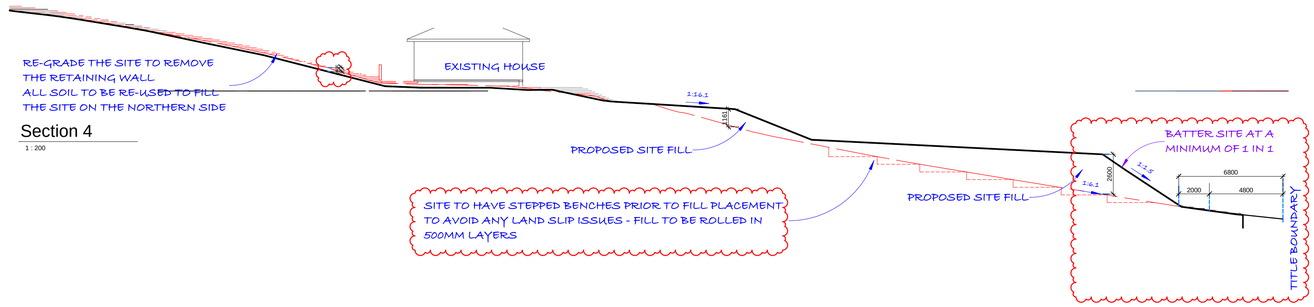
Section 2
1 : 200



Section 3
1 : 200

Cut Volume - 1288.0 m3
Fill Volume - 2026.0 m3

Import Fill - 738 m3



Section 4
1 : 200

Revision: B

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response

3D DESIGN GROUP
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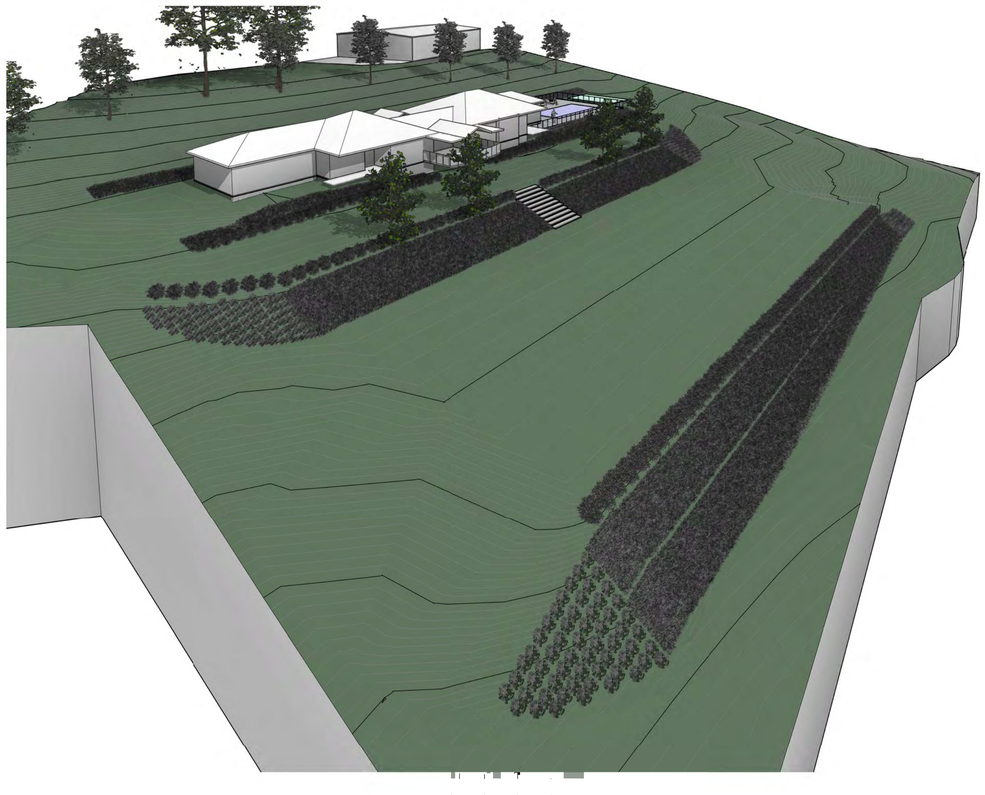
3D View 1

3D View 3



3D View 2

3D View 4

3D View 5

Revision: **B**

No.	Date	Description
A	15.10.24	Town Planning Drawings
B	20.12.24	RFI Response

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Design:	**BE**	Sheet Size:	**A1**
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