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Date Plans Provided: 10/08/2021

Town Planning Written Report

Prepared on behalf of the permit-applicant to justify the development of three double storey dwellings at 95 Kookaburra Avenue, Werribee.

(Amended August, 2021)

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INTRODUCTION

The land that is the subject of this application is an irregular shaped mid block, which is located on the northern side of Kookaburra Avenue, one property west of the intersection with Derrimut Road. The subject site has the unique attribute of a 23.44 metre wide frontage. The subject land has an overall area of 735.10 square metres.

The land currently accommodates an existing single storey dwelling which is proposed to be demolished.



Above, is the view of the subject site from the street frontage. The property has a high/solid fence at the street frontage.

Below, is a photograph of the actual dwelling.



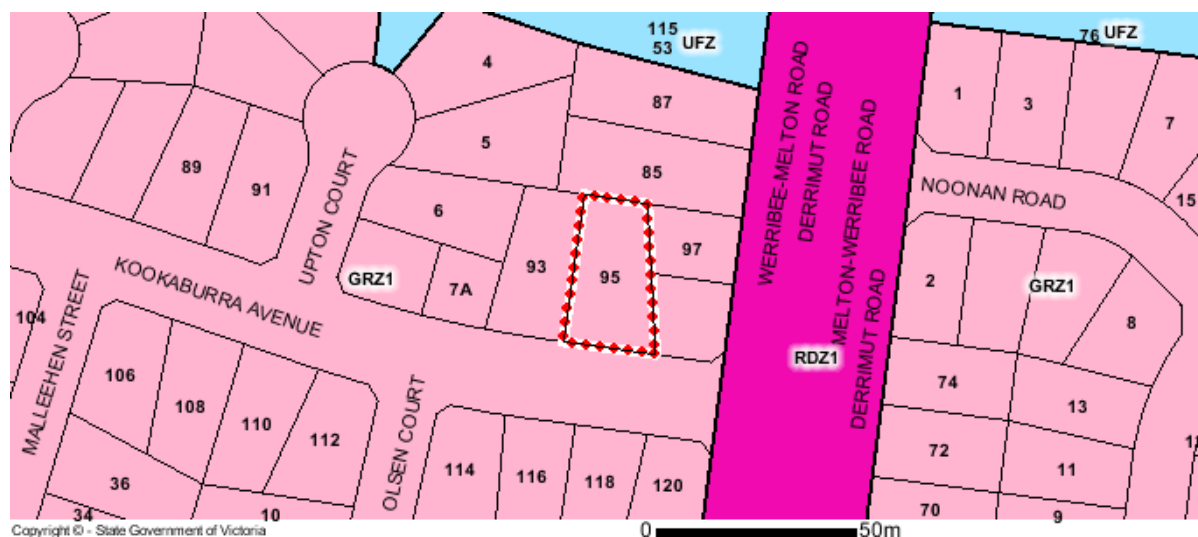
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The subject land is located within a well-serviced area that is located in close proximity to public transport, schools, recreation facilities, shops and places of employment.

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It is proposed to construct three new double storey dwellings on the subject land, all of which accommodate three bedrooms and single lock-up garages.

Two of the proposed dwellings are located at the site frontage and one dwelling is located at the rear.

It is submitted that the proposed development represents a site responsive, double storey development for this particular site, which is well orientated and conditioned on

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the site. The orientation of the land justifies the proposed layout, where the secluded open spaces all have an appropriate northern orientation.

Despite the two storey form, the recessive-looking elevations (where the more dominant face brick cladding are utilised on ground level walls and lighter-looking cladding to first floor walls), will respect the prevalent single storey character of the area.

The proposed design elements associated with the proposal are considered appropriate from a neighbourhood character point of view includes:

- Appropriate use of building materials that are common throughout this area;
- Extensive articulation of walls to create interesting facades;
- The appropriate use of fenestration, which contributes to visually interesting facades; t
- The combination of hipped and gabled roof forms which acknowledges the prevalent character of existing houses within this area which have pitched roof forms;
- The contemporary design response which would result in a high-quality design that will enhance the character of this area.

In terms of existing neighbourhood character, there are numerous examples of existing double storey dwellings throughout this section of Werribee.

A planning permit is required pursuant to Clause 32.08-4 of the Wyndham Planning Scheme for the construction of more than one dwelling on the subject site that is within in a General Residential Zone (GRZ1).

There are no planning scheme overlays that affect the subject site.

It is submitted that the proposal accords with the purposes of the General Residential Zone (which encourages increased densities in well-served areas such as the subject site), as well as the ResCode requirements pursuant to Clause 55 of the Wyndham Planning Scheme.

PLANNING POLICY FRAMEWORK

It is submitted that the proposed three dwelling development on the subject site does not conflict with the State Planning Policy Framework section of the Wyndham Planning Scheme.

Clause 11 – Settlement

This proposal satisfies the intent of this Clause through diversity of housing choice, facilitating economic viability of this area and promoting energy efficiency by providing additional housing close to public transportation. The subject site is well serviced by buses, schools (both primary and secondary), activity centres and recreation facilities. The subject site is located within reasonable walking distance to the Werribee Plaza Shopping Centre, bus stops, schools and recreation reserves.

Clause 11.01-1S – Settlement

This Clause encourages in-fill redevelopment as a means of limiting urban sprawl. By providing for additional housing within an area that is within close proximity to existing activity centres and is well-served by public transport and schools reduces pressure on supply of urban land.

Clause 11.02 – Managing Growth

One of the Strategies relating to the supply of urban land is to plan to accommodate projected population growth over at least a 15-year period. In the short-term, additional housing growth should also be encouraged within established areas, justifying three three-bedroom dwellings on a large site.

Clause 15 – Built Environment

The proposal contributes positively to local urban design and maintains liveability, diversity, amenity and safety of the public realm.

The proposed dwellings are well-designed by way of the following:

- Variation of external cladding (face brick, James Hardies profiled cladding, render and timber-look garages).
- Interesting roof forms, which include gabled and hipped forms, that also include the provision of eaves.
- Variation to window sizes throughout.
- Innovative design features such as contrasting feature walls, parapet canopy porch features and overhanging elements in front of the respective garages.

Clause 15.01-1S – Urban Design & Clause 15.01-2S Building Design

The proposal will achieve high standards in architecture and urban design, positively responding to the existing character. Accommodating two attached dwellings on a site

by-side layout at the Kookaburra Avenue street frontage with dwelling separation from both side boundaries, will preserve the local (prevailing) subdivision pattern.

The architectural features and design detailing that are to be incorporated as part of this development will ensure that the proposal is consistent with the Clause 15.01-5S Objective and Strategies.

Clause 15.01-4R – Healthy Neighbourhoods – Metropolitan Melbourne

The proposed development of additional dwellings is consistent with the recommendation of this Clause. The proposal facilitates increased housing in the established areas to create a city of 20-minute neighbourhoods close to existing services, jobs and public transport, justifying the proposed development.

Clause 15.02 – Sustainable Development

The proposed dwellings are required to achieve a six-star energy rating at the building stage.

This development accords with the current State Planning Policy, actively promoting urban consolidation. All three proposed dwellings have outdoor clothes drying, can accommodate external water storage tanks and low-maintenance, drought-tolerant planting.

Promoting urban consolidation and increasing residential densities within well-serviced, established areas also reflects sustainable development. In this instance, the efficient use of a large site that has an area of 735.10 square metres is highly appropriate from a sustainability point of view. There are a number of VCAT decisions that state that opportunities to use land efficiently should not be wasted. In **Teschendorf v Nillumbik SC (2007) VCAT 595**; Senior Member Byard and Member Wilson in paragraph 30 state:

“It is all too common for opponents of proposals to say that the intended development would be better if a floor was deleted or a lot was deleted or the like. Often they are looking at the question from a narrow perspective, perhaps of their own interests.

The public interest can be wider so that good planning looks to achieve an optimum yield that is neither too little nor too much.

It is poor planning to endorse a development that wastes an opportunity and fails to make proper use of scarce resources (in such cases land). In fact, there have been occasional decisions of this Tribunal that have refused a proposal for this very reason, namely that the proposal is an underdevelopment and underutilisation of the opportunity represented by the site.

Refusals or modifications to proposals on the basis that they would be overdevelopments are rather more common. It really adds nothing to the

assessment of a proposal to say that, from some points of view, it would be easier if it were smaller. The question is, is this proposal acceptable?"

The afore-mentioned comments are consistent with the following VCAT decision being **McColl v Stonnington CC (2008) VCAT 1318**; whereby Senior Member Byard in paragraphs 42 and 43 states:

"It is perfectly understandable that those proposing this development will seek to maximise the yield of dwellings reasonably possible of achievement on this site. That is, no doubt, in their financial interests. They are entitled to pursue those interests, but not beyond the limits of reasonable planning concerns.

It should not be supposed that good planning involves forever trying to minimise proposals. Various significant planning policies and purposes, including that metropolitan document known as Melbourne 2030, look for urban consolidation as well as the provision of a variety of styles and size of dwellings to meet various needs.

They particularly look for such development in close proximity to shops and stations and the like; and to capitalise on existing infrastructure by making fuller use of it. Whilst it is right to say that overdevelopment represents bad planning, it can equally be said that underdevelopment compromises many important planning purposes, and is also bad planning. It is the optimum or best balance between these competing considerations that should be sought. This certainly does not mean development that underutilises the potential of a site."

The afore-mentioned comments are highly relevant for a large site that provides increased development potential and opportunity that should not be 'wasted' or 'underutilised.'

Clause 16 – Housing

This clause encourages diversity for housing and convenient access to activity centres, public transport, schools and open space. The provision of three dwellings on the subject site satisfies the intent of this clause.

Clause 16.01-3R – Housing Diversity & Clause 16.01-4S Housing Affordability

This development facilitates both housing diversity and affordability.

The proposed three-bedroom, double storey dwellings are suitable for a very wide cross-section of the community. The proposed dwellings reflect an affordable option for a new 'three-bedroom family home' which is located on a low-maintenance, compact parcel of land. It is important for all areas to have housing options to meet the increasingly diverse housing needs.

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Townhouse 3 at the rear of the site includes a ground level bedroom, that would be suitable for an older occupant or an occupant/s with limited mobility.

Clause 18 - Transport

The provision of additional housing within an area that is well-served by public transport (buses), providing convenient access to Hoppers Crossing and Werribee train stations, which will accord with the intent of this Clause.

LOCAL PLANNING POLICY FRAMEWORK

Clause 21.01-1 – Municipal Profile

The increasing population of Wyndham (being one of the fastest growing municipalities in Australia), justifies increased housing opportunities. By 2031, it is expected that Wyndham's population is expected to grow by another 155,000 people.

The characteristics of the Wyndham community that would justify an increased supply of new three-bedroom dwellings on more compact parcels of land as outlined in Clause 21.01-1 include:

- A relatively high proportion of family households;
- A high birth rate;
- A larger average household size than metropolitan Melbourne;
- Growing levels of cultural diversity;
- A relatively low level of socio-economic disadvantage;
- Relatively lower levels of educational attainment;
- A growing level of unaffordable housing.

The intent of the planning scheme is to provide access to a range and quality of housing opportunities that will meet the needs of the growing population.

It is also stated in the planning scheme that the City of Wyndham is an area in which young families predominate, whereby Wyndham's housing provision has tended to be relatively uniform. Again, justifying the provision of three compact three-bedroom dwellings on compact, easy to maintain parcels of land.

Furthermore, there also needs to be appropriate and more affordable housing options in the short-term for younger families, as well as single, two, three and four person households justifying the proposed medium-density housing development, where each dwelling accommodates three bedrooms.

This proposed three-dwelling development provides for appropriate housing to cater for a wide cross-section of the community which is attributed to all three dwellings having the provision of three bedrooms.

The three dwelling development being proposed also represents housing that is highly suitable for single parent families. This household type generates demand for three bedroom dwellings on more compact, easy to maintain parcels of land.

By allowing the construction of three dwellings on the subject site will safeguard and promote housing diversity opportunity for this established, well-served residential area.

The recent increases in the cost of purchasing a house, as well as rises in the cost of renting, which includes housing within Werribee. This also provides further justification to promote urban consolidation as a means of increasing residential densities by using large sites efficiently to accommodate more dwellings.

Most of all, this section of Werribee is well-served with schools, recreation facility, public transport and being located within convenient walking distance from an activity centre and buses provide convenient access to train stations.

The area is well-served by buses, schools and recreation facilities, justifying the provision of a three-dwelling development on this particular site, providing suitable accommodation for a wide cross-section of the community.

Clause 21.07-1 – Residential Development

The intent of the above-mentioned planning scheme objective is to provide access to a range and quality of housing opportunities that will meet the needs of the increasing population. By allowing the construction of additional dwellings on the subject site will safeguard and promote housing diversity opportunity for this established, well-served residential area.

The recent increases in the cost of purchasing a house, as well as rises in the cost of renting, which includes housing within Werribee, provides further justification to promote urban consolidation through increased medium-density housing.

Most of all, this section of Werribee is well-served with schools, recreation facility, public transport and being located within reasonable distance from an activity centre and buses that provide convenient access to train stations.

The area is well-served by buses, schools and recreation facilities, justifying the provision of a three dwelling development on the subject site which can provide suitable accommodation for a wide cross-section of the community.

Having regard to **Clause 21.07-1** of the Wyndham Planning Scheme, the population of the municipality is expected to grow. Therefore, by increasing residential densities within reasonable proximity to a local activity centre and being within an area well-served by public transport, reflects a pragmatic approach to meeting the additional housing demand generated by the rapid population growth. Therefore, the provision of three (3) three-bedroom dwellings on the subject land is considered appropriate based on future housing needs.

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The proposal fully accords with **Clause 21.06** relating to **built environment**, by providing additional housing without adversely affecting the existing neighbourhood and garden character due to the appropriate design response.

Clause 22.04 - Neighbourhood Character

The proposal accords with Clause 22.04-3.1 having regard to the site being within the Garden Court Character Type. This policy also seeks the protection of the existing tree canopy, where well established.

The subject site does not accommodate significant trees.

The layout of the new dwellings will provide for a large front yard that can accommodate two large canopy trees at the street frontage (one in front of each dwelling).

Based on the frontage width of the subject site, the provision of two vehicle crossings is considered highly appropriate. Such provision will maintain adequate landscaping and on-street parking at the site frontage.

Townhouses 1 and 2 will provide an appropriate front setback and will include physical separation from both side boundaries. The proposal will achieve the desired pattern of dwelling spacing from side boundaries for the front dwellings when viewed from the public realm of the street frontage.

The proposal avoids side boundary wall construction for the two front dwellings, which is considered a favourable neighbourhood characteristic by Council.

The well-articulated and detailed two storey form is respectful of the existing neighbourhood character, that also includes existing two storey forms within the wider surrounding area.

Also, the provision of a face brick cladding of walls as well as the hipped roof form are aspects of the proposal that accord with the character of the area, being elements incorporated by the designer into this proposal.

Utilising a lighter-looking render for the first floor wall cladding promotes 'lightness of structure,' effectively minimising building bulk associated with the two-storey building form.

The subject site does have an interface with open spaces and creek or river corridors, which is located directly opposite. The proposal will not adversely affect or dominate the open space and river corridor in any way.

Wyndham Housing & Neighbourhood Character Strategy

The subject land is within an **incremental change area** as defined in the **Town Planning & Neighbourhood Character Strategy**, which has been adopted by Council.

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The proposal accords with the Objectives of the Strategy, which encourages moderate housing growth and diversification of housing, including townhouse's as proposed on the subject site.

The proposal responds favourably to the preferred character statements of the Garden Court Character Type area.

Accommodating dwellings at the site frontage with physical separation from both side boundaries helps to preserve the existing streetscape character.

The desired preferred character statements that are considered met by this development, include:

- The spaciousness of the area to be reinforced by the generous front yards (of the two front dwellings) and the secluded open spaces of all three proposed dwellings. The secluded open spaces of all three proposed dwellings are able to accommodate canopy trees having dimensions exceeding 3.0 metres.
- Proposal accords with the preferred character by having physical separation from both side boundaries.
- The generous landscaped areas proposed throughout the site and the use of an appropriately recessive, low-pitched roof form also acknowledges the existing spacious character, whilst providing for moderate housing growth, without adversely affecting the prevalent character of the area.
- The proposed garages are not the dominant elements of the proposed development being limited to a single width as well as being located behind the front dwelling line of the respective dwelling's front facades. The impact of the garages is further minimised by the overhanging front porches of Townhouses 1 and 2, as well as the cantilevered front canopy porch of Townhouse 3.

The most important justification of the proposed development is the housing diversity that such a proposal would deliver to this area, which is consistent to the objectives and actions encouraged by the Wyndham Housing & Neighbourhood Character Study.

The provision of three-bedroom townhouses for this particular site provides suitable housing for a wide cross section of household types which has already been demonstrated in this report.

The efficient use of the land also facilitates for improved housing affordability, which is encouraged by the Wyndham Housing & Neighbourhood Character Study.

NOTE: The Draft Amendment recently adopted by Council for proposed variations to be included in the Schedule to the General Residential Zone (proposed) Schedule 3 have been acknowledged in the submission of this application as the site in the Garden Court 1 Precinct.

The relevant requirements are included within (proposed) Schedule 3 to Clause 52.08 and include:

Landscaping: The generous front setback and limiting vehicle access to a single driveway maximises landscaping potential at the site frontage. The subject site can easily accommodate the front yard having two trees with a minimum height of 5 metres (in accordance with the Wyndham Landscape Guidelines 2018).

It is the unique frontage width of 23.44 metres which justifies the provision of two vehicle crossings at the site frontage.

Side and rear setbacks: The recommendation is to provide a minimum side setback of 1.0 metre to one side boundary. The proposal satisfies this requirement for the two front dwellings, achieving substantial physical separation from both side boundaries which is noticeable from the public realm.

Townhouse 3 at the rear is justified to have walls constructed along both side boundaries, as this dwelling does not have a prominent presence from the public realm.

Private open space: The secluded open spaces of all three proposed dwellings exceed 40 square metre and have convenient access from a living room.

CLAUSE 52.06 – CAR PARKING

The proposal satisfies the **purpose** of Clause 52.06 ensuring the appropriate number of car parking spaces are provided for each of the three dwellings, based on each dwelling having three bedrooms.

The proposed car parking arrangement ensures that parking does not adversely affect the amenity of the locality. The manner in which the car parking has been designed will encourage occupiers of all three dwellings to park within the site due to the convenience of the proposed on-site parking.

The manner in which the car parking has been designed is to minimise the impact of the car parking structures onto the public realm. This includes limiting each garage to have a single width.

The high-quality timber-look garage doors, will achieve a high-quality design, where the respective garages are not the dominant elements of the proposed development, but reflect well-integrated and recessive elements of the respective dwellings.

The proposal accords with **Clause 52.06-2** relating to the provision of car parking spaces. All three dwellings provide the required two on-site car spaces as each dwelling has three bedrooms.

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The on-site parking for all three dwellings is consistent, being in the form of a single lock-up garage and an 'open' tandem car space in front.

The proposal fully accords with the **Clause 52.06-9** design standards for car parking.

Design Standard 1 – Accessways

Proposed accessways will have a width that is at least 3 metres wide. The proposal has been designed to enable an area clear of visual obstructions which includes low letterboxes and planting at the Kookaburra Avenue frontage. All on-site car spaces provide the required 2.1 metres headroom beneath overhead obstructions which includes the respective dwelling's garages.

Design standard 2 – Car parking spaces

Car parking spaces and accessways accord with the minimum dimensions as outlined in Table 2. This also includes diagram 1 relating to clearance to car parking spaces.

Design standard 3 – Gradients

Due to the flat site, the proposal fully accords with Design Standard 3.

Design standard 4 – Mechanical parking

Not applicable to this application.

Design standard 5 – Urban design

Garage doors will not visually dominate the public realm being limited to a single width and integrated into the design of all three dwellings to reflect a recessive element of the proposed three-dwelling development.

Design standard 6 – Safety

The proposed car parking will be well lit. Permit conditions can be imposed to ensure compliance. The proposed car parking areas will maximise natural surveillance and pedestrian visibility.

Design standard 7 – Landscaping

The proposal will include landscaped buffers adjacent to the respective driveways to soften the appearance of this car space.

Clause 52.06-11 – Construction of car parking

The plans include all of the required information relating to the construction of the on-site car parking.

CLAUSE 53.18-3

A Sustainable Design Assessment (SDA) report will be completed by a suitably qualified consultant that should satisfy the requirements of Clause 53.18-3 of the Wyndham Planning Scheme.

The proposal will include double glazing to windows and sliding doors, permeable areas throughout the site; energy-efficient heating and cooling systems, rainwater collection as well as stormwater treatment.

RESCODE ASSESSMENT – CLAUSE 55

CLAUSE 55.01 NEIGHBOURHOOD AND SITE DESCRIPTION AND DESIGN RESPONSE

PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:

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This application has been accompanied by a neighbourhood and site description and a design response, as well as a photographic analysis of the area.

55.01-1 Neighbourhood and site description

The neighbourhood and site description utilises a site plan outlining the surrounding, existing context.

55.01-2 Design response

The design response that has been prepared for the subject site outlines the proposal within the context of surrounding properties.

55.02 NEIGHBOURHOOD CHARACTER AND INFRASTRUCTURE

55.02-1 Neighbourhood character objectives

It is submitted that the proposed design respects the existing neighbourhood character by proposing three appropriately designed double storey dwellings, being positioned within the site to not dominate or 'overwhelm' adjacent properties.



Adjacent dwelling immediately east of the subject site (97 Kookaburra Ave)



Adjacent dwelling immediately west (93 Kookaburra Ave)

The proposal has been sensitively designed to respect the existing character of the surrounding area which includes an eclectic mix of architectural styles.

The proposed development has a pitched roof form, variation to external walls, appropriate fenestration and appropriately located lock-up garages that do not dominate the street frontage.

The proposal allows space for multiple canopy trees within the front setback and the secluded open spaces of all three proposed dwellings. Such provision will enhance the garden character of this area.

Standard B1

It is submitted that the proposed design response is appropriate to the neighbourhood and the site, satisfying ResCode Standard B1.

The following are three VCAT cases that provide justification for appropriately designed double storey dwellings from a neighbourhood character point of view. These decisions are often cited at other VCAT hearings when justifying other applications for two-storey building forms within areas dominated by single dwellings.

The most important aspect is that the proposed double storey dwellings have been designed to accord with all of the applicable planning scheme requirements that apply. This is the case for this proposal on the subject site, whereby the following (often cited) decisions provide justification for the proposed double-storey form of all four of the proposed dwellings on the subject site:

1. **Waylan Consulting v Moreland CC¹:**

“Double storey dwellings are not two headed monsters. They are a normal housing type throughout the Melbourne metropolitan area. Under the present planning and building regulations there is no prohibition of double storey single dwellings in most of the metropolitan area unless heritage or design and development overlays affect them. In this case there are no overlays.”

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2. **Rendevski v Greater Geelong CC²:**

Leaving aside the fact that this would not be the first two storey "intrusion" (either for a single home or multi-unit), the Tribunal would be reluctant to reject what is a perfectly normal and acceptable form of development right throughout our urban areas, except if the neighbourhood characteristics were so pristine and important so as to make a two storey proposal unacceptable.”

3. **Jacobs v Banyule CC³:**

I regard double storey dwellings as such, perfectly normal and acceptable scale of building throughout metropolitan Melbourne,.....they would surely qualify as “low scale”.

55.02-2 Residential policy objectives

It is submitted that the proposed development is in accordance with the relevant policies for housing contained under both the State Planning Policy Framework and the Local Planning Policy Framework, which has been outlined earlier in this report.

Standard B2

This written report describes how the development is consistent with any relevant policy for housing in the State Planning Policy Framework and the Local Planning Policy.

55.02-3 Dwelling diversity objective

This particular objective only applies to developments of ten or more dwellings.

¹ [2000] VCAT 1198

² [1999] VCAT 1886

³ [2008] VCAT 634

Standard B3

Not applicable to a four-dwelling development

55.02-4 Infrastructure objectives

It is submitted that the subject land is appropriately serviced to ensure that the proposed development is provided with appropriate utility services and infrastructure.

Standard B4

The proposed development will be connected to reticulated services, including reticulated sewerage, drainage, electricity and gas.

The proposed development will not unreasonably exceed the capacity of utility services and infrastructure, including reticulated services and roads within this well-established residential area.

55.02-5 Integration with the street objective

The proposed dwellings have been appropriately integrated with the street frontage.

Townhouses 1 and 2 are located and orientated toward the Kookaburra Avenue frontage.

Based on the width of the subject site, it is highly appropriate to accommodate as many dwellings as possible at the site frontage.

Townhouse 3, located at the rear of the site is connected by an exclusive driveway that connects to the Kookaburra Avenue frontage.

The proposal will not conflict with **Standard B5** in any way.

55.03 SITE LAYOUT AND BUILDING MASSING

55.03-1 Street setback objective

The proposal accords with **Standard B6** providing a front setback for Townhouses 1 and 2 that achieves the numeric average. The proposal has been designed to satisfy the relevant Objective, which is a mandatory requirement will be met, requiring the front setback to satisfy the following requirements:

- *Respecting the existing or preferred neighbourhood character;*

AND

- *Make efficient use of the site.*

55.03-2 Building height objective

It is submitted that the design of the proposed double storey development is considered respectful in an area that includes both double and single storey dwellings.

The proposal easily satisfies that maximum building height of **Standard B7** by having an overall height that is substantially less than the maximum height of 9.0 metres.

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55.03-3 Site coverage objective

The proposal has been designed to ensure that the site coverage respects the preferred neighbourhood character and responds to the features of the site, by way of appropriate building setbacks and provision of appropriate open space areas throughout the site.

Standard B8

The proposal satisfies this Standard as site coverage is below the 60% maximum that is allowed pursuant to this Standard (43.9% site coverage being proposed).

55.03-4 Permeability objectives

The proposal has been designed to reduce the impact of increased stormwater run-off on the drainage system and to facilitate on-site stormwater infiltration.

Standard B9

The proposal complies with the Standard as more than 20% of the site will not be covered by impervious surfaces (37.52% permeable).

55.03-5 Energy efficiency objectives

As previously stated in this report, the proposal will achieve efficient dwellings, which includes well-orientated north-facing windows, internal cross-ventilation, the provision of eaves, rainwater tanks, double-glazed windows and outdoor clothes drying.

Furthermore, it is submitted that **Standard B10** has been satisfied. Also, the proposed dwellings will each be required to achieve a 6-star energy-rating at the building stage.

55.03-6 Open space objective

The subject site does not have an abuttal to any public or communal open space, hence this particular ResCode objective and Standard B11 does not apply.

A public open space is located directly opposite the subject site, justifying the double storey form of this dwelling as a means of providing improved passive surveillance of the public open space.

55.03-7 Safety objective

The proposed development has been designed to ensure the layout provides for the safety and security of residents and property.

Kookaburra Avenue is not defined as a road that is defined as a Road Zone – Category 1. Therefore, cars reversing out onto this local street is considered to accord with the intent of **Standard B12**.

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55.03-8 Landscaping objectives

Indicative landscaping details are shown on the layout plan.

A permit condition can be imposed to ensure that a proper landscaping plan is prepared which ensures that the proposal respects the landscape character of the neighbourhood.

The indicative detailing outlined on the plans demonstrates that there is adequate space throughout the site to accommodate meaningful landscaping.

Standard B13

Permit conditions can be imposed by the responsible Authority to ensure compliance with Standard B13 having regard to landscaping provision.

55.03-9 Access objectives

It is submitted that vehicle access to and from this particular site is safe, manageable and convenient.

The fact that no front fence is proposed will maintain appropriate visibility for residents having to exit out of the subject site via their respective driveways.

Standard B14

It is submitted that the proposal satisfies Standard B14 by the proposed accessways being designed to allow for convenient, safe and efficient vehicle movements. However, the proposal seeks a 1% dispensation to Standard B14 as the proposal includes 34% of vehicle accessway at the front property boundary. The Standard recommends 33%.

This 1% dispensation will be unnoticeable on a 23.44 metre wide block, nor does this dispensation effect on-street parking potential.

If Council expects fully Standard B14 compliance, this can be achieved by reducing the common driveway width at the front property boundary from 5000mm to 4800mm, which would match the 4800mm vehicle crossing width at the point where the footpath and vehicle crossing meet.

55.03-10 Parking location objectives

The designer has ensured that the proposal provides for convenient parking for resident vehicles, as well as helping to avoid parking and traffic difficulties in the development and the neighbourhood, maintaining existing levels of on-street car parking.

For advice on the plans that are being provided to you, please refer to the information on the Council's website. The plans may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:

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Standard B15

The proposal satisfies Standard B15 as the car parking facilities for each of the proposed development are close and conveniently located to the respective dwellings.

It is submitted that the car parking provision for the proposed dwelling and the existing dwelling fully accords with **Clause 52.06** of the Wyndham Planning Scheme.

55.04 AMENITY IMPACTS

55.04-1 Side and rear setbacks objective

The proposed development has been designed to ensure appropriate side setbacks are provided to the adjacent property to the north, east and west of the subject site, satisfying the numerical requirements of **Standard B17**.

55.04-2 Walls on boundaries objective

The proposal does not conflict with any aspect of **Standard B18**. Proposed boundary walls have been avoided for Townhouses 1 and 2 at the site frontage. The proposed boundary walls of Townhouse 3 will accord with the numeric requirements of Standard B18 and the Objectives of Clause 55.04-2.

55.04-3 Daylight to existing windows objective

The proposal has been appropriately designed to not conflict with the objectives of Clause 55.04-3, nor does the proposal conflict with the requirements of **Standard B19** as far as neighbouring properties are concerned.

55.04-4 North-facing windows objective

The proposal will not conflict with the requirements of **Standard B20** as far as neighbouring properties due to the orientation of the subject land.

55.04-5 Overshadowing open space objective

This development will not conflict with the objectives of this Clause, nor does the proposal conflict with the requirements of **Standard B21**. Shadow diagrams provided with this application demonstrate full compliance.

55.04-6 Overlooking objective & 55.04-7 Internal views objective

The proposed first floor windows have been treated to ensure that full compliance with **Standards B22** and **B23** is achieved.

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55.04-8 Noise impacts objectives

The proposed dwelling has been designed in such a way to contain noise sources within developments, so that that there is no affect to surrounding, existing dwellings on adjacent lots.

Standard B24

In terms of Standard B24 relating to noise sources, provisions such as mechanical plant (external air-conditioning units, heaters, hot-water units, etc.), these can easily be addressed by appropriate permit conditions being imposed by the Responsible Authority.

55.05 ON-SITE AMENITY AND FACILITIES

55.05-1 Accessibility objective

It is submitted that the proposal has been designed to be mindful of visitors with limited mobility to the proposed dwellings. The ground level sub-floor has been kept to a 'workable' minimum.

The specific requirement of **Standard B25** relates specifically to the dwelling entries of the ground floor of dwellings, which is considered to be accessible to people with limited mobility.

55.05-2 Dwelling entry objective

The proposal satisfies the dwelling entry objective as the front door of all three proposed dwellings are appropriately orientated toward the street frontage (including the rear dwelling). The proposal fully accords with **Standard B26**.

55.05-3 Daylight to new windows objective

The design of the proposed dwelling ensures adequate daylight into new habitable room windows and fully accords with **Standard B27**.

55.05-4 Private open space objective

The proposed development has been designed to provide adequate private open space for the reasonable recreation and service needs of all four proposed dwellings.

Standard B28

The dimensions of the secluded open spaces for all three of the proposed dwellings will exceed the minimum requirements outlined under Standard B28 which require each dwelling including private open space consisting of:

- *An area of 40 square metres, with one part of the private open space to consist of secluded private open space at the side or rear of the dwelling or residential building with a minimum area of 25 square metres, a minimum dimension of 3 metres and convenient access from a living room.*

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55.05-5 Solar access to open space objective

All three proposed dwellings on the subject land both provide secluded open spaces areas that will receive appropriate levels of sunlight that fully accord with the numeric requirements of **Standard B29**.

The proposal reflects a site responsive design where all three dwellings reflects an appropriate northern orientation.

55.06 DETAILED DESIGN

55.06-1 Design detail objective

It is submitted that the proposed development incorporates design detail resulting in high-quality contemporary design.

As previously stated, the proposal has been appropriately designed, reflecting design detail that is respectful of the existing neighbourhood character.

With regard to this particular three dwelling development, the designers have taken into consideration the immediate housing stock and have adhered to a number of key architectural elements which include pitched roofs and appropriately located garages that do not dominate the street frontage.

It is submitted that the designer of this proposal has come up with a design that reflects a high architectural standard, whilst also incorporating simple and design elements that are both consistent and compatible within the existing neighbourhood setting.

The variation of architectural features and design detailing, as well as variations to materials and colours acknowledges the varying character and design detailing of existing nearby dwellings.

The proposal provides for a unique design that results in high-quality contemporary architecture, which is encouraged under this section of ResCode. This type of contemporary design response will ensure that the proposal reflects a development of its time.

The proposed dwellings will make a positive impact on the neighbourhood character of this area. It is submitted that **Standard B31** has been satisfied.

The positive design elements of the proposed dwelling include:

- *Proposed dwelling having a well-designed and highly articulated two-storey form.*
- *The 22.5-degree pitched roof form results in a built form that is consistent with most of the existing dwellings within the surrounding area.*
- *The proposal having appropriate window proportions that are consistent with the size and shape of existing windows of other nearby dwellings.*
- *The walls are well articulated and include variations to the colour scheme/finishes which accentuates the extent of wall articulation.*

Overall, Standard B31 encourages designs to be innovative and of a high architectural standard, which this particular development satisfies.

55.06-2 Front fences objective

No front fence is proposed. Such provision will not conflict with the preferred neighbourhood character of achieving an appropriate garden character at the street frontage.

The existing high/solid fence will be removed from the front boundary, resulting in an improvement from the existing streetscape character.



55.06-3 Common property objectives

Common property has been avoided, reflecting a positive design response.

positive design plans, should be being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:

55.06-4 Site services objectives

The proposed development has been designed in such a way to ensure that site services can be installed and easily maintained, as well as the site facilities being accessible, adequate and attractive.

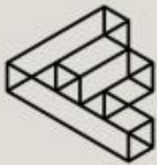
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Permit conditions can be imposed by the Responsible Authority to ensure that the specific requirements of **Standard B34** are satisfied.

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FRATER

95 Kookaburra Avenue, Werribee

17/07/2021

Sustainable Design Assessment

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Address
281 Lygon Street
East Brunswick VIC 3057

Phone
03 8691 6928

Email
admin@fraterplanning.com.au

Plan: 25 of 57

Sustainable Design Assessment (SDA)

Proposed Residential Development

PLEASE NOTE: The plan/s that are being provided to you may vary from what is ultimately approved by Council however they are the most recent version as at the date shown below:

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DOCUMENT VERSION

Version 0: Draft issued on 09/04/2021 for Client review

Version 1: Issued on 14/07/2021 –Changes as per drawings

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INITIATIVES TO BE MARKED ON DRAWINGS

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Water & Stormwater Management

- ☐ Mark-up showing roof catchment area to be diverted to the Rainwater tank for each dwelling – If required, the use of charged pipe system will be explicitly acknowledged on the drawings and charged pipes will not be running underneath the building footprint
- ☐ Location and size of each Rainwater tank proposed
- ☐ Note showing connection to the toilets and laundry
- ☐ Extent of permeable driveway
- ☐ Note showing use of native or drought tolerant species for landscaped area. Watering will not be required after an initial period when plants are getting established. If irrigation is required, it will be connected to rainwater tanks
- ☐ Note showing WELS rating for water fittings/fixtures (refer to report) – Fixtures (e.g. dishwasher) provided as part of base building work have to be chosen within one WELS star of best available at the time of purchase

Energy Efficiency

- ☐ Note showing commitment to 4W/m² lighting density in the dwellings
- ☐ Retractable external clothes drying line
- ☐ Lighting sensors for external lighting (motion detectors, timers etc.)

Indoor Environment Quality

- ☐ Note showing double glazing on all habitable rooms (floor plans and elevations)
- ☐ External Adjustable shading (east/west/north) or Improved horizontal fixed shading (north only)

Transport

- ☐ Bike space location for each dwelling provided in the garage– not installed over bonnet

Waste

- ☐ Three bins system including rubbish, recycling and organic/garden waste.

Urban Ecology

- ☐ Show extent of vegetated areas around the site (includes lawn)

INTRODUCTION

PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:

Frater Consulting Services have been engaged to undertake a Sustainable Design Assessment for the proposed townhouse development located at 95 Kookaburra Avenue, Werribee. This has been prepared to address the Wyndham City Council's sustainability requirements Planning Policy Clause 22.08 *Environmentally Sustainable Development*

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Within Clause 22.10, the City of Wyndham has identified the following key categories to be addressed:

- Energy Performance;
- Water Resources;
- Stormwater Management;
- Indoor Environment Quality;
- Construction, Building & Waste Management;
- Building Materials;
- Transport; and
- Urban Ecology.

The site has been assessed using the BESS tool. BESS was developed by association of councils led by Moreland City Council. This tool assesses the energy and water efficiency, thermal comfort and overall environmental sustainability performance of new buildings or alterations. It was created to demonstrate how new development can meet sustainability requirements as part of a planning permit application for the participating council.

Each target area within the BESS tool generally receives a score of between 1% and 100%. A minimum score of 50% is required for the energy, water, stormwater and IEQ areas. An overall score of 50% represents 'Best Practice' while a score over 70% represent 'Excellence'. The result of the BESS assessment is included as Appendix C.

The Stormwater Treatment Objective – Relative Measure (STORM) calculator which addresses stormwater quality considerations has been used for the development to ensure that stormwater management best practice requirements have been achieved. The result of the STORM assessment is included as Appendix A.



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SITE DESCRIPTION

The proposed site is located at 95 Kookaburra Avenue, Werribee. The 735.1m² site is currently occupied by a single storey house which is proposed to be demolished prior to the construction of the development. It is located in a residential area approximately 32kms south-west of the Melbourne CBD.

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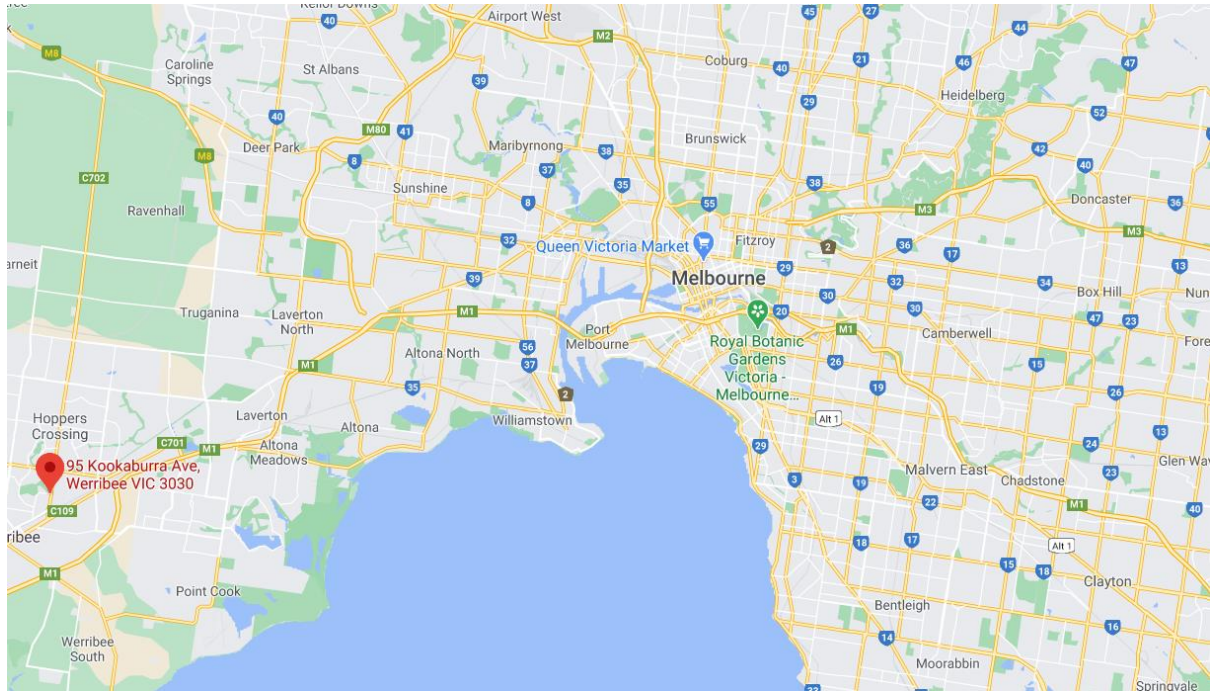


Figure 1: Location of the proposed development in Werribee with relation to Melbourne CBD (Source: Google Maps)

PROPOSED DEVELOPMENT

The proposal consists of development of the site into three double storey townhouses (3 x 3-bedroom). The area of the site is 735.1m². Each townhouse will be provided with an undercover garage and driveways opening on Kookaburra Avenue

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ENERGY EFFICIENCY

Energy and its key elements should be integrated into the design of the proposed development. These elements contribute to reducing greenhouse gas emissions by utilising energy efficient appliances, energy conservation measures and renewable energy.

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Thermal Performance

Full energy ratings will be carried out at the building approval stage. All dwellings will achieve 6.0 Stars each. This will be achieved using appropriate insulation level in all external walls, roof and floors as well as the use of double glazing windows throughout habitable rooms. For the purpose of BESS assessment, minimum compliance figures have been assumed which will be met at the building approval stage.

Heating and Cooling Systems

Heating and cooling systems can account to up to 40% of a household's energy use. Therefore, to reduce the energy consumption heating and cooling will be provided by energy efficient air conditioners (chosen **within one star of the best available** product in the range at the time of purchase). Please note that 3 Star energy rating has been entered in BESS as an average however actual star rating will depends on the product range.

Hot Water Heating

Hot water for the townhouses will be provided with gas instantaneous hot water units chosen as 6 Star minimum or within one star of the best available whichever is greater.

Internal Lighting

Energy consumption from artificial lighting within the townhouses will be reduced by using LED lighting. A lighting level of 4W/m² will not be exceeded in the townhouses. The use of light internal colours will improve daylight penetration thus reducing the need for artificial lighting.

External Lighting

External lighting for the townhouses) will be LED and will include controls such as motion detectors or timers to minimise consumption during off-peak times.

Energy Efficient Appliances

All appliances if provided in the development as part of the base building work (e.g. dishwasher) will be chosen within one energy efficiency star of the best available.

Clothes Drying

External retractable clothes drying lines or racks will be provided for each townhouse within the identified private open spaces.

WATER EFFICIENCY & STORMWATER MANAGEMENT

PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:

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Water saving-use and reuse and its key elements should be integrated into the design of the proposed development. These principles contribute to reducing the water demand in addition to promoting water reuse. Stormwater management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring natural systems are protected and enhanced whilst promoting on-site retention and aims to reduce runoff or peak flows.

Water Efficient Fittings

The development will include efficient fittings and fixtures to reduce the volume of mains water used in the development. The following WELS star ratings will be specified;

- Toilets – 4 Star;
- Taps (bathroom and kitchen) – 5 Star; and
- Showerhead – 3 Star with aeration device (6.0-7.5L/min).

Rainwater Collection & Use

Rainwater runoff from part of the roof area of each townhouse will be collected and stored in rainwater tanks¹. Each dwelling will be provided with a 3,000L tank.

If required, a charged pipe system or multiple tanks will be installed to collect water from part of the roof of each dwelling.

In the case of a charged pipe system, the charged pipes will not be running underneath the building footprint (slab) and the stakeholders (builder/developer/architect) will be required to explicitly acknowledge this solution and have the capacity to install it.

Rainwater collected will be used for toilet flushing and laundry in each townhouse. These initiatives will reduce significantly the stormwater impacts of the development and help achieve compliance with the STORM calculator (See Appendix A).

Stormwater Treatment – Permeable Paving

Minimum of 60m² of driveway will be designed to be permeable. This will help towards reducing the overall stormwater outflows from the site.

Water Efficient Appliances

All appliances if provided in the development as part of the base building work (e.g. dishwasher) will be chosen within one WELS star of the best available.

Water Efficient Landscaping

Native or drought-tolerant plants will be implemented for the landscaped areas on site. Use of water or irrigation will not be required after an initial period when plants are getting established. If irrigation is required, it will be connected to rainwater tanks.

¹ Please note that any stormwater detention volume requirement for the site will be in addition to the proposed rainwater retention and that the proposed tank will not be directly topped up by mains water.

INDOOR ENVIRONMENT QUALITY

PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:

Date Plans Provided: 18/08/2021

Indoor Environment Quality and its key elements should be integrated into the design of the proposed development. These elements play a significant role in the health, wellbeing and satisfaction of the development occupants. Facilitating a good (IEQ) design provides a naturally comfortable indoor environment and less dependence on building services such as, artificial lighting, mechanical ventilation and heating and cooling device.

Volatile Organic Compounds

All paints, adhesives and sealants and flooring will have low VOC content. Alternatively, products will be selected with no VOCs. Paints such as eColour, or equivalent should be considered. Please refer to Appendix B for VOC limits.

Formaldehyde Minimisation

All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better. Alternatively, products will be specified with no Formaldehyde. Products such as ecological panel – 100% post-consumer recycled wood (or similar) will be considered for use within the development. Please refer to Appendix B for formaldehyde limits.

Daylight Levels

Daylight penetration will be enhanced with the use of light internal colours to improve daylight reflection. All bedrooms and living rooms will be provided with windows to allow for natural sunlight and ventilation. There are no bedrooms which rely on borrowed daylight. Installation of mirrored wardrobe doors could improve even further the daylight spread within the bedrooms.

Double Glazing

Glazing will be chosen in accordance with the energy rating requirements at the building approval stage. However, as a minimum double glazing will be provided to all living areas and bedrooms. This will provide better thermal performance and reduce condensation which helps prevent the formation of mould within the dwellings.

Task Lighting

A higher illuminance level (300Lux) will be provided for all task areas (e.g. kitchen bench, bathroom basin) to ensure appropriate light is provided to do any tasks in these areas.

Shading

A combination of improved horizontal projection fixed shading (north only) and external adjustable shading (awning, external blinds etc.) will be provided on all main glazing on the east, west and north facades. This will help to reduce glare and control solar gains, improving the thermal comfort of the townhouses.

Ventilation

All kitchens will have a separate dedicated exhaust fan (range-hood) which will be directly exhausted out of the building.

All townhouses will have access to effective cross flow ventilation. It will provide fresh air to the occupants and reduce the need for mechanical cooling. Windows and doors will be provided to encourage and improve natural ventilation in the dwellings.

CONSTRUCTION, BUILDING & WASTE MANAGEMENT

Date Plans Provided: 10/08/2021

Building Management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring efficient and effective on-going building performance. Waste management and its key elements should be integrated into the design of the proposed development. These principles contribute to ensuring minimal waste is transported to landfill by means of disposal, recycling and on-site waste storage and/or collection methods.

Metering and Monitoring

Separate utility meters (water, gas and electricity) will be provided for each townhouse. This will allow residents to monitor and reduce their consumption.

Construction Waste Management

A waste management plan will be introduced to all on-site staff at a site orientation session to ensure that the waste generated on site is minimised and disposed of correctly. A minimum 80% of all construction and demolition waste generated on site will be reused or recycled.

Construction Environmental Management

The builder will identify environmental risks related to construction and include management strategies such as maintaining effective erosion and sediment control measures during construction and operation and ensure that appropriate staging of earthworks (e.g. avoid bare earthworks in high risk areas of the site during dominant rainfall period).

Operational Waste

Each townhouse will be provided with bins for general, recycling waste and garden/organic waste.



Figure 2: Organic/garden waste bin

Recycling bins will be provided next to general waste bins in the kitchen.



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Figure 3: Examples of kitchen receptacles for general waste and recycling.

TRANSPORT

Bicycle Parking

Residents will be able to securely park their bicycle within each townhouse's garage. This will provide for a total of at least 3 bicycle spaces provided for residents and their visitors. The bike spaces will not be installed over bonnet.

BUILDING MATERIALS

Materials selection should be integrated into the design of the proposed development. The criteria for appropriate materials used are based on economic and environmental cost.

Timber

All timber used in the development will be Forest Stewardship Council (FSC) or Program for the Endorsement of Forest Certification (PEFC) certified, or recycled / reused.

Flooring

The use of timber flooring will be preferred for all living areas and bedrooms. Wherever possible, flooring will be selected from products/materials certified under any of the following:

- Carpet Institute of Australia Limited, Environmental Certification Scheme (ECS) v1.2;
- Ecospecifier GreenTag GreenRate V3.2; and/or
- Good Environmental Choice (GECA).

Alternatively, flooring must be durable, include some eco-preferred content, be modular and/or come from a manufacturer with a product stewardship program and ISO 14001 certification.

Joinery

Wherever possible, joinery will be manufactured from materials/products certified under any of the following:

- Ecospecifier GreenTag GreenRate V3.1;
- Good Environmental Choice (GECA); and/or
- The Institute for Market Transformation to Sustainability (MTS) Technology standard Version 4.0 – SmarT 4.0.

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The use of Ecological Panel (or equivalent) will be investigated, which is created from 100% post-consumer recycled products.

Non-toxic and Durable External Materials

All external materials used to construct the building will be long lasting and will be non-toxic.

Steel

Wherever possible, steel for the development will be sourced from a Responsible Steel Maker². Reinforcing steel for the project will be manufactured using energy reducing processes commonly used by large manufacturers such as Bluescope or OneSteel.



URBAN ECOLOGY

In highly urbanised environments, such as metropolitan Melbourne, it is important to recognise the importance of maintaining and increasing the health of our urban ecosystems to improve living conditions not only for the fauna but also ourselves. We can improve our urban ecosystem through the incorporation of vegetation through landscaping for both new and existing developments.

Vegetation

Large landscaped area will be provided around the site and within the private open spaces. It will provide the occupants with a pleasant surrounding environment. The design will incorporate a mix of native species to help maintain local biodiversity.

Insulant ODP

All thermal insulation used in the development will not contain any ozone-depleting substances and will not use any in its manufacturing.

² A Responsible Steel Maker must have facilities with a currently valid and certified ISO 14001 Environmental Management System (EMS) in place, and be a member of the World Steel Association's (WSA) Climate Action Program (CAP).

IMPLEMENTATION & MONITORING

The proposed Kookaburra Avenue development will meet the best practice requirement of the City of Wyndham through the different initiatives describe in this SDA such as thermally efficient building envelope, efficient air conditioning and hot water system and sustainable materials. An appropriate implementation and monitoring of the initiatives outlined within this SDA will be required.

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Implementation of the ESD initiatives outlined in this report requires the following processes:

- Full integration with architectural plans and specifications
- Full integration with building services design drawings and specifications
- Endorsement of the ESD Report with town planning drawings
- ESD initiatives to be included in plans and specifications for building approval

APPENDIX A – WSUD REPORT / STORM ASSESSMENT

PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:
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New development must comply with the best practice performance targets for suspended solids, total phosphorous and total nitrogen, as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victoria Stormwater Committee 1999. Currently, these water quality performance targets require:

- Suspended Solids - 80% retention of typical urban annual load.
- Total Nitrogen - 45% retention of typical urban annual load.
- Total Phosphorus - 45% retention of typical urban annual load.
- Litter - 70% reduction of typical urban annual load.

The STORM tool, an industry accepted tool, was used to assess the development and ensure that the best practice targets described above are met. A minimum compliance score of 100% is required to achieve for the development.

Site Delineation

For the purpose of the assessment, the development has been delineated into the following surface types:

- Site area of 735.1m²;
- Entire roof area runoff of dwelling 1 of 115m² which will be diverted into rainwater tank(s);
- Entire roof area runoff of dwelling 2 of 115m² which will be diverted into rainwater tank(s);
- Part of the roof area runoff of dwelling 3 of 60m² which will be diverted into rainwater tank(s);
- Permeable area of 244.7m² comprised of landscaped area, permeable paving and other pervious surfaces in the backyards;
- Minimum 60m² of exposed driveway to be designed to be permeable; and
- Remainder of impervious areas of 140.4m² comprised of unconnected roof areas and other impervious areas around the site.

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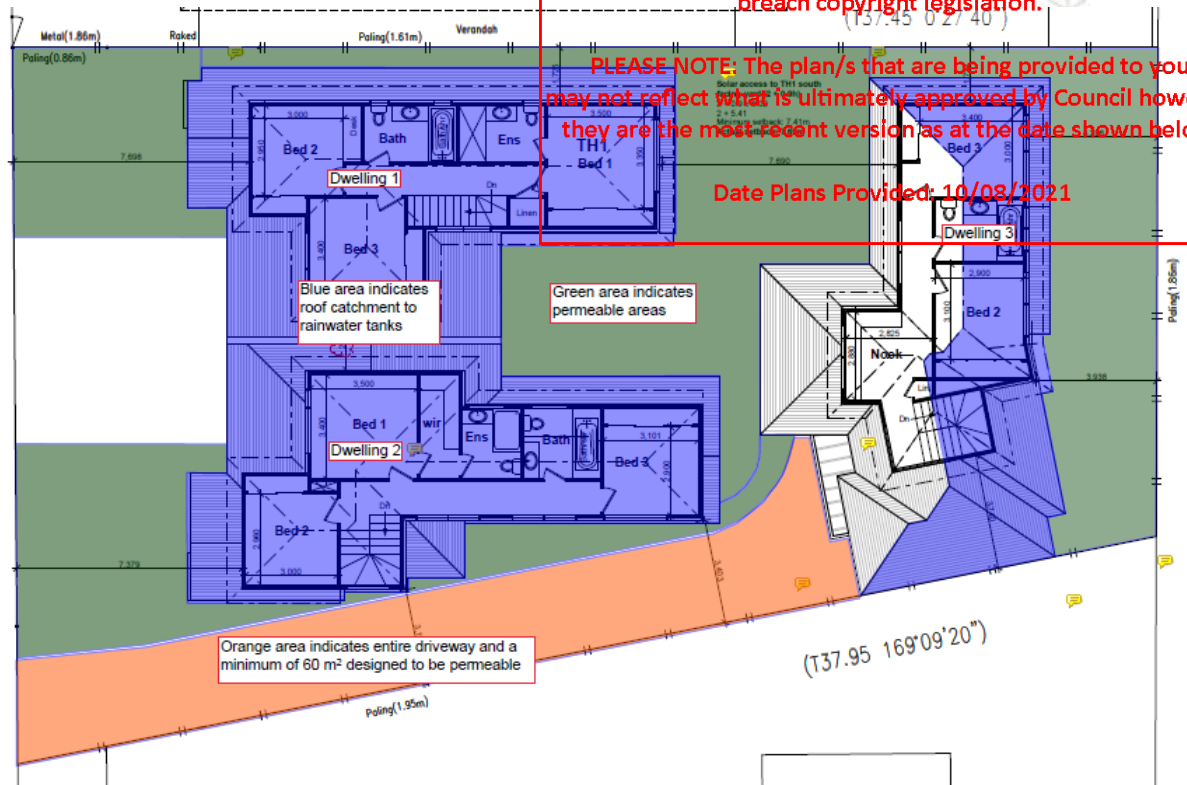


Figure 4: Roof catchment area for each dwelling to RWT (blue) permeable driveway (orange) and permeable areas (Green)

Stormwater initiatives

Rainwater Tank

(3,000L Rainwater tank for toilet flushing and laundry for each dwelling)

The roof catchment area of each townhouse (as described above) will be diverted to 3,000L rainwater tanks for each townhouse. The rainwater collected will be used for toilet flushing and laundry in all townhouses.

If required, a charged pipe system or multiple tanks will be installed to collect water from part of the roof of each dwelling.

In the case of a charged pipe system, the charged pipes will not be running underneath the slab and the stakeholders (builder/developer/architect) will be required to explicitly acknowledge this solution and have the capacity to install it.

Permeable Paving

Minimum 60m² of exposed driveway (as described above) will be designed to be permeable. This will reduce the overall stormwater runoff from the site.

The remainder of impervious areas will directly be released at the legal point of discharge on site.

Permeable areas are excluded from the STORM assessment.

Stormwater Results

The initiatives and areas described above have been applied to the STORM calculator and the proposed development has achieved a score of 100%.



STORM Rating Report

TransactionID: 1190043
Municipality: WYNDHAM (South West of Skeleton Creek)
Rainfall Station: WYNDHAM (South West of Skeleton Creek)
Address: 95 kookaburra Avenue

Assessor: Werribee VIC 3030 Frater Consulting Services
Development Type: Residential - Dwelling
Allotment Site (m2): 735.10
STORM Rating %: 100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Dwelling 1 Roof Catchment	115.00	Rainwater Tank	3,000.00	4	143.10	86.20
Dwelling 2 Roof Catchment	115.00	Rainwater Tank	3,000.00	4	143.10	86.20
Dwelling 3 Roof Catchment	60.00	Rainwater Tank	3,000.00	4	170.00	82.00
Other impervious area	140.40	None	0.00	0	0.00	0.00

Please note that an additional occupant has been input in STORM for each dwelling to account for laundry connection.

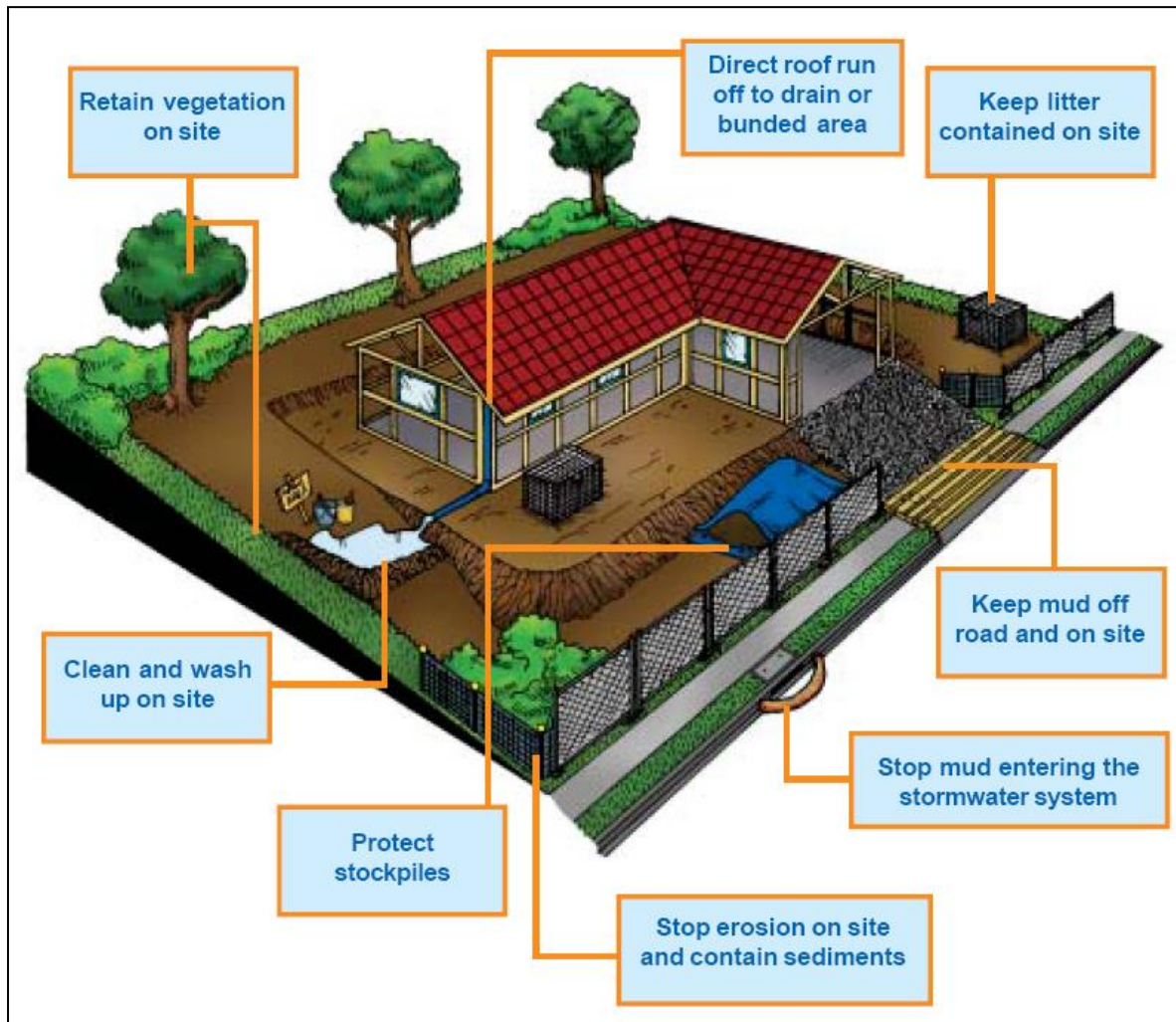
We have assumed that on average a household will have a 3 WELS star washing machine and will run two loads per week. Based on data from WELS, 3-Star washing machine have an average consumption per load of 102 L. With two loads per week, this would represent 204 L/week for laundry or 29L/day. STORM input assume that one bedroom/occupant represent a daily consumption of 20L/day therefore connection to laundry (29L/day) has been input as an additional occupant.

Stormwater Management at Construction Site

To manage stormwater management in the construction stage, measures will be put in place to minimise the likelihood of contaminating stormwater. These will include using buffer strips, silt traps, sediment traps, sediment traps are installed, and the site will be kept clean from any loose rubbish. The builder will follow the process outlined in "Keeping Our Stormwater Clean – A Builder's Guide" by Melbourne Water.

PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however these will be measured using buffer strips are date shown below:

Date Plans Provided: 10/08/2021



Copies of "Keeping Our Stormwater Clean – A Builder's Guide" booklet can be obtained from Melbourne Water by ringing on 131 722 or can be downloaded from the following website.

<https://www.melbournewater.com.au/sites/default/files/Keeping-our-stormwater-clean-builders-guidelines.pdf>

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APPENDIX B – VOC & FORMALDEHYDE EMISSION LIMITS

The following table are an extract of the Green Star Design and as built submission guidelines.

Table 13.1.1: Maximum TVOC Limits for Paints, Adhesives and Sealants

Date Plans Provided: 10/08/2021

Product Category	Max TVOC content in grams per litre (g/L) of ready to use product.
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

The product complies with the Total VOC (TVOC) limits specified in the Table below.

Carpet Test Standards and TVOC Emissions Limits

Test protocol	Limit
ASTM D5116 - Total VOC limit	0.5mg/m ² per hour
ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m ² per hour
ISO 16000 / EN 13419 - TVOC at three days	0.5 mg/m ² per hour
ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m ² per hour

Table 13.2: Formaldehyde Emission Limit Values for Engineered Wood Products

Test Protocol	Emission Limit Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	$\leq 1 \text{ mg/L}$
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	$\leq 1.5 \text{ mg/L}$
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	$\leq 1 \text{ mg/L}$
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	$\leq 1 \text{ mg/L}$
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	$\leq 1 \text{ mg/L}$
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	$\leq 1 \text{ mg/L}$
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	$\leq 1 \text{ mg/L}$
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	$\leq 0.1 \text{ mg/m}^2\text{hr}^*$
ASTM D5116 (applicable to high pressure laminates and compact laminates)	$\leq 0.1 \text{ mg/m}^2\text{hr}$
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	$\leq 0.1 \text{ mg/m}^2\text{hr}$ (at 3 days)
ASTM D6007	$\leq 0.12 \text{ mg/m}^{3**}$
ASTM E1333	$\leq 0.12 \text{ mg/m}^{3***}$
EN 717-1 (also known as DIN EN 717-1)	$\leq 0.12 \text{ mg/m}^3$
EN 717-2 (also known as DIN EN 717-2)	$\leq 3.5 \text{ mg/m}^2\text{hr}$

*mg/m²hr may also be represented as mg/m²/hr.

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APPENDIX C – BESS ASSESSMENT

BESS Report

Built Environment Sustainability Scorecard

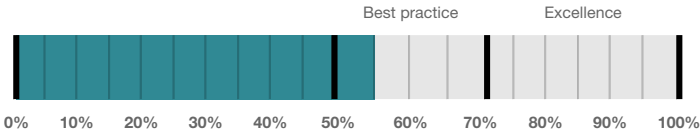
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This BESS report outlines the sustainable design commitments of the proposed development at 95 Kookaburra Ave Werribee VIC 3030. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Wyndham City Council.

Note that where a Sustainability Management Plan is required, the BESS report and accompanying documents are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Wyndham City Council. They are the most recent version as at the date shown below:

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Your BESS Score



58%

Project details

Address	95 Kookaburra Ave Werribee VIC 3030
Project no	A525B560-R2
BESS Version	BESS-5
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	vana@fraterconsultingservices.com.au
Application no.	
Site area	735 m²
Building floor area	417.71000000000004 m²
Date	14 July 2021
Software version	1.7.0-B.365



Performance by category

● Your development ● Maximum available

Category	Weight	Score	Pass	Bar
Management	5%	0%	*	
Water	9%	50%	✓	
Energy	28%	50%	✓	
Stormwater	14%	100%	✓	
IEQ	17%	100%	✓	
Transport	9%	50%	*	
Waste	6%	50%	*	
Urban Ecology	6%	50%	*	
Innovation	9%	0%	*	

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Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Townhouse			
Dwelling 3	1	144 m ²	34%
Dwelling 1	1	140 m ²	33%
Dwelling 2	1	134 m ²	32%
Total	3	417 m²	100%

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Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Water efficient garden annotated	To be printed Refer to drawings	✓
Energy 3.3	External lighting sensors annotated	To be printed Refer to drawings	✓
Energy 3.4	Clothes line annotated (if proposed)	To be printed Refer to drawings	✓
Stormwater 1.1	Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)	To be printed Refer to drawings	✓
IEQ 2.2	Dwellings meeting the requirements for having 'natural cross flow ventilation'	To be printed Refer to drawings	✓
IEQ 3.1	Glazing specification to be annotated	To be printed Refer to drawings	✓
IEQ 3.2	Adjustable shading systems	To be printed Refer to drawings	✓
IEQ 3.3	North-facing living areas	To be printed Refer to drawings	✓
Transport 1.1	All nominated residential bicycle parking spaces	To be printed Refer to drawings	✓
Waste 2.1	Location of food and garden waste facilities	To be printed Refer to drawings	✓
Urban Ecology 2.1	Vegetated areas	To be printed Refer to drawings	✓

Supporting evidence

Credit	Requirement	Response	Status
Energy 3.5	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 2.2	A list of dwellings with natural cross flow ventilation		-
IEQ 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-
IEQ 3.2	Reference to floor plans and elevations showing shading devices		-
IEQ 3.3	Reference to the floor plans showing living areas orientated to the north		-

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Credit summary

Management Overall contribution 4.5%

1.1 Pre-Application Meeting	
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	
4.1 Building Users Guide	

Water Overall contribution 9.0%

1.1 Potable water use reduction		40%
3.1 Water Efficient Landscaping		100%

Energy Overall contribution 27.5%

		Minimum required 50%	50%	✓ Pass
1.2 Thermal Performance Rating - Residential			0%	
2.1 Greenhouse Gas Emissions			100%	
2.2 Peak Demand			0%	
2.3 Electricity Consumption			100%	
2.4 Gas Consumption			100%	
2.5 Wood Consumption			N/A	✦ Scoped Out
			No wood heating system present	
3.2 Hot Water			100%	
3.3 External Lighting			100%	
3.4 Clothes Drying			100%	
3.5 Internal Lighting - Residential Single Dwelling			100%	
4.4 Renewable Energy Systems - Other			N/A	⊗ Disabled
			None	
4.5 Solar PV - Houses and Townhouses			N/A	⊗ Disabled
			None	

Stormwater Overall contribution 13.5%

		Minimum required 100%	100%	✓ Pass
1.1 Stormwater Treatment			100%	

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IEQ Overall contribution 16.5%

		Minimum required 50%	100%	Pass
2.2 Cross Flow Ventilation			100%	
3.1 Thermal comfort - Double Glazing			100%	
3.2 Thermal Comfort - External Shading			100%	
3.3 Thermal Comfort - Orientation			100%	

Transport Overall contribution 9.0%

		50%	
1.1 Bicycle Parking - Residential		100%	
1.2 Bicycle Parking - Residential Visitor		N/A	Scaped Out
		Not enough dwellings.	
2.1 Electric Vehicle Infrastructure		0%	

Waste Overall contribution 5.5%

		50%	
1.1 - Construction Waste - Building Re-Use		0%	
2.1 - Operational Waste - Food & Garden Waste		100%	

Urban Ecology Overall contribution 5.5%

		50%	
2.1 Vegetation		100%	
2.2 Green Roofs		0%	
2.3 Green Walls and Facades		0%	
2.4 Private Open Space - Balcony / Courtyard Ecology		0%	
3.1 Food Production - Residential		0%	

Innovation Overall contribution 9.0%

		0%	
1.1 Innovation		N/A	Disabled
		None	

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Credit breakdown**Management** Overall contribution 0%

1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 0% towards the category score.
Criteria	Has any ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	No
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	0%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Townhouse	No
4.1 Building Users Guide	0%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	No

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Water

Overall contribution 4% Minimum required 50%

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Water Approach	
What approach do you want to use Water?: <small>Use the built in calculation tools</small>	
Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?: No	
Are you installing a swimming pool?:	
Are you installing a rainwater tank?: Yes	
Water fixtures, fittings and connections	
Date Plans Provided: 10/08/2021	
Showerhead: All	3 Star WELS (>= 6.0 but <= 7.5)
Bath: All	Medium Sized Contemporary Bath
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Default or unrated
Which non-potable water source is the dwelling/space connected to?:	
Dwelling 1	RWT 1
Dwelling 2	RWT 2
Dwelling 3	RWT 3
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	Yes
Non-potable water source connected to Hot Water System: All No	
Rainwater Tanks	
What is the total roof area connected to the rainwater tank?:	
RWT 1	115 m ²
RWT 2	115 m ²
RWT 3	60.0 m ²
Tank Size:	
RWT 1	3,000 Litres
RWT 2	3,000 Litres
RWT 3	3,000 Litres
Irrigation area connected to tank:	
RWT 1	-
RWT 2	-
RWT 3	-
Is connected irrigation area a water efficient garden?:	
RWT 1	No
RWT 2	No
RWT 3	No

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Other external water demand connected to tank?		<p>This copied document is made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach copyright legislation.</p>
RWT 1		
RWT 2		
RWT 3		
1.1 Potable water use reduction		40%
Score Contribution	This credit contributes 83.3% towards the category score.	
Criteria	<p>PLEASE NOTE: The plan/s that are being provided to you may not reflect what is ultimately approved by Council however they are the most recent version as at the date shown below:</p> <p>What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction</p> <p>Date Plans Provided: 10/08/2021</p>	
Output	Reference	
Project	588 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	484 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	358 kL	
Output	% Reduction in Potable Water Consumption	
Project	39 %	
Output	% of connected demand met by rainwater	
Project	87 %	
Output	How often does the tank overflow?	
Project	Often	
Output	Opportunity for additional rainwater connection	
Project	125 kL	
3.1 Water Efficient Landscaping		100%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will water efficient landscaping be installed?	
Question	Criteria Achieved ?	
Project	Yes	

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Energy

Overall contribution 14%

Minimum required 50%

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Dwellings Energy Approach

What approach do you want to use for Energy?:

Use the built in calculation tools

Project Energy Profile Question

Are you installing a solar photovoltaic (PV) system?

PLEASE NOTE: The plan/s that are being provided to you

Are you installing any other renewable energy system(s)?

No

Gas supplied into building:

Natural Gas

they are the most recent version as at the date shown below:

Dwelling Energy Profiles

Below the floor is: All

Ground or Carpark

Above the ceiling is: All

Outside

Date Plans Provided: 10/08/2021

Exposed sides:

Dwelling 1

3

Dwelling 2

Dwelling 3

4

NatHERS Annual Energy Loads - Heat: All

118 MJ/sqm

NatHERS Annual Energy Loads - Cool: All

20.0 MJ/sqm

NatHERS star rating: All

6.0

Type of Heating System: All

D Reverse cycle space

Heating System Efficiency: All

3 Star

Type of Cooling System: All

Refrigerative space

Cooling System Efficiency: All

3 Stars

Type of Hot Water System: All

J Gas Instantaneous 6 star

% Contribution from solar hot water system: All

-

Is the hot water system shared by multiple dwellings?: All

No

Clothes Line: All

D Private outdoor clothesline

Clothes Dryer: All

F Clothes dryer 1 stars

1.2 Thermal Performance Rating - Residential

0%

Score Contribution

This credit contributes 30.0% towards the category score.

Criteria

What is the average NatHERS rating?

Output

Average NATHERS Rating (Weighted)

Townhouse

6.0 Stars

2.1 Greenhouse Gas Emissions

100%

Score Contribution

This credit contributes 10.0% towards the category score.

Criteria

What is the % reduction in annual greenhouse gas emissions against the benchmark?

Output

Reference Building with Reference Services (BCA only)

Townhouse

24,641 kg CO2

Output

Proposed Building with Proposed Services (Actual Building)

Townhouse

8,788 kg CO2

Output

% Reduction in GHG Emissions

Townhouse

64 %

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2.2 Peak Demand

Score Contribution

This credit contributes 0% towards the category score.

Criteria

What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?

2.3 Electricity Consumption

Score Contribution

This credit contributes 100% towards the category score.

Criteria

What is the % reduction in annual electricity consumption against the benchmark?

Output

Reference

Townhouse

21,455 kWh

Output

Proposed

Townhouse

6,670 kWh

Output

Improvement

Townhouse

68 %

2.4 Gas Consumption

Score Contribution

This credit contributes 10.0% towards the category score.

Criteria

What is the % reduction in annual gas consumption against the benchmark?

Output

Reference

Townhouse

53,636 MJ

Output

Proposed

Townhouse

38,609 MJ

Output

Improvement

Townhouse

28 %

2.5 Wood Consumption

N/A

✦ Scoped Out

This credit was scoped out

No wood heating system present

3.2 Hot Water

Score Contribution

This credit contributes 5.0% towards the category score.

Criteria

What is the % reduction in annual hot water system energy use (gas and electricity) against the benchmark?

Output

Reference

Townhouse

14,899 kWh

Output

Proposed

Townhouse

10,864 kWh

Output

Improvement

Townhouse

27 %

3.3 External Lighting

Score Contribution

This credit contributes 5.0% towards the category score.

Criteria

Is the external lighting controlled by a motion detector?

Question

Criteria Achieved ?

Townhouse

Yes

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3.4 Clothes Drying		100%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	Does the combination of clothes lines and efficient dryers reduce energy (gas+electricity) consumption by more than 10%?	
Output	Reference	
Townhouse	1,955 kWh	
Output	Proposed	
Townhouse	391 kWh	
Output	Improvement	
Townhouse	80 %	
3.5 Internal Lighting - Residential Single Dwelling		100%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?	
Question	Criteria Achieved ?	
Townhouse	Yes	
4.4 Renewable Energy Systems - Other		N/A <input type="radio"/> Disabled
This credit is disabled	None	
4.5 Solar PV - Houses and Townhouses		N/A <input type="radio"/> Disabled
This credit is disabled	None	

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Stormwater Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:		Melbourne Water STORM tool
1.1 Stormwater Treatment		100%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Question	STORM score achieved	
Project	100	
Output	Min STORM Score	
Project	100	


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IEQ Overall contribution 16% Minimum required 50%

2.2 Cross Flow Ventilation		100%
Score Contribution	This credit contributes 20.0% towards the category score.	
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.1 Thermal comfort - Double Glazing		100%
Score Contribution	This credit contributes 40.0% towards the category score.	
Criteria	Is double glazing (or better) used to all habitable areas?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.2 Thermal Comfort - External Shading		100%
Score Contribution	This credit contributes 20.0% towards the category score.	
Criteria	Is appropriate external shading provided to east, west and north facing glazing?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.3 Thermal Comfort - Orientation		100%
Score Contribution	This credit contributes 20.0% towards the category score.	
Criteria	Are at least 50% of living areas orientated to the north?	
Question	Criteria Achieved ?	
Townhouse	Yes	

Transport Overall contribution 4%

1.1 Bicycle Parking - Residential		100%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	Is there at least one secure bicycle space per dwelling?	
Question	Bicycle Spaces Provided ?	
Townhouse	3	
Output	Min Bicycle Spaces Required	
Townhouse	3	
1.2 Bicycle Parking - Residential Visitor		N/A  Scoped Out
This credit was scoped out	Not enough dwellings.	
2.1 Electric Vehicle Infrastructure		0%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	No	

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Waste Overall contribution 3%

1.1 - Construction Waste - Building Re-Use	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing floor area re-used.
Question	Criteria Achieved ?
Project	No
2.1 - Operational Waste - Food & Garden Waste	100%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Are facilities provided for on-site management of food and garden waste?
Question	Criteria Achieved ?
Project	Yes

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Urban Ecology

Overall contribution 3%

2.1 Vegetation	0%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area.
Annotation	Achieved: 22.0 sqm of the site (60%) will be covered with vegetation.
Question	Percentage Achieved ?
Project	30 %
2.2 Green Roofs	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green roof?
Question	Criteria Achieved ?
Project	No
2.3 Green Walls and Facades	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Does the development incorporate a green wall or facade?
Question	Criteria Achieved ?
Project	No
2.4 Private Open Space - Balcony / Courtyard Ecology	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there a tap and floor waste on every balcony / in every courtyard?
Question	Criteria Achieved ?
Townhouse	No
3.1 Food Production - Residential	0%
Score Contribution	This credit contributes 12.5% towards the category score.
Criteria	Is there at least 0.25m ² of space per resident dedicated to food production?
Question	Food Production Area
Townhouse	-
Output	Min Food Production Area
Townhouse	3 m ²

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Innovation

Overall contribution 0%

1.1 Innovation	N/A	0 Disabled
This credit is disabled	None	

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