HUME CITY COUNCIL

Office Use Only

Application No.: Date Lodged: / /

Application for
Planning Permit

Planning Enquiries
Phone:
Web: http://www.hume.vic.gov.au

If you need help to complete this form, read *How to Complete the Application for Planning Permit form*.

⚠ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*. If you have any concerns, please contact Council's planning department.

⚠ **Questions marked with an asterisk (*) are mandatory and must be completed.**

⚠ **If the space provided on the form is insufficient, attach a separate sheet.**

The Land

1 Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: | St. No.: 283 | St. Name: GAP RD

Suburb/Locality: SUNBURY | Postcode:3429

Formal Land Description *
Complete either A or B.

⚠ This information can be found on the certificate of title.

A Lot No.: 11 ○ Lodged Plan ○ Title Plan ◉ Plan of Subdivision No.: 057484

OR

B Crown Allotment No.: | Section No.:

Parish/Township Name:

The Proposal

⚠ You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.

2 **For what use, development or other matter do you require a permit? ***

If you need help about the proposal, read: *How to Complete the Application for Planning Permit Form*

3 UNIT DEVELOPMENT
CONSTRUCTION OF 2 NEW DWELLINGS WHILE RETAINING THE EXISTING DWELLING ON SITE

Provide additional information on the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

3 **Estimated cost of development for which the permit is required ***

Cost $411K ⚠ You may be required to verify this estimate.

Insert '0' if no development is proposed (eg. change of use, subdivision, removal of covenant, liquor licence)

Existing Conditions

4 **Describe how the land is used and developed now ***

eg. vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

SINGLE DWELLING

Provide a plan of the existing conditions. Photos are also helpful.

Title Information

5 **Encumbrances on title** *

If you need help about the title, read: *How to Complete the Application for Planning Permit Form*

Does the proposal breach, in any way, an encumbrance on title such as a restrictrive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- ◯ Yes. (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- ◯ No
- ◉ Not applicable (no such encumbrance applies).

Provide a full, current copy of the title for each individual parcel of land forming the subject site. (The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', eg. restrictive covenants.)

Applicant and Owner Details

6 Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Please provide at least one contact phone number *

[redacted]

This
of er
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Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Declaration

7 **This form must be signed by th**

⚠ Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

Need help with the Application?

If you need help to complete this form, read *How to complete the Application for Planning Permit Form*
General information about the planning process is available at *http://www.dpcd.vic.gov.au/planning*

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

8 Has there been a pre-application meeting with a Council planning officer?

◯ No ◯ Yes If 'yes', with whom?:

Date: day / month / year

Checklist

9 Have you:

☑ Filled in the form completely?

☑ Paid or included the application fee?

⚠ Most applications require a fee to be paid. Contact Council to determine the appropriate fee.

☑ Provided all necessary supporting information and documents?

- ☑ A Full, current copy of title information for each individual parcel of land, forming the subject site.
- ☑ A plan of the existing conditions.
- ☑ Plans showing the layout and details of the proposal.
- ☑ Any information required by the planning scheme, requested by council or outlined in a council planning permit check list.
- ☑ If required, a description of the likely effect of the proposal (eg. traffic, noise, environmental impacts).

☑ Completed the relevant Council planning permit checklist?

☑ Signed the declaration (section 7)?

Lodgement

Lodge the completed and signed form, the fee payment and all documents with:

Hume City Council
PO Box 119 Dallas VIC 3047

Pascoe Vale Road Broadmeadows VIC 3047

Contact information:
Fax: 61 03 93090109
Email: email@hume.vic.gov.au
DX: 94718
Translation: (03) 9205 2200 for connection to Hume Link's multilingual telephone information service

The Victorian Government acknowledges the Traditional Owners of Victoria and pays respects to their ongoing connection to their Country, History and Culture. The Victorian Government extends this respect to their Elders, past, present and emerging.

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 09000 FOLIO 495 Security no : 124113529337A
Produced 19/03/2024 03:19 PM

LAND DESCRIPTION

Lot 11 on Plan of Subdivision 057484.
PARENT TITLE Volume 08439 Folio 547
Created by instrument E449378 07/07/1972

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AJ448679J 24/01/2012
NATIONAL AUSTRALIA BANK LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP057484 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

Additional information: (not part of the Register Search Statement)

Street Address: 28 [illegible]

ADMINISTRATIVE NOTICES

NIL

eCT Control 16089P NATIONAL AUSTRALIA BANK LTD
Effective from 23/10/2016

DOCUMENT END

Imaged Document Cover Sheet

The document following this cover sheet is an imaged document supplied by LANDATA®, Secure Electronic Registries Victoria.

Document Type	**Plan**
Document Identification	**LP057484**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**19/03/2024 15:19**

PLAN OF SUBDIVISION

LP57484
EDITION 1
PLAN MAY BE LODGED 20/2/63

CROWN ALLOTMENTS 56 & 61

PARISH OF BUTTLEJORRK

COUNTY OF BOURKE
VOL. 2819 FOL. 734
VOL. 8314 FOL. 872

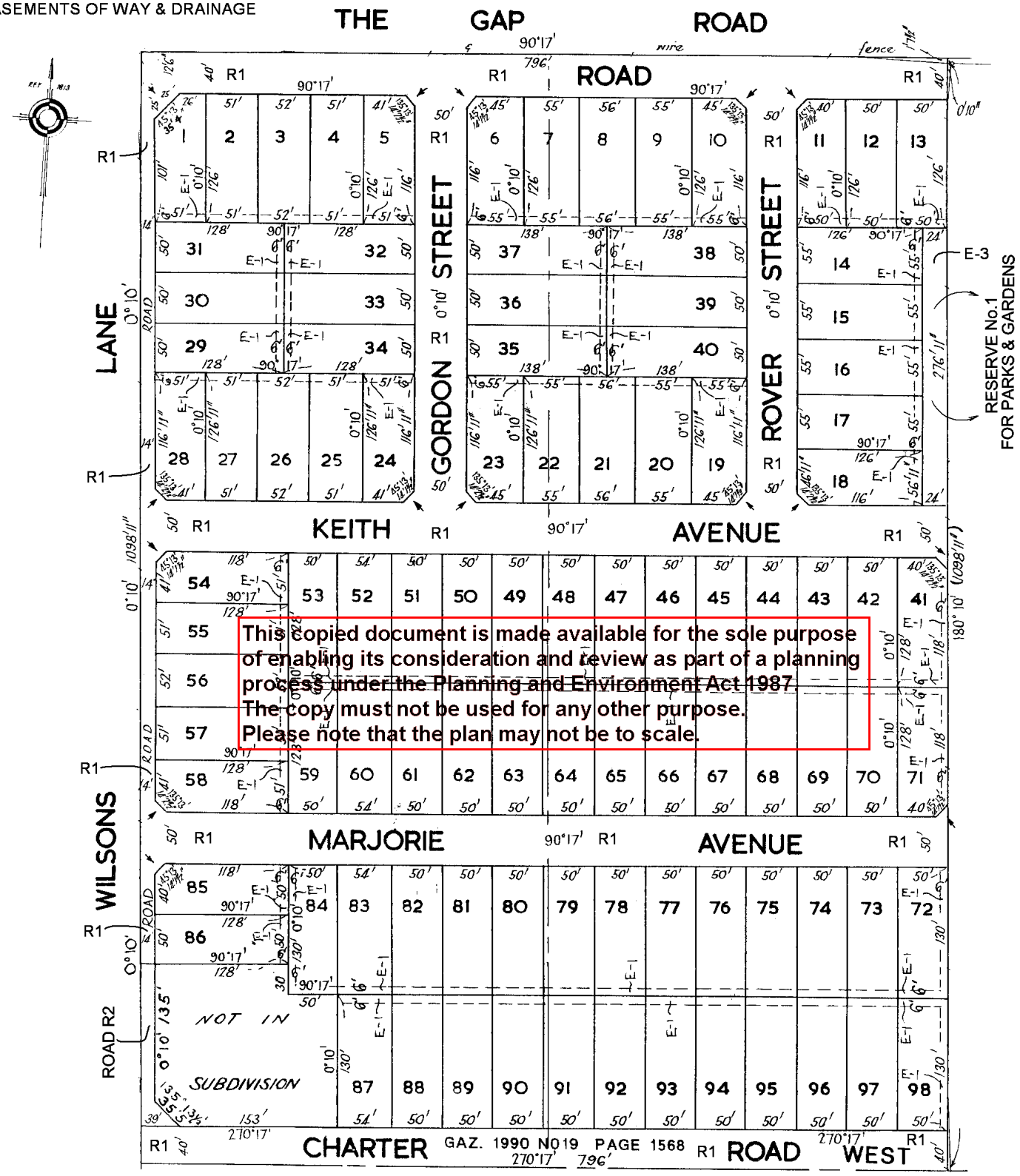
Measurements are in Feet & Inches
Conversion Factor
FEET X 0.3048 = METRES

COLOUR CONVERSION
E - 1 = BLUE
R1 & R2 = BROWN
E - 3 = GREEN

APPROPRIATIONS
THE LAND COLOURED BLUE & GREEN IS APPROPRIATED OR SET APART FOR EASEMENTS OF DRAINAGE & SEWERAGE

THE LAND COLOURED BROWN IS APPROPRIATED OR SET APART FOR EASEMENTS OF WAY & DRAINAGE

NOTATIONS
Reference Marks, iron pipes, shown thus ✱
All corners are splayed 10' unless shown otherwise



[redacted]

PLANNING REPORT ASSESSMENT

283 Gap Road, Sunbury

Proposed development of two new dwellings to the rear of existing dwelling on site

Municipality: Hume City Council

Planning Application Number: to be confirmed

Dated: 3 September 2024

Table of Contents

01 | Proposal

The proposal involves the development of two new dwellings while retaining the existing dwelling in a General Residential Zone (GRZ1). Key features of the development are summarised below:

Dwelling Layout

- Proposed two double storey dwellings are sited side-by-side to the rear of the existing single storey dwelling on site.
- Both dwellings are designed with open plan living, meals and kitchen area on the ground level.
- Both dwellings are designed with two bedrooms on the first level.
- The existing dwelling provides two bedrooms.

Vehicle access and car parking

- The existing crossover along Gap Road is retained for vehicle access to unit 1.
- A new crossover along Rover Street is proposed for vehicle access to unit 2.
- The existing crossover along Rover Street is retained for vehicle access to unit 3.
- Both dwellings are provided with a single garage.
- The existing dwelling is provided with a carport and a car space.

Landscaping

- Existing vegetation on site is removed.
- Comprehensive landscaping is introduced with new plantings.
- Direct access to secluded private open space is provided from the living/meals area.

Setbacks & Building Heights

- Proposed front setback is 7.7m from Gap Road.
- Proposed overall height is 7.8m to the top of the roof ridge.

Other features

- No front fence is proposed for this development.

Planning Permit Trigger

Planning permit is required under Clause 32.08-6 of the Hume Planning Scheme to construct two or more dwellings on a lot in a General Residential Zone. The development must meet the requirements of Clause 55.

02 | Site and Surrounds

Subject Site

The subject site is situated on the south side of Gap Road. It has a total area of 580.6sqm, with a front and rear boundary of 15.24m (north & south), and two side boundaries of 38.4m (east & west). The site has a fall of approximately 3.2m from north to south. An easement is present along the rear boundary.

The site currently contains a detached single storey brick dwelling with tile roof. It has a setback of approximately 7.7m from Gap Road. The front yard is established, a row of trees are planted along the front boundary. A garage is located to the rear of the dwelling. All existing structures to the rear of the dwelling are to be demolished to accommodate the proposed development.

Some street trees are present in the nature strip fronting the site. Vehicle access is provided by two crossovers located to the left-hand of the Gap Road frontage and no per street frontage; this is to be modified to the satisfaction of the responsible authority.

Surrounding Properties

The Neighbourhood and Site Description Plan provides details on the site and surrounding context. The immediate interfaces to the subject site are illustrated below:

To the left of the site:

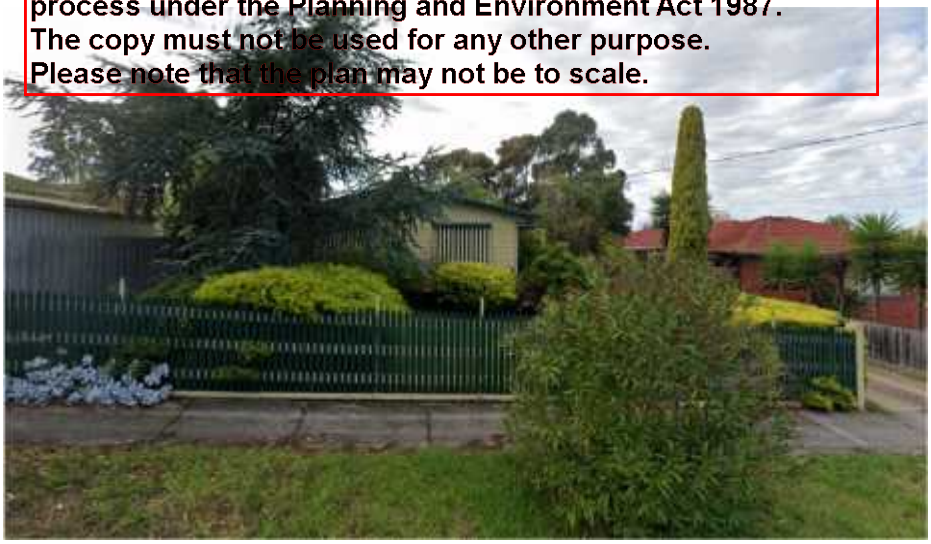
281 Gap Road

A single storey brick dwelling with tile roof occupies the property. It is setback approximately 8.7m from the street. The front yard is low maintenance in character, with no fence along the front boundary. The rear yard contains a garage. Vehicle access is provided by a crossover located to the left end of the street frontage.

To the right of the site:

1 Rover Street

The property is occupied by a single storey weatherboard dwelling with tile roof. It has a setback of approximately 7.8m from the street. The front yard is low established in character, with picket fencing along the front boundary. Vehicle access is provided by a crossover located to the right end of the street frontage.



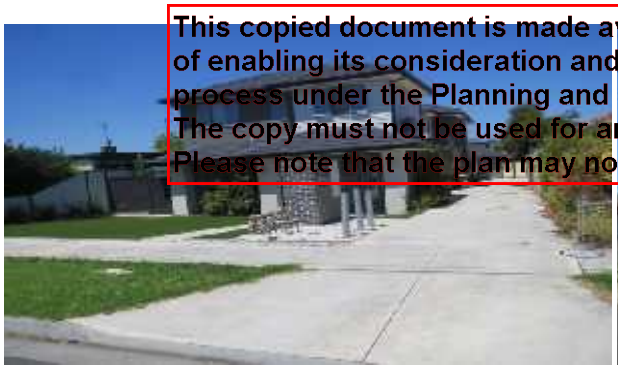
Neighbourhood Context

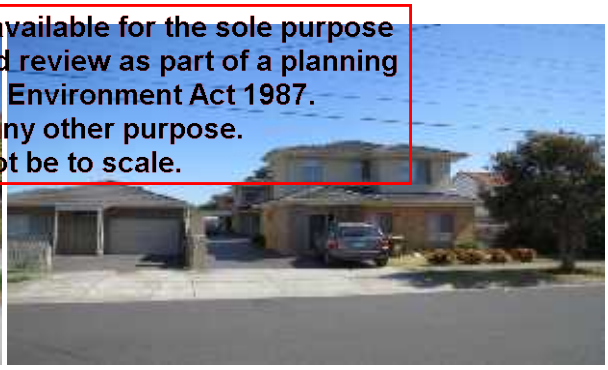
The surrounding area is an established residential area, consists predominantly of post war period dwellings. Dwellings around the neighbourhood are mostly detached one storey tall with brick and rendered exteriors and pitched tile roofs. Multi-dwelling developments are emerging in the area. They are generally detached or semi-detached double storey dwellings, diverse in architectural style and form.

Garages and carports are commonly recessive in the streetscape, situated to the side or rear of the dwellings. Front fences when present, are generally of varying styles and heights. Front gardens of adjoining properties are mostly low maintenance, consisting of lawn cover and various sized native or indigenous trees and shrubs. High canopy trees are present along the nature strips and inside the garden of properties.

The subdivision pattern of the area is similar in size and shape, block sizes approximately range from 600-1000sqm. The setbacks of the dwellings along Gap Road in proximity to the subject site range from approximately 6-10m.

Multi-dwelling developments in the neighbourhood includes:





The Locality

Gap Road is a local street connecting to Railway Crescent (west) and Goulburn Street (east). The site is located within convenient proximity to various community services and facilities.

Public Transport services

- Bus service 485 runs nearby on Wilsons Lane.
- Sunbury Station is approximately 3.0km east.

Public open space, sport and recreation facilities

- Keith Avenue Playground is approximately 220m east.
- Abelia Court Playground is approximately 500m north.
- Boardman Stadium is approximately 1.5km south.
- Eric Boardman Memorial Reserve is approximately 1.4km south.
- Kid Friendly Local Park is approximately 1.0km northeast.
- Heysen Drive Reserve is approximately 1.4km northeast.

Education services

- Sunbury Heights Primary School is approximately 1.0km east.
- Sunbury West Primary School is approximately 1.5km northeast.
- Sunbury Downs Secondary College is approximately 1.0m southeast.
- Killara Primary School is approximately 2.5km north.
- St Anne's Catholic Primary School is approximately 2.7km northeast.

Retail services

- Sunbury Terrace is approximately 2.7km east.
- Sunbury Shopping Centre is approximately 2.9km east.
- Sunbury Square is approximately 2.9km east.

Religious services

- Sunbury Baptist Church is approximately 600m east.
- Kingdom Hall of Jehovah's Witnesses is approximately 1.5km north.

Health services

- Sunbury Hospital is approximately 2.4km northeast.
- Sunbury Private Hospital is approximately 2.9km northeast.

Community services

- Sunbury Community Hub is approximately 2.9km northeast.
- Sunbury Library is approximately 850m east.

Emergency and government services

- Australia Post is approximately 3.2km east.
- Sunbury Police Station is approximately 4.4km east.

Site Opportunities & Constraints

Site opportunities and constraints are identified through an assessment of the site and context. The proposed development is designed to respond positively to these matters.

Opportunities

- The site is located within close proximity to numerous services and facilities including public transport, shops, schools and public open space.
- The natural slope of the site will have minimum effect on the development.

Constraints

- An easement is present along the rear boundary.
- The dwelling to the east contains windows in proximity to the common boundary.
- The properties to the east and south contain secluded open space areas adjoining to the common boundary. Overlooking, overshadowing and visual bulk impacts on these areas need to be carefully managed.

03 | Planning Policies and Controls

Municipal Planning Strategy

The Municipal Planning Strategy (MPS) outlines the overarching strategic directions of a given municipality. The proposal accords with the following key clauses:

Clause 02.01 Context:

Hume City is located 20km north west of Melbourne's CBD. It is one of Melbourne's seven growth area municipalities. The settlement pattern comprises of two urban corridors, Hume Corridor and Sunbury Township, separated and surrounded by Rural Areas. The main land uses are industrial, established residential and new residential development, and agriculture.

Clause 02.02 Vision:

Hume's vision is to be a sustainable and thriving community with great health, education, employment, infrastructure and a strong sense of belonging (Council Plan 2021 – 2025, p26). This will be achieved by:

- *Valuing education and lifelong learning.*
- *Enabling economic growth through the creation of local jobs and supporting local industries.*
- *Acknowledging and celebrating the diversity of Hume people.*
- *Supporting active participation by residents in community life.*
- *Growing in a way that is both sustainable and sensitive to the open, natural and rural spaces.*
- *Creating a place that will benefit future generations while protecting the environment.*
- *Advocating for sustainable neighbourhoods.*
- *Protecting heritage.*
- *Designing spaces that are accessible and fill the community with pride.*

Clause 02.03 Strategic Directions:

Clause 02.03-1 Settlement

In planning for settlement, council seeks to:

- *Develop the Hume Corridor to be a sustainable urban area with high quality development in new growth areas.*
- *Maintain the inter urban break in the Hume Corridor for, larger detached housing and low density rural residential development that supports the conservation of biodiversity and landscape values.*
- *Develop Hume's regional and predominantly State Significance Employment Areas as major employment locations for manufacturing, logistics and transport.*
- *Maintain the character of Sunbury Township as a town separated from Melbourne by non-urban areas while accommodating planned growth.*
- *Limit the expansion of Bulla township.*
- *Protect Melbourne Airport's curfew free status from encroachment by development.*
- *Facilitate high density residential development within and around activity centres and Sunbury, Craigieburn and Sunbury train stations.*
- *Sequence development so that it provides communities with access to local infrastructure and services when they move into new housing.*
- *Facilitate improved street networks and pedestrian amenity through subdivision and redevelopment of large land parcels to create walkable communities and minimise car dependence.*

Clause 02.03-5 Built Environment and Heritage

In planning for built environment and heritage, council seeks to:

- *Improve the image and appearance of Hume Corridor's established areas.*
- *Deliver high quality development in new growth areas across Hume.*
- *Enhance the visual and streetscape amenity and appearance of industrial and commercial areas to attract investment, provide businesses and works with a high quality working environment, and quality interfaces with residential areas.*
- *Support well designed medium and higher density residential development that protects the amenity of existing residents and responds to the preferred neighbourhood character.*
- *Facilitate accessible, functional, well-designed and innovative community buildings.*
- *Encourage environmentally sustainable design and development including in precinct wide master planning and large- scale development in new growth areas.*
- *Minimise the contribution of new development to the Urban Heat Island effect.*
- *Protect places of heritage, cultural and social significance.*
- *Ensure signs are displayed in a manner that is compatible with the character of the area, and avoids visual clutter.*

Clause 02.03-6 Housing

In planning for housing, council seeks to:

- *Increase the diversity of housing in Hume.*
- *Encourage well-designed infill residential development that provides housing options for smaller households.*
- *Encourage housing that can be adapted for different life stages or is suitable for the needs of an ageing household.*

- *Encourage the development of attractive, well-designed accommodation for older people that meets the needs of future occupants, in appropriate locations throughout the residential areas.*
- *Locate and design aged accommodation to be accessible to a range of community facilities.*

Planning Policy Framework

The Planning Policy Framework (PPF) provides the broad guiding principles to facilitate appropriate land use and development. The following key themes and policies are of particular relevance to this application:

Clause 11 Settlement, including:

- Clause 11.01-1S Settlement
  To facilitate the sustainable growth and development of Victoria and deliver choice and opportunity for all Victorians through a network of settlements.

- Clause 11.01-1R Settlement – Metropolitan Melbourne

- Clause 11.02-1S Supply of urban land
  To ensure a sufficient supply of land is available for residential, commercial, retail, industrial, recreational, institutional and other community uses.

Clause 15 Built Environment and Heritage, including:

- Clause 15.01-1S Urban design
  To create urban environments that are safe, healthy, functional and enjoyable and that contribute to a sense of place and cultural identity.

- Clause 15.01-1S Urban design – Metropolitan Melbourne
  To create a distinctive and liveable city with quality design and amenity.

- Clause 15.01-2S Building design
  To achieve building design and siting outcomes that contribute positively to the local context, enhance the public realm and support environmentally sustainable development.

- Clause 15.01-2L-01 Building design – Hume

- Clause 15.01-2L-02 Energy and resource efficiency – Hume

- Clause 15.01-2L-03Environmentally sustainable development – Hume
  To achieve best practice in environmentally sustainable development from the design stage through to construction and operation.

- Clause 15.01-3S Subdivision design
  To ensure the design of subdivisions achieves attractive, safe, accessible, diverse and sustainable neighbourhoods.

- Clause 15.01-3L Subdivision design – Hume

- Clause 15.01-4S Healthy neighbourhoods
  To achieve neighbourhoods that foster healthy and active living and community wellbeing.

- Clause 15.01-4R Healthy neighbourhoods– Metropolitan Melbourne

- Clause 15.01-5S Neighbourhood character
  To recognise, support and protect neighbourhood character, cultural identity, and sense of place.

Clause 16 Housing, including:

- Clause 16.01-1S Housing supply
  To facilitate well-located, integrated and diverse housing that meets community needs.

- Clause 16.01-1R Housing supply – Metropolitan Melbourne

- Clause 16.01-2S Housing affordability
  To deliver more affordable housing closer to jobs, transport and services.

Clause 18 Transport, including:

- Clause 18.01-1S Land use and transport integration
  To facilitate access to social, cultural and economic opportunities by effectively integrating land use and transport.

Statutory Planning Controls

Zone

The land is in a General Residential Zone – Schedule 1. The purpose of this Zone includes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To encourage development that respects the neighbourhood character of the area.*
- *To encourage a diversity of housing types and housing growth particularly in locations offering good access to services and transport.*
- *To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.*

Minimum Garden Area Requirement

Clause 32.08-4 applies to the construction or extension of a dwelling or residential building. Table below sets out the requirement for the minimum percentage of a lot set aside as garden area:

400-500sqm	*25%*
Above 500-650sqm	*30%*
Above 650sqm	*35%*

Maximum building height requirement for a dwelling or residential building

Clause 32.08-10 applies to a dwelling or residential building.

- *The building height must not exceed 11 metres; and*
- *The building must contain no more than 3 storeys at any point.*

Varied Requirements of Clause 55

There are no varied Clause 55/ResCode requirements in Schedule 1 to the General Residential Zone.

Overlay

The land is not affected by any planning overlays.

Permit Trigger

As identified earlier in this report, a planning permit is required under Clause 32.08-6 of the Hume Planning Scheme to construct two or more dwellings on a lot in a General Residential Zone. The development must meet the requirements of Clause 55.

Particular Provisions

The following particular provisions are relevant to the consideration of the application:

Clause 52.06 Car Parking

The clause applies for the provision of car parking. Purpose of this clause is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

Clause 53.18 Stormwater Management in Urban Development

The clause applies to an application to construct a building. Purpose of this clause is:

- *To ensure that stormwater in urban development, including retention and reuse, is managed to mitigate the impacts of stormwater on the environment, property and public safety, and to provide cooling, local habitat and amenity benefits.*

Clause 55 Two or More Dwellings on a Lot and Residential Buildings

The Clause (ResCode) applies as a standard guideline to the proposal. Purpose of this clause is:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To achieve residential development that respects the existing neighbourhood character or which contributes to a preferred neighbourhood character.*
- *To encourage residential development that provides reasonable standards of amenity for existing and new residents.*
- *To encourage residential development that is responsive to the site and the neighbourhood.*

General Provisions

The following particular provisions are relevant to the consideration of the application:

Clause 65.01 Approval of an Application or Plan

The clause establishes a list of considerations prior to deciding on an application or approval of a plan. Relevant matters include:

- *The matters set out in section 60 of the Act.*
- *Any significant effects the environment, including the contamination of land, may have on the use or development.*
- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The purpose of the zone, overlay or other provision. Any matter required to be considered in the zone, overlay or other provision.*
- *The orderly planning of the area.*

- *The effect on the environment, human health and amenity of the area.*
- *The proximity of the land to any public land.*
- *Factors likely to cause or contribute to land degradation, salinity or reduce water quality.*
- *Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.*
- *The extent and character of native vegetation and the likelihood of its destruction.*
- *Whether native vegetation is to be or can be protected, planted or allowed to regenerate.*
- *The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.*
- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

04 | Planning Assessment

Planning Policy Considerations

The proposal is in accordance with the overarching objectives within the Municipal Planning Strategy and Planning Policy Framework. The findings are as follows:

Urban Consolidation

The subject site is situated in an established and highly accessible area, achieving urban consolidation for the efficient use of existing infrastructures and services. It is within walking distance to public transport. Furthermore, it has excellent proximity to activity centres, schools, recreation facilities and other social infrastructure. The high accessibility of the site will encourage residents to use sustainable transport modes such as walking, cycling and public transport. As sought by Clause 02.03-1, 11&18 of the planning scheme.

Housing Supply

The proposed development is designed to comply with the managing of change and growth in the residential areas of Hume. The proposal brings a total of two new double storey dwellings to the rear of the existing dwelling to the area. This will provide greater housing choice and diversity to the neighbourhood. Housing affordability is also encouraged as multi-dwelling developments are relatively more affordable in comparison to low density developments (single dwelling on a similar sized land). As sought by Clause 02.03-6 &16 of the planning scheme.

Design Response

The proposed development sensitively responds to the interfaces to Gap Road and its wider surrounding, making a positive contribution to the locality. The dwellings represent a high-quality, contemporary architectural design to enhance the neighbourhood and streetscape character of the area. Exterior building materials are selected to complement the existing architectural style.

The scale and form of the development is consistent with the area's emerging character. The proposed dwellings are sited with appropriate spacing between site boundaries and adjoining developments to respect the rhythm of spacing in the neighbourhood. Recessed walls are proposed to create visual interest and reduce visual bulk.

A 3-unit development is proposed for the subject site, allowing for the existing dwelling to have direct integration with the street and the proposed dwellings to the rear to have direct integration

with Rover Street. The dwelling layout is designed to maximise outlook opportunities for passive surveillance over the public realm, whilst minimise direct overlooking into the neighbouring properties. As sought by Clause 02.03-5 & 15 of the planning scheme.

Landscaping

The proposed development will enhance the landscape character of the area by ensuring sufficient open space is provided to allow for the planting of vegetation. Canopy trees are proposed in the front setback to contribute positively to the streetscape. Vegetation is planted along the driveway to soften the appearance of hard surfaces. No front fence is proposed to reinforce the open streetscape character and to allow views to the front garden. As sought by Clause 02.03-5 & 15 of the planning scheme.

Zoning and Overlay Considerations

General Residential Zone

The proposed development meets the purpose of the General Residential Zone in respecting the neighbourhood character of the area and contributing to the diversity of housing types in a location offering good access to services and transport. The design also complies with the minimum garden area requirement by providing 44.9% of garden area for a block between 500-650sqm in size. The maximum height of the building is also met by providing a single storey development of 7.8m high.

ResCode Considerations

The proposal demonstrates a high level of compliance with the objectives and standards of Clause 55/ResCode as detailed in the assessment in Appendix 1.

Access and Car Parking Considerations

Proposed dwellings will meet the requirements of Clause 52.06-5 of the planning scheme in the provision of two car spaces for a three or more bedroom dwelling. The proposed dwellings are provided with a single garage while the existing dwelling will be provided with a single carport and single car space.

The proposed parking meets the design standard for the safe and efficient movement of vehicles and pedestrians. The existing crossover located to the left end of the street frontage is modified for vehicle access to unit 1 and a new crossover is proposed to Rover Street for vehicle access to unit 2 and the existing crossover to the right of the site will be modified for vehicle access to unit 3. Please refer to Appendix 2 for a detailed assessment of the objectives and standards in Clause 52.06-9 of the planning scheme.

Stormwater Considerations

The proposed development provides an appropriate stormwater management system on site to mitigate the impacts of stormwater on the environment, property and public safety.

05 | Conclusion

In summary, the proposed development of two new dwellings to the rear of the existing dwelling on a lot accords with the state and local policies in the Planning Scheme. It is an appropriate form of infill development for the site based on existing developments in the immediate and surrounding area. Therefore, the proposal is deemed worthy of Council support and it is requested that a planning permit be granted.

06 | Appendices

Appendix 1– ResCode (Clause 55) Assessment

The proposal demonstrates a high level of compliance with the ResCode standards and meets the objectives of Clause 55 of the Planning Scheme as per the assessment below.

Neighbourhood character Clause 55.02-1 Standard B1	Complies with standard and objective. The proposed development is appropriate to the neighbourhood and the site. Refer to the Neighbourhood and Site Description Plan and Design Response. The existing dwelling on site will be retained and two new double storey dwellings are proposed to the rear. This respects the existing single and double storey character of the area. The proposed dwellings are a modern, contemporary interpretation of the traditional built form in the area to distinguish the old from the new. They will maintain the predominant built form in the area. The building materials proposed for the dwellings have the dual purpose of softening the appearance of the development whilst providing different textures that complement the existing architectural style and enhance the neighbourhood and streetscape character of the area. No front fence is proposed for this development to encourage the open streetscape character. A spacious front setback is provided to allow for planting of canopy trees and shrubs that contribute to the streetscape.
Residential policy Clause 55.02-2 Standard B2	Complies with standard and objective. The proposed development meets the objectives in aspects such as affordable housing and providing for the needs of residents at various stages of life. The quality of the design, site layout, side and rear setbacks, provision of car parking and open space allocation will ensure that the development provides a good standard of amenity for future residents and good standard for future development in the area. The subject site is within close proximity of a number of community facilities and services including open space facilities, schools and shopping facilities are all within proximity of the site. The proposed development supports medium density in an area that can take advantage of public transport and community infrastructure and services. The proposed development complies with the State Government's initiatives of urban consolidation and will not cause detriment to the amenity of adjoining properties and will not be out of character with the area.
Dwelling diversity Clause 55.02-3 Standard B3	Not applicable. The development does not meet or exceed ten dwellings.

Infrastructure Clause 55.02-4 Standard B4	Complies with standard and objective. The dwellings are proposed in an established area with appropriate utility services and infrastructure. They should also not represent any unreasonable burden on existing services and facilities.
Integration with the street Clause 55.02-5 Standard B5	Complies with standard and objective. Unit 1 will have direct integration with Gap Road while unit 2 & 3 will have direct integration with Rover Street.
Street setback Clause 55.03-1 Standard B6	Complies with standard and objective. The proposed development is setback of 7.7m from the street. This is retained by keeping the existing dwelling on site. This complies with the regulation of having the average distance as the setback of the abutting dwellings or minimum 9m.
Building height Clause 55.03-2 Standard B7	Complies with standard and objective. The overall total height of the proposed development is 7.8m to the top of the roof ridge. This is less than the limit of 11m as specified to the zone. The development will have minimal visual impact on adjoining properties or when viewed from the street.
Site coverage Clause 55.03-3 Standard B8	Complies with standard and objective. The proposed site coverage is 46.1%, which meets the maximum 60%.
Permeability Clause 55.03-4 Standard B9	Complies with standard and objective. The proposed site permeability is 46.0%, which is well above the minimum 20%. Hard surfaces are reduced as much as possible to allow for more permeable areas and for landscaping opportunities. The proposed development will provide good onsite stormwater infiltration to reduce the impact of increased stormwater runoff.
Energy efficiency Clause 55.03-5 Standard B10	Complies with standard and objective. The proposal is deemed to achieve a minimum rating of 7 stars as part of the building permit stage. The proposed dwellings are sited, oriented and designed to ensure that the energy efficiency of the existing dwellings on abutting properties is not unreasonably reduced. Solar panels are absent on the adjoining properties.
Open space Clause 55.03-6 Standard B11	Not applicable. The development is not located adjacent to any public and communal open space.
Safety Clause 55.03-7 Standard B12	Complies with standard and objective. The entrances are not obscured or isolated from the street or internal accessways. The dwellings will enable casual surveillance of visitors and pedestrians through maximising windows to face the street or internal accessway.

	The private open space for each dwelling is appropriately designed and sited with the protection of side and rear fences so that it is not used as a public thoroughfare.
Landscaping Clause 55.03-8 Standard B13	Complies with standard and objective. Generous landscaping opportunities for the planting of canopy trees, shrubs and groundcovers are provided in the front setback, along the accessways and in the secluded private open space of each dwelling.
Access Clause 55.03-9 Standard B14	Complies with standard and objective. The existing crossover will be modified, and a new crossover is proposed. The width of the accessway does not exceed 40% of the street frontage for a site with a street frontage less than 20m.
Parking location Clause 55.03-10 Standard B15	Complies with standard and objective. New vehicle storages are proposed close and convenient to each dwelling. Garages are also well ventilated. Habitable room windows are not located close to the shared accessway or car parks of other dwellings.
Side and rear setbacks Clause 55.04-1 Standard B17	Complies with standard and objective. The proposed development complies with the side and rear setback as outlined in the standard: *1m, plus 0.3m for every metre of height over 3.6m up to 6.9m, plus 1m for every metre of height over 6.9m.*
Walls on boundaries Clause 55.04-2 Standard B18	Complies with standard and objective. A wall is proposed to be built along the eastern and western boundary of the site. The length of the new wall does not exceed 10m plus 25 per cent of the remaining length of the boundary of an adjoining lot as suggested by the standard. The height of the boundary wall does not exceed 3.6m and an average of 3.2m as suggested by the standard.
Daylight to existing windows Clause 55.04-3 Standard B19	Complies with standard and objective. The proposed dwellings are sited with sufficient distance from existing windows of adjoining properties. Habitable room windows of adjoining dwellings will still maintain direct access to daylight. All windows will maintain a light court with a minimum area of 3sqm and minimum dimension of 1m clear to the sky.
North-facing windows Clause 55.04-4 Standard B20	Not applicable. No existing north-facing windows are present within 3m of a boundary.
Overshadowing open space Clause 55.04-5 Standard B21	Complies with standard and objective. Refer to the proposed Shadow Diagram. Overshadowing to the secluded private open space of the surrounding dwellings due to the proposed dwellings will be minimal and not substantially greater than the extent of shadows cast by the existing boundary fences and outbuildings.

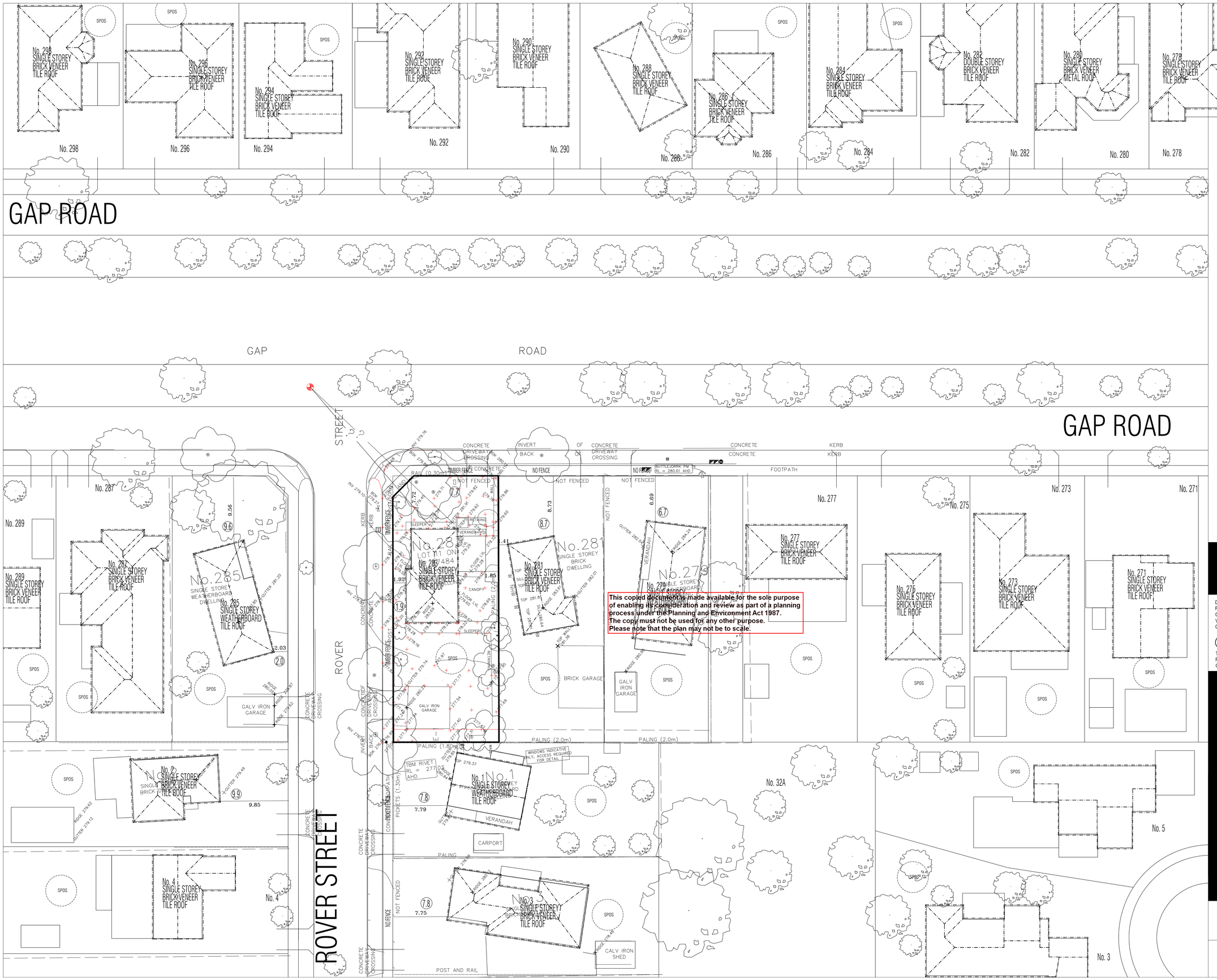
	An area of 75% or 40sqm with a minimum width of 3m of secluded private open space for existing dwellings will receive a minimum of five hours of sunlight.
Overlooking Clause 55.04-6 Standard B22	Complies with standard and objective. The windows are designed to limit overlooking into habitable room windows and secluded open space of adjacent properties. Views from living areas are orientated towards the private open space where possible.
Internal views Clause 55.04-7 Standard B23	Complies with standard and objective. The proposed dwellings are designed to limit views into the secluded private open space and habitable room windows of other dwellings within the development.
Noise impacts Clause 55.04-8 Standard B24	Complies with standard and objective. The proposed development is designed to contain noise sources within the development and to protect residents from external noise. There are no mechanical plants proposed adjacent to or located near bedrooms of immediately adjacent existing dwellings. Noise sensitive rooms and secluded private open space of the new dwellings are designed and sited to take into consideration noise sources on immediately adjacent properties.
Accessibility Clause 55.05-1 Standard B25	Complies with standard and objective. The proposed dwellings are designed to take into consideration people with limited mobility. The internal layout and configuration of the proposed dwellings can be altered to accommodate people with limited mobility.
Dwelling entry Clause 55.05-2 Standard B26	Complies with standard and objective. Each dwelling will have its own sense of identity and address. The entrances for the proposed dwellings are appropriately oriented to front onto Rover Street and separate driveway for the proposed dwellings.
Daylight to new windows Clause 55.05-3 Standard B27	Complies with standard and objective. The proposed dwellings are designed to provide adequate daylight into new habitable room windows. All windows have a light court with a minimum area of 3sqm and minimum dimension of 1m clear to the sky.
Private open space Clause 55.05-4 Standard B28	Complies with standard and objective. Open space on site for each dwelling is distributed to the rear and throughout the site. The development will provide sufficient private open space for the reasonable recreation, service and storage needs of residents. The proposed design meets the requirement of minimum 40sqm of private open space (POS) and minimum 25sqm of secluded private open space (SPOS) with a minimum dimension of 3m. The private open space for each dwelling is located off living areas, in the rear or side of the dwellings.

Solar access to open space Clause 55.05-5 Standard B29	Complies with standard and objective. The design has sought to orientate the open space areas to capitalise on the northern aspect as far as applicable.
Storage Clause 55.05-6 Standard B30	Complies with standard and objective. Each dwelling has convenient access to 6 cubic metres of externally accessible, secure storage space. The storage facilities will not be visible from the street.
Design detail Clause 55.06-1 Standard B31	Complies with standard and objective. Design details such as façade articulation, window and door proportions, roof forms, verandahs, eaves, and exterior finishes are designed to both enhance and integrate with the streetscape. Visual bulk is reduced through articulation, recessed walls, spacing and the variety of materials and colours selected for the dwellings. The garages are designed to be visually compatible with neighbourhood characteristics and form an integral part of each dwelling.
Front fences Clause 55.06-2 Standard B32	Not applicable. No front fence is proposed for the development.
Common property Clause 55.06-3 Standard B33	Complies with standard and objective. The proposed development avoids future management difficulties in areas of common ownership, as the subject site can be functionally subdivided into separate allotments. Vehicle accessways to the dwellings will be functional and capable of efficient management. Car parking, access areas and site facilities are practical, attractive and easily maintained.
Site services Clause 55.06-4 Standard B34	Complies with standard and objective. Adequate and accessible site facilitates will be provided to each dwelling, including mailboxes and bins enclosures.

Appendix 2– Car Parking Assessment

The proposal satisfies the design standards for car parking in Clause 52.06-9 of the Planning Scheme as per the assessment below.

Accessways Design standard 1	Complies with standard. The accessways are functional, with a minimum width of 3m, and corner visibility splays.
Car parking spaces Design standard 2	Complies with standard. A single car space is at least 4.9m long and 2.6m wide, and a single garage is at least 6m long and 3.5m wide.
Gradients Design standard 3	Not applicable. The accessway serves three dwellings or less.
Mechanical parking Design standard 4	Not applicable.
Urban design Design standard 5	Complies with standard. The garages are designed to be visually compatible with neighbourhood characteristics and form an integral part of the dwelling.
Safety Design standard 6	Complies with standard. The design of the car parks/accessway provides adequate natural surveillance and pedestrian visibility.
Landscaping Design standard 7	Complies with standard. The proposed landscaping at the front of the site as well as along the accessways will assist in reducing its visual dominance and in softening the development.



KEY

- P.O.S PRIVATE OPEN SPACE
- S.P.O.S SECLUDED PRIVATE OPEN SPACE
- HW HABITABLE WINDOWS
- CANOPY TREES
- 8.2 BUILDING SETBACKS TO BOUNDARY FENCE LINE
- V1 PHOTO VIEW ANGLE
- POLE POWER POLE
- PIT PHONE PIT

DO NOT SCALE THIS DRAWING. FIGURED DIMENSIONS TO TAKE PRECEDENCE OVER SCALE. BUILDERS & CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORKS.

NORTH

NEIGHBOURHOOD AND SITE DESCRIPTION PLAN

UNIT DEVELOPMENT

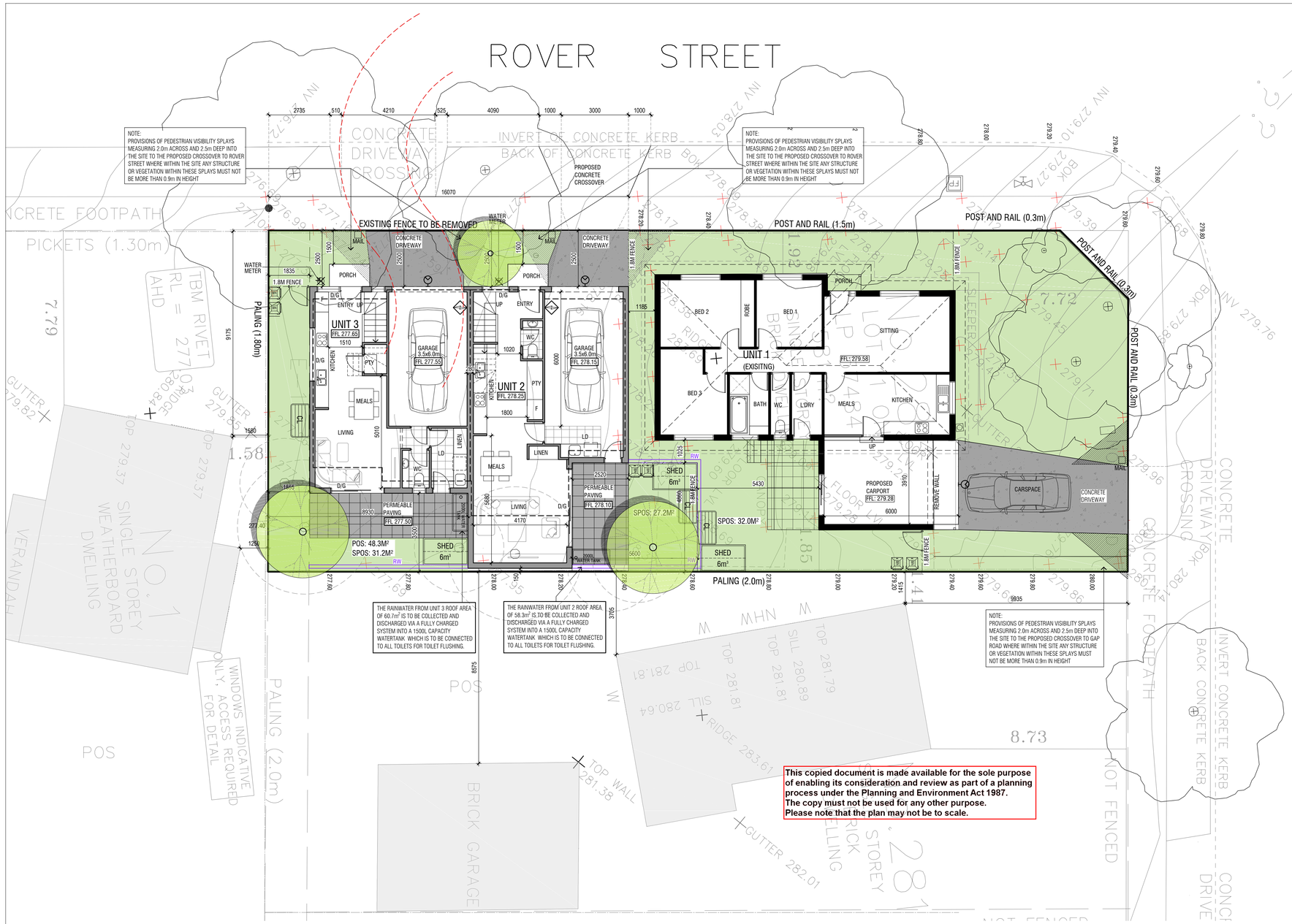
283 GAP ROAD, SUNBURY

DESIGN RESPONSE

1. EXISTING CROSSOVER ALONG GAP ROAD TO BE RETAINED TO PROVIDE VEHICLE ACCESS UNIT 1.
2. PROPOSED VEHICLE STORAGE FOR ALL UNITS ARE LOCATED BEHIND THE LINE OF THE FRONT DWELLING TO HIDE THE DOMINANCE OF CAR PARKING STRUCTURES FROM THE STREET-SCAPE.
3. NEW MAILBOXES FOR ALL UNITS.
4. PROPOSED FRONT STREET SETBACK TO DEVELOPMENT IS SYMPATHETIC TO THE ADJOINING NEIGHBOURS.
5. LARGE LAWN AREA PROVIDES SPACE FOR LANDSCAPING.
6. OPEN SPACES TO UNITS ARE ORIENTED TOWARDS NORTH PROVIDING FUTURE RESIDENCES WITH EXCELLENT SOLAR ACCESS AND NORTH LIGHT. OPEN SPACE ON SITE FOR EACH DWELLING IS DISTRIBUTED TO THE REAR AND THROUGHOUT THE SITE. THE DEVELOPMENT WILL PROVIDE SUFFICIENT PRIVATE OPEN SPACE FOR THE REASONABLE RECREATION, SERVICE AND STORAGE NEEDS OF RESIDENTS. THE PRIVATE OPEN SPACES FOR ALL DWELLINGS ARE LOCATED OFF LIVING AREAS.
7. LANDSCAPING LOCATION TO PROVIDE SOFT BUFFER AND SCREENING BETWEEN THE ADJOINING PROPERTIES.
8. SETBACKS BETWEEN UNITS AIMS TO RETAIN EXISTING SIGHT LINES WITHIN AND THROUGH THE SITE. THIS WILL ALSO REDUCE VISUAL BULK OF THE NEW DEVELOPMENT.
9. ANY PROPOSED WALLS TO BE BUILT TO THE BOUNDARY ARE LOCATED AWAY FROM EXISTING HABITABLE ROOM WINDOWS AND OPEN SPACES.
10. PROPOSED CROSSOVER ALONG ROVER STREET TO PROVIDE VEHICLE ACCESS TO UNIT 2.
11. EXISTING CROSSOVER ALONG ROVER STREET TO BE RETAINED TO PROVIDE VEHICLE ACCESS TO UNIT 3.
12. UPPER FLOOR LEVEL OF DWELLINGS SETBACK FROM SIDE BOUNDARIES TO REDUCE OVERSHADOWING AND VISUAL BULK TO ADJOINING PROPERTIES. UPPER LEVEL FOOTPRINT IS OFFSET WITHIN THE GROUND FLOOR ENVELOPE TO REDUCE VISUAL BULK AND CREATE A MORE GRADUAL TRANSITION BETWEEN THE SINGLE STOREY AND TWO-STOREY BUILDING FORM.

DESIGN RESPONSE

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY



BESS INITIATIVES:
SPECIFICATION TO ACHIEVE BESS REQUIREMENTS

WATER EFFICIENCY:

RAINWATER TANKS
EACH DWELLING IS TO BE PROVIDED WITH >2000L WATER TANKS, ATTACHED TAPS, & CONNECTED TO ALL TOILETS FOR TOILET FLUSHING

WATER FIXTURES, FITTINGS & CONNECTIONS
SHOWERHEAD: 4 STAR WELS (>4.5 BUT <=6.0)
KITCHEN TAPS: 5 STAR WELS OR GREATER
BATHROOM TAPS: 5 STAR WELS OR GREATER
DISHWASHERS: DEFAULT OR UNRATED
TOILETS: 4 STAR WELS OR GREATER
WASHING MACHINE: DEFAULT OR UNRATED
WATER EFFICIENT LANDSCAPING: YES

ENERGY EFFICIENCY:

SOLAR PHOTOVOLTAIC (PV) SYSTEM: NO
OTHER RENEWABLE ENERGY SYSTEMS: NO

THERMAL PERFORMANCE:
DWELLING WILL HAVE AN AVERAGE OF 7.0 STAR NATHERS RATING

ENERGY USE
HEATING SYSTEM: REVERSE CYCLE CENTRAL(OTHER) (5 STAR RATING)
COOLING SYSTEM: REFRIGERATIVE SPACE (5 STAR RATING)
HOT WATER SYSTEM: ELECTRIC INSTANTANEOUS (5 STAR RATING)
CLOTHESLINE: PRIVATE CLOTHESLINE
DRYER: NONE PROVIDED
EXTERNAL LIGHTING: MOTION SENSOR CONTROLLED (AS SHOWN ON FLOOR PLANS)
ILLUMINATION: 4 WATT/SQM (THROUGH 10-13 WATT LED DOWNLIGHTS)

STORMWATER:

REFER TO WSUD PLAN (100% MIN - 120% BEST PRACTICE)

INDOOR ENVIRONMENTAL QUALITY:

HABITABLE ROOM CROSS VENTILATION: SATISFIED

DOUBLE GLAZING: APPLICABLE TO ALL HABITABLE ROOMS

SHADING DEVICES: UNSATISFIED

TRANSPORT:

BICYCLE PARKING: 0 SECURE BICYCLE SPACES

EV INFRASTRUCTURE: 32A-40A EV CHARGING INFRASTRUCTURE

WASTE:

MIN 30% REUSE EXISTING BUILDING: SITE IS BEING FULLY REDEVELOPED

FOOD & GARDEN WASTE: NONE PRESENT

URBAN ECOLOGY:

VEGETATION: 26.4% OF SITE IS TO BE COVERED WITH VEGETATION

TAPS IN COURTYARD: NO TAPS TO BE PROVIDED IN EACH OF THE COURTYARDS

ESD SYMBOLS:

CL	CLOTHESLINE
	EXTERNAL LIGHT SENSORS
2000L WATER TANK	RAINWATER TANK AS PER WSUD PLAN
D/G	DOUBLE GLAZING
	ELECTRICAL VEHICLE CHARGING PORT (32A-40A)

AREA SCHEDULE:

UNIT 1 (EXISTING)

GROUND FLOOR AREA:		95.2 m²
PROPOSED CARPORT:		25.0 m²
TOTAL AREA:	12.9 SQ	120.2 m²
SPOS:		32.0 m²

UNIT 2

GROUND FLOOR AREA:		48.7 m²
FIRST FLOOR AREA:		61.0 m²
GARAGE:		28.7 m²
PORCH:		1.8 m²
TOTAL AREA:	15.1 SQ	140.2 m²
SPOS:		25.2 m²

UNIT 3

GROUND FLOOR AREA:		43.5 m²
FIRST FLOOR AREA:		56.8 m²
GARAGE:		22.7 m²
PORCH:		1.8 m²
TOTAL AREA:	13.4 SQ	124.8 m²
SPOS:		26.8 m²

SITE

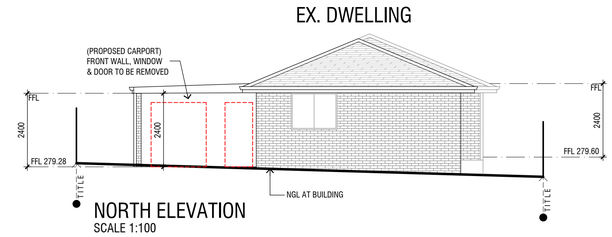
SITE AREA:		580.6 m²
SITE COVERAGE:	46.1%	267.6 m²
SITE PERMEABILITY:	46.0%	267.5 m²
GARDEN AREA REQ:	46.0%	267.5 m²

MATERIAL SCHEDULE:

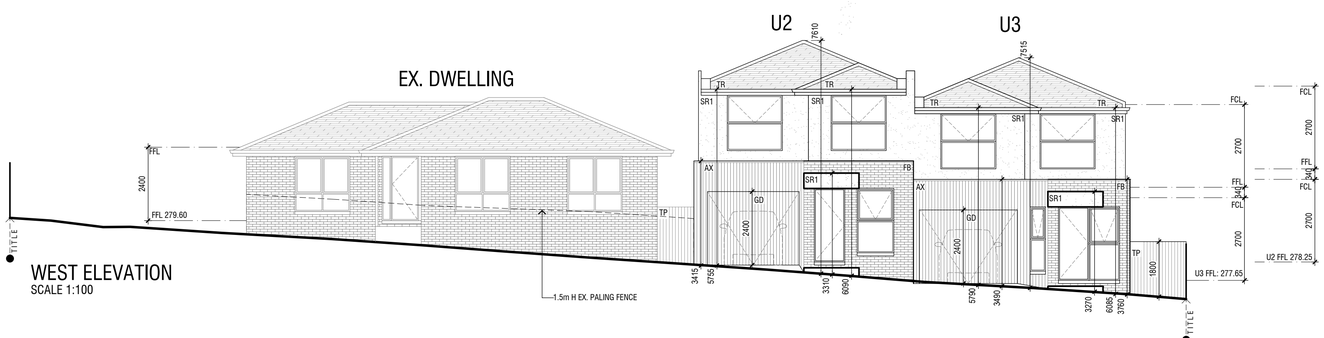
SR1	SMOOTH RENDER FINISH
FB	FACEBRICK WALL
GD	SELECTED GARAGE DOOR
AX	SELECTED AXON CLAD
G1	FIXED OBSCURE GLAZING (NOT FILM) WITH A MAXIMUM TRANSPARENCY OF 25% TO A MINIMUM HEIGHT OF 1.7m ABOVE THE FINISHED FLOOR LEVEL
G2	OBSCURE GLAZING, RESTRICTED 125mm OPENING
TP	1.8mH TIMBER PAILING FENCE
TR	SELECTED TILED ROOF AT 22.5 DEGREE PITCH

ALUMINIUM WINDOWS THROUGH-OUT

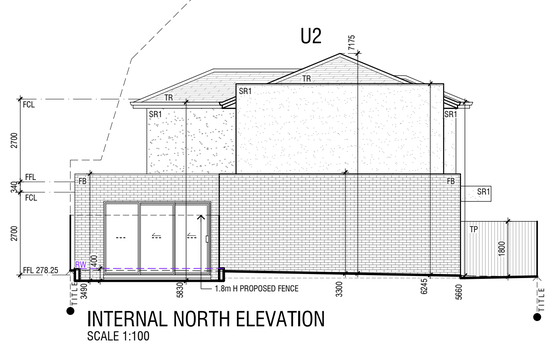
COLORBOND GUTTERS, FASCIA'S AND DOWNPIPES



NORTH ELEVATION
SCALE 1:100

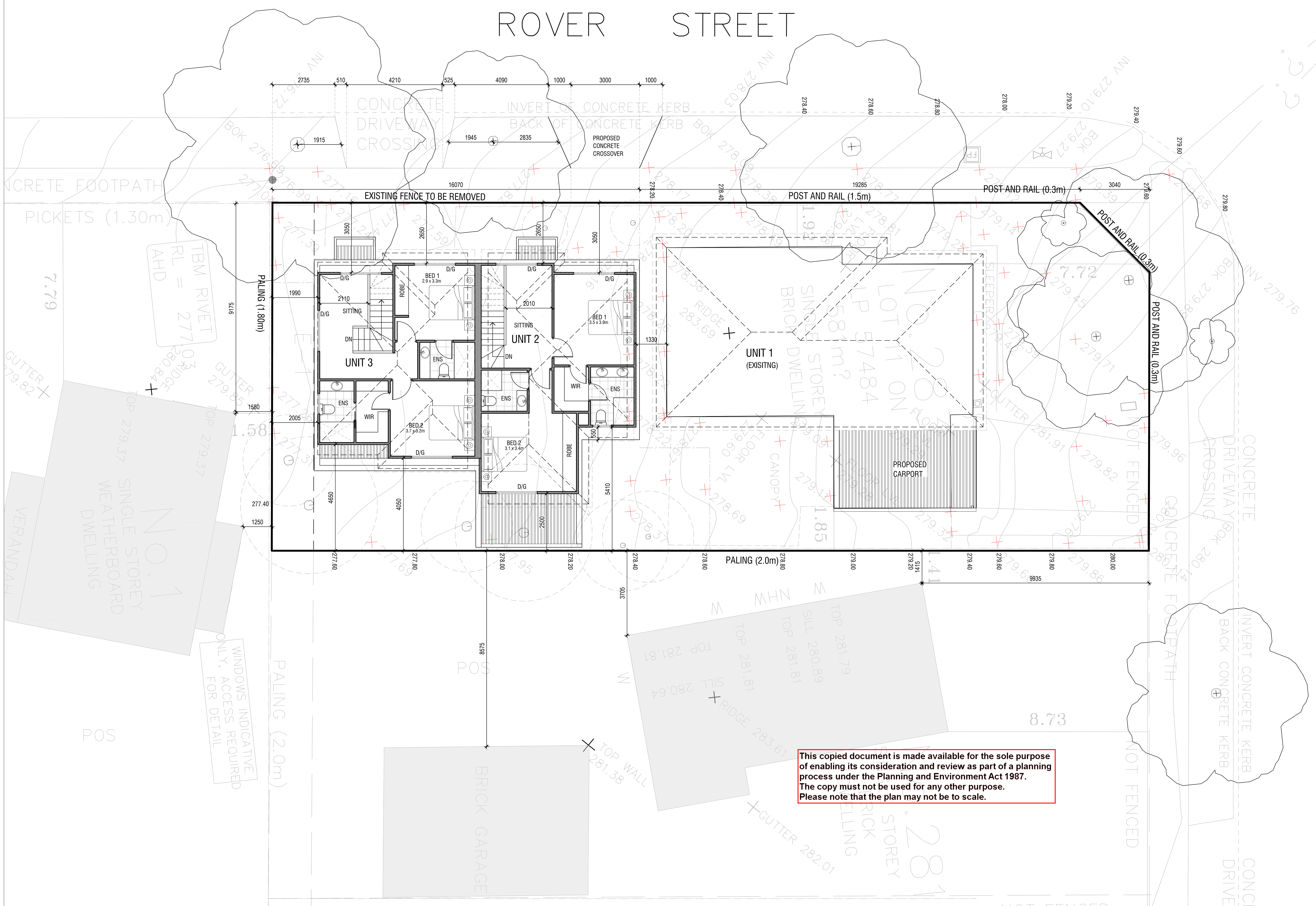


WEST ELEVATION
SCALE 1:100



INTERNAL NORTH ELEVATION
SCALE 1:100

NORTH



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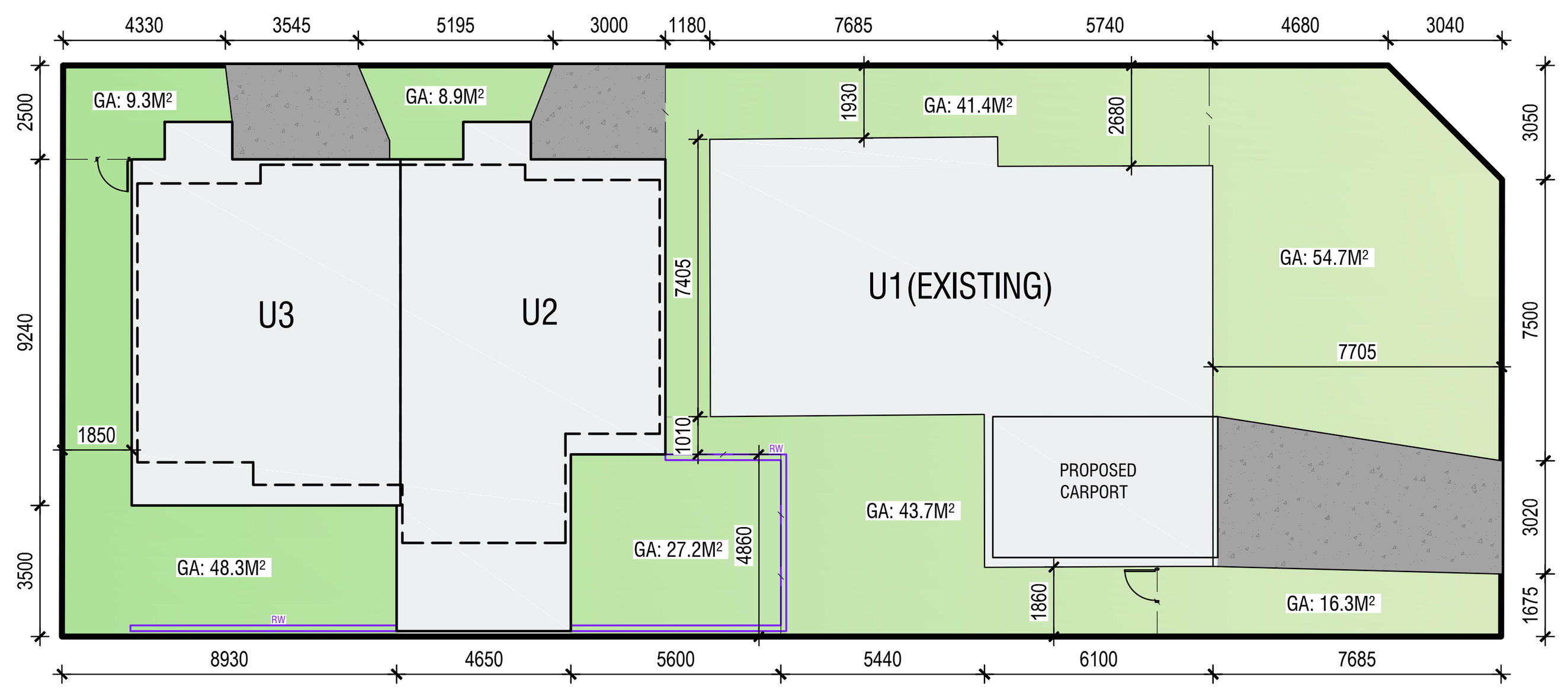
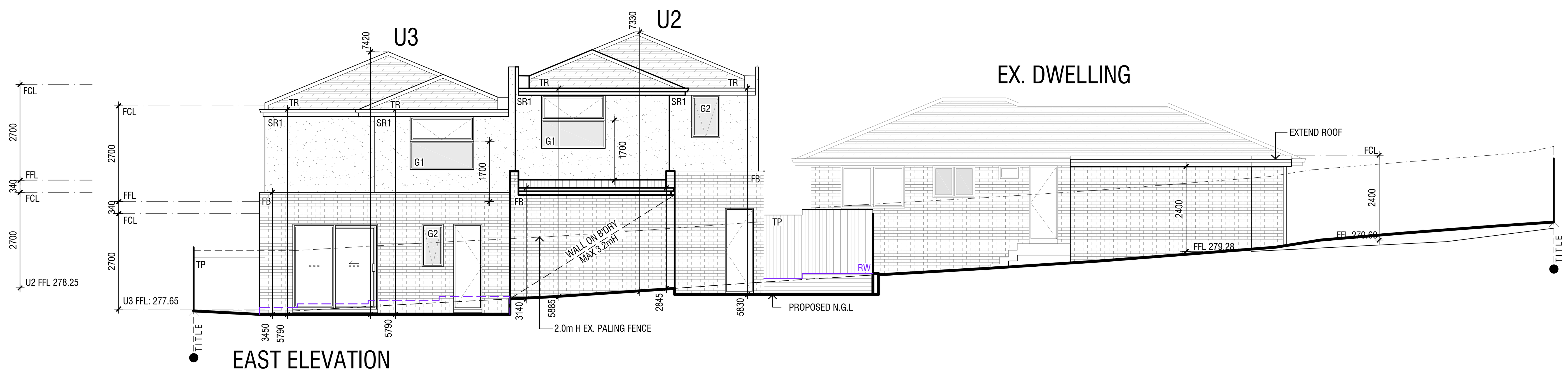


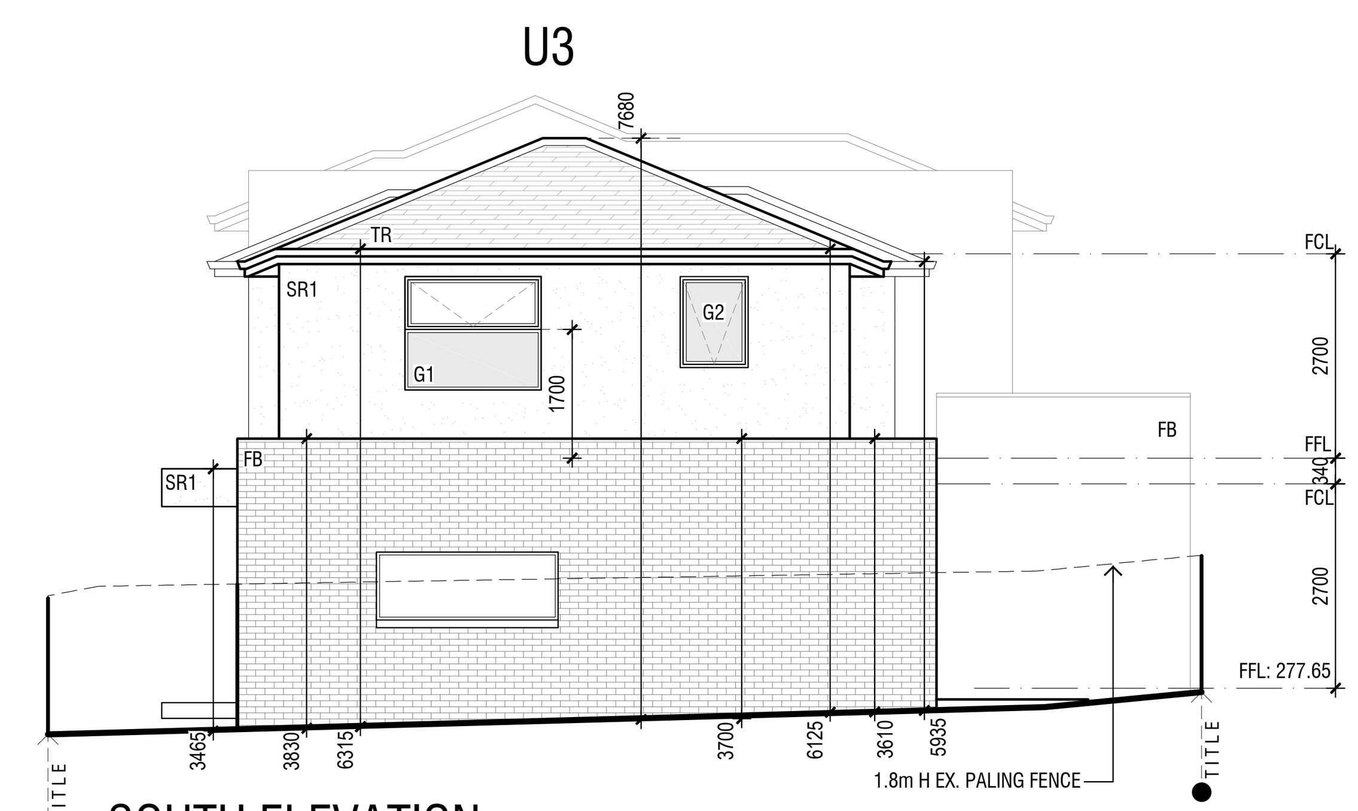
GARDEN AREA ANALYSIS
SCALE 1:200

- GARDEN AREA INCLUDED
- SITE COVERAGE
- CONCRETE DRIVEWAY

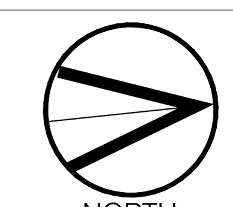
SITE		
SITE AREA:		580.6 m²
SITE COVERAGE:	46.1%	267.6 m²
SITE PERMEABILITY:	46.0%	267.5 m²
GARDEN AREA REQ:	46.0%	267.5 m²



EAST ELEVATION
SCALE 1:100



SOUTH ELEVATION
SCALE 1:100



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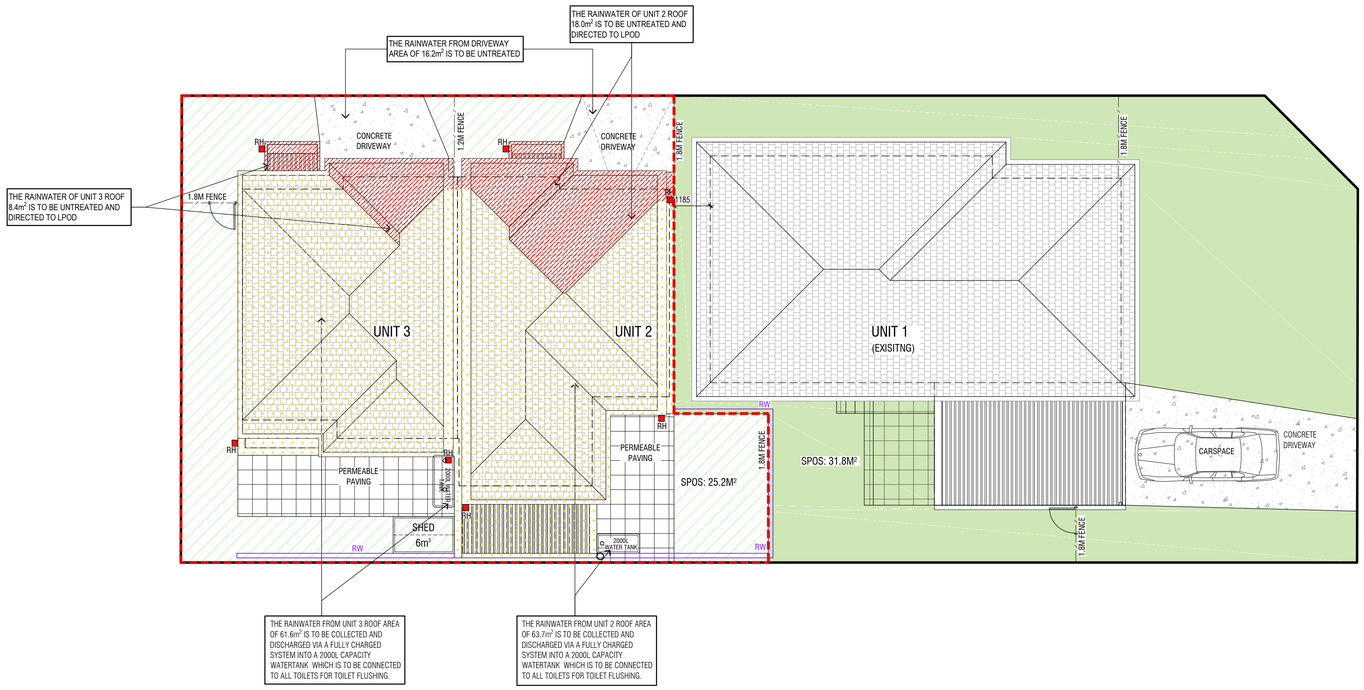


LEGEND

- CONCRETE SURFACE
- PERMEABLE PAVER
- TILE ROOF AREA
- ROOF AREA - UNTREATED
- ROOF AREA TO RAINWATER TANK
- VEGETATED AREA
- 1500L WATER TANK — 1500L WATERTANK TO TREAT SELECTED ROOF AREA. CONNECT WATER TANK TO ALL SANITARY FLUSHING
- DOWNPIPE
- RAINHEAD

WATER SENSITIVE URBAN DESIGN NOTES:

ALL DRAINAGE TO BE DESIGNED AND CERTIFIED BY AUTHORIZED DRAINAGE ENGINEER

EACH RAINWATER TANK IS TO BE CONNECTED TO ALL TOILETS IN EACH DWELLING

GRAVITY FED OR FULLY CHARGED SYSTEM IS NECESSARY TO ACHIEVE THE MINIMUM ROOF CATCHMENT AREA IN ACCORDANCE WITH STORM REQUIREMENTS.

TANK OVERFLOW MUST BE TAKEN TO L.P.D.

THE TANKS MUST BE USED ONLY FOR REUSE WITHIN THE DWELLINGS, AND ARE COMPLETELY INDEPENDENT OF ANY DETENTION REQUIREMENTS (THROUGH THE LEGAL POINT OF DISCHARGE PROCESS)

GRAVITY FED SYSTEM TO BE USED WHEN HARVESTING STORMWATER FROM ROOF TO RAIN GARDEN.

RAINGARDENS TO BE BUILT MINIMUM 300MM FROM ADJOINING FOOTINGS

BUILD THE RAIN GARDEN CLOSE TO THE WATER SOURCE. THIS WILL HELP MINIMISE THE ADDITIONAL PLUMBING NEEDED TO BRING WATER TO THE RAIN GARDEN.

RAINGARDEN MUST BE FULLY LINED AND HAVE OVERFLOW PLUMBED INTO THE STORMWATER SYSTEM.

MAINTENANCE AND MANAGEMENT OF RAINGARDENS TO BE THE RESPONSIBILITY OF THE OWNERS CORPORATION

FOR EXCAVATION AND CLEARANCE REFER TO BUILDING A RAINGARDEN INSTRUCTION SHEET, RAINGARDENS MUST BE BUILT TO MELBOURNE WATER REQUIREMENTS

THE FINAL DESIGN OF THE STORMWATER SYSTEM WILL MEET COUNCIL DRAINAGE ENGINEERS' REQUIREMENTS. THE DESIGNED SYSTEM COMPLIES WITH MELBOURNE WATER STORM REQUIREMENTS THAT MEETS VICTORIAN BEST PRACTICE STORMWATER GUIDELINES

MAINTENANCE GUIDELINES (EVERY 3-6 MONTHS)

RAINWATER TANKS:	TO BE INSPECTED, INLET TO BE CLEANED REGULARLY. IF SLUDGE IS PRESENT, TANKS MUST BE DRAINED BY PROFESSIONAL PLUMBER AND CLEANED
GUTTERS AND DOWNPIPES:	TO BE INSPECTED AND CLEANED REGULARLY.
FIRST FLUSH DEVICES:	IF APPLICABLE, TO BE INSPECTED AND CLEANED REGULARLY.

ONCE A RAINWATER TANK IS INSTALLED, IT IS RECOMMENDED THAT THE FOLLOWING COMPONENTS OF THE ROOF CATCHMENT AND TANK BE INSPECTED AT LEAST EVERY SIX MONTHS:

- GUTTERS- THEY GENERALLY WILL NEED CLEANING AS WELL AS INSPECTION. IF INSPECTION FINDS LARGE AMOUNTS OF LEAF MATERIAL OR OTHER DEBRIS, THEN THE INSPECTION AND CLEANING FREQUENCY MAY NEED TO BE INCREASED.
- ROOF- CHECK FOR THE PRESENCE OF ACCUMULATED DEBRIS INCLUDING LEAF AND OTHER PLANT MATERIAL. ACCUMULATED MATERIAL SHOULD BE CLEARED. IF TREE GROWTH HAS LED TO OVERHANGING BRANCHES THESE SHOULD BE PRUNED.
- TANK INLETS, INSECT-PROOFING AND LEAF FILTERS- IF NECESSARY THESE SHOULD BE CLEANED AND REPAIRED.
- TANK AND TANK ROOF- CHECK STRUCTURAL INTEGRITY OF THE TANK INCLUDING THE ROOF AND ACCESS COVER. ANY HOLES OR GAPS SHOULD BE REPAIRED.
- INTERNAL INSPECTION- CHECK FOR EVIDENCE OF ACCESS BY ANIMALS, BIRDS OR INSECTS INCLUDING THE PRESENCE OF MOSQUITO LARVAE. IF PRESENT, IDENTIFY AND CLOSE ACCESS POINTS. IF THERE IS ANY EVIDENCE OF ALGAL GROWTH (GREEN GROWTH OR SCUM ON OR IN THE WATER), FIND AND CLOSE POINTS OF LIGHT ENTRY.
- PIPEWORK - CHECK FOR STRUCTURAL INTEGRITY. SECTIONS OF PIPEWORK THAT ARE NOT SELF-DRAINING SHOULD BE DRAINED. BURIED PIPEWORK, SUCH AS WITH 'WET SYSTEMS', CAN BE DIFFICULT TO DRAIN OR FLUSH. WHERE POSSIBLE DRAINAGE POINTS SHOULD BE FITTED.

IN ADDITION TO SIX-MONTHLY INSPECTIONS, TANKS SHOULD BE INSPECTED EVERY 2-3 YEARS FOR THE PRESENCE OF ACCUMULATED SEDIMENTS. IF THE BOTTOM OF THE TANK IS COVERED WITH SEDIMENT THE TANK SHOULD BE CLEANED.

PROPOSED SITE:

SITE AREA:		260.0 m²
SITE COVERAGE:	56.5%	147.2 m²
SITE PERMEABILITY:	35.5%	92.1 m²
GARDEN AREA REQ:	35.5%	92.1 m²
VEGETATED AREA:	26.4%	66.6 m²

THE DEVELOPMENT INCLUDES THE REINTEGRATION OF URBAN WATER INTO THE LANDSCAPE TO FACILITATE A RANGE OF BENEFITS, INCLUDING MICROCLIMATE COOLING, LOCAL HABITAT AND PROVISION OF ATTRACTIVE SPACES FOR COMMUNITY USE AND WELL-BEING.

- THE INCORPORATED WSUD TREATMENT MEASURES WILL HELP TO CONTROL AIR, SOIL, AND WATER QUALITY, ALONG WITH OTHER POTENTIAL ENVIRONMENTAL PROBLEMS WITHIN THE SITE
- STORMWATER HARVESTING AND REUSE WILL REDUCE THE OVERALL STORMWATER OUTFLOWS FROM THE SITE WHILE ALSO REDUCING URBAN TEMPERATURES THROUGH ENHANCED EVAPOTRANSPIRATION AND SURFACE COOLING
- THE DEVELOPMENT MAXIMISES THE PROVISION OF VEGETATED LANDSCAPING AND PERMEABLE SURFACES, WHICH WILL HELP TO TRAP SEDIMENT AND ENHANCE FILTRATION OF NUTRIENTS AND PESTICIDES BY SLOWING DOWN RUNOFF THAT COULD ENTER THE LOCAL SURFACE WATERS OR THE COUNCIL STORMWATER SYSTEM
- THE ROOT SYSTEMS OF THE PLANTED VEGETATION WITHIN THE SITE WILL HOLD SOIL PARTICLES TOGETHER WHICH GREATLY REDUCES WIND EROSION AND STABILISES THE SOIL, PROVIDING PROTECTION AGAINST LOCAL EROSION WHICH WILL ALSO ASSIST GREATLY IN HOLDING AS MUCH WATER AS POSSIBLE AND RELEASING IT SLOWLY INTO THE STORMWATER SYSTEM
- THE SITE WILL NOW BE CAPABLE OF HOLDING A MUCH GREATER AMOUNT OF WATER DURING FLASH FLOODING EVENTS

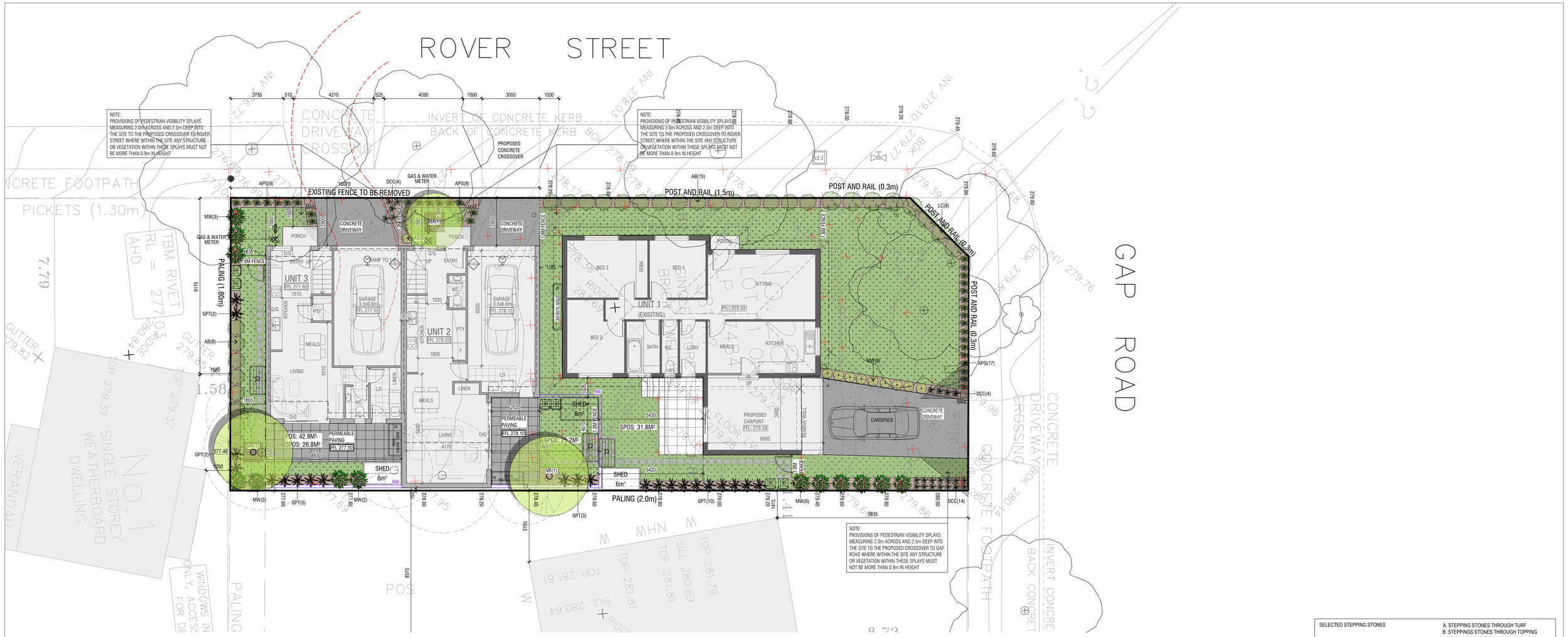
Melbourne Water STORM Rating Report

TransactionID:	0
Municipality:	HUME
Rainfall Station:	HUME
Address:	283 GAP ROAD SUNBURY VIC 3029
Assessor:	[redacted]
Development Type:	Residential - Multiunit
Allotment Site (m2):	260.00
STORM Rating %:	105

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
U2 ROOF - TANK	63.70	Rainwater Tank	2,000.00	2	139.00	92.10
U2 ROOF - UNTREATED	18.00	None	0.00	0	0.00	0.00
U3 ROOF - TANK	61.60	Rainwater Tank	2,000.00	2	143.00	90.70
U3 ROOF - UNTREATED	8.40	None	0.00	0	0.00	0.00
DRIVEWAY - UNTREATED	16.20	None	0.00	0	0.00	0.00

Date Generated: 03-Sep-2024 Program Version: 1.0.0

NORTH



SPECIFICATIONS

SUBGRADE PREPARATION
SITE TO BE PREPARED IN ACCORDANCE WITH BEST HORTICULTURAL PRACTICE AND UNDER APPROPRIATE CONDITIONS. DISTURBANCE TO NATIVE SOIL STRUCTURE IS TO BE MINIMISED. THE USE OF MACHINERY THAT MAY DAMAGE SOIL STRUCTURE OR PROFILE IS NOT ACCEPTABLE. ALL LAWN AND PLANTED AREAS SUB-GRADE TO IS TO BE CULTIVATED TO A MINIMUM DEPTH OF 150MM. DRAINAGE FALLS TO BE SHAPED PRIOR TO TOP SOILING. TEST SUB GRADE TO BE TO DETERMINE PH, SALINITY AND GYPSUM REQUIREMENT PRIOR TO PREPARATION AND CONDITIONING. ANY GYPSUM REQUIRED IS TO BE DISTRIBUTED ACCORDING TO MANUFACTURERS RECOMMENDED RATE AND CULTIVATED INTO THE SUB-GRADE AT A MINIMUM DEPTH OF 150MM. TOPPING AREAS TO BE GRADED / DRAINED TO AVOID WATER DISCHARGE INTO ADJOINING PROPERTIES.

WEED CONTROL
ENVIRONMENTAL WEEDS TO BE REMOVED AND DISPOSED OFF OF SITE PRIOR TO SUB GRADE PREPARATION, TOP SOILING AND PLANTING WORKS.

SOIL PREPARATION
SPREAD TOPSOIL IN MAXIMUM 150MM LAYERS, LIGHTLY COMPACTED BY USE OF A 150 - 200KG ROLLER, OR BY CAREFULLY WALKING UNTIL IT IS SETTLED AT FINISHED KERB LEVELS OR TO WITHIN 75MM BELOW EDGING LEVELS TO ACCOMMODATE MULCH. IMPORTED TOPSOIL FOR GARDEN BEDS IS TO BE MEDIUM TEXTURE GENERAL PURPOSE GARDEN SOIL AND LIGHTLY COMPACTED TO MINIMUM 300MM DEPTH TO GARDEN BEDS. SOIL IS TO COMPLY WITH AS 2223-1978, AND AS FOLLOWS:
- FREE FROM PERENNIAL WEEDS AND THEIR ROOTS, BULBS AND RHIZOMES
- FREE FROM BUILDING RUBBLE AND ANY OTHER MATTER DELETERIOUS TO PLANT GROWTH
- PH TO BE 6.0-7.0
- TEXTURE TO BE LIGHT TO MEDIUM FRIABLE LOAM
- FREE FROM SILT MATERIAL

IMPORTED TOPSOIL FOR LAWN REJUVENATION / ESTABLISHMENT SHALL HAVE THE ABOVE CHARACTERISTICS, BUT SHALL BE A FREE DRAINING SANDY LOAM. LIGHTLY COMPACT TO MINIMUM DEPTH OF 100MM.

MULCH
MULCH FOR GARDEN BEDS IS TO BE AN AGED ORGANIC MATERIAL WITH 60 - 80 PERCENT WOOD CHIPS PARTICLES IN A SIZE RANGE OF 25 - 50 MM MAXIMUM BY VOLUME. SPREAD MULCH AT A CONSOLIDATED DEPTH OF 75MM.

PLANTING PROCEDURE
FILL PLANTING HOLE WITH WATER AND ALLOW TO DRAIN COMPLETELY IF SOIL IS DRY. TREE ROOTS ARE TO BE TEASED OUTWARDS IF MATTED OR CIRCLING OCCURS PRIOR TO BACKFILLING. PLACE TREE IN CENTRE OF HOLE ON FIRM SOIL TO PREVENT SINKING, ENSURING TOP OF THE ROOTBALL IS FLUSH WITH THE SURROUNDING SOIL SURFACE AND THE TRUNK IS VERTICAL. BACKFILL MATERIAL IS TO BE IN A LOOSE, FRIABLE STATE, WITH NO BRICKS, ROCKS OR FOREIGN MATERIAL - IF SUFFICIENT MATERIAL IS NOT AVAILABLE FORM THE ORIGINAL HOLE TO BACKFILL, A SIMILAR SOIL TYPE MUST BE SOURCED AND USED. PREVENT LARGE AIR POCKETS IN SOIL FROM OCCURRING BY FIRMLY BACKFILLING SOIL IN LAYERS THEN THOROUGHLY WATERED IN. TREES TO BE STAKED WITH TWO 2250MM X 70MM HARDWOOD STAKES DRIVEN FIRMLY INTO THE GROUND. DO NOT BE PLACE STAKE THROUGH THE ROOTBALL AREA. TREES ARE TO BE SECURED TO EACH STAKE WITH A STRONG, SOFT AND FLEXIBLE MATERIAL, TIGHT ENOUGH TO SUPPORT THE TREE IN WINDY CONDITIONS BUT FLEXIBLE ENOUGH TO STIMULATE DEVELOPMENT OF A GOOD SUPPORTIVE ROOT SYSTEM. TREE TIE MATERIAL MUST NOT DAMAGE TREE BARK OR RESTRICT TRUNK GROWTH FOR A MINIMUM PERIOD OF THREE YEARS. SLOW RELEASE FERTILISER (3/6 MONTH FORMULATION) SUCH AS 'OSMOCOTE' IS TO BE APPLIED TO THE TOP OF THE ROOTBALL AREA AWAY FROM THE TRUNK / STEM TO MANUFACTURERS SPECIFICATIONS AND WATERED IN IMMEDIATELY. ALL TREES TO BE MULCHED TO A DIAMETER OF 1200MM WIDE AND TO A DEPTH OF 100MM BUT MUST NOT BE IN CONTACT WITH THE TREE TRUNK. MULCH IS TO BE AN AGED ORGANIC MATERIAL WITH 60 - 80 PERCENT OF ITS VOLUME BEING WOOD CHIP PARTICLES IN A SIZE RANGE OF 25 -50MM MAXIMUM. MULCH IS TO BE SPREAD AT A CONSOLIDATED DEPTH OF 75MM. THE PLANTING HOLE SURFACE IS TO BE SHAPED TO MINIMISE WATERLOGGING/EXCESSIVE WATER RETENTION BUT RETAIN THE MULCH MATERIAL NEATLY. THE SITE MUST BE LEFT IN A CLEAN AND SAFE CONDITION.

PLANT ESTABLISHMENT PERIOD
THE LANDSCAPE IS TO BE MAINTAINED BY APPLYING BEST HORTICULTURAL PRACTICE TO PROMOTE HEALTHY PLANT PERFORMANCE FOR A 13 WEEK ESTABLISHMENT PERIOD FOLLOWING THE APPROVAL OF PRACTICAL COMPLETION BY THE RESPONSIBLE AUTHORITY INCLUDING (BUT NOT LIMITED TO) THE FOLLOWING TASKS - PRUNING AS NECESSARY TO MAINTAIN PLANTS IN A HEALTHY AND STRUCTURALLY SOUND MANNER, PEST AND DISEASES - VEGETATION TO BE PEST AND DISEASE FREE, MULCHING, STAKING AND TYING. MAINTAINED 75MM MULCH DEPTH AROUND TREE BASES THROUGHOUT MAINTENANCE PERIOD, WATER AS OFTEN AS NECESSARY TO ENSURE HEALTHY AND VIGOROUS GROWTH IN ACCORDANCE WITH CURRENT LOCAL WATERING REGULATIONS, MAINTAIN WEED FREE STATE OVER THE ENTIRE MULCH AREA BY SPRAYING OR MECHANICAL WEEDING, FERTILISING - 3/6 X MONTHLY SLOW RELEASE FERTILISER IN ACCORDANCE WITH MANUFACTURERS RECOMMENDED APPLICATION RATES, REPLACEMENT OF DECEASED, STOLEN OR VANDALISED PLANTS BEYOND REPAIR OR REGROWTH WITH THE SAME SPECIES AS SPECIFIED IN THE PLANT SCHEDULE WITHIN THE ASSIGNED MAINTENANCE PERIOD

IRRIGATION
IF APPLICABLE, INSTALL IN-GROUND AUTOMATIC DRIP IRRIGATION SYSTEM TO ALL GARDEN AREAS AND PLANTER BOXESIN ACCORDANCE WITH CURRENT LOCAL WATERING REGULATIONS

TIMBER EDGING
TIMBER EDGING TO BE 75MM X 25MM TREATED PINE SECURED TO 300MM LONG TREATED PINE STAKES AT NOM. MIN 1000MM SPACINGS WITH GALVANISED SCREWS AND INSTALLED TO ALL JUNCTIONS BETWEEN GARDEN BEDS, LAWN AND TOPPING / PEBBLE AREAS

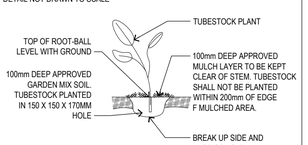
DRAINAGE
LANDSCAPE AND / OR BUILDING CONTRACTOR(S) ARE RESPONSIBLE FOR CIVIL AND HYDRAULIC COMPUTATIONS FOR LANDSCAPE BUILDING WORKS INCLUDING, BUT NOT LIMITED TO SURFACE AND SUB SURFACE DRAINAGE FOR ALL LANDSCAPE AREAS PRIOR TO COMMENCEMENT OF WORKS

GENERAL
WHILE CARE HAS BEEN TAKEN TO SELECT TREE SPECIES WITH NON-INVASIVE ROOT SYSTEMS IT IS RECOMMENDED THAT ROOT CONTROL BARRIERS BE INSTALLED FOR ANY TREES LOCATED WITHIN TWO METRES OF ANY BUILDING LINES.
CLIMBING PLANTS (IF APPLICABLE) ARE TO BE TRAINED TO SUPPORTIVE MESH, WIRE OR LATTICE FIXED OVER ENTIRE FENCE SECTION FROM BASE TO TOP
DO NOT SCALE FROM PLAN - CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING CONSTRUCTION

PLANTS - QUALITY OF TREES AND SHRUBS
PROVIDE PLANTS AT SPECIFIED PLANT HEIGHTS AND POT SIZES, AT MINIMUM. PROVIDE LARGER STOCK IF PLANT MATERIAL IS UNAVAILABLE IN THESE SIZES, TREES AND SHRUBS SHALL BE HEALTHY NURSERY STOCK FREE FROM PESTS, INSECTS, DISEASES AND WEEDS. SUBSTITUTE PLANS ARE NOT ACCEPTABLE UNLESS DEEMED ACCEPTABLE BY THE RESPONSIBLE AUTHORITY IN WRITING. SEMI MATURE TREES TO BE SUPPLIED TO MEET THE FOLLOWING CRITERIA: HAVE A MINIMUM PLANTED HEIGHT TO SIZES AS INDICATED IN THE PLANT SCHEDULE, HAVE A MINIMUM TRUNK CALLIPER OF 50MM AT GROUND LEVEL, BE UNDAMAGED AND FREE OF DISEASES AND INSECT PESTS, NOT BE ROOT BOUND OR HAVE CIRCLING OR GIRDLING ROOTS BUT HAVE ROOTS GROWN TO THE EDGE OF - THE CONTAINER, SHOULD BEAR A SINGLE STRAIGHT TRUNK, STRONG BRANCHING PATTERN, AND FULL CANOPY, SHOW HEALTHY, VIGOROUS GROWTH

PROTECTION OF EXISTING TREES
ALL EXISTING VEGETATION SHOWN ON THE ENDORSED PLAN ON BOTH SUBJECT SITE AND NEIGHBOURING PROPERTIES TO BE RETAINED MUST BE SUITABLY MARKED AND PROTECTED (IF REQUIRED) PRIOR TO COMMENCEMENT OF DEVELOPMENT ON SITE INCLUDING DEMOLITION. VEGETATION MUST NOT BE REMOVED, DESTROYED OR LOPPED WITHOUT THE WRITTEN CONSENT OF THE RESPONSIBLE AUTHORITY. BEFORE THE COMMENCEMENT OF WORKS INCLUDING DEMOLITION, TREE PROTECTION BARRIERS MUST BE ERECTED AROUND TREES ON BOTH SUBJECT SITE AND ADJOINING PROPERTIES TO FORM A DEFINED TREE PROTECTION ZONE DURING DEMOLITION AND CONSTRUCTION IN ACCORDANCE WITH TREE PROTECTION MEASURES AS PER AS 4970-2009. ANY REQUIRED PRUNING MUST BE CARRIED OUT BY A TRAINED AND COMPETENT ARBORIST WITH A THOROUGH KNOWLEDGE OF TREE PHYSIOLOGY AND PRUNING METHODS. PRUNING TO BE CARRIED OUT AS PER AS 4373-2007. ALL TREE PROTECTION PRACTICES MUST MEET THE REQUIREMENTS OF A CONSULTING ARBORIST AND / OR TO THE SATISFACTION OF THE RESPONSIBLE AUTHORITY.

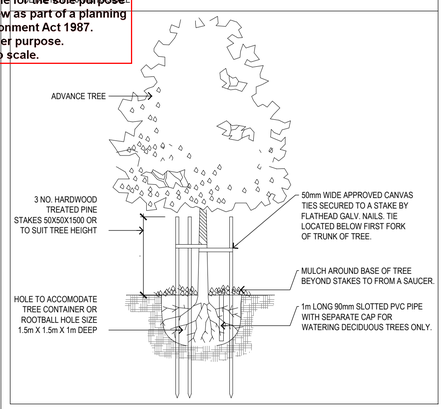
SHRUB PLANTING
DETAIL NOT DRAWN TO SCALE



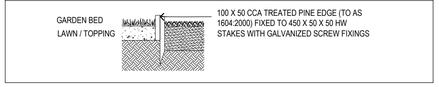
LEGEND

- PROPOSED EVERGREEN SHRUBS
- EXISTING TREES TO BE RETAINED AND PROTECTED
- PROPOSED LAWN AREAS
- PROPOSED CONCRETE DRIVEWAY
- PROPOSED GARDEN BED
- SELECTED MULCH/TOPPING AREA
- PROPOSED PERMEABLE PAVERS
- PROPOSED PAVER STEP-STONES
- 2000L SLIMLINE — PROPOSED RAINWATER TANKS
- SHED 6m³ — PROPOSED 6m³ STORAGE SHED
- CL — PROPOSED WASHING LINE
- BIN BIN — PROPOSED BIN STORAGE AREA
- FENCE WITH HEIGHTS AND MATERIALS AS NOMINATED
- WATER METER/ GAS METER

ADVANCE TREE PLANTING



TYPICAL TIMBER EDGE DETAIL
TO ALL GARDEN BEDS AND LAWN/TOPPINGS EDGE



SITE

SITE AREA:		580.6 m²
SITE COVERAGE:	46.1%	267.6 m²
SITE PERMEABILITY:	46.0%	267.5 m²
GARDEN AREA REQ:	46.0%	267.5 m²

STEPPING STONE DETAIL
SCALE 1:20

https://www.pavingexpert.com/step_stones_01

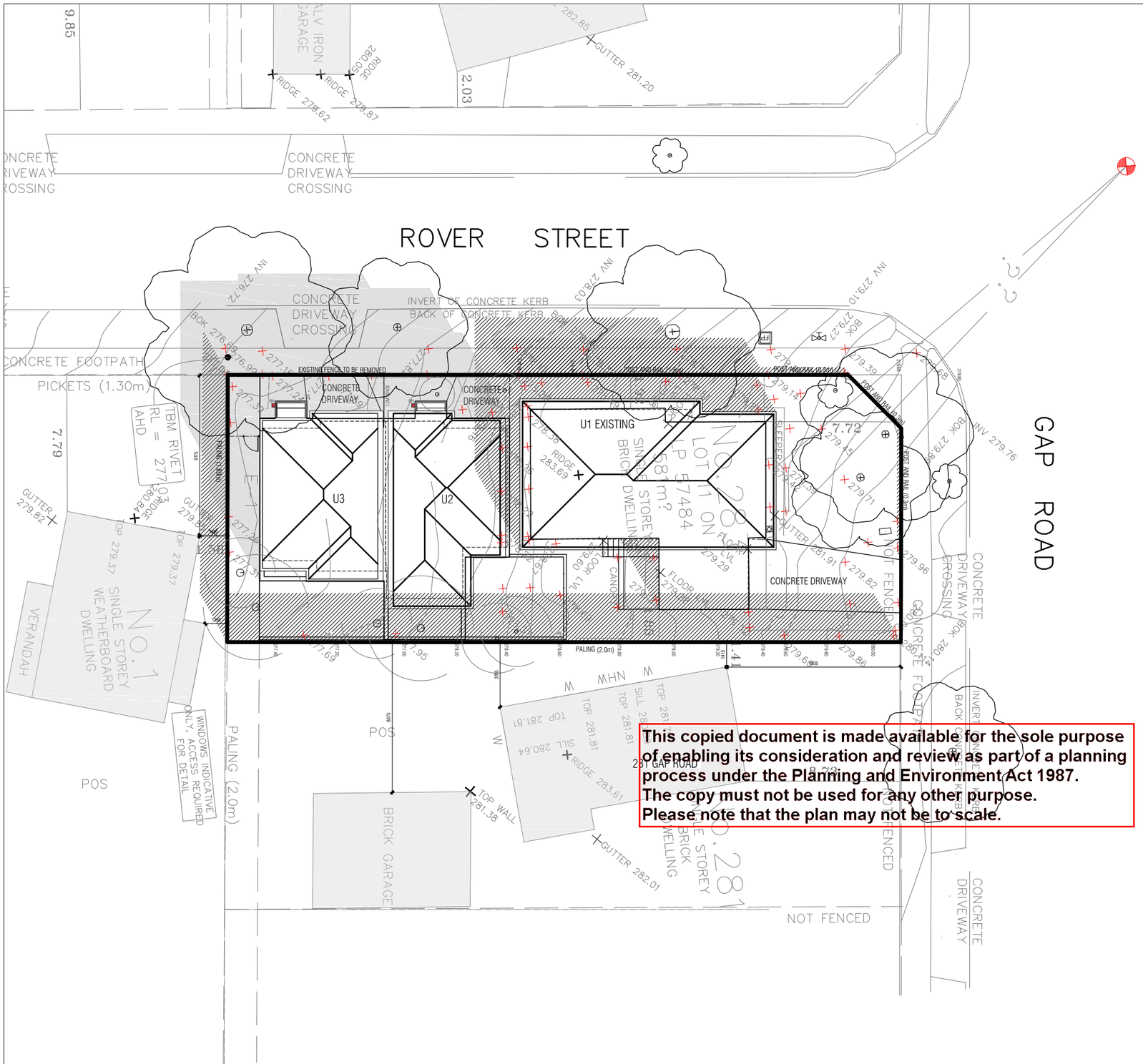
SURFACE FINISH DETAIL

GARDEN BEDS	TOPPINGS AREAS	LAWN AREAS
75mm ORGANIC PINE BARK MULCH 400mm APPROVED MEDIUM LOAM SOIL MIN 150mm DEEP ROTARY HOED SUBGRADE	40mm COMPACTED SELECTED TOPPINGS 75mm COMPACTED FCR BASE (NO COMPACTED BASE AROUND BASE OF EXISTING TREES) SUBGRADE	STRATHAYAR WALTER SOFT LEAF BUFFALO OR SIMILAR INSTANT LAWN 100mm APPROVED SANDY LOAM SOIL MIN 150mm DEEP ROTARY HOED SUBGRADE

PLANT SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	QTY	SUPPLY SIZE	MATURE H x W
	TREES				
MA	MAGNOLIA KAY PARRIS	MAGNOLIA	1	40ltr / MIN 1.8m HIGH	5.0m X 3.0m
VR	EUCALYPTUS 'VINTAGE RED'	VINTAGE RED	2	40ltr / MIN 1.8m HIGH	7.0m X 4.0m
	SHRUBS				
MW	ACACIA MYRTIFOLIA	MYRTLE WATTLE	13	20cm POT	1.5m X 1.0m
AB	WESTRINGIA 'AUSSIE BOX'	AUSSIE BOX	23	14cm POT	0.9m X 0.9m
GPT	GAPANTHUS PRAECOX SPP. ORIENTALIS 'TALL BLUE'	AGAPANTHUS 'TALL BLUE'	22	20CM POT	1.5m X 0.5m
LC	SANTOLINA CHAMAECYPARISSUS	LAVENDER COTTON	8	20CM POT	0.5m X 1m
AS	ACMENA 'ALLYN MAGIC'	ALYN MAGIC	3	20cm POT	0.6m X 0.6m
	TUSSOKS/ GRASSES/ EVERGREEN PERENNIALS				
DCC	DIANELLA CAERULA "CASSA BLUE"	CASSA BLUE FLAX LILLY	22	14cm POT	0.4m X 0.4m
APS	AGAPANTHUS PRAECOX SPP. ORIENTALIS 'BABY PETE'	AGAPANTHUS 'BABY PETE'	34	14CM POT	0.2m X 0.4m

NORTH



LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

NORTH

SHADOW DIAGRAM 9AM

22nd OF SEPTEMBER

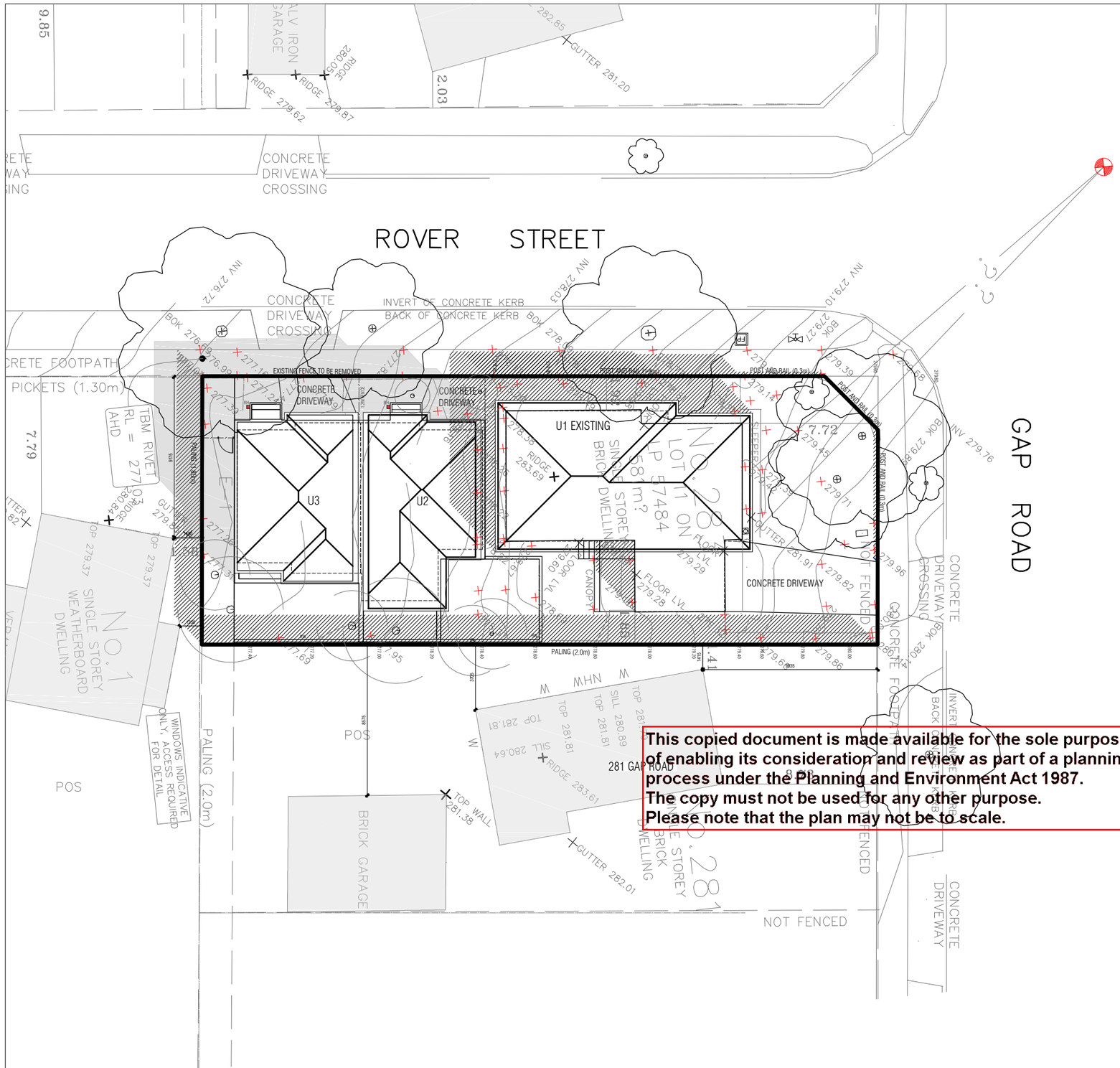
PROPOSED SHADOW DIAGRAM

UNIT DEVELOPMENT

283 GAP ROAD, SUNBURY

SD01

REV-C



LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

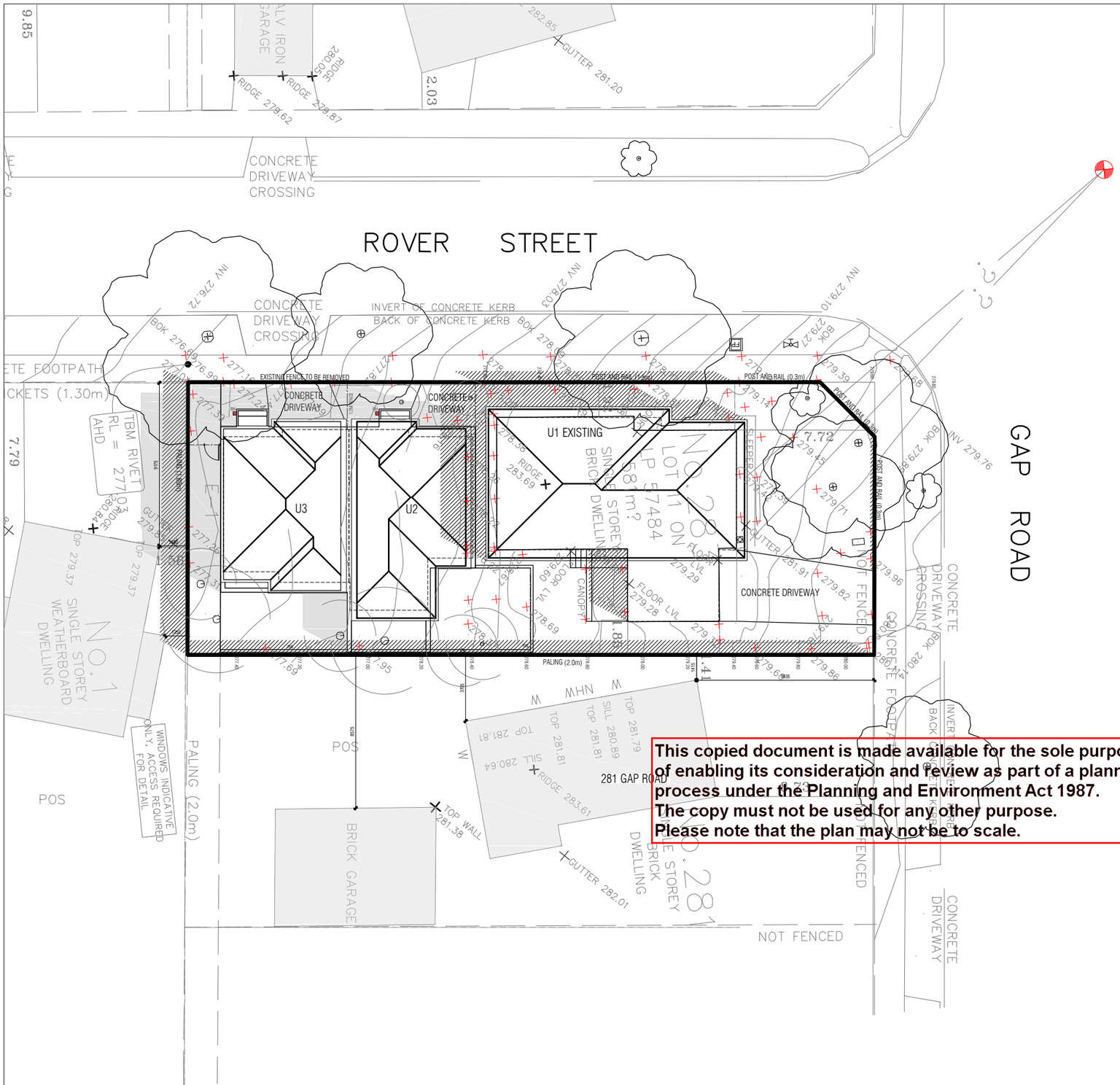
NORTH

SHADOW DIAGRAM10AM

22nd OF SEPTEMBER

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

SD02
REV-C



LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

NORTH

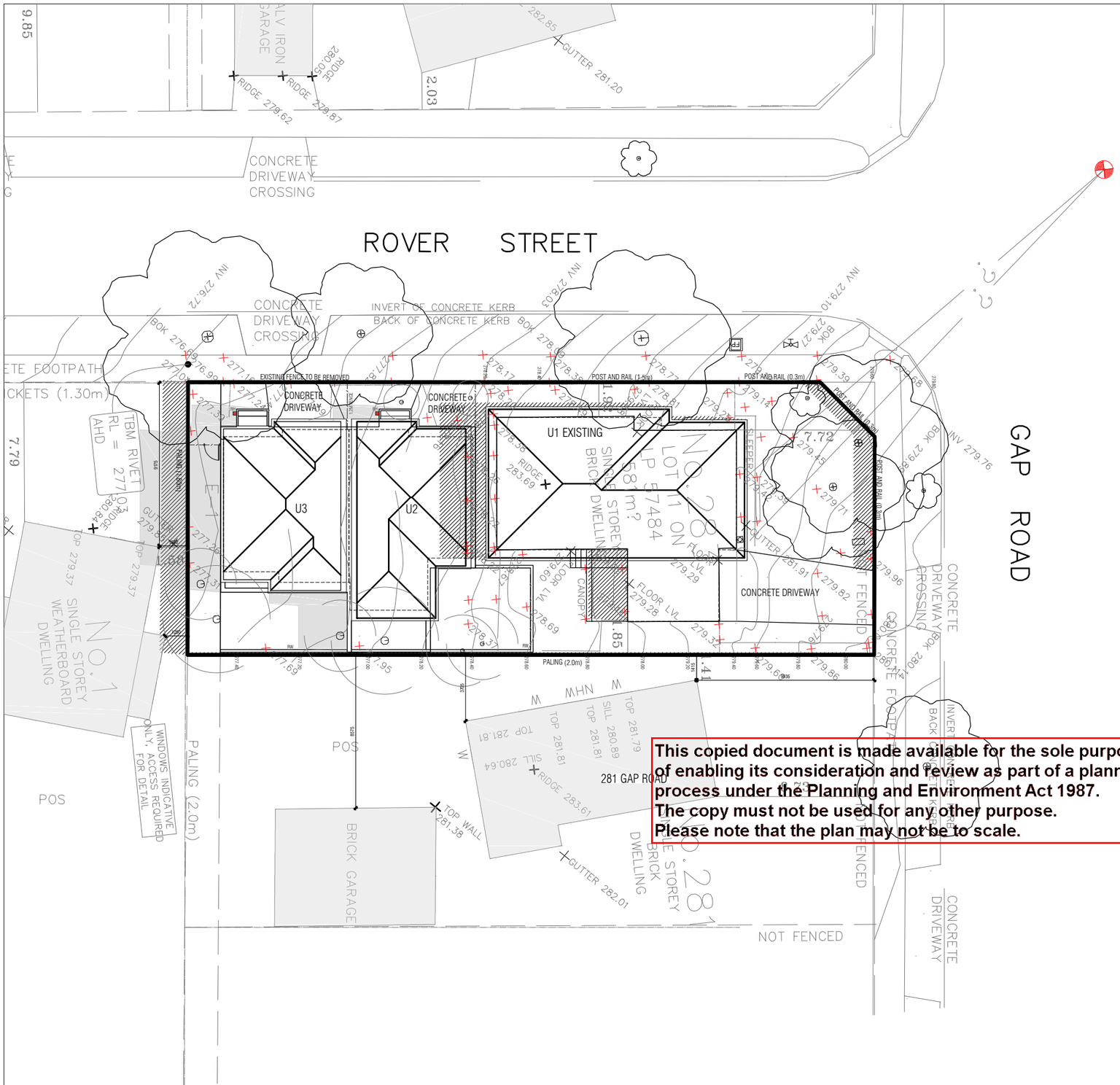
SHADOW DIAGRAM 11AM

22nd OF SEPTEMBER

PROPOSED SHADOW DIAGRAM

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

SD03
REV-C



LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

NORTH

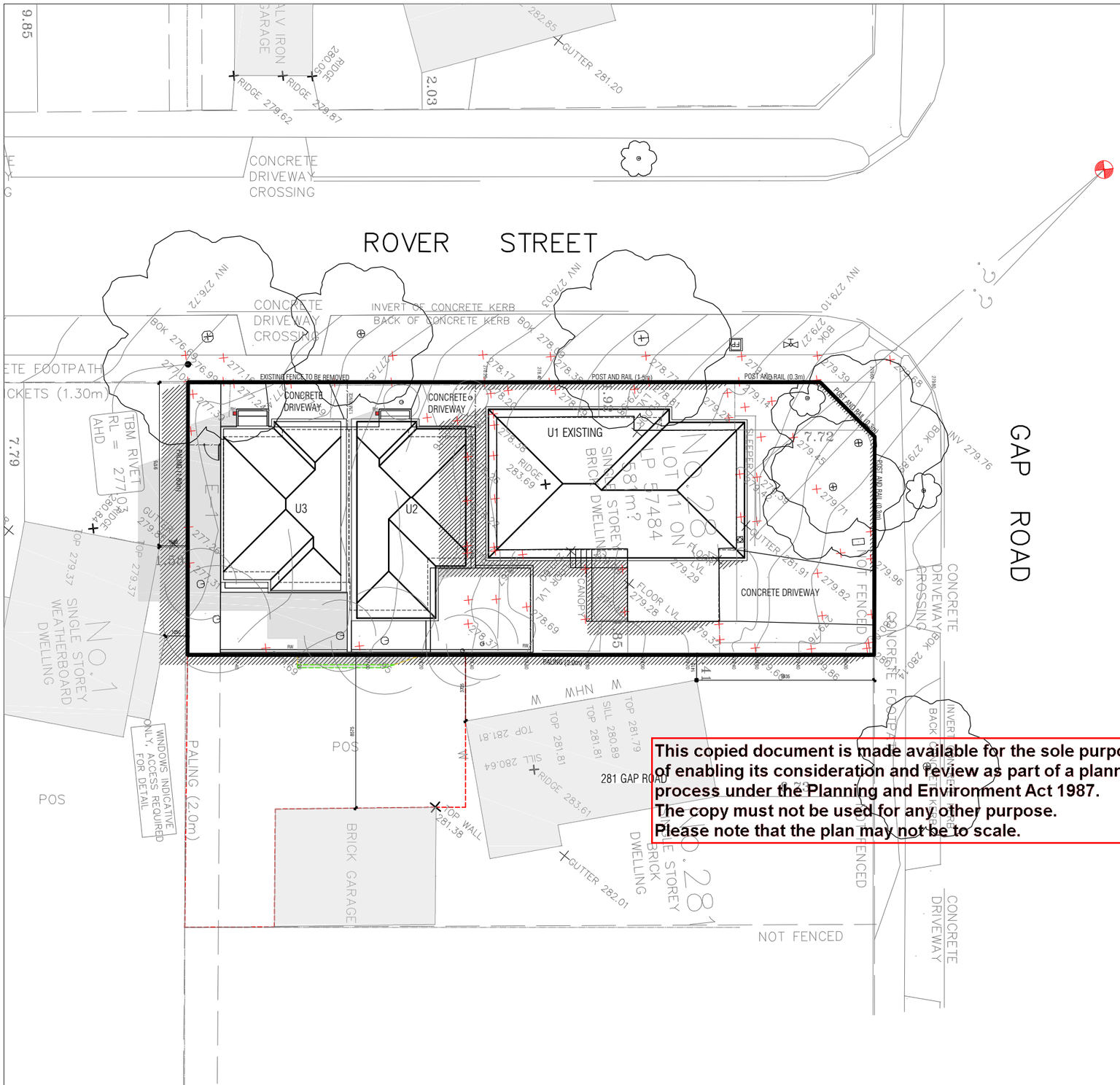
SHADOW DIAGRAM 12PM

22nd OF SEPTEMBER

PROPOSED SHADOW DIAGRAM

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

SD04
REV-C



281 GAP ROAD		
EXISTING SPOS		167.0m2
EXISTING SHADOWED IN SPOS	1.9%	3.3m2
PROPOSED SHADOWED IN SPOS	0.5%	0.9m2

LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

NORTH

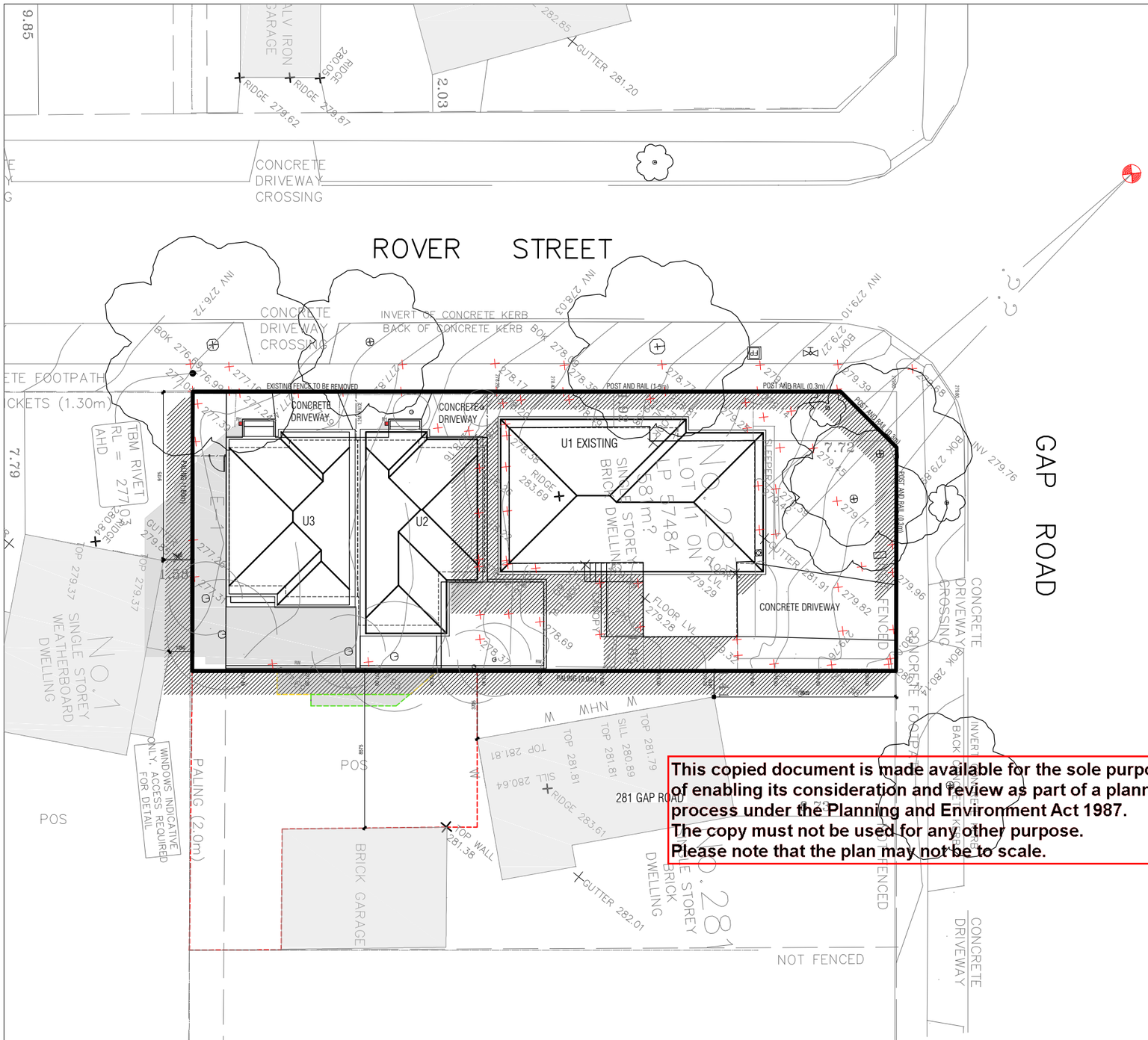
SHADOW DIAGRAM 1PM

22nd OF SEPTEMBER

PROPOSED SHADOW DIAGRAM

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

SD05
REV-C



281 GAP ROAD		
EXISTING SPOS		167.0m2
EXISTING SHADOWED IN SPOS	6.1%	10.2m2
PROPOSED SHADOWED IN SPOS	1.8%	3.1m2

LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

NORTH

SHADOW DIAGRAM 2PM

22nd OF SEPTEMBER

PROPOSED SHADOW DIAGRAM

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

SD06
REV-C

ROVER STREET

GAP ROAD

281 GAP ROAD

281 GAP ROAD		
EXISTING SPOS		167.0m2
EXISTING SHADOWED IN SPOS	17.3%	29.0m2
PROPOSED SHADOWED IN SPOS	7.0%	11.8m2

LEGEND

PROPOSED SHADOWS

EXISTING SHADOWS

NORTH

SHADOW DIAGRAM 3PM

22nd OF SEPTEMBER

PROPOSED SHADOW DIAGRAM

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

SD07
REV-C

[redacted]

SDA REPORT
SUSTAINABLE DESIGN ASSESSMENT

283 Gap Road Sunbury Victoria 3429

Construction of Two (2) Double Storey Dwellings rear of existing

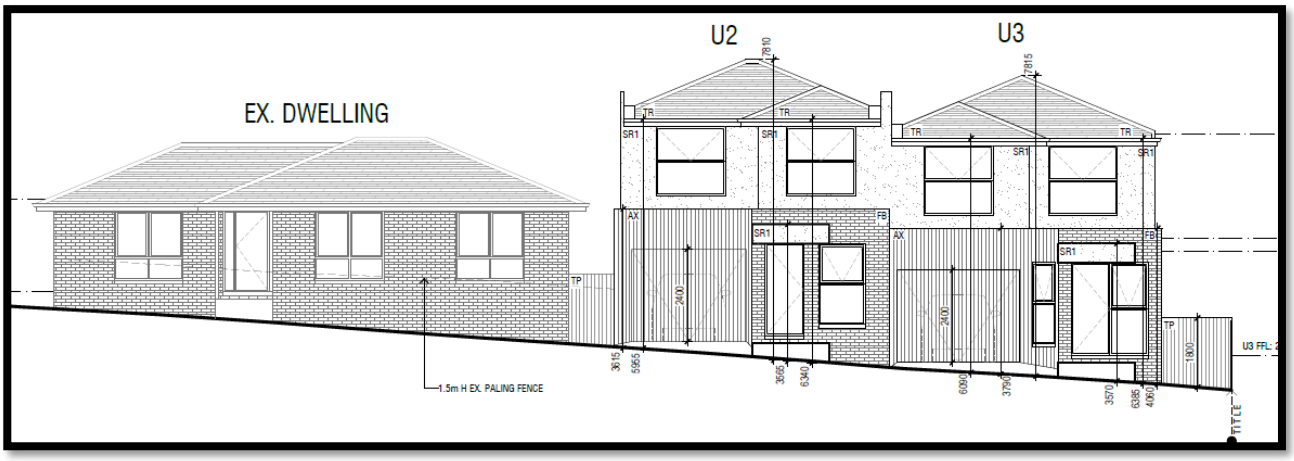
[redacted]

Dated: 17 July 2024

SDA Summary

This report identifies that the dwellings in this development achieve:
• NatHERS 7.0-star rating average will be achieved as minimum requirement in accordance with The National Construction Code (NCC) Part 3.12 & Hume City Council.
• NatHERS Assessment on thermally unique dwellings will be carried out upon receiving working drawings to be sure that the design is final and there is no waste of resources & time earlier on.

- The BESS assessment concludes that the proposed development achieves the minimum BESS score of 50%. ***See BESS Report attached.***
- The Melbourne Water storm calculator demonstrates the development meets the minimum 100% required water quality objective. Refer WSUD Plan attached.



Documentation Details:
[redacted] urpose anning . Please note that the plan may not be to scale.

Methodology

The purpose of this report is to assess the thermal performance of the new development located at **283 Gap Road Sunbury Victoria 3429**. Default Heating & Cooling Values been used to ascertain the heating and cooling loads (shown in Mj/m²) which ultimately determine a star rating.

The heating and cooling scores show how much heat energy must be added or removed to maintain comfortable conditions within the home. They are based on a standard set of occupancy conditions used for rating purposes only. They do not reflect actual energy consumption and are not to be used for calculating heating and cooling system requirements.

Development Information

The proposed development involves the construction of **two double storey dwellings** (class 1). The project is Located at **283 Gap Road Sunbury Victoria 3429**. Situated in a developed residential area and surrounded by existing homes and established vegetation, the development is in an area of *Suburban Exposure*, as per NatHERS tech note (category 3 wind-shielding).

The aerial image below depicts the existing neighbouring buildings at the time of this rating, which along with the documentation, will be considered in the assessment as potential shading screens, as per NatHERS tech note (part 10.12).

Building Fabric: NCC- Part 3.12.1

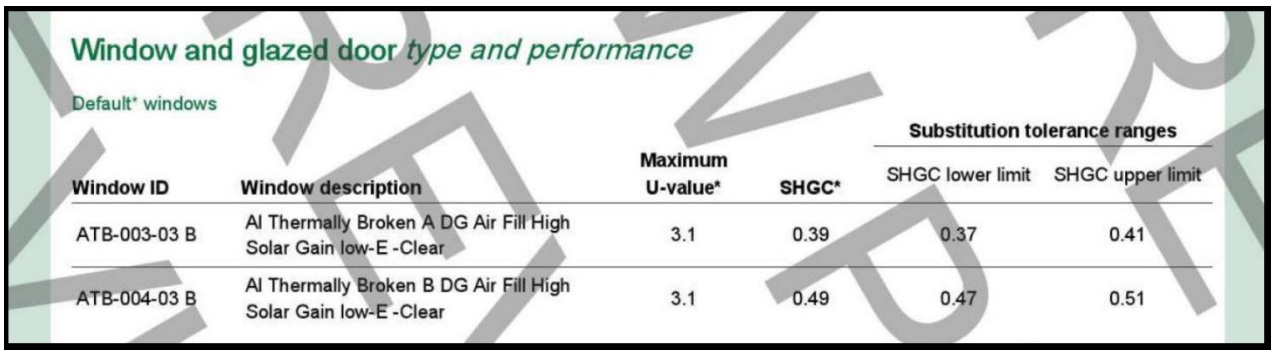
The basic building structural elements and components of a building including the roof, ceilings, walls and floors. These building elements are to be installed with a minimum of the added insulation values specified in NCC- Part 3.12.1

External Glazing: NCC - Part 3.12.2

The following performance values need to be achieved for each window system, as specified on plans.

- Double Glazing to Habitable Areas
- Single Glazing or greater to Non-Habitable Areas

If Required 'High Solar Gain Low E' Glazing' will be used to achieve the Average Star Rating



Window and glazed door *type and performance*

Default* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ATB-003-03 B	Al Thermally Broken A DG Air Fill High Solar Gain low-E -Clear	3.1	0.39	0.37	0.41
ATB-004-03 B	Al Thermally Broken B DG Air Fill High Solar Gain low-E -Clear	3.1	0.49	0.47	0.51

Building Sealing: NCC - Part 3.12.3

Building sealing procedures are to be as following:

- Mitigation of air leakage is paramount and must be considered in construction of all building elements. Unnoticed air leakage, drafts caused by poorly sealed external openings and construction gaps can affect the building occupants' sense of comfort, causing them to increase the use of artificial heating and cooling.
- All roofs, walls, floors etc are to be constructed in a manner that will minimise air leakage and all external doors and windows are to be adequately sealed by foam or rubber materials to prevent any air infiltration,
- Exhaust fans, Rangehoods must have an inbuilt draught seal or dampers, which must be self-close when the fan is not in operation. A chimney or flue serving an open solid fuel burning appliance is required to have a damper or flap fitted that can be closed (may be operated by the occupants)
- External door seals - for an effective seal, compression seals or bulb seals must be fitted to the door jamb, at the head and sides. (Refer to general notes and NCC 2019: Volume 2: Part 3.12.3 Building Sealing, for strategies that may be employed).
- Weather-strips can be factory fitted or installed on site.
- Recessed downlights - All internal recessed downlights to be sealed and IC-4 Rated. The IC or insulation contact rating is a measure used to determine whether a recessed downlight is suitable to come in contact with building insulation. Consequently, there is no need to cut clearance around the downlights and therefore the insulation is not compromised.

Air Movement: NCC - Part 3.12.4

Air movement has been assessed and will been taken into consideration as part of this star rating.

Services: NCC - Part 3.12.5

No heating or cooling services have been considered as part of this FirstRate assessment. It is assumed any mechanical ventilation systems requiring compliance to NCC will be addressed by the projects mechanical engineer.
Artificial lighting and power are to be limited throughout the building, a sufficient electrical design has been provided on plans and shows compliance to the NCC, table below indicating the required maximum wattages to be adhered to.

All external perimeter lighting must be installed as per the following specifications;
(i) be controlled by—
(A) a daylight sensor; or
(B) a time switch that is capable of switching on and off electric power to the system at variable pre-programmed times and on variable pre-programmed days; and
(C) have an average light source efficacy of not less than 60 Lumens/W; or
(D) be controlled by a motion detector

The table below indicates the required maximum artificial lighting and power wattages to be adhered to.

Zones	Maximum W/m²
Residence (Class 1)	4.0W/m² (a 20% reduction from The NCC allowance)
Garage (Class 10)	2.4W/m² (a 20% reduction from The NCC allowance)
Outdoor zones	3.2W/m² (a 20% reduction from The NCC allowance)

NatHERS Assessment - Results

The following table represents the default heating and cooling load of the NatHERS energy assessment. This report identifies that the dwelling achieves the minimum 7-star rating average, required in accordance with The National Construction Code (NCC) Part 3.12 & **Hume City Council.**

Dwelling	Star Rating	Heating MJ/m²	Cooling MJ/m²	Total Energy MJ/m²
U2-U3	7.0 ☆	80.0	19.0	99.0
AVG:	7.0 ☆			

BESS Assessment – Commitments

BESS assessment has been undertaken and the following items have been actioned or shown on the drawings or quantified in the assessment.

BESS 50%	Commitments	Score
Management:		0%
➢ ESD officer present at PRE-APP Meeting:	**Not Present**	
➢ Preliminary NatHERS:(Planning Permit Stage)	**NatHERS Ratings not yet Completed (TBC at PP)**	
➢ Building users guide issued:	**None Supplied**	
Water:		55%
➢ Purple Pipe or On-site Water Recycling:	**None**	
➢ Swimming pool:	**None**	
➢ Rainwater Tanks:	**>2000L with Taps attached, connected to Toilets**	
➢ Bath Size:	**Default or unrated**	
➢ Fixtures, Fittings & Connections:		
○ Showerhead:	**4 Star WELS (>4.5 but <-6.0)**	
○ Kitchen Taps:	**5 Star WELS or greater**	
○ Bathroom Taps:	**5 Star WELS or greater**	
○ Dishwashers:	**Default or unrated**	
○ WC:	**4 Star WELS or greater**	
○ Washing Machine:	**Default or unrated**	
➢ Water Efficient Landscaping:	**Yes**	
Energy:		52%
➢ Installing a Solar Photovoltaic (PV) System:	**No**	
➢ Installing Other Renewable Energy System(s):	**No**	
➢ Gas Supply to Building:	**Natural Gas**	
➢ Average NatHERS Rating:	**7.0 Star Average**	
➢ Heating System & Efficiency:	**Reverse Cycle Central (other), 5 Star (MEPS)**	
➢ Cooling System & Efficiency:	**Refrigerative Space, 5 Star (MEPS)**	
➢ Hot Water System:	**Electric Instantaneous**	
➢ Contribution from Hot Water:	**0%**	
➢ Clothesline:	**Private Clothesline**	
➢ Dryer:	**None Provided**	
➢ External Lighting:	**Motion Sensor Controlled**	
➢ Illumination Reduction to 4W/sqm:	**Yes**	
Stormwater:		100%
➢ STORM score achieved:	**Refer to WSUD Plan (100% Min - 120% Best Practice)**	
IEQ: (Indoor Environmental Quality)		60%
➢ Habitable Room Cross Ventilation:	**Satisfied Cross Ventilation to Habitable Rooms**	
➢ Double Glazing to Habitable Areas:	**Windows are Double Glazed in Habitable Areas**	
➢ External Shading to North, East & West	**Unsatisfied External Shading Requirement**	
➢ Min. 50% of Living Areas orientated to North	**Unsatisfied North Orientation to Living Areas**	
Transport:		50%
➢ Secure Bicycle Spaces:	**0 Secure bicycles spaces (One Per Dwelling)**	
➢ Electrical Vehicle Charging:	**GPO Designated for Electric Vehicles**	
Waste:		0%
➢ Min. 30% Reuse Existing Building?	**Site is being Fully Redeveloped**	
➢ Management of Food & Garden Waste:	**None Present**	

Urban Ecology:	50%

- Site Vegetation Cover: **26.4% Vegetated Area**
- Green Roofs, Walls: **None Present**
- Balcony Floor Waste & Tap: **No Tap & Floor Waste has been Annotated**
- Food Production: **No Areas Provided**

Innovation:	0%

- Innovative Ideas/Measures Imposed: **None Imposed**

Additional Sustainable Measures

- *Energy Efficiency*

The proposed development is designed to be energy efficient to reduce carbon emissions. The various systems and features incorporated in the design of the development include:

- *Energy Efficiency Requirements/Hume City Council Expectations Exceeded*

The proposed dwellings are to meet or exceed the council expectations. The building envelope is insulated to achieve a **minimum 7.0-star rating average** through the use of bulk insulation to external roof, seals to external doors & windows, increase in external wall insulation and concrete slab flooring. *NatHERS will be completed upon receiving working drawings.*

- *High Performance Glazing*

To provide comfortable indoor spaces and reduce energy needed for heating and cooling, high-performance double-glazing window is required for all bedrooms and living areas and single-glazed or better for unconditioned zones.

- *Natural Lighting*

All living areas and bedrooms have direct access to natural daylight to reduce the need for artificial lighting.

- *External Shading*

Proposed appropriate external shading to north facing living area and bedroom windows. Fixed external shading to north facing glazing, such as awnings or projecting eaves, can reduce excessive heat gain in summer while allowing warming winter sun to reach the glazing. As a rule of thumb eaves width should measure 45% of the height from the window sill and the bottom of the eaves.

~~Adjustable shading allows for greater occupant control and when provided to the east and west helps with low angle sun.~~

- *Water Energy System*

Electric Instantaneous hot water system is specified following the policy that has been implemented through amendment VC250. The system significantly reduces energy use by heating water only when required.

- *Heating/Cooling System*

Class leading energy efficient **5 star** rated cooling and heating systems is specified to reduce energy used for space cooling.

- *Peak Energy Demand*

Peak energy demand during summer is designed to be reduced through the provision of roof insulation to reduce heat gain from roof in order to reduce cooling load, the provision of openable windows and efficient internal layout for natural ventilation to reduce cooling requirements and the provision of class leading energy efficient HVAC systems to reduce energy consumption.

- *Energy Efficient Light Fittings*

Energy saving LED lighting is specified to reduce lighting energy use.
□ The project has achieved:
□ Class 1 building - maximum allowable wattage 4W/m2
□ Porch & Alfresco - maximum allowable wattage 4W/m2
□ Class 10 building - maximum allowable wattage 3W/m2

(Compact florescent or LED lights with appropriate controls and sensors are encouraged,
- Provision of Retractable Clothes Drying Lines
Outdoor retractable clothes drying lines / racks are specified to discourage the use of clothes dryer in order to reduce energy use and pollutants within the dwelling.

Additional Sustainable Measures

Stormwater Management / Water Sensitive Urban Design

The development is designed to treat stormwater runoff, minimising peak stormwater flows and reducing stormwater pollutants (nitrogen, phosphorous, suspended solids, etc) though the provision of:

- *STORM Rating*

The proposed development meets the required best practice STORM rating benchmark by achieving a rating of 100%. Stormwater Detention Stormwater is to be detained on site to reduce peak flow runoff discharge into council's stormwater drainage system. Rainwater tanks are excluded and independent of any detention requirements.

- *Permeability*

Hard surfaces and hard landscaping are minimised for the development to minimise hard surface storm water runoff.

- **INDOOR ENVIRONMENT QUALITY (IEQ)**

The development is designed to provide a healthy and comfortable indoor environment for the wellbeing of occupants and to lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices. The design achieves this through:

- **Ventilation**

The proposed dwellings are designed to have openable windows to all living areas and the layout of the living spaces are configured to maximise cross ventilation opportunities.

- **Orientation of windows**

Windows are oriented to maximise views, to allow natural light access and to prevent overlooking of neighbouring secluded private open spaces.

- **Daylight**

The dwellings are designed to provide all living areas and bedrooms to have direct access to natural daylight.

- **External Views**

Living area windows are oriented to landscape areas to present occupants with desirable views. Windows are also provided at the front of the dwellings to enable passive street surveillance and a sense of address for the dwellings.

- **Thermal Comfort**

A thermally efficient building envelope and energy efficient HVAC systems are proposed to maximise thermal comfort of occupants.

Transport

The development is designed to encourage walking, the use of public transport and alternative transport means other than car. The design achieves this through:

- Minimising the Provision of Car Parks for Conventional Vehicles

The development only provides the minimum required number of car spaces required by the planning framework to discourage the use of cars.

- Providing Bike Storage – *Refer to BESS* – *Not Applicable*

~~The garages of the dwellings are designed to be wide enough to accommodate bicycles without the need of bike racks, without encroaching into the minimum required space for the required car parking spaces. However, **Mona Lisa system** bike racks can be installed when necessary to provide sufficient bike parking space without interference to the garage space. The following initiatives have been targeted:~~

✓ A dedicated AC EV Level 2 charger at up to 22kW (32 Amp, 3-phase) installed per dwelling.

Additional Sustainable Measures

Waste Management

The development is designed to minimise waste and encourage the reuse of and recycling of materials during the design, construction and occupancy.

The design achieves this through:

- *Construction Waste Minimisation*

The development is designed to use readily available materials and is designed to use standard components or dimensions to minimise cutting waste. The nominated builder of the development is encouraged to reuse existing building components (eg bricks) and to recycle reusable waste.

- *Occupancy Waste Minimisation*

Storage areas for recycling bins are proposed to be easily accessible to encourage recycling and to enable an effective recycling service to be provided. A low maintenance garden with drought resistant plants is proposed to minimise green waste.

- Storage Spaces for Recycling and Green Waste

Storage areas for recycling bins (240L) are proposed. Sufficient space for green waste bin is provided next to the waste and recycling bins should occupants elect to have one.

Building Materials

The development is designed to minimise material use, to encourage recycling of existing material where possible, to advocate the use of environmentally friendly materials and to use materials of low embodied energy. The design achieves this through:

- **Toxicity**

The development is designed to be constructed using non - toxic materials such as timber, plasterboards, bricks and low VOC paints.

- **Sustainable Timber**

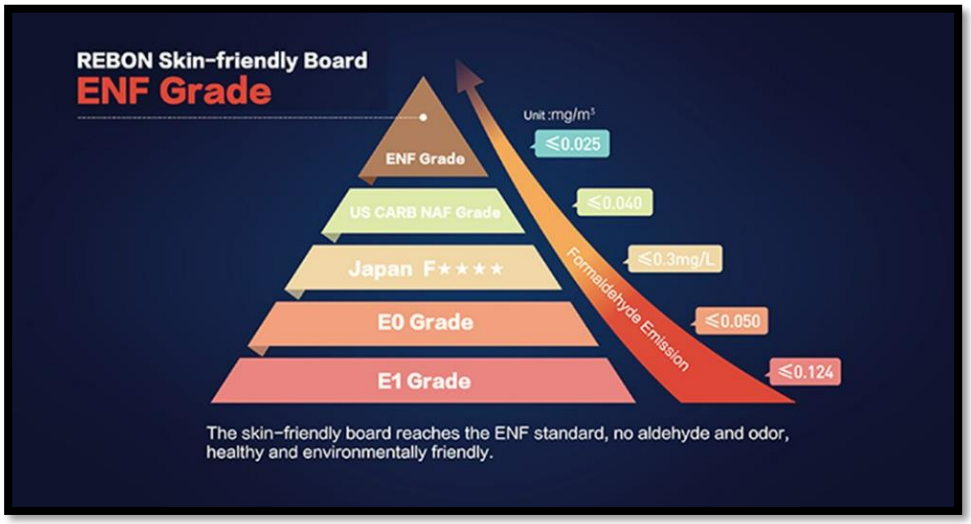
The development is designed to be timber framed using locally grown plantation timber. Plantation timber minimise forest and natural habitat destruction. In addition, timber stores carbon which reduces greenhouse gasses in the atmosphere. Suggest using timber that meets the **Australian Forestry Standard (AFS) AS 4707 - 2006.**

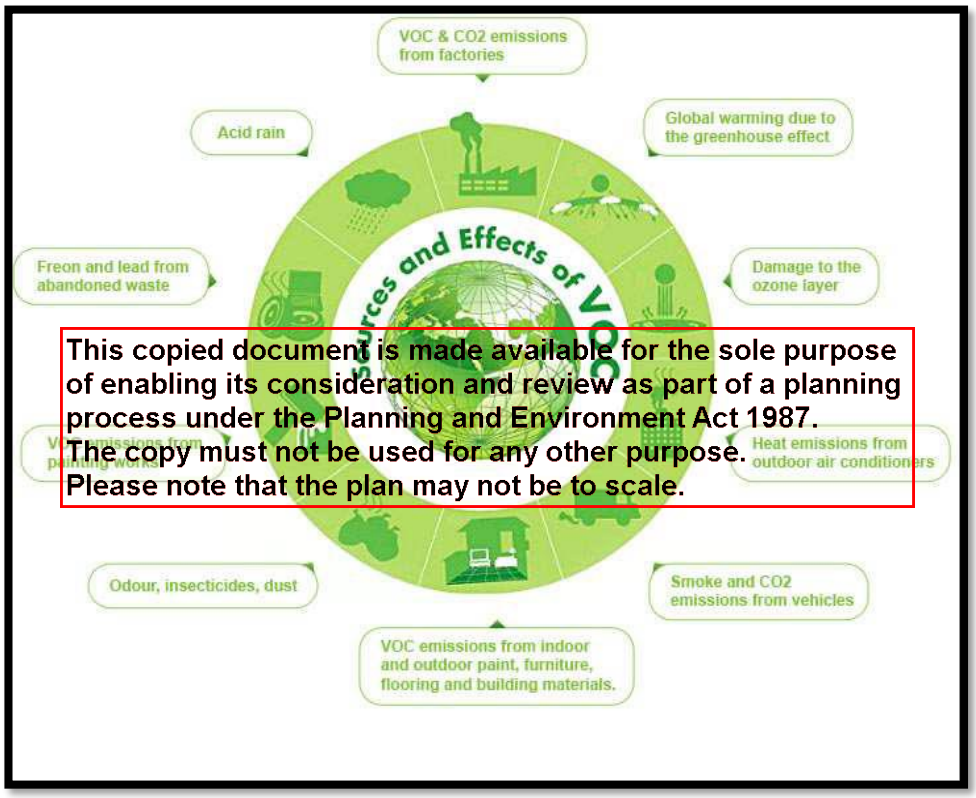
Concrete use supplementary cementitious material (SCM) and recycled aggregate where appropriate and recycled water in its manufacture.

- **Hazardous Materials and VOC**

Low VOC paints are nominated to be used to minimise indoor air contamination.

(Grade E0 or E1 engineered wood products e.g. MDF, plywood, engineered-wood flooring for formaldehyde emission)





Further information relating to low VOC Paints can be found in the Australian Standard AS/NZS 2311 "The Painting of Buildings" Sections 1.5.2.6 & 4.22

Additional information regarding VOC Paints, VOC limits and Green Star ratings can be obtained from the "Green Building Council of Australia"

(www.gbca.org.au) or the "Australian Paint Manufacturers Federation"

All fabricated structural steelwork to be supplied by a steel fabricator/contractor accredited to the Environmental Sustainability Charter of the Australian Steel Institute. Sourced from a Responsible Steel Maker i.e. 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).

Construction and Building Management

The development is designed to promote sustainability in all lifecycle stages including construction. The design achieves this through:

- Environmental Management During Construction

The construction of the dwellings is to be carried out with minimal environmental impact including noise. Waste bins are to be provided and where practical, existing materials are to be recycled or stored for future reuse.

- Stormwater Pollution Reduction During Building Construction Works

Stormwater run-off are to be minimised during construction and where applicable, sediment filters or the like are to be installed to prevent pollutants from being discharged into council drains.

By council best practice, a recycling/reuse commitment of **at least 70%** for all demolition and construction waste (by mass).

Urban Ecology

The development is designed to protect and enhance biodiversity through the provision of sustainable indigenous and native landscaping. The design achieves this through:

- **On Site Topsoil Retention**

The footprint of the development is proposed to be over the footprint of the existing dwelling to minimise topsoil removal.

- **Reuse of Already Developed Land**

The dwellings are proposed on already developed land as an infill development to minimise the destruction of natural habitats and reduce urban sprawl.

- **Maintaining Ecological Value**

Existing open spaces are retained as much as possible to maintain existing ecological value.

- **Enhancing Ecological Value**

Existing exotic and poor condition plants are to be replaced with native or indigenous plants to enhance the ecological value of the development. Drought resistant plant species are selected to reduce water usage.

- **Defining synergies between building elements and building uses**

The spaces within the dwellings proposed were designed according to their designated uses and to maximise natural lighting and ventilation. Living, dining and kitchen areas were designed to be open plan to maximise the flexibility of the space to be used for activities. Spaces are designed to be close to each other to minimise dead spaces and to reduce the size of the dwellings.

- **Significant Enhancement to building's environmental performance**

The proposed use of class leading energy efficient cooling, heating appliances and water efficient fixtures along with innovative rainwater treatment features significantly enhance the dwellings environmental performance as benchmarked.

- **Responding to local climate conditions through passive measures**

The building envelope is insulated with the use of reflective and bulk insulation to external roof, seals to external doors, increase in external wall insulation and concrete slab flooring to reduce heat loss/gain in winter and summer. Shaded openable windows are proposed to allow for cross ventilation during summer. The proposed features reduce energy use for cooling and heating for thermal comfort.

- **New Design Approach**

The dwellings were designed as an infill development which maximises the use of existing developed land. This reduces urban sprawl, minimises the development footprint and places occupants closer to activity centres.

20 mm recycled aggregate

- Used as a base or subbase material for hardstand areas and access roads, pipe bedding, walkways and under concrete pads
- Suitable for drainage material, backfill for retaining walls and decorative applications
- Ideal for creating temporary footings for light excavation equipment during wet weather conditions
- Easy to spread and compact

40 mm recycled aggregate

- Used as a base or subbase material for hardstand areas and access roads, pipe bedding, walkways and under concrete pads
- Suitable for shakedown material for worksites, backfill for retaining walls and open drain or swale lining
- Can be used for a temporary access track on to building sites during wet weather conditions

WHAT TO CONSIDER?

The availability of recycled aggregate can vary based on site location, demand for product, and availability of materials suitable for recycling. However, as it is sourced locally, supply of recycled aggregates can be more reliable than for virgin aggregates which are often sourced overseas.

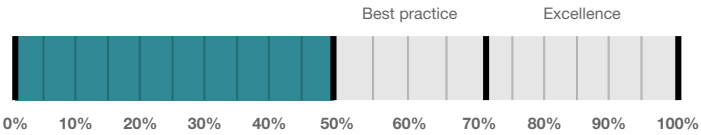
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 283 Gap Rd Sunbury Victoria 3429. 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 Hume City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score

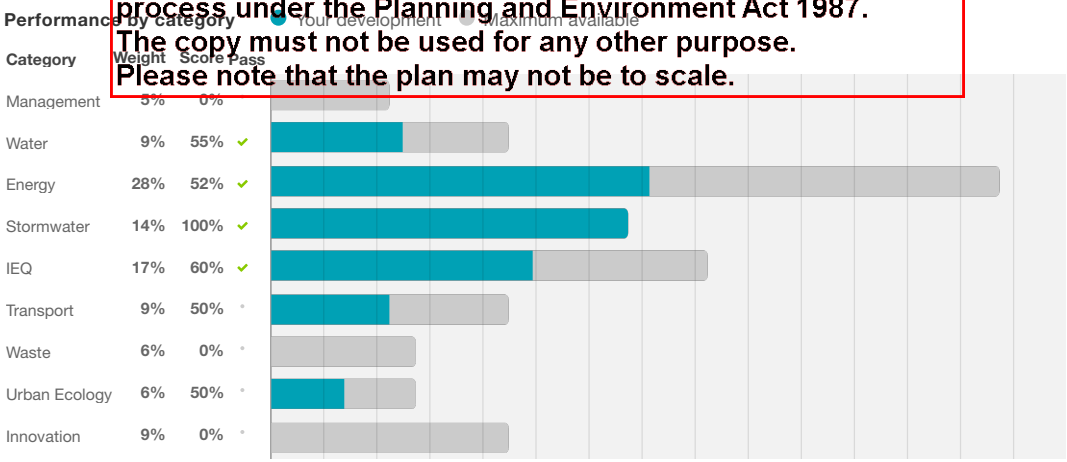


50%

Project details

Address	283 Gap Rd Sunbury Victoria 3429
Project no	0479F337-R1
BESS Version	BESS-8
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	[redacted]
Application no.	P25975
Site area	580.00 m²
Building floor area	201.90 m²
Date	17 July 2024
Software version	[illegible]

Performance by category



Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Townhouse			
Unit 2	1	105 m²	51%
Unit 3	1	97.0 m²	48%
Total	**2**	**201 m²**	**100%**

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Annotation: Water efficient garden details		-
Energy 3.3	Annotation: External lighting controlled by motion sensors		-
Energy 3.4	Location of clothes line (if proposed)		-
Stormwater 1.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
IEQ 2.2	Annotation: Dwellings designed for 'natural cross flow ventilation' (If not all dwellings, include a list of compliant dwellings)		-
IEQ 3.1	Annotation: Glazing specification (U-value, SHGC)		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Urban Ecology 2.1	Location and size of vegetated areas		-
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards		-

Supporting evidence

Credit	Requirement	Response	Status
Energy 3.5	[illegible]		-
Stormwater 1.1	[illegible]		-
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)		-

Credit summary

Management Overall contribution 4.5%

	0%
1.1 Pre-Application Meeting	0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	0%
4.1 Building Users Guide	0%

Water Overall contribution 9.0%

	Minimum required 50%	55%	✔ Pass
1.1 Potable Water Use Reduction		46%	
3.1 Water Efficient Landscaping		100%	

Energy Overall contribution 27.5%

	Minimum required 50%	52%	✔ Pass
1.2 Thermal Performance Rating - Residential		0%	✔ Achieved
2.1 Greenhouse Gas Emissions		0%	
2.6 Electrification		100%	
2.7 Energy consumption		100%	
3.3 External Lighting		100%	
3.4 Clothes Drying		100%	
3.5 Internal Lighting - Houses and Townhouses		100%	
4.4 Renewable Energy Systems - Other		N/A	⌖ Scoped Out
		No other (non-solar PV) renewable energy is in use.	
4.5 Solar PV - Houses and Townhouses		0%	⊘ Disabled
		No solar PV renewable energy is in use.	

Stormwater Overall contribution 13.5%

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

IEQ Overall contribution 16.5%

	Minimum required 50%	50%	✔ Pass
2.2 Cross Flow Ventilation		100%	
3.1 Thermal comfort - Double Glazing		100%	
3.2 Thermal Comfort - External Shading		0%	
3.3 Thermal Comfort - Orientation		0%	

Transport Overall contribution 9.0%

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

Waste Overall contribution 5.5%

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

Urban Ecology Overall contribution 5.5%

	50%
2.1 Vegetation	75%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
2.4 Private Open Space - Balcony / Courtyard Ecology	100%
3.1 Food Production - Residential	0%

Innovation Overall contribution 9.0%

	0%
1.1 Innovation	0% ⊘ Disabled
A minimum project score of 50% is required before an Innovation Credit can be used.	

Credit breakdown

Management Overall contribution 0%

1.1 Pre-Application Meeting		0%
Score Contribution	This credit contributes 50% towards the category score.	
Criteria	Has an 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	

Water

Overall contribution 5% Minimum required 50%

Water Approach	
What approach do you want to use for Water?:	Use the built in calculation tools
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?:	No
Are you installing a rainwater tank?:	Yes
Fixtures, fittings & connections profile	
Showerhead: All	4 Star WELS (>= 4.5 but <= 6.0)
Bath: All	Default or unrated
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	Default or unrated
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?:	
Unit 2	RWT 2
Unit 3	RWT 3
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	No
Non-potable water source connected to Hot Water System: All	No
Rainwater tank profile	
What is the total roof area connected to the rainwater tank?:	
RWT 2	58.3 m²
RWT 3	60.7 m²
Tank Size:	
RWT 2	2,000 Litres
RWT 3	2,000 Litres
Irrigation area connected to tank:	
RWT 2	0.0 m²
RWT 3	0.0 m²
Is connected irrigation area a water efficient garden?:	
RWT 2	No
RWT 3	No
Other external water demand connected to tank?:	
RWT 2	-
RWT 3	-

1.1 Potable Water Use Reduction	46%
Score Contribution	This credit contributes 83.3% towards the category score.
Criteria	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.
Output	Reference
Project	327 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	258 kL
Output	Proposed (including rainwater and recycled water use)
Project	229 kL
Output	% Reduction in Potable Water Consumption
Project	30 %
Output	% of connected demand met by rainwater
Project	100 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	116 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

Energy Overall contribution 15% Minimum required 50%

Dwellings Energy Approach	
What approach do you want to use for Dwellings?:	Use the built in calculation tools

Project Energy Profile Question	
Are you installing any solar photovoltaic (PV) system(s)?:	No
Are you installing any other renewable energy system(s)?:	No
Energy Supply:	All-electric

Dwelling Energy Profiles	
Below the floor is: All	Ground or Carpark
Above the ceiling is: All	Outside
Exposed sides: All	3
NatHERS Annual Energy Loads - Heat: All	80.0 MJ/sqm
NatHERS Annual Energy Loads - Cool: All	19.0 MJ/sqm
NatHERS star rating: All	7.0
Type of Heating System: All	Reverse cycle central other
Heating System Efficiency: All	5 Stars (2011 MEPS)
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	5 Stars (2019 MEPS)
Type of Hot Water System: All	Electric Instantaneous
Clothes Line: All	Private outdoor clothesline
Clothes Dryer: All	No clothes dryer

1.2 Thermal Performance Rating - Residential 0% ✔ Achieved

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Townhouse	7.0Stars

2.1 Greenhouse Gas Emissions 0%

Score Contribution	This credit contributes 17.6% 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	5,031 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Townhouse	5,960 kg CO2
Output	% Reduction in GHG Emissions
Townhouse	-19 %

2.6 Electrification 100%

Score Contribution	This credit contributes 17.6% towards the category score.
Criteria	Is the development all-electric?
Question	Criteria Achieved?
Project	Yes

2.7 Energy consumption		100%	
Score Contribution	This credit contributes 23.5% towards the category score.		
Criteria	What is the % reduction in annual energy consumption against the benchmark?		
Output	Reference Building with Reference Services (BCA only)		
Townhouse	43,819 MJ		
Output	Proposed Building with Proposed Services (Actual Building)		
Townhouse	25,242 MJ		
Output	% Reduction in total energy		
Townhouse	42 %		

3.3 External Lighting		100%	
Score Contribution	This credit contributes 2.9% towards the category score.		
Criteria	Is the external lighting controlled by a motion detector?		
Question	Criteria Achieved ?		
Townhouse	Yes		

3.4 Clothes Drying		100%	
Score Contribution	This credit contributes 5.9% towards the category score.		
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?		
Output	Reference		
Townhouse	945 kWh		
Output	Proposed		
Townhouse	189 kWh		
Output	Improvement		
Townhouse	80 %		

3.5 Internal Lighting - Residential Dwellings		100%	
Score Contribution	This credit contributes 2.9% 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	Scoped Out
This credit was scoped out	No other (non-solar PV) renewable energy is in use.		

4.5 Solar PV - Houses and Townhouses		0%	Disabled
This credit is disabled	No solar PV renewable energy is in use.		

Stormwater

Overall contribution 14% Minimum required 100%

Which stormwater modelling software are you using?:	Melbourne Water STORM tool
1.1 Stormwater Treatment	100%
Score Contribution	This credit contributes 100% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Question	STORM score achieved
Project	101
Output	Min STORM Score
Project	100

IEQ

Overall contribution 10% Minimum required 50%

2.2 Cross Flow Ventilation	100%
Score Contribution	This credit contributes 20% 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% 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	0%
Score Contribution	This credit contributes 20% towards the category score.
Criteria	Is appropriate external shading provided to east, west and north facing glazing?
Question	Criteria Achieved ?
Townhouse	No
3.3 Thermal Comfort - Orientation	0%
Score Contribution	This credit contributes 20% towards the category score.
Criteria	Are at least 50% of living areas orientated to the north?
Question	Criteria Achieved ?
Townhouse	No

Transport Overall contribution 4%

1.1 Bicycle Parking - Residential		0%	
Score Contribution	This credit contributes 50% towards the category score.		
Criteria	How many secure and undercover bicycle spaces are there for residents?		
Question	Bicycle Spaces Provided ?		
Townhouse	0		

1.2 Bicycle Parking - Residential Visitor		N/A	Scoped Out
This credit was scoped out	Not enough dwellings.		

2.1 Electric Vehicle Infrastructure		100%	
Score Contribution	This credit contributes 50% towards the category score.		
Criteria	Are facilities provided for the charging of electric vehicles?		
Question	Criteria Achieved ?		
Project	Yes		

Waste Overall contribution 0%

1.1 - Construction Waste - Building Re-Use		0%
Score Contribution	This credit contributes 50% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Question	Criteria Achieved ?	
Project	No	

2.1 - Operational Waste - Food & Garden Waste		0%
Score Contribution	This credit contributes 50% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Question	Criteria Achieved ?	
Project	No	

Urban Ecology Overall contribution 3%

2.1 Vegetation		75%
Score Contribution	This credit contributes 50% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	26 %	

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 green façade?	
Question	Criteria Achieved ?	
Project	No	

2.4 Private Open Space - Balcony / Courtyard Ecology		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?	
Question	Criteria Achieved ?	
Townhouse	Yes	

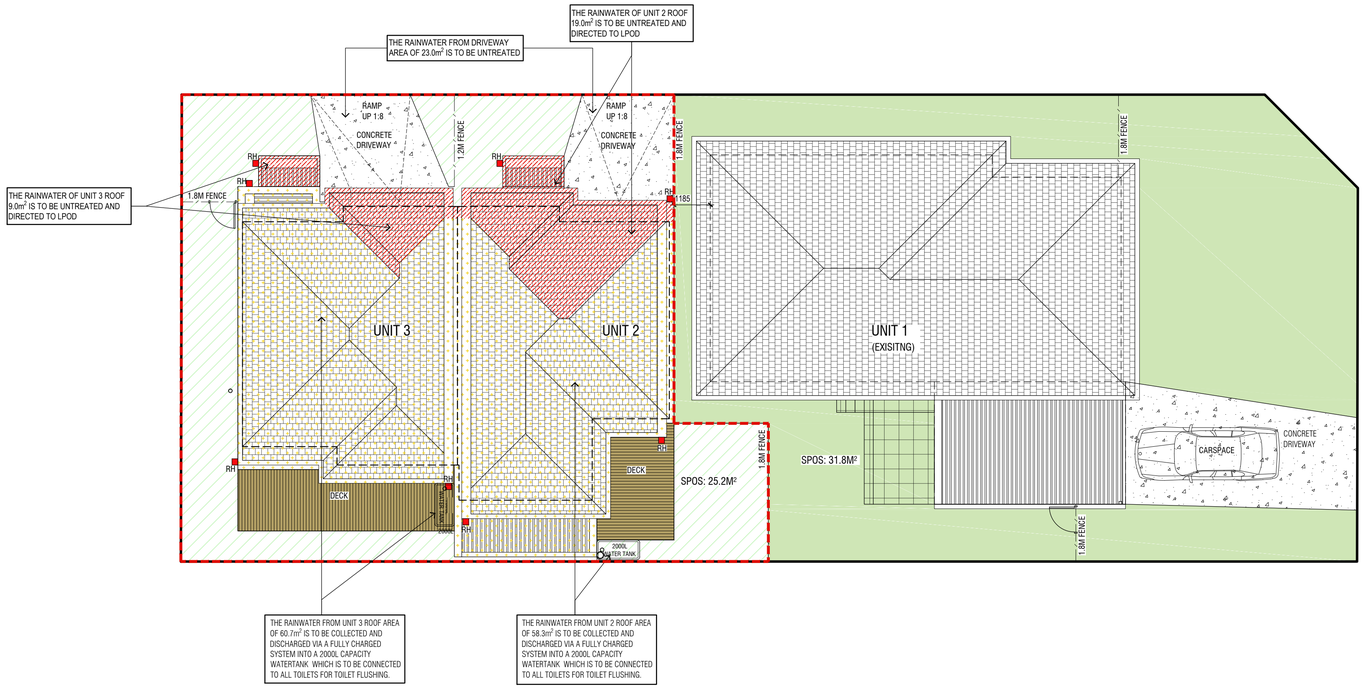
3.1 Food Production [illegible]		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	What area of space per resident is dedicated to food production?	
Question	Food Production Area	
Townhouse		
Output	Min Food Production Area	
Townhouse	2 m²	

Innovation Overall contribution 0%

1.1 Innovation		0%	⊘ Disabled
This credit is disabled	A minimum project score of 50% is required before an Innovation Credit can be used.		

Disclaimer

The Built Environment Sustainability Scorecard (BESS) has been provided for the purpose of information and communication. While we make every effort to ensure that material is accurate and up to date (except where denoted as 'archival'), this material does in no way constitute the provision of professional or specific advice. You should seek appropriate, independent, professional advice before acting on any of the areas covered by BESS.



LEGEND

- CONCRETE SURFACE
- PERMEABLE PAVER/ DECK
- TILE ROOF AREA
- ROOF AREA - UNTREATED
- ROOF AREA TO RAINWATER TANK
- VEGETATED AREA
- 1500L WATER TANK — 1500L WATERTANK TO TREAT SELECTED ROOF AREA. CONNECT WATER TANK TO ALL SANITARY FLUSHING
- DOWNPIPE
- RAINHEAD

WATER SENSITIVE URBAN DESIGN NOTES:

ALL DRAINAGE TO BE DESIGNED AND CERTIFIED BY AUTHORIZED DRAINAGE ENGINEER

EACH RAINWATER TANK IS TO BE CONNECTED TO ALL TOILETS IN EACH DWELLING

GRAVITY FED OR FULLY CHARGED SYSTEM IS NECESSARY TO ACHIEVE THE MINIMUM ROOF CATCHMENT AREA IN ACCORDANCE WITH STORM REQUIREMENTS.

TANK OVERFLOW MUST BE TAKEN TO L.P.D.

THE TANKS MUST BE USED ONLY FOR REUSE WITHIN THE DWELLINGS, AND ARE COMPLETELY INDEPENDENT OF ANY DETENTION REQUIREMENTS (THROUGH THE LEGAL POINT OF DISCHARGE PROCESS)

GRAVITY FED SYSTEM TO BE USED WHEN HARVESTING STORMWATER FROM ROOF TO RAIN GARDEN.

RAINGARDENS TO BE BUILT MINIMUM 300MM FROM ADJOINING FOOTINGS

BUILD THE RAIN GARDEN CLOSE TO THE WATER SOURCE. THIS WILL HELP MINIMISE THE ADDITIONAL PLUMBING NEEDED TO BRING WATER TO THE RAIN GARDEN.

RAINGARDEN MUST BE FULLY LINED AND HAVE OVERFLOW PLUMBED INTO THE STORMWATER SYSTEM.

MAINTENANCE AND MANAGEMENT OF RAINGARDENS TO BE THE RESPONSIBILITY OF THE OWNERS CORPORATION

FOR EXCAVATION AND CLEARANCE REFER TO BUILDING A RAINGARDEN INSTRUCTION SHEET, RAINGARDENS MUST BE BUILT TO MELBOURNE WATER REQUIREMENTS

THE FINAL DESIGN OF THE STORMWATER SYSTEM WILL MEET COUNCIL DRAINAGE ENGINEERS' REQUIREMENTS. THE DESIGNED SYSTEM COMPLIES WITH MELBOURNE WATER STORM REQUIREMENTS THAT MEETS VICTORIAN BEST PRACTICE STORMWATER GUIDELINES

MAINTENANCE GUIDELINES (EVERY 3-6 MONTHS)

RAINWATER TANKS:	TO BE INSPECTED, INLET TO BE CLEANED REGULARLY. IF SLUDGE IS PRESENT, TANKS MUST BE DRAINED BY PROFESSIONAL PLUMBER AND CLEANED
GUTTERS AND DOWNPIPES:	TO BE INSPECTED AND CLEANED REGULARLY.
FIRST FLUSH DEVICES:	IF APPLICABLE, TO BE INSPECTED AND CLEANED REGULARLY.

ONCE A RAINWATER TANK IS INSTALLED, IT IS RECOMMENDED THAT THE FOLLOWING COMPONENTS OF THE ROOF CATCHMENT AND TANK BE INSPECTED AT LEAST EVERY SIX MONTHS:

- GUTTERS- THEY GENERALLY WILL NEED CLEANING AS WELL AS INSPECTION. IF INSPECTION FINDS LARGE AMOUNTS OF LEAF MATERIAL OR OTHER DEBRIS, THEN THE INSPECTION AND CLEANING FREQUENCY MAY NEED TO BE INCREASED.
- ROOF- CHECK FOR THE PRESENCE OF ACCUMULATED DEBRIS INCLUDING LEAF AND OTHER PLANT MATERIAL. ACCUMULATED MATERIAL SHOULD BE CLEARED. IF TREE GROWTH HAS LED TO OVERHANGING BRANCHES THESE SHOULD BE PRUNED.
- TANK INLETS, INSECT-PROOFING AND LEAF FILTERS- IF NECESSARY THESE SHOULD BE CLEANED AND REPAIRED.
- TANK AND TANK ROOF- CHECK STRUCTURAL INTEGRITY OF THE TANK INCLUDING THE ROOF AND ACCESS COVER. ANY HOLES OR GAPS SHOULD BE REPAIRED.
- INTERNAL INSPECTION- CHECK FOR EVIDENCE OF ACCESS BY ANIMALS, BIRDS OR INSECTS INCLUDING THE PRESENCE OF MOSQUITO LARVAE. IF PRESENT, IDENTIFY AND CLOSE ACCESS POINTS. IF THERE IS ANY EVIDENCE OF ALGAL GROWTH (GREEN GROWTH OR SCUM ON OR IN THE WATER), FIND AND CLOSE POINTS OF LIGHT ENTRY.
- PIPEWORK - CHECK FOR STRUCTURAL INTEGRITY. SECTIONS OF PIPEWORK THAT ARE NOT SELF-DRAINING SHOULD BE DRAINED. BURIED PIPEWORK, SUCH AS WITH 'WET SYSTEMS', CAN BE DIFFICULT TO DRAIN OR FLUSH. WHERE POSSIBLE DRAINAGE POINTS SHOULD BE FITTED.

IN ADDITION TO SIX-MONTHLY INSPECTIONS, TANKS SHOULD BE INSPECTED EVERY 2-3 YEARS FOR THE PRESENCE OF ACCUMULATED SEDIMENTS. IF THE BOTTOM OF THE TANK IS COVERED WITH SEDIMENT THE TANK SHOULD BE CLEANED.

PROPOSED SITE:

SITE AREA:		259.2 m²
SITE COVERAGE:	54.4%	141.0 m²
SITE PERMEABILITY:	35.5%	92.1 m²
GARDEN AREA REQ:	35.5%	92.1 m²
VEGETATED AREA:	26.4%	68.6 m²

THE DEVELOPMENT INCLUDES THE REINTEGRATION OF URBAN WATER INTO THE LANDSCAPE TO FACILITATE A RANGE OF BENEFITS, INCLUDING MICROCLIMATE COOLING, LOCAL HABITAT AND PROVISION OF ATTRACTIVE SPACES FOR COMMUNITY USE AND WELL-BEING.

- THE INCORPORATED WSUD TREATMENT MEASURES WILL HELP TO CONTROL AIR, SOIL, AND WATER QUALITY, ALONG WITH OTHER POTENTIAL ENVIRONMENTAL PROBLEMS WITHIN THE SITE
- STORMWATER HARVESTING AND REUSE WILL REDUCE THE OVERALL STORMWATER OUTFLOWS FROM THE SITE WHILE ALSO REDUCING URBAN TEMPERATURES THROUGH ENHANCED EVAPOTRANSPIRATION AND SURFACE COOLING
- THE DEVELOPMENT MAXIMISES THE PROVISION OF VEGETATED LANDSCAPING AND PERMEABLE SURFACES, WHICH WILL HELP TO TRAP SEDIMENT AND ENHANCE FILTRATION OF NUTRIENTS AND PESTICIDES BY SLOWING DOWN RUNOFF THAT COULD ENTER THE LOCAL SURFACE WATERS OR THE COUNCIL STORMWATER SYSTEM
- THE ROOT SYSTEMS OF THE PLANTED VEGETATION WITHIN THE SITE WILL HOLD SOIL PARTICLES TOGETHER WHICH GREATLY REDUCES WIND EROSION AND STABILISES THE SOIL, PROVIDING PROTECTION AGAINST LOCAL EROSION WHICH WILL ALSO ASSIST GREATLY IN HOLDING AS MUCH WATER AS POSSIBLE AND RELEASING IT SLOWLY INTO THE STORMWATER SYSTEM
- THE SITE WILL NOW BE CAPABLE OF HOLDING A MUCH GREATER AMOUNT OF WATER DURING FLASH FLOODING EVENTS

Melbourne Water STORM Rating Report

TransactionID: 0
Municipality: HUME
Rainfall Station: HUME
Address: 283 GAP ROAD
SUNBURY
VIC 3429
Assessor: PLANNING AND DESIGN
Development Type: Residential - Multiunit
Allotment Site (m2): 259.20
STORM Rating %: 101

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
U2 Roof - Tank	58.30	Rainwater Tank	2,000.00	2	146.00	89.20
U2 Roof - Untreated	19.00	None	0.00	0	0.00	0.00
U3 Roof - Tank	60.70	Rainwater Tank	2,000.00	2	143.00	90.70
U3 Roof - Untreated	9.00	None	0.00	0	0.00	0.00
Driveway - Untreated	23.00	None	0.00	0	0.00	0.00

Date Generated: 17-Jul-2024 Program Version: 1.0.0

NORTH

Revisions
Rev- 07.05.2024 ISSUE FOR TOWN PLANNING
Rev_B 17.07.2024 RESPONSE TO COUNCIL'S RFI

PLANNING & DESIGN P/L
31 Enfield Ave Preston 3072 T:9018 1529
E: chinh@planninganddesign.com.au

PLANNING & DESIGN

DATE	SCALE	DRAWN BY	CHECKED BY	PROJECT No.
JULY 2024	1:100@A1	R.J.,I.A	C.M	7904

WSUD PLAN

UNIT DEVELOPMENT
283 GAP ROAD, SUNBURY

TP05 REV_B

Advisory notice

Electric vehicles in buildings

To support Australians making the switch to electric vehicles (EV), the National Construction Code (NCC) is requiring more buildings to be ready for EV charging.

The global experience of EVs to date indicates they have a lower likelihood of being involved in a fire than internal combustion engines, but the characteristics of battery fires are different to liquid fuel fires.

To ensure we understand and respond proportionately to any updated evidence of EV charging risks, the ABCB has reviewed the approaches taken by international regulators, including those countries with greater uptake of EVs. We have also engaged Australian research team EV FireSafe to help develop a set of recommendations that can support the safer installation and use of EV chargers without being an unreasonable barrier to adoption. The full report from EV FireSafe, on which these provisions are based, can be read here.

We believe the recommendations set out in this advisory note are low cost, have low visual impact, are easily implementable and reflect the better practices already being adopted by many reputable suppliers. These recommendations will help reduce the risk of substandard equipment or installation practices emerging as the EV charging industry grows.

The ABCB will continue to work with other government bodies and emergency response agencies to review the latest evidence on EV charging trends from around the world. We will review and update our guidance and/or regulatory response as needed.

June 2023, Version 1.0 - © Commonwealth of Australia and States and Territories of Australia 2023, published by the Australian Building Codes Board

To support safer EV charging, the ABCB recommends:

Master isolation

Provide a master isolation switch with signage at fire indicator panel/Fire Detection Indicator Control Equipment (FDCIE) or building entrance.

RCM Tick compliance

Use chargers that have the Regulatory Compliance Mark (RCM).

Emergency services information pack (ESIP)

ESIPs developed for each site and provided for first responders.

Break glass fire alarm

Provide additional break glass unit (BGU).

Placarding site

Provide placarding/signage to identify each EV charge points.

Collision protection

Provide vehicle impact bollards or stops.

Block plans

Block plans should be updated for existing sites and implemented for new builds to clearly show the location of charging hubs and master isolation.

AS/NZS 3000 App P compliance

Mode 3 and 4 chargers should only be installed by a qualified person and in accordance with AS/NZS 3000 Appendix P.

Proximity to evacuation routes and flammable risks

Carefully assess proximity to avoid blocking evacuation routes or placing chargers too close to other flammable risks.

Regular maintenance

Ensure the owner of the charging unit understands and meets their maintenance obligations.

Complex buildings

Complex buildings and higher-risk environments should seek comprehensive, specialist fire safety assessment and advice.

Directional signage

Directional signage to be provided – to the charging units and to the emergency exits.

Smart charging

Where possible, prioritise the use of 'Smart charging' to enable remote monitoring and access to disconnect power supply to a connected EV. This gives emergency responders another potential method of shutdown from unit to EV. Encourage operators to monitor for faults and provide early intervention when detected.

Placarding at site entrance

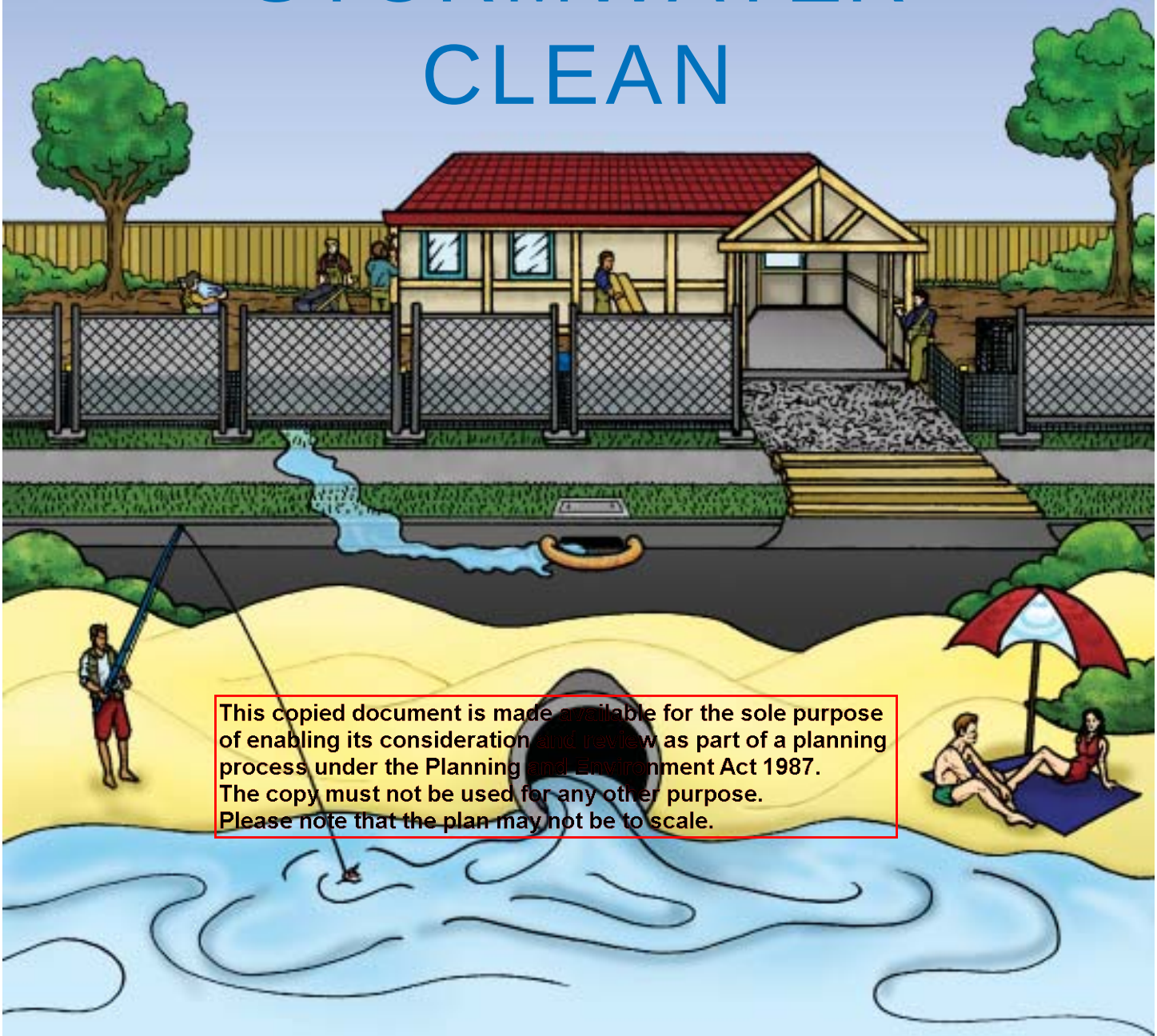
Sites with 5 or more Mode 3 or 4 chargers to install ground level or other appropriate level placards to indicate which entrance is most closely located to EV charging hub.

Pre-incident plans (PIP)

Where 5 or more chargers are installed, then building owners should invite local fire crews to attend a site familiarisation visit in order to develop a pre-incident plan (PIP).

The National Council for Fire and Emergency Services (AFAC) has also issued a position statement "Electric Vehicles (EV) and EV charging equipment in the built environment". Proponents of development applications that are subject to fire authority review, should familiarise themselves with the AFAC position statement and any additional advice issued by their local fire authority.

KEEPING OUR STORMWATER CLEAN



A BUILDER'S GUIDE

Information to help you control sediment and litter from your building site and comply with Council and State regulations

Melbourne Water

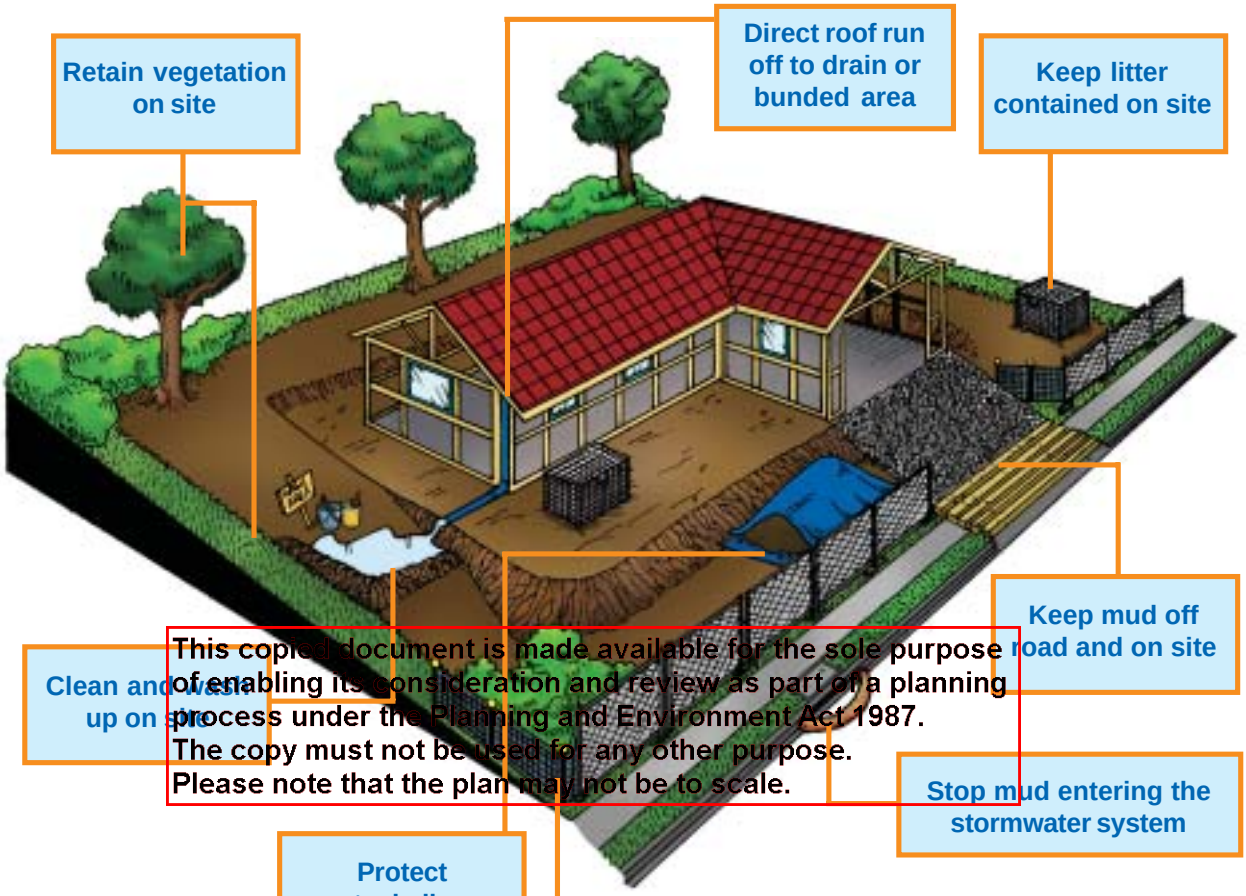
Victoria The Place To Be

EPA VICTORIA

ACKNOWLEDGEMENTS

This revised booklet was originally produced with the support of the Victorian EPA, Melbourne Water, Cities of Kingston, Casey, Hume, Melbourne, Moreland and Moonee Valley.

Check Council requirements and plan before you start work on site



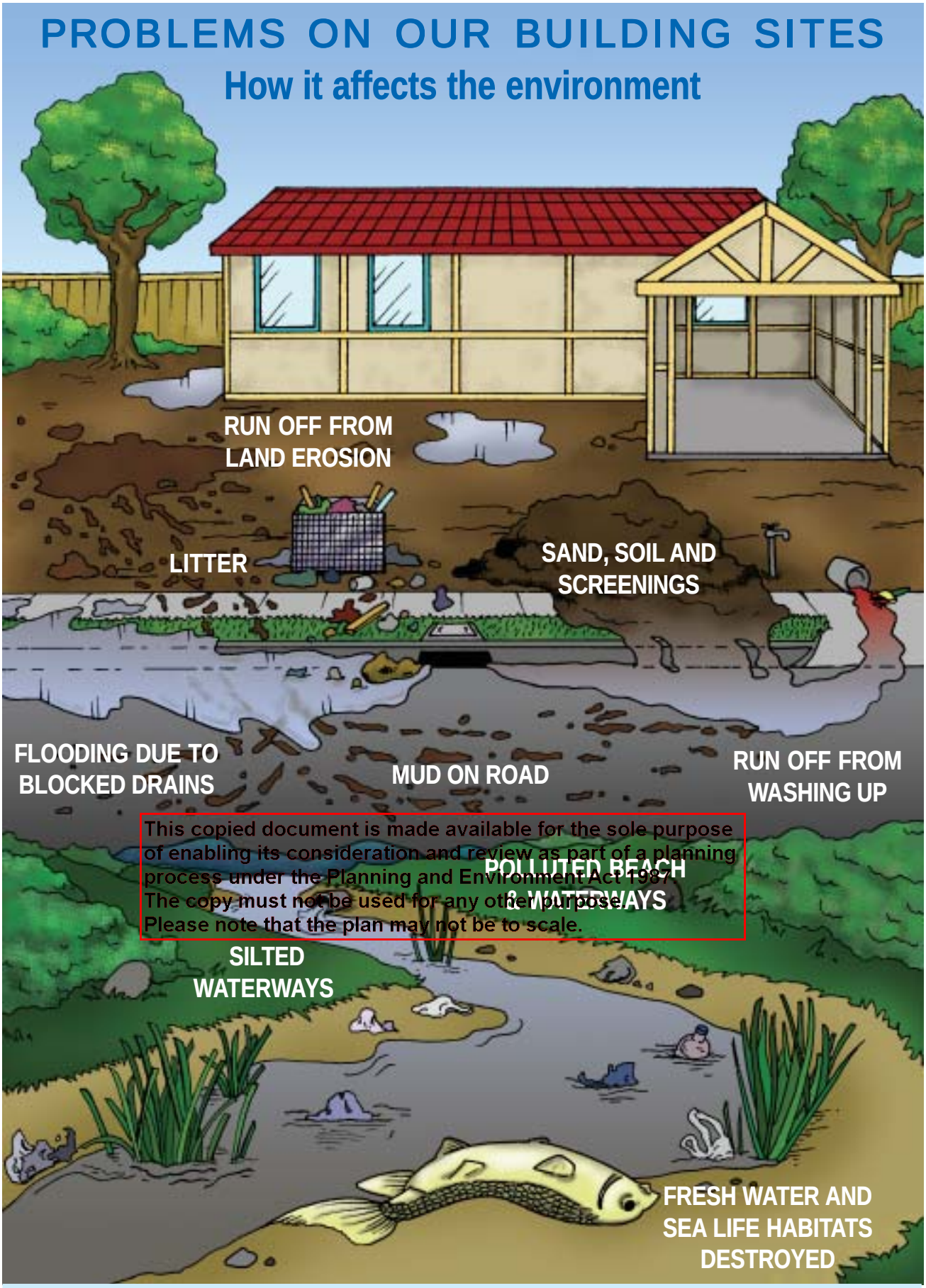
Supplier information for sediment & erosion control on page 3

CONTENTS

6 SITE RULES TO KEEP STORMWATER CLEAN

PROBLEMS ON OUR BUILDING SITES

How it affects the environment



WHY DO I NEED TO PROTECT OUR ENVIRONMENT?

It's the law!

Sediment from building sites can pollute stormwater. There are State and local council laws which make this an offence.

The developer or person managing the building site has the responsibility of making sure that the stormwater is not polluted.

Penalties apply for polluting stormwater.

To enjoy using our environment - now and in the future

Stormwater is not treated and carries pollution to local waterways and bays. Pollution in our stormwater can lead to short and long term damage to our environment.

To benefit builders

The site looks good (which is good for attracting new customers) **and you'll be helping to protect our environment**.

The site has fewer hazards. A well organised site has less loose material lying around causing a hazard. This reduces health and safety issues on a building site.

Downtime is reduced. A well managed and organised site is more efficient. This saves time and money.

USEFUL SUPPLIER INFORMATION

This information is provided for helpful contact details only. The companies are not listed in any particular order and are not necessarily recommended over others that may provide similar services.

SEDIMENT CONTROL

Approximate Price:
Geofabric fencing
100 m roll from $55 to $130
stakes $12 for 10
Filter socks unfilled: 2 m $4.50 filled $8 - $25

Geofabrics Australasia
03 8586 9111 www.geofabrics.com.au
Products: silt fencing

Southern Geosynthetics Supplies
0419 478 238 www.geosynthetics.com.au
Products: Silt fences, Silt Sausages

Statewide River & Stream Management
03 9702 9757 www.stateplanthire.com
Products: silt fence, stakes, silt logs
Installation service and site kits
Approx cost: $220 for 20 m frontage installed, $88 self installation

Treemax
03 98787 4111 www.treemax.com.au
Products:filter fence, silt worm, silt sock

Zerosion
0408 351 566 www.zerosion.com.au
Products: silt fence installation
Approx cost: $215 for up to 20 m frontage

STABILISED DRIVEWAYS

For aggregate look under sand, soil and gravel in the Yellow Pages
Recycled aggregate available from major suppliers.

TEMPORARY DOWNPIPE

Available from major plumbing suppliers

Art Plastic 25 m rolls of temporary plastic downpipe approx: $25

Temporary Flexible Downpipe
03 9786 3711 www.tfd.com.au
$135 per kit - does 2-3 16 sq houses

OTHER EQUIPMENT

Coates Shorco Sykes 131994
Supply : silt fence $125 100 m
Hire: Rumble Grids $180 p/week for 2 panels
Hire: Environmental settlement tanks 4 m tank $542 p/week

PORTABLE TOILETS

See Toilets – Portable in the Yellow Pages

TEMPORARY FENCING

See Fencing Contractors in the Yellow Pages
Australian Temporary Fencing 131716
Victorian Temporary Fencing 03 9484 4000

BRICK AND TILE CUTTING

Slop Mop Recycling Products
www.slopmop.com.au 0418 825 301 Brikasaurus: capture and recycle waste water for brick and tile cutting operations.
Slopmop: water delivery & waste clean up system for use behind concrete saws and grinders.

Useful information is available from:

Master Builders Green Living Builders
www.mbav.com.au
HIA GreenSmart Program
www.greensmart.com.au
Keep Australia Beautiful Victoria – CleanSites Program
http://www.kabv.org.au/
Victorian Litter Action Alliance
http://www.litter.vic.gov.au
Environment Protection Agency Victoria
www.epa.vic.gov.au
See Publication 981 – Reducing stormwater pollution from construction sites
Melbourne Water
www.melbournewater.com.au

SITE RULE 1

Check Council requirements and plan before you start work on site.

Questions to ask BEFORE you start

Planning, BEFORE you start a job, will make a big difference to how well you manage your site. Check Council requirements for site management. Complete a site management plan (one can be found at the back of this booklet).

Where is the lowest point on the site?

Water always runs to the lowest point. It is important to know where this point is when planning your site. It will affect where you put your crossover, stockpile materials and sediment fence. Leave a buffer of vegetation along the lowest boundary.

Where will I put the crossover?

Try to put the crossover as far away from the lowest point as possible. As water runs to the lowest point it is more likely to be wet and muddy. [See Page 16.]

Where will I keep my stockpile?

Stockpiles are best kept on site, as far away from the lowest point as practical. [See Page 12.]

Where will I build my sediment control fence?

Sediment control fences should be built on the lowest side/s of a site prior to erecting a temporary fence. A flat site may not need sediment control fences. [See Page 9.] These are a primary management measure to keep sediment on site.

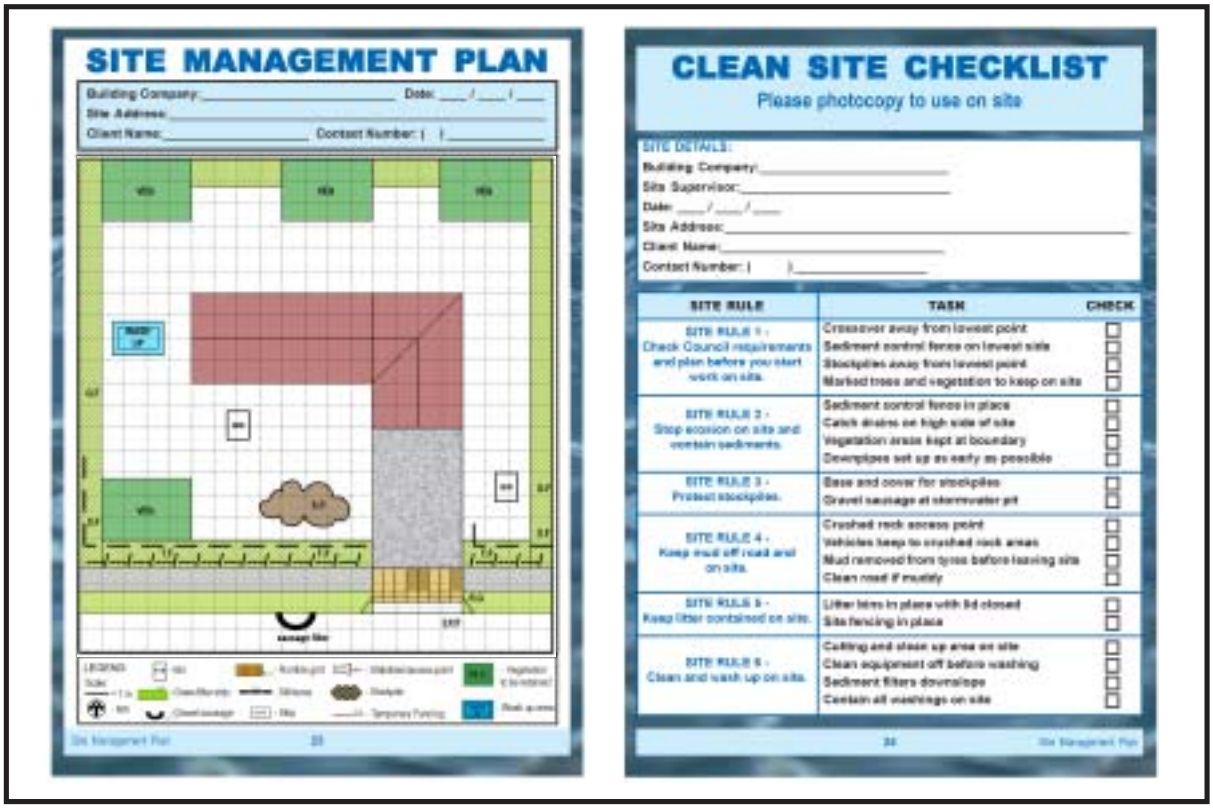
Which trees and vegetation will be kept on site?

Rope or fence off the areas you are going to keep. Keeping vegetation such as grassed areas will help to prevent damage to the surface of the site later on and may trap sediment. [See Page 7.]

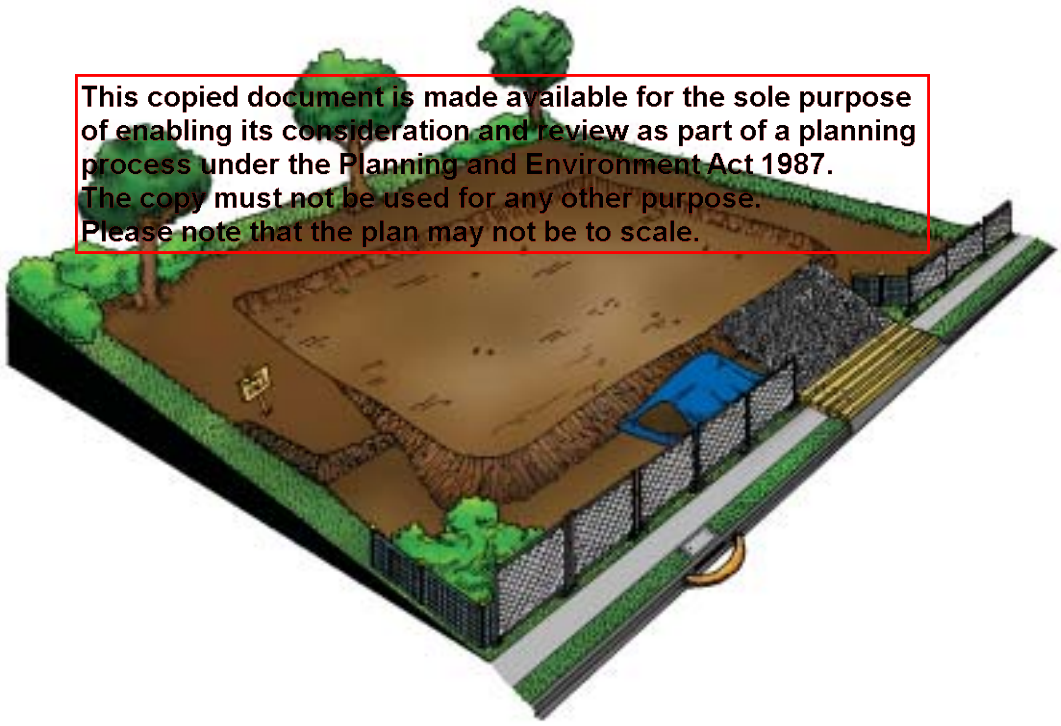
Why fence my site?

Many councils require sites to be fenced. Site fencing helps to keep building activities to the site, helps stop movement of litter, and helps to keep a site safe by stopping members of the public wandering on site. [See Page 20.]

SITE READY TO START JOB



For copy of plan & checklist photocopy pages 23 & 24.



SITE RULE 2

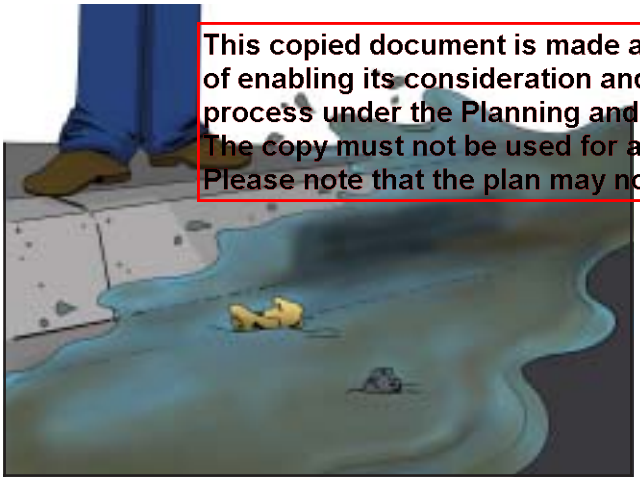
Stop erosion and keep sediment on site

Why is erosion a problem?

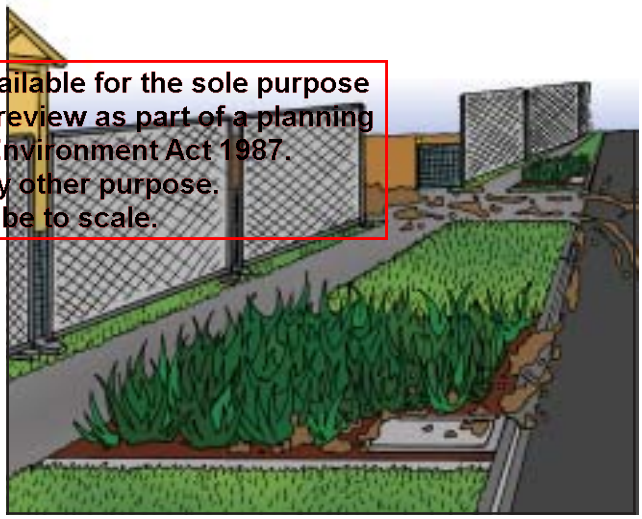
Sediment escaping from building sites can:

1. Make roads and footpaths slippery for vehicles and pedestrians, increasing public liability risk.

2. Enter the stormwater system and make stream and river water cloudy which can kill plants and animals in creeks and the bay.



3. Cause blockages to the stormwater system including the side entry pit and pipes, increasing the chance of flooding and requiring regular cleaning.

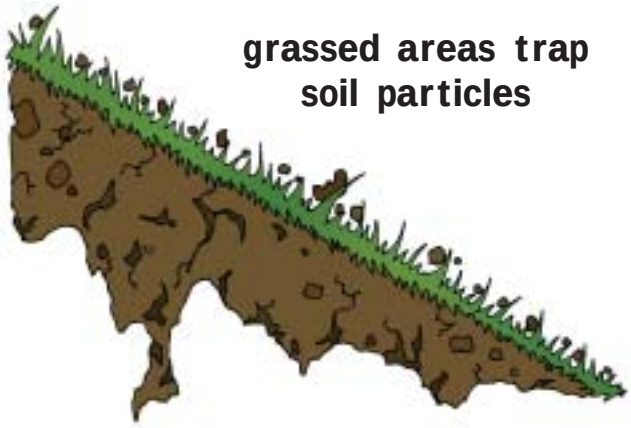


4. Overload and clog local stormwater filtration systems such as raingardens and swales.

METHODS TO CONTROL EROSION

Control Method 1 - Keep areas of vegetation as a buffer strip at the site boundary.

To prevent sediment leaving site use existing grassed areas and a sediment control fence.



Vegetation helps protect the soil from the effects of rain and surface water by:

- Slowing the flow of water across the ground. Fast water is able to carry more soil particles off site
- Holding the soil together and minimising erosion
- Acting as a filter to trap soil particles.

Decide what areas of vegetation you are going to keep on site. Mark and protect trees, shrubs and grassed areas that you are keeping. Then apply for the relevant permits to remove vegetation.

Protect areas close to the boundary, drains and gutters, and where surface water flows may carry sediment off site.

Control Method 2 - Early downpipe connection

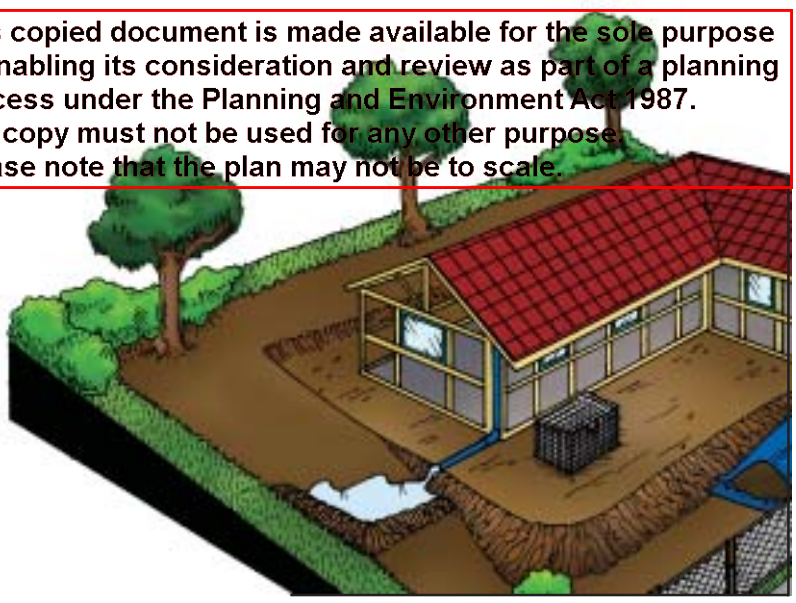
Connecting downpipes to the stormwater or onsite detention system has a number of benefits:

- Less drainage problems on site
- Less mud on site after rain
- A safer site
- Reduce damage to building foundations
- Less downtime after storms
- Projects get finished sooner.

Aim to have the downpipes connected as soon as the roof is installed (temporary or permanent).

Control Method 3 - Pipe roof water onto a grassed or bunded area.

If you cannot connect to the stormwater system, pipe the water away from the building onto a vegetated area where there is good ground cover or to a bunded area.

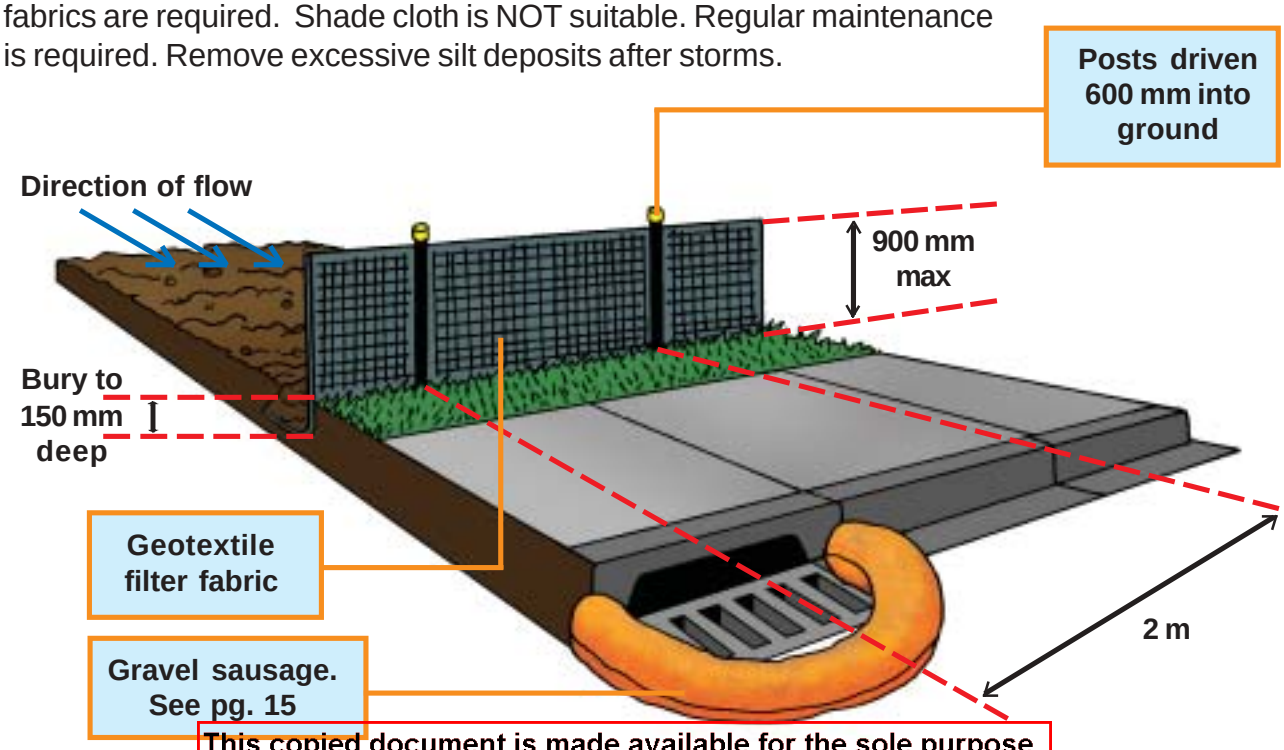


This lets water seep into the ground with less damage to the surface of the soil.

METHODS TO CONTAIN SEDIMENT ON SITE

Method 1 - Sediment Control Fences

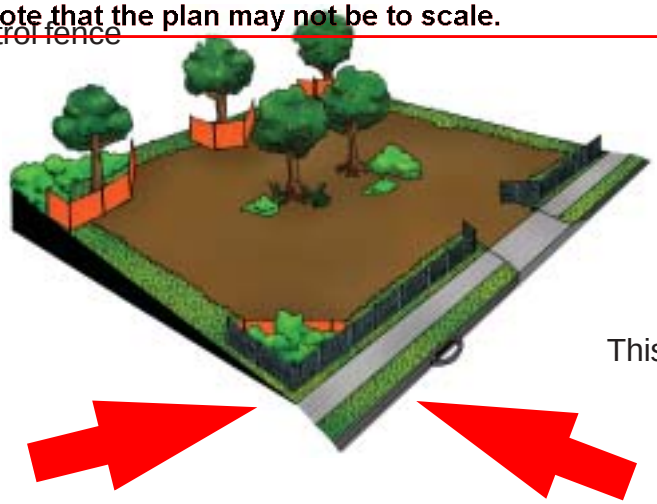
Sediment control fences stop sediment from being washed off site. The fence allows muddy water to pond behind it and for sediment to settle as the water slowly filters through. Geotextile fabrics are required. Shade cloth is NOT suitable. Regular maintenance is required. Remove excessive silt deposits after storms.



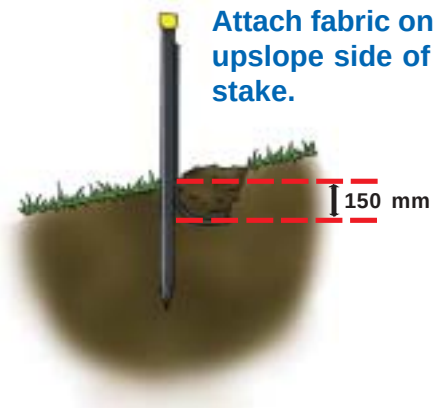
TO BUILD A SEDIMENT CONTROL FENCE:

a) Identify the low point on site.

Place sediment control fence along boundaries where the low point is.



This is the point where the land will allow water to carry sediment off the building site.



b) Dig a trench along the fence line before temporary site fencing is installed.

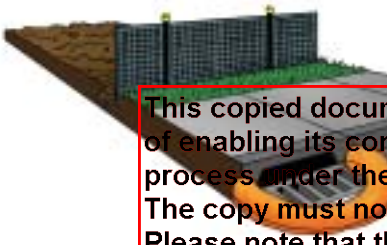
The trench will be used to bury the base of the sediment control fabric.

The trench should be 150 mm deep.

c) Put in 1500 mm wooden posts (38 mm) or star pickets.

Put 1.5 m star pickets at a maximum of 2 m apart and 600 mm deep.

Put 1.5 m wooden posts (38 mm) at 1.2 m intervals (max 2 m) and 600 mm deep.



d) Fix geotextile to posts

Geotextile material allows water to pass through but traps sediments.

Use cable ties or staples to attach the geotextile to the upslope side of the fence posts.

Only join fabric at the pickets with a 150 mm overlap (wrap around post).

e) Spread volume of water.

Put a star picket 1.5 m upslope of the others every 20 m (if the fence is longer than 20 m). This spreads the volume of water that flows through each section of fence.

Turn ends up slope to allow for ponding.

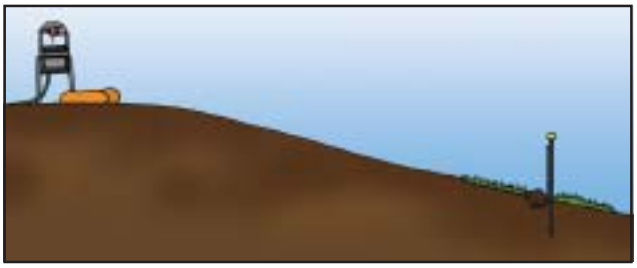
Method 2 - Control dust and slurry from cutting

A large amount of dust can be made from cutting materials such as concrete, bricks and tiles. When mixed with water this material can be turned into slurry and washed into waterways. Cement changes the acidity of water which may then kill water plants and animals. The following methods will help keep this waste on site and out of the waterways:

a) Cut materials on site

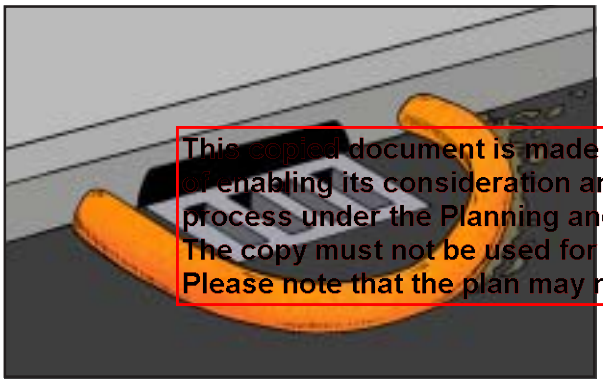
Choose a set area to do all your cutting. This area should be on the building site and away from all stormwater drains.

Equipment is available that captures water used in the cutting process (see page 3).



b) Put sediment control filters downslope

Sediment logs should be placed downslope to catch cutting slurry. A back-up sediment fence may also be used.



c) Use a gravel sausage or sediment log

When cutting must take place near stormwater drains, use gravel sausages or sediment logs.

Alternatively, you can buy sleeves from geotextile companies and fill these with sand.

Always clean up and correctly dispose of captured sediment.

d) Clean up when finished

When you have finished cutting, clean up your equipment in the cutting area.

Use a broom to clean up and get rid of the slurry where it can't get into the stormwater system. Dispose of in waste container

DO NOT HOSE THE SLURRY AWAY

SITE RULE 3

Contain stockpiles on site

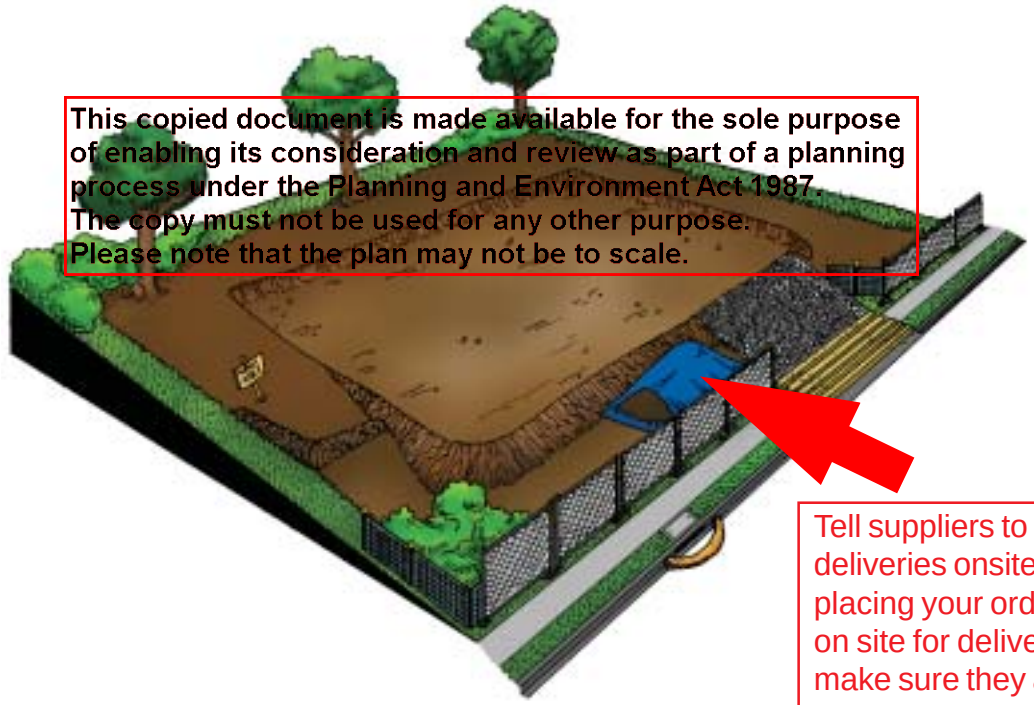
Why are sand, soil and screenings a problem?

Sand, soil, screenings, dust or sludge from concrete and brick cutting, and other materials escaping from building sites can cause many problems.

Putting stockpiles such as sand, gravel, topsoil and mulch across footpaths and roads will cause a hazard to both vehicles and pedestrians.

Sediment can smother stormwater filtering systems including swales and raingardens.

Stockpiles should be stored on site, not on footpaths or roads.



Tell suppliers to place deliveries onsite when placing your order or be on site for deliveries to make sure they are put in the right place.

Stockpiles not stored properly can get washed or blown away and pollute the stormwater.

This is particularly true of stockpiles that:

- Are high
- Have steep sides
- Are put on hard surfaces where they can be blown or washed away.

KEEPING STOCKPILES ON SITE

Place the stockpile in a designated area on site, and upslope of the sediment control fence.

If exposed for some time, stockpiles should be covered with a tarp.

In some cases it may be impossible to store stockpiles on site. In this case, a different set of control methods will be used.

WHEN UNABLE TO STORE STOCKPILES ON SITE

You may have to store a stockpile off site (although never on the footpath, gutter or road). Contact the council to make sure that you have the appropriate council permits.

The council will tell you how stockpiles stored off site are to be managed. Materials may be stored on tarps or on pallets. Containers such as rubbish skips with opening sides that you can get into easily are a good idea.

Material must not get into drains, gutters or the stormwater system

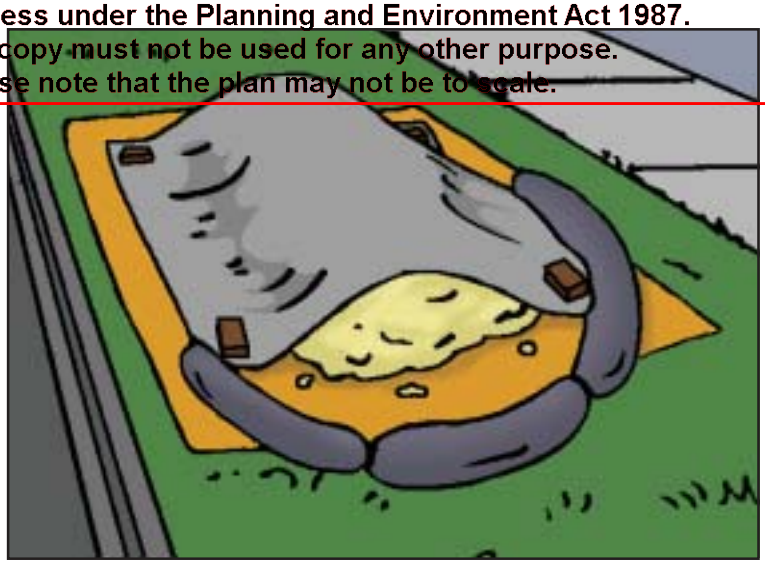
The following control methods can be used when storing materials or working off site.

Method 1 - Cover Stockpile

a) Place a tarp, plastic or bunded pallet under the area where the stockpile will be placed.

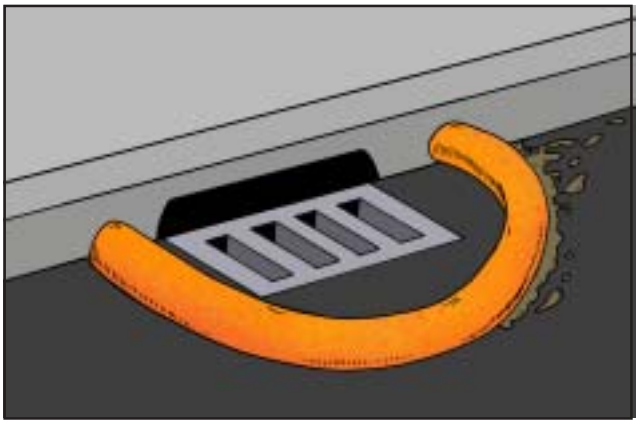
b) Place a secured covering over the stockpile.

c) Then place sediment control logs around the downslope base of the stockpile.



Method 2 - Protect Downstream Stormwater Pit with a Gravel Sausage or Sediment Log

A gravel sausage or sediment log is a temporary collection device that can be used when stockpiles are stored or cutting is done off site.
It is also a useful precautionary measure at all sites.

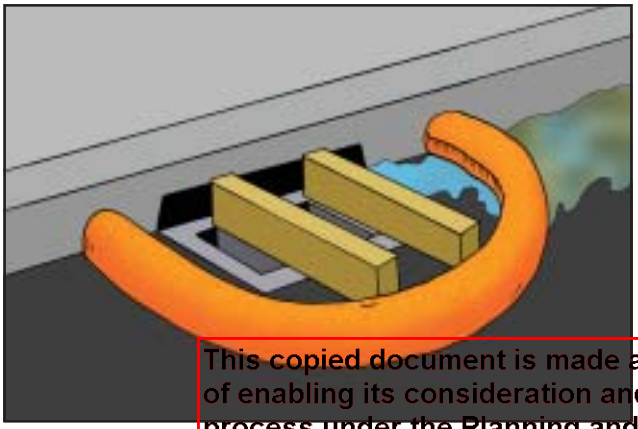


TO BUILD A GRAVEL SAUSAGE:

a) Make the sausage sleeve

A gravel sausage is made from a geotextile sleeve filled with 25 - 50 mm gravel.

The gravel sausage should be 150 mm high.



b) Put the gravel sausage across the opening of the inlet pit

Make sure that the sausage is tight with the kerbing on the upslope side of the inlet pit and extends beyond the grate.

There should be a 100 mm gap between the front of the pit and sausage. Use wooden blocks to keep the 100 mm gap.

c) Clean out gravel sausage regularly

When soil and sand builds up around the gravel sausage, this should be collected and disposed of on site.

Regular maintenance is required.

DO NOT HOSE SEDIMENT DOWN THE GUTTER

SITE RULE 4

Keep mud off road and on site

Why is mud a problem?

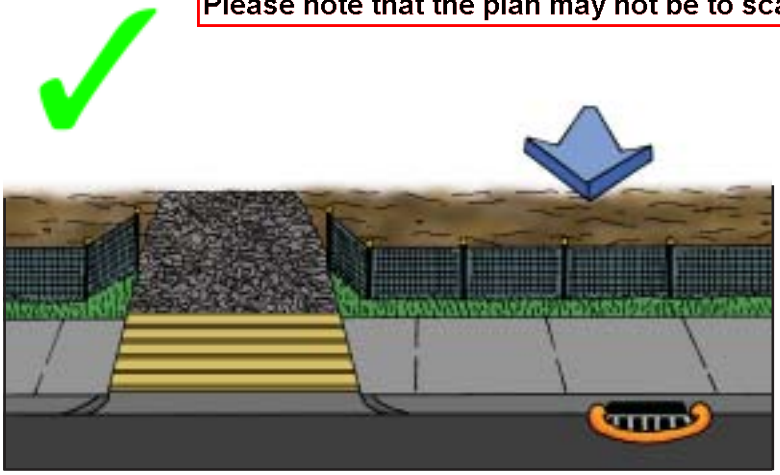
Two things happen when vehicles go on and off the site:

1. The surface area of the site is damaged making it dangerous.

2. Mud is carried back onto the roads and footpaths, and washes into the stormwater system.

METHODS TO CONTROL MUD

The following simple methods will help you to protect the surface of your site and help stop vehicles from dropping mud on the road from their wheels. The best way to do this is to put crushed rock on the crossover or access point of your building site.



Putting crushed rock on the access point of your site is a good way to prevent damage and provide a dry access point for vehicles. Where possible park vehicles off site.

Make sure gravel does not collect in the gutter or on the footpath.

Control Method 1: Build a crushed rock crossover

Remove a 3m or greater strip of soil from road (or where concrete crossover ends) to nearest building point or a minimum of 5 m.

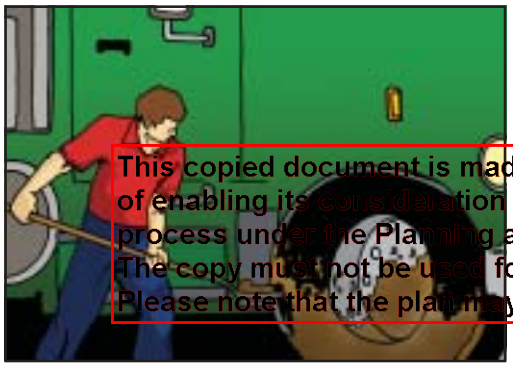
Use road base or 40 mm aggregate or crushed rock to a depth of 200 mm.

Restrict vehicle access to this point.

Control Method 2: Keep to crushed rock path

Only drive where you need to. Keep to a set path (preferably on crushed rock).

Control Method 3: Remove mud from tyres



Use a shovel to remove mud from truck tyres before leaving site.

Control Method 4: Clean road

If mud goes on road, remove as much as possible and put it back on site.

Use a broom or a shovel.
DO NOT USE A HOSE.

SITE RULE 5

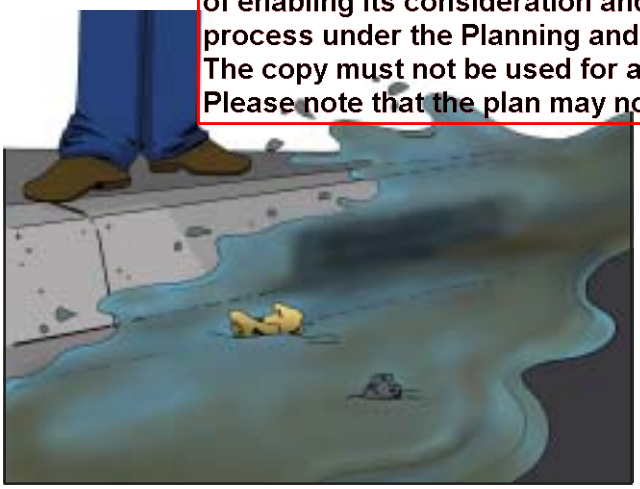
Keep litter contained on site

Why is litter a problem?

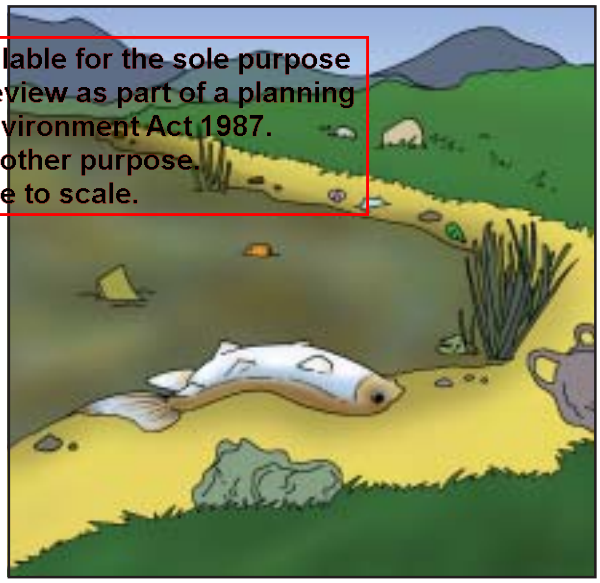
Many building sites have both building rubble and other rubbish spread across them.

This causes many problems:

You may now have an **UNSAFE WORK ENVIRONMENT!**
This could increase the chance of legal and public liability problems



Litter blowing off site can block stormwater drains.



Litter may spoil local creeks and eventually find its way to the coast.

METHODS TO CONTROL LITTER

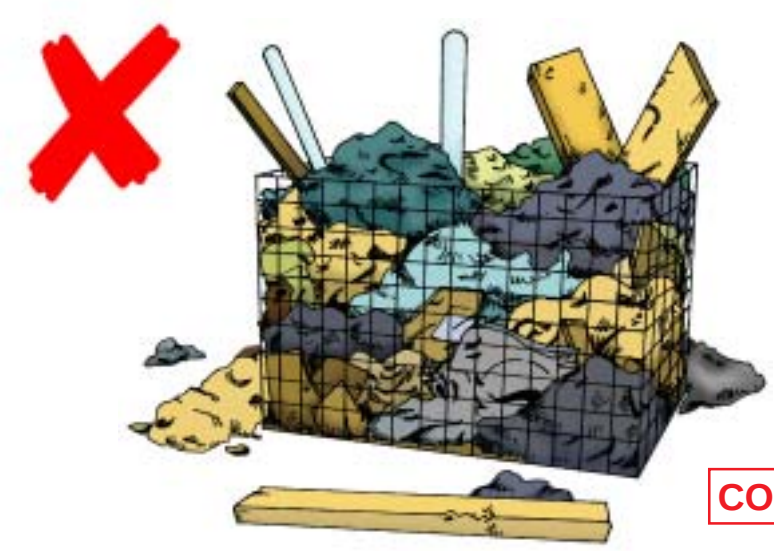
The following simple methods will help you to stop litter leaving your site or being a hazard on site.

Control Method 1: Litter bins or covered skips

A mesh bin with a closeable lid is suitable for larger items like cardboard boxes, plastic wrapping and polystyrene.

Mesh to be 50 mm or smaller

A smaller bin is okay for smaller rubbish like paper, food wrapping and drink containers that may be blown off site. Council bins may be restricted from building sites.



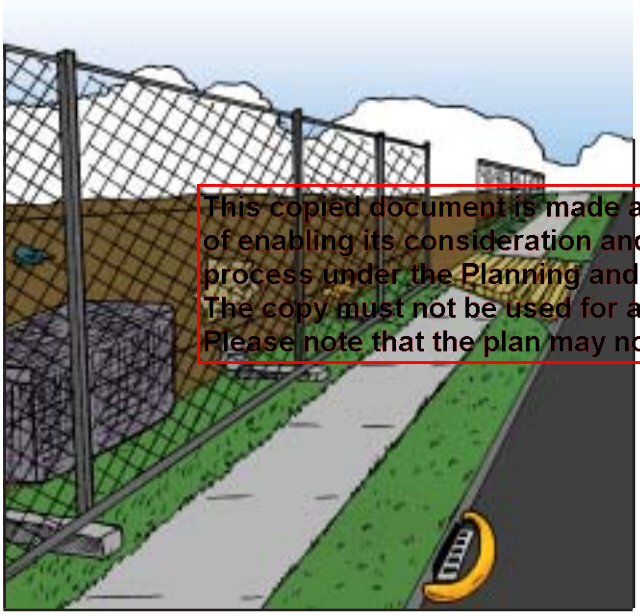
Empty the litter bin regularly. Don't allow overflow. Where possible, collect the materials from the litter bin for recycling and /or keep different materials in separate bins.

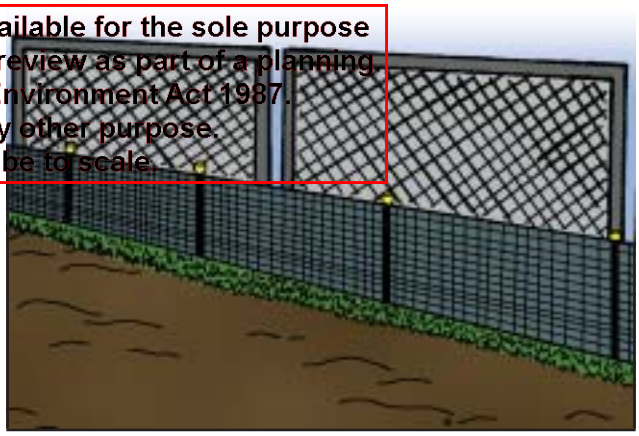
CONSIDER A RECYCLING BIN

Control Method 2: Site fencing

Site fencing will help to keep litter from being carried off site by wind or water and provide security.

A FENCE DOES NOT NEGATE THE NEED FOR A BIN.





Check council requirements for temporary fencing and avoid trip hazards on footpath.

Remember to install a sediment control fence prior to installation of the temporary fence.

SITE RULE 6

Clean and wash up on site

Why is washing up a problem?

When cleaning up after painting, plastering or concreting it's most important to keep the wash water out of the stormwater system.

Problems to the environment include:

1. Oil based paints form a thin film over the surface of the water. This starves water plants and animals of oxygen

2. Paints and petrol chemicals can contain toxic compounds

3. Concrete changes the acidity of waterways which can kill water plants and animals. Concrete washings can harden and block drains

4. Roads around a building site can become dirty, slippery and dangerous.

METHODS TO CONTROL WASHING UP

The following simple methods will help you to stop the contamination of stormwater from paint, plaster or concrete washings.

Control Method 1: Have a set washing up area

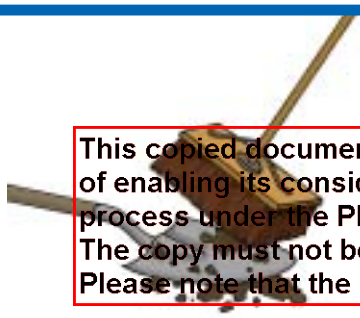
Choose a set area to do all your washing up. This area should be on the building site and away from all stormwater drains. It should be bunded and contain wash out barrels.

You could use the same area you have chosen for tile and brick cutting.
Contain chemicals and slurry onsite.
Put sediment control fences downslope.

NOTE: SEDIMENT CONTROL FENCES WILL NOT STOP CHEMICALS

Control Method 2: Get rid of concrete slurry on site

Collect wash water from concrete mixers and pumps in a wheel barrow and get rid of it in your wash area. You can also safely get rid of concrete slurry by tipping small amounts in a ditch lined with plastic or geotextile liners. When the water evaporates or soaks into the surface the solids can then be put into a skip bin or recycled in construction or as road base.



Control Method 3: Clean equipment off before washing

Brush dirt and mud off equipment before you wash it. Spin rollers and brushes to remove paint before you wash them in a wash out bin. You will then need less water to clean this equipment.

Control Method 4: Clean painting tools carefully

Use one container to wash the brush and another to rinse it. Let the first container stand overnight to let solids settle. Then pour out the water on to the ground if it is not too dirty and put settled solids in a bin.

Wash oil based paints in solvent baths until clean. DO NOT PUT THE SOLVENT ON THE GROUND. Contact a waste disposal company for removal.

SITE MANAGEMENT PLAN

Building Company:_____ **Date:** ____ / ____ / ____

Site Address:_____

Client Name:_____ **Contact Number: ( )** _____

LEGEND:

Scale:

= 1 m

- Nth

- Bin
- Grass filter strip
- Gravel sausage
- Rumble grid
- Silt fence
- Skip
- Stabilised access point
- Stockpile
- Temporary Fencing
- Vegetation to be retained
- Wash up area

CLEAN SITE CHECKLIST

Please photocopy to use on site

SITE DETAILS:

Building Company:_____ **Date:** ____ / ____ / ____

Site Supervisor:_____

Site Address:_____

Client Name:_____ **Contact Number: ( )** _____

SITE RULE	TASK	CHECK
SITE RULE 1 - Check Council requirements and plan before you start work on site.	Crossover away from lowest point	☐
	Sediment control fence on lowest side	☐
	Stockpiles away from lowest point	☐
	Marked trees and vegetation to keep on site	☐
SITE RULE 2 - Stop erosion on site and contain sediments.	Sediment control fence in place	☐
	Catch drains on high side of site	☐
	Vegetation areas kept at boundary	☐
	Gravel sausage at storm water pit	☐
	Downpipes set up as early as possible	☐
SITE RULE 3 - Protect stockpiles.	Base and cover for stockpiles	☐
	Gravel sausage at stormwater pit	☐
SITE RULE 4 - Keep mud off road and on site.	Crushed rock access point	☐
	Vehicles keep to crushed rock areas	☐
	Mud removed from tyres before leaving site	☐
	Clean road if muddy	☐
	Clean stormwater pit and maintain gravel sausage	☐
SITE RULE 5 - Keep litter contained on site.	Litter bins in place with lid closed	☐
	Site fencing in place	☐
SITE RULE 6 - Clean and wash up on site.	Cutting and clean up area on site	☐
	Clean equipment off before washing	☐
	Sediment filters downslope	☐
	Contain all washings on site	☐

6 RULES FOR A CLEAN WORKSITE

SITE RULE 1 -

Check Council requirements and plan before you start work on site.

SITE RULE 2 -

Stop erosion on site and contain sediments.

SITE RULE 3 -

Protect stockpiles.

SITE RULE 4 -

Keep mud off road and on site.

SITE RULE 5 -

Keep litter contained on site.

SITE RULE 6 -

Clean and wash up on site.

Melbourne Water

Victoria The Place To Be

EPA VICTORIA

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