Our Lady of The Immaculate Conception Primary School, Sunshine

Learning Building
New Construction

June 2021

R1

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1.0 Introduction

This report has been prepared by ClarkeHopkinsClarke Architects on behalf of Our Lady of The Immaculate Conception Primary School to accompany a planning permit application for a new Learning Building in Sunshine.

A pre-application meeting with the DELWP was held on March 25th 2020.

This report provides the following:

- A description of the site and surrounding area;
- A description of the proposal;
- An outline of the relevant statutory and strategic planning policy framework; and
- An assessment of the proposal against the relevant provision of the City of Brimbank Planning Scheme.

This report should be read in conjunction with the following attachments:

- Architectural drawings prepared by ClarkeHopkinsClarke Architects
- Concept Landscape plans prepared by Ochre Landscape
- Arborist report prepared by McLeod Trees
- Traffic Impact Assessment Report by Quantum Traffic Engineers
- Sustainable Design Assessment Report by Energy Water Environment Consultant
- Water Sensitive Urban Design Report Energy Water Environment Consultant

2.1 The Subject Site

The subject site is located on Station Place in Sunshine, Victoria. The land is formally described as Land in Plan of Consolidation 362909K. Our Lady's Primary School site is the combination of 10 sites that have now been amalgamated into one title.

The site is irregular in shape, with a north frontage to Monash Street of approx 89.43m, the eastern boundary to Victoria Street is approx 44.60m, North east boundary is approx 37.67m, South boundary is approx 35.12m and the western boundary frontage to Station Place of approx 125.68m. The eastern, northern and western boundaries all abut residential properties. The overall site is approx 5.3 hectares.

The land is currently occupied by Our Lady of the Immaculate Conception Primary School, and is shared with the Our Lady of The Immaculate Conception Catholic Church and the Parish office.

Our Lady of The Immaculate Conception Primary School is a Catholic co-educational Primary School from Prep to Year 6, located approximately 12km west of the Melbourne CBD. The School has a current enrolment of 439 students and 46 staff members.

The site currently consists of 9 detached buildings of single and double storey construction. Three of these double storey buildings are the Church, The Mary MacKillop Centre and the Parish office/Multipurpose Hall. The other 6 buildings are school buildings and include a Staff & Admin office block and 5 learning buildings. Other existing facilities include external asphalt basketball court and hard play area, an outdoor play (Mary MacKillop Village) and playground, and a variety of well kept garden and planted vegetation in the form of trees, shrubs and grasses.

From 1928 to 2000 the School was lead by the Sisters of St Joseph of the Sacred Heart, who were formed by the Saint Mary of the Cross MacKillop. St Mary MacKillop is a primary source of inspiration for the school and the Mary MacKillop Library Resource Centre built under the BER in 2009 is named after her.

The school's main frontage is to Station Place and there are secondary pedestrian access points from Victoria Street and Monash Street. Vehicles can gain access from Victoria Street and park on the asphalt courts as required. This is currently used by the Parish on the weekends for parking for the Church and Parish Hall facilities.

The area is serviced by nearby Sunshine Train station and buses which run on Monash Street. The proposed building works do not impact upon the current parking arrangements.

Figure 1 Zoning Plan

2.2 Surrounds

Vehicular Access to Site

There is no designated parking on site, however the school currently utilises parking on Station Place. Some of which have no parking time limits but most parking in the area is limited to 2HR's.

Public Transport Connections to Site

The area is serviced by nearby Sunshine Train station and buses which run on Monash Street.

Local bus route 216 operate along Monash Street, with one bus stop located right in front of the church in close proximity to the campus.

Generally, the site's interfaces are as follows:

North
The street frontage to Monash Street.

East
The street frontage to Victoria Street.

South
The land abuts the rear of a row residential properties,

West
The street frontage to Station Place - the school main entry point.

Figure 2 Site Context

1 | SUBJECT SITE - MAIN ENTRANCE TO SCHOOL

2 | SUBJECT SITE TO NEARBY SUNSHINE TRAIN STATION CARPARK

3 | SUBJECT SITE FROM VICTORIA STREET FRONTAGE

3.1 Proposal

Our Lady of The Immaculate Conception Primary School has identified the need for a new double storey learning building to meet the anticipated future enrolment growth and upgrading their existing learning facilities. The new building will also create a welcoming sense of arrival to the school and street presence as well.

This scope of works involves the following:

- The demolition of 3 existing single storey General Purpose Learning Buildings.
- The construction of a new double storey Learning Building with multiple learning settings.
- The Ground Floor contains five General Purpose Learning areas, a tiered seating storytelling space, an assortment of breakout spaces, staff work areas and associated amenities.
- The First Floor contains five General Purpose Learning areas, a tiered seating storytelling space, an assortment of breakout spaces, staff work areas and associated amenities.
- Access to the upper level will be via one sets of internal stairways, an external stairs towards the Level 1 outdoor learning deck and lift access is also available from central circulation space.
- The development of the surrounding planting, as detailed in the attached Landscape Plan by Ochre Landscape. The proposed landscaping will involve minimal landscape buffers around the new learning building. There is a proposal to remove 1 tree (Tree 1) in the proposed design. Please refer to Section 4.6 Tree Protection Local Law and the Arborist report attached.

Building Form and Character

- External materials and finishes include face brickwork, lightweight cladding, profiled metal and glazing.
- The building materiality references the existing materials in the school and surrounds, particularly the Mary MacKillop double storey brick building which is of significant heritage value. The facade also incorporated the sawtooth roof forms which was inspired by the industrial historical past of Sunshine - Sunshine Harvester Works.
- The Learning Building is set back 4.5m from the south west title boundary on Station Place. The maximum height of the building is 9.8m high.
- Proposed highlight windows setback in the centre of the roof to provide natural ventilation and lighting into the core of the proposed building.

The three proposed to be demolished buildings (Building 5, Building 6 & Building 8) have not been identified as being of heritage significance considering their lack of architectural character as advised by the Brimbank Council's Heritage advisor on 10th February 2021.

- Building 5 (Year 3) is a single storey brick building consisting of 2 classrooms and adjoining bag storage and staff space.
- Building 6 (Year 4) is a single storey weatherboard building consisting of 2 classrooms and adjoining bag storage and breakout space.
- Building 8 (Year 2) is a single storey brick building consisting of 2 classrooms and adjoining bag storage, staff space and student amenities.


BUILDING 5 - TO BE DEMOLISHED


BUILDING 6 - TO BE DEMOLISHED


BUILDING 8 - TO BE DEMOLISHED

Figure 3 Artist's Impressions of Proposal - Learning & Administration Building - West View

Figure 4 Artist's Impressions of Proposal - Learning & Administration Building - North View

3.1 Proposal cont.

External Material Finishes

01 - Masonry - Brick Type 1
02 - Masonry - Brick Type 2
03 - Fibre Cement Cladding Type 1
04 - Fibre Cement Cladding Type 2
05 - Fibre Cement Cladding Type 3
06 - Profiled Metal Roof
07 - Metal Aluminium Frame
08 - Metal Perforated Screen

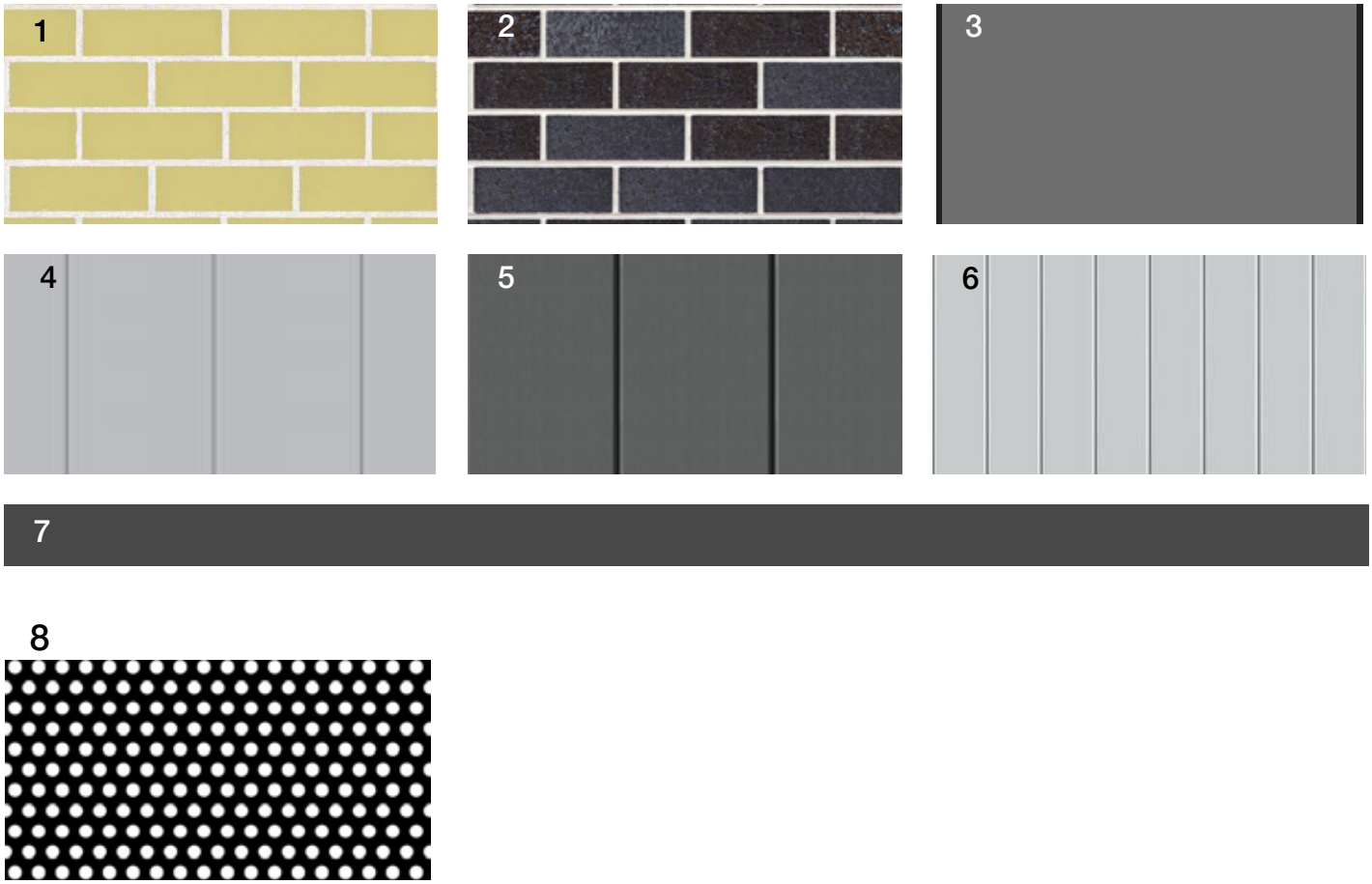

Figure 8 External Finishes

3.2 Environmental Sustainable Design (ESD)

Environmentally Sustainable Design principles are a key part of the design of Our Lady of The immaculate Conception Primary School and can be summarised as follows;

1. Indoor Environment Quality
The building will be designed to maintain a high indoor environment quality through focusing on the categories of Ventilation, Materiality, Thermal Comfort, Light, Noise and Views.

Air Quality & Ventilation - Good internal air quality can be achieved by ensuring natural air levels are maintained throughout the building. This can be achieved through maximising opportunities for passive ventilation and reducing reliance on mechanical ventilation. A semi-automated time clock system for both mechanical and passive ventilation also allows for air quality, which is controlled in response to the use of the building and to reduce unnecessary energy expenditure.

Thermal Comfort - A semi-automated passive and mechanical ventilation system allows spaces in the building to be heated and cooled only as necessary. Zoning and manual override options allows for occupants to regulate temperatures in their immediate environment, increasing user satisfaction levels.

Materiality - Materials will be selected to reduce harmful pollutants into the air internally; including low or no VOC paints, carpets, coatings, sealants and adhesives.

Light - Daylight levels will be optimised through orientation responsive design. South facing windows will be maximised to allow for diffused light into learning areas; with North, East and West glazing shaded to allow for natural light without increasing glare. Glare will also be managed by reducing direct light onto surfaces which are in users' lines of sight.

Noise - Noise levels will be minimised through the selection of appropriate levels of insulation, reducing noise transfer from outside, as well as internal reverberation and noise transfer between spaces.

Views - Increasing connection to the outdoor environment improves user satisfaction. This is achieved by maximising external views and creating outdoor connections from learning areas.

2. Transport
Active transport is prioritised into the design with walking and cycling crossings and paths appropriately placed for safe and easy access.

3. Energy Efficiency
Above standard insulation and thermal mass will be incorporated into the design to provide a stable internal temperature, therefore reducing a reliance on heating and cooling systems. High performance glazing coupled with orientation responsive design reduces excessive solar heat gain. The design of appropriate shading for exposed windows allows sunlight to be captured and screened where necessary on each facade.

Internally, energy efficient fixtures will be selected. In particular, motion and light sensors allows lighting to be responsive so that artificial lights are not used unnecessarily.

4. Waste Management
Waste management can be controlled through the whole of life cycle material selection which ensures that upon demolition, materials are recovered and recycled therefore reducing waste.

During construction, management strategies can be implemented to reduce builders' waste. As the building design develops, opportunities for recycling, composting and other strategies can also be implemented to reduce the quantity of waste going to landfill

Whole of life cycle material selection ensures that upon demolition materials are recovered and recycled, reducing waste.

During the procurement process, builders' waste management strategies will be assessed in their tenders with a focus on strategies developed to minimise construction waste. The building design will also incorporate opportunities for recycling, composting and other strategies to reduce the quantity of waste going to landfill.

3.2 Environmental Sustainable Design (ESD) cont.

5. Water Efficiency
Water efficiency will be incorporated into both the building and landscape design. A water wise garden planting policy and permeable landscaped surfaces implemented into the design will increase water retention in the landscape, reducing wastage and also allowing for water saving strategies to be an educational outcome.

6. Energy Efficiency
The urban ecology of Our Lady of the Immaculate Conception Primary School will be maintained and improved upon across the site as the masterplan is developed.

An increase in planting will increase the site percentage covered by vegetation. Benefits of vegetation being in close proximity to the buildings include a reduced need for air conditioning internally as seasonal heat, glare and ground temperatures are regulated.

7. Stormwater Management
The site will connect to existing stormwater infrastructure. The site will be graded to follow the natural ground gradient.

8. Building Materials
Building Materials for the project are selected to limit environmental impact. Selections are based on a whole of life cycle assessment; including material production and embodied energy, transport, durability, recycling and reuse potential. A focus is also placed on local products and those with ease of maintenance and cleaning to promote reduced life cycle costs.

Light coloured materials and finishes also reduce environmental impact, particularly light coloured roofs which reduce the building's solar heat gain.

9. Building Materials
Sustainable construction management practices ensure environmental targets are met and construction and demolition waste is minimised. Promoting sustainable site management will be a focus during construction, through the implementation of demolition, construction and waste minimisation strategies.

A Sustainable Design Assessment, including STORM and BESS reports can be found in Appendix B.

4.0 Planning Policy Framework

Details of the planning controls and policies that apply to the site under the Brimbank Planning Scheme are summarised below.

Planning Scheme	City of Brimbank

LPPF	Clause 22.01 Brimbank Heritage Policy
	Clause 22.02 Environmentally Sustainable Development
	Clause 52.06 Carparking
	Clause 52.17 Native Vegetation
	Clause 52.34 Bicycle Facilities
Zones	Clause 32.09 Neighbourhood Residential Zone (NRZ1)

Overlays	Clause 43.01 Heritage Overlay

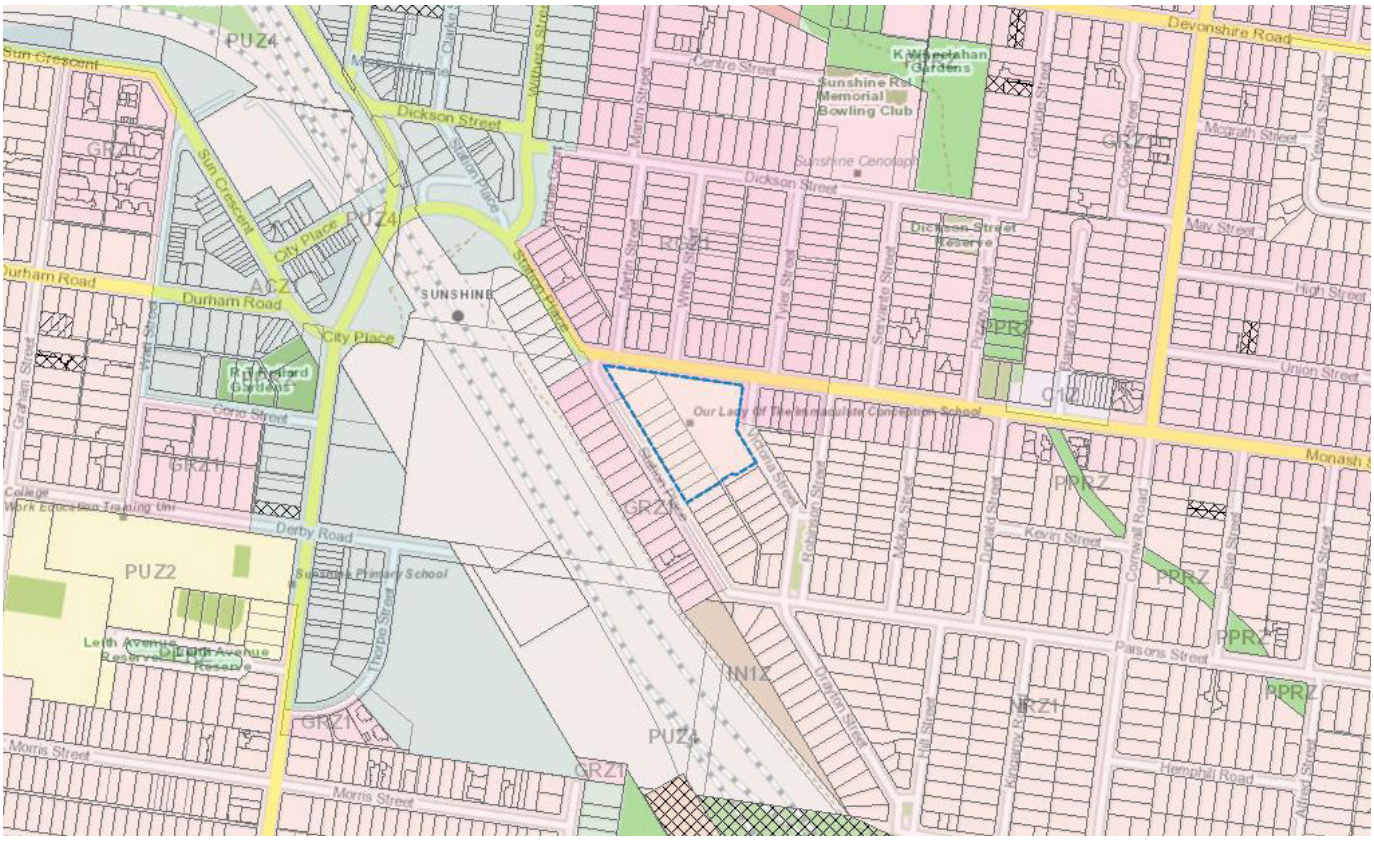

Figure 9 Zoning diagram

4.1 Local Planning Policy

The following Clauses of the Local Planning Policy are relevant to the proposal:

Clause 22 - Local Planning Policies

- 22.01 Brimbank Heritage Policy

Clause 22.01 provides guidance and identifies the need for its cultural heritage assets to be conserved and enhanced. The clause outlines application requirements that should accompany formal planning applications.

In alignment with the application requirements of Clause 22.01, please refer to a description of the school in Section 2.1 and proposal description in Section 3.1 of this report.

Clause 22.01 - Landscaping, notes that the *'Discourage the construction of large areas of hard paving in the front setback. Discourage the removal of trees where the schedule to the Heritage Overlay identifies that tree controls apply, unless: landscape character of an area is maintained by ensuring that there is adequate space available for planting of vegetation and that significant trees be retained where practicable'*

A conceptual landscape design can be found in the architectural drawing package showing the existing and proposed vegetation. The proposed vegetation is ornamental in nature, respects the existing vegetation on site and provides buffers to the building and site boundary.

An arborist report was carried out to assess the health status and significant values of the existing trees. It was deemed appropriate to remove Tree 1 (as noted in the arborist report).

- 22.02 Environmentally Sustainable Design

Clause 22.02-4 states that a Sustainable Design Assessment is required as part of the application. Please refer to the appendices of this report for a Sustainable Design Assessment, including STORM and BESS reports.

Principles of environmentally sustainable design incorporated into the project can be found in Section 3.2 of this report.

- Clause 52.06 Carparking

Clause 52.06 states that the statutory car parking requirement is 6 spaces. As no car spaces are proposed on the site, this application is seeking a waiver for these car spaces due to the following:

- There are a total of 23 unrestricted parking spaces on-street surrounding the school site, whilst some are located on residential frontages they have been historically managed to allow staff parking.
- The existing school has historically operated without on-site parking
- The school is located in close proximity to public transport including Sunshine Train Station and various local bus routes.

Refer to the Traffic Impact Assessment Report undertaken by Quantum Traffic dated 18th March 2021 for further information.

- Clause 52.17 Native Vegetation

Clause 52.17 is that to ensure that there is no net loss to biodiversity as a result of removal, destruction or lopping of native vegetation. There is only one tree proposed to be removed (Tree 1 as noted in the arborist report).

The arborist report states that this tree is directly impacted by the proposed building and subsequently the removal is required to proceed and that this tree can be removed without further permission.

Refer to the Arboricultural Impact Assessment undertaken by McLeod Trees dated 18th March 2021 for further information.

- Clause 52.34 Bicycle Facilities

Clause 52.34 is to encourage cycling as a mode of transport. The traffic report recommends to provide 24 bicycle spaces as the requirement is 23 (all associated with students). The existing bicycle parking is located between the existing Building 2 and 3. This is proposed to be extended to accommodate 24 spaces (12 rails). See drawing TP02 TP2 for exact location.

Refer to the Traffic Impact Assessment Report undertaken by Quantum Traffic dated 18th March 2021 for further information.

4.3 Zone

The land is included in the Neighbourhood Residential Zone (NRZ1).

The purpose of the zone is:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To recognise areas of predominantly single and double storey residential development.
- To manage and ensure that development respects the identified neighbourhood character, heritage, environmental or landscape characteristics.
- To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

Clause 32.09.2 of the Planning Scheme states that a permit is required to use the land for a "primary school", which is a Section 2 use.

General
The Municipal Planning Strategy and the Planning Policy Framework.

The proposal is consistent with the Municipal Planning Strategy and the Planning Policy Framework.

In determining the application, the Council will need to consider the following Decision Guidelines for Non-residential use and development:

The purpose of this zone.

The purpose of this zone is to allow ***educational,*** *recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations. This proposal is to undertake works to an existing education facility.*

The objectives set out in a schedule to this zone.

The proposal is consistent with objectives in a schedule to the zone.

Any other decision guidelines specified in a schedule to this zone.

The proposal is consistent with decision guidelines in a schedule to the zone.

The impact of overshadowing on existing rooftop solar energy systems on dwellings on adjoining lots in a General Residential Zone, Mixed Use Zone, Neighbourhood Residential Zone, Residential Growth Zone or Township Zone.

There is no impact of overshadowing on adjoining lots from the proposed works. All shadows from the proposed works will remain within the property boundaries.

Subdivision
N/A

Dwellings and residential buildings
N/A

The decision guidelines for applications within the Neighbourhood Residential Zone (NRZ1) are outlined below:

Non-residential use and development in this zone
Whether the use or development is compatible with residential use.

There is no change to the existing use of the site as a Primary School.

Whether the use generally serves local community needs.

Our Lady of The Immaculate Conception Primary School is an important part of the local Sunshine community and Our Lady of The Immaculate Conception Church shares the school site, the school is therefore an important part of the local community and Parish.

The scale and intensity of the use and development.

The scale and intensity of the use and development are considered to be appropriate in the context of the existing school site.

The design, height, setback and appearance of the proposed buildings and works.

The proposed works are set back further than the distance from the property boundary with the existing buildings which are being demolished.

The proposed landscaping.

The proposed landscaping will support and enhance the proposed development.

The provision of car and bicycle parking and associated accessways.

There is no change to the proposed car or bicycle parking.

Any proposed loading and refuse collection facilities.

This proposal will have no impact on the existing loading and refuse collection facilities.

The safety, efficiency and amenity effects of traffic to be generated by the proposal.

The proposal has minimal impact on the traffic to the site. A Traffic Impact Assessment was carried out by the traffic engineer. (See Attached)

4.6 Clause 43.01 - Heritage Overlay

The purpose of Clause 43.01 is:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To conserve and enhance heritage places of natural or cultural significance.
- To conserve and enhance those elements which contribute to the significance of heritage places.
- To ensure that development does not adversely affect the significance of heritage places.
- To conserve specified heritage places by allowing a use that would otherwise be prohibited if this
- will demonstrably assist with the conservation of the significance of the heritage place.

General
The Municipal Planning Strategy and the Planning Policy Framework.

The proposal is consistent with the Municipal Planning Strategy and the Planning Policy Framework.

In determining the application, the Council will need to consider the following Decision Guidelines for Non-residential use and development:

- The significance of the heritage place and whether the proposal will adversely affect the natural or cultural significance of the place.

- Whether the location, bulk, form or appearance of the proposed building will adversely affect the significance of the heritage place.

- Whether the location, bulk, form and appearance of the proposed building is in keeping with the character and appearance of adjacent buildings and the heritage place.

  The proposed works will reference the heritage place Mary MacKillop Library Resource Centre). A written description of the proposal statement can be found in Section 3.1 of this report.

- Whether the demolition, removal or external alteration will adversely affect the significance of the heritage place. Whether the proposed works will adversely affect the significance, character or appearance of the heritage place.

  The proposed works will have no impact on the heritage place.

- Whether the proposed subdivision will adversely affect the significance of the heritage place.

  This will not be applicable to the proposed works.

- Whether the proposed subdivision may result in development which will adversely affect the significance, character or appearance of the heritage place.

  This will not be applicable to the proposed works.

- Whether the proposed sign will adversely affect the significance, character or appearance of the heritage place.

  There is no proposed signage included in the proposed works.

- Whether the lopping or development will adversely affect the health, appearance or significance of the tree.

  The proposed works will have no impact on the health, appearance of significance of existing trees on site. A Careful consideration and investigation by the arborist with a written description of Tree protection local law can be found in Section 4.6 of this report.

- Whether the location, style, size, colour and materials of the proposed solar energy system will adversely affect the significance, character or appearance of the heritage place.

  There are no solar energy system proposed in the proposed works.

4.6 Environmental Significance Overlay

The purpose of Clause 42.01 -5 is:

- The Municipal Planning Strategy and Planning Policy Framework.
- The statement of environmental significance and the environmental objective contained in a schedule to this overlay.
- The need to remove, destroy or lop vegetation to create a defendable space to reduce the risk of bushfire to life and property.
- Any other matters specified in a schedule to this overlay.

A permit is required to carry out works where any part of such works takes place within the Tree Protection Zone.

The proposed works for the new Learning Building areas in which part of the works takes place within a Tree Protection Zone. Refer to the attached Arborist report - impact of the proposal noted on page 8-14 and drawings TP01 showing existing Tree 1 to be removed as supported by the arborist report .

Removal of Tree 1

This tree has a moderate retention value and a moderate site significance. The tree is directly impacted by the proposed demolition and a construction of a learning building, subsequently the removal of this tree is required for the development to proceed as proposed.

Area of Tree Protection Zone - Tree 11
TPZ is 11.8m. (radius)
The area of the TPZ is 110m^2.
The area of encroachment into the TPZ is 8m2,
The structural root zone has been identified to be 2.7m diameter from the centre of the tree.

The Tree Protection Zone is identified on the report prepared by McLeod Trees as Tree 11. Tree 11 is located to the west of the proposed Learning Building. The works proposed within this Tree 11 -Tree Protection Zone is at 7% with total area of 8m2.

The proposed landscape work will incorporate landscape works and suitable permeable paving within the Tree Protection Zone.

6.0 Conclusion

Having considered all information included within this report, it is concluded that the proposed Learning represents an appropriate development of the subject site.

The proposal is compliant with key objectives of the City of Brimbank Planning Scheme and is consistent with the existing use of the site.

The built form will be a welcoming, contemporary building that addresses the existing school site and surrounding built environment, and will shape the future of Our Lady of The Immaculate Conception Primary School.

Figure 10 Artist's Impressions of Proposal - Learning & Administration Building

Appendix A
Certificate of Title

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

VOLUME 10451 FOLIO 710

Security no : 124088049960A
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Land in Plan of Consolidation 362909K.
PARENT TITLES :
Volume 01917 Folio 337 Volume 10425 Folio 546
Created by instrument PC362909K 02/07/1999

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of 383 ALBERT STREET,EAST MELBOURNE 3002
PC362909K 02/07/1999

ENCUMBRANCES, CAVEATS AND NOTICES

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 set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE PC362909K FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 04750 FOLIO 870

Security no : 124088049970P
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 1 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 02264 Folio 685
Created by instrument 1120160 06/08/1923

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of ST PATRICK'S CATHEDRAL GREY STREET MELBOURNE
1176334 23/07/1924

ENCUMBRANCES, CAVEATS AND NOTICES

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 LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 03538 FOLIO 507

Security no : 124088049966T
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lots 2 and 3 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1477818R 25/09/1911

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of ST PATRICK'S CATHEDRAL GREY STREET MELBOURNE
1352606 26/01/1928

ENCUMBRANCES, CAVEATS AND NOTICES

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 LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

DOCUMENT END

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

VOLUME 05289 FOLIO 604

Security no : 124088049962X
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 4 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1326076 11/07/1927

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of CATHEDRAL PLACE EAST MELBOURNE
F008339 21/09/1973

ENCUMBRANCES, CAVEATS AND NOTICES

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 LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 04969 FOLIO 719

Security no : 124088049964V
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 5 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1208022 24/03/1925

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of 383 ALBERT ST EAST MELBOURNE
P053855D 03/03/1989

ENCUMBRANCES, CAVEATS AND NOTICES

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 LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 05154 FOLIO 753

Security no : 124088049963W
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 6 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1275091 13/07/1926

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of 383 ALBERT ST EAST MELBOURNE
M320508C 16/06/1986

ENCUMBRANCES, CAVEATS AND NOTICES

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 LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 05009 FOLIO 679

Security no : 124088049974K
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 7 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1222793 03/07/1925

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of 383 ALBERT STREET EAST MELBOURNE
K031964 03/08/1982

ENCUMBRANCES, CAVEATS AND NOTICES

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 LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 04911 FOLIO 103

Security no : 124088049965U
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 8 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1186928 06/10/1924

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of ST PATRICK'S CATHEDRAL GREY STREET MELBOURNE
K339447 20/04/1983

ENCUMBRANCES, CAVEATS AND NOTICES

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DIAGRAM LOCATION

SEE LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 05256 FOLIO 176

Security no : 124088049978F
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 9 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 03292 Folio 298
Created by instrument 1313606 12/04/1927

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of ST PATRICK'S CATHEDRAL GREY STREET MELBOURNE
K339447 20/04/1983

ENCUMBRANCES, CAVEATS AND NOTICES

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DIAGRAM LOCATION

SEE LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 03324 FOLIO 658

Security no : 124088049971N
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 10 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 01917 Folio 337
Created by instrument G712949 19/07/1977

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of 383 ALBERT ST EAST MELBOURNE
R554420K 19/09/1991

ENCUMBRANCES, CAVEATS AND NOTICES

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DIAGRAM LOCATION

SEE LP001683 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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

VOLUME 04881 FOLIO 002

Security no : 124088049975J
Produced 10/02/2021 04:29 PM

LAND DESCRIPTION

Lot 11 Block A on Plan of Subdivision 001683.
PARENT TITLE Volume 02152 Folio 235
Created by instrument H387035 26/01/1979

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
THE ROMAN CATHOLIC TRUSTS CORPORATION FOR THE DIOCESE OF MELBOURNE of 383 ALBERT ST EAST MELBOURNE 3002
T217993K 27/07/1994

ENCUMBRANCES, CAVEATS AND NOTICES

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DIAGRAM LOCATION

SEE TP466027Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF REGISTER SEARCH STATEMENT----------

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

Street Address: 93 MONASH STREET SUNSHINE VIC 3020

DOCUMENT END

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Document Type	**Plan**
Document Identification	**PC362909K**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**10/02/2021 16:41**

PLAN OF CONSOLIDATION

LV USE ONLY
EDITION 1

PLAN NUMBER
PC362909K

Location of Land

PARISH :	CUT-PAW-PAW
TOWNSHIP :	-
SECTION :	-
CROWN ALLOTMENT :	-
CROWN PORTION :	18 (PART)
LV BASE RECORD :	CHART 129 (2478)
LAST PLAN REFERENCE :	LOT 1 ON PS417158P AND LOT 1 ON TP10504C
TITLE REFERENCES :	VOL. 10425 FOL. 546 VOL 9917 FOL 332 (A) (LAND IN TR. V750067L)
POSTAL ADDRESS : (AT TIME OF CONSOLIDATION)	2-4 VICTORIA STREET SUNSHINE 3020
AMG CO-ORDINATES : (APPROX. CENTRE OF PLAN)	E : 309 330 N : 5 815 150 Zone : 55

Council Certification and Endorsement

COUNCIL NAME: BRIMBANK CITY COUNCIL REF: S99047

1. THIS PLAN IS CERTIFIED UNDER SECTION 6 OF THE SUBDIVISION ACT 1988.

2. ~~THIS PLAN IS CERTIFIED UNDER SECTION 11(7) OF THE SUBDIVISION ACT 1988~~
~~DATE OF ORIGINAL CERTIFICATION UNDER SECTION 6 / /~~

3. THIS IS A STATEMENT OF COMPLIANCE ISSUED UNDER SECTION 21 OF THE SUBDIVISION ACT 1988.

COUNCIL DELEGATE
~~COUNCIL SEAL~~
DATE 23/3/99

RE-CERTIFIED UNDER SECTION 11(7) OF THE SUBDIVISION ACT 1988.

COUNCIL DELEGATE
COUNCIL SEAL
DATE / /

LV USE ONLY
STATEMENT OF COMPLIANCE/ EXEMPTION STATEMENT
RECEIVED ✓
DATE 4/5/97

LV USE ONLY
PLAN REGISTERED
TIME 11.00
DATE 2/7/99
ASSISTANT REGISTRAR OF TITLES.

NOTATIONS

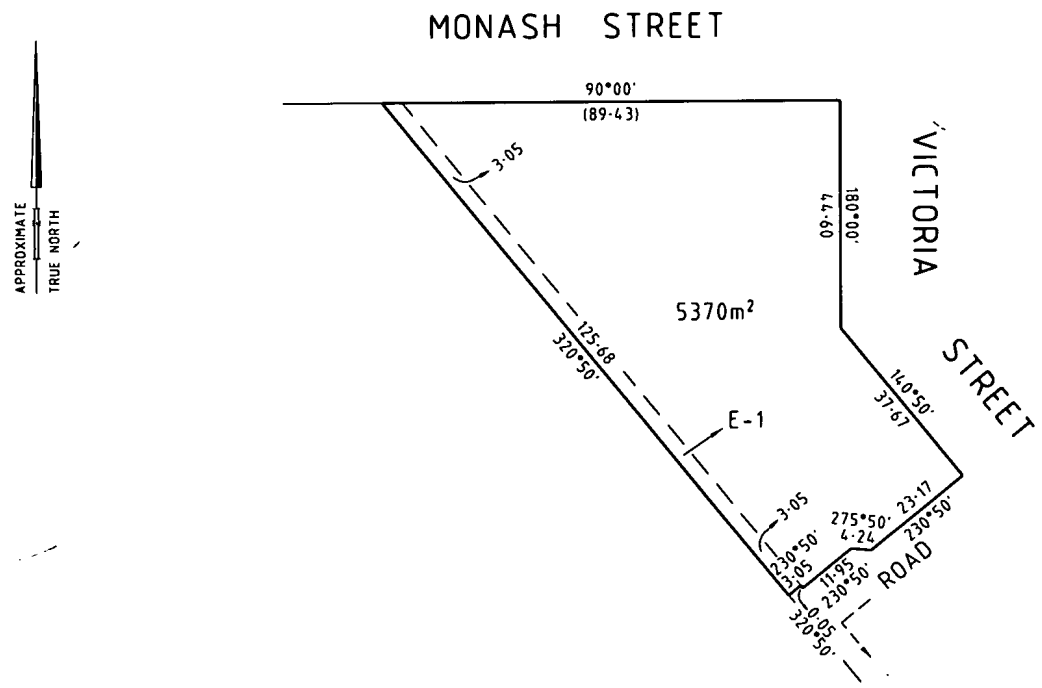
DEPTH LIMITATIONS
DOES NOT APPLY

SURVEY
THIS PLAN IS NOT BASED ON SURVEY

EASEMENT INFORMATION

LEGEND. A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
E-1	AS PROVIDED FOR IN SEC.207C LGA 1989	SEE DIAG.	SEC 207C LGA 1989	CITY WEST WATER
E-1	AS PROVIDED FOR IN SEC.207C LGA 1989	SEE DIAG.	TRANSFER V750067L	BRIMBANK CITY COUNCIL



SCALE 1:1000
0 10 20 30 40 50
LENGTHS ARE IN METRES

SHEET 1 OF 1 SHEET

BARKER MONAHAN
A.C.N. 005 394 865
SURVEYORS, DEVELOPMENT AND LOCAL GOVERNMENT CONSULTANTS
581 GILBERT RD WEST PRESTON 3072
P.O. BOX 218 PRESTON, DX97218
TELEPHONE 9478 6133 FAX 9470 5189

LICENSED SURVEYOR . . . DAVID JOHN MONAHAN . . . . .

SIGNATURE . . . . . DATE 16/2/99

REF. 10283 VERSION 01

COMPUTER FILE: 0283CON.DWG DATE: 05/01/1999

DATE 23/3/99
COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

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Document Type	**Plan**
Document Identification	**LP001683**
Number of Pages (excluding this cover sheet)	**6**
Document Assembled	**10/02/2021 16:41**

PLAN OF SUBDIVISION OF
PART OF CROWN PORTION 18
PARISH OF CUT PAW PAW
COUNTY OF BOURKE

V.1917 F.337
V.1917 F.338
V.1917 F.339
V.1841 F.030

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

APPURTENANCIES

AS TO LOTS 2-6 (B.I.), 8, 9, 10, 15, 16, 22, 23, 24, 39, 40, 41, 42, 43, & 44 BLOCK A
TOGETHER WITH A RIGHT OF CARRIAGEWAY OVER THE ROADS COLOURED BROWN ON THIS PLAN AS CONTAINED IN VOL.1917 FOL.337

AS TO LOTS 1, 5, 8-12 (B.I.), 16-20 (B.I.), 46, 50, 51, 52 & 60 BLOCK B
TOGETHER WITH A RIGHT OF CARRIAGEWAY OVER THE ROADS COLOURED BROWN ON THIS PLAN AS CONTAINED IN VOL.1917 FOL.338

AS TO LOTS 47, 48, 49, 65, 68, 69, 72, 75, 81, 85, 87, 88, 100, 109, 110, 112 & 113 BLOCK B
TOGETHER WITH A RIGHT OF CARRIAGEWAY OVER THE ROADS COLOURED BROWN ON THIS PLAN AS CONTAINED IN VOL.1917 FOL.338 & 339

AS TO LOTS 2, 7, 8, 15, 16 &18 BLOCK C
TOGHETHER WITH A RIGHT OF CARRIAGEWAY OVER THE ROADS COLOURED BROWN ON THIS PLAN AS CONTAINED IN VOL.1841 FOL.030

AS TO LOT 103 BLOCK B
TOGETHER WITH A RIGHT OF CARRIAGEWAY OVER E-2

AS TO LOT 44 BLOCK C
TOGETHER WITH A RIGHT OF CARRIAGEWAY OVER E-5

LP 1683
EDITION 6
PLAN MAY BE LODGED
25/11/87

4 SHEETS
SHEET 1

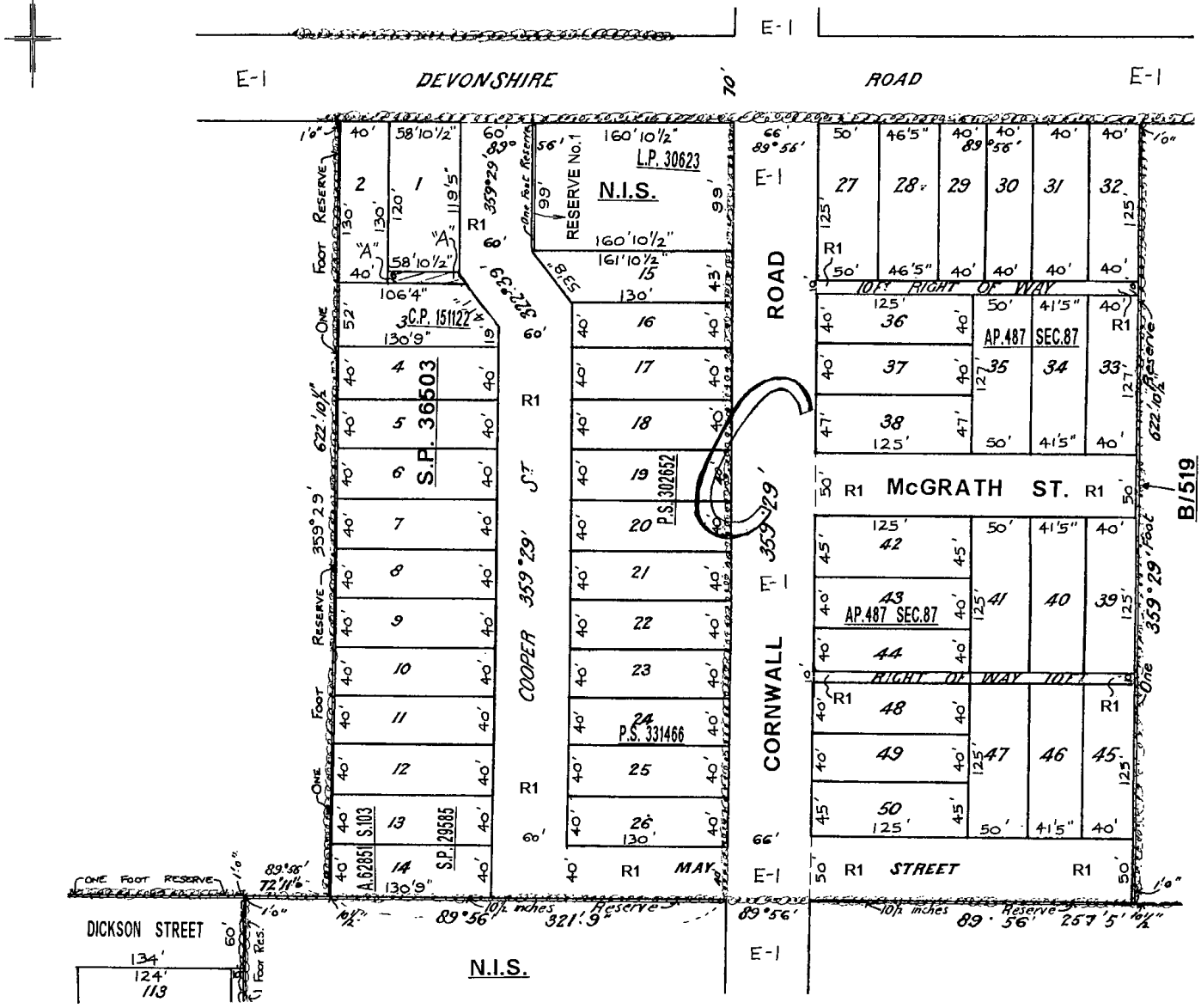
COLOUR CODE
E-1, R1 & R2 = BROWN

ENCUMBRANCES

AS TO THE LAND MARKED E-3:
THE EASEMENT TO THE M.M.B.W.
CREATED BY INSTRUMENT NO. 1520304

AS TO THE LAND MARKED E-4:
THE EASEMENT TO THE M.M.B.W.
CREATED BY INSTRUMENT NO.1519240

AS TO THE LAND MARKED R1 & R2:
ANY EASEMENTS AFFECTING
THE SAME

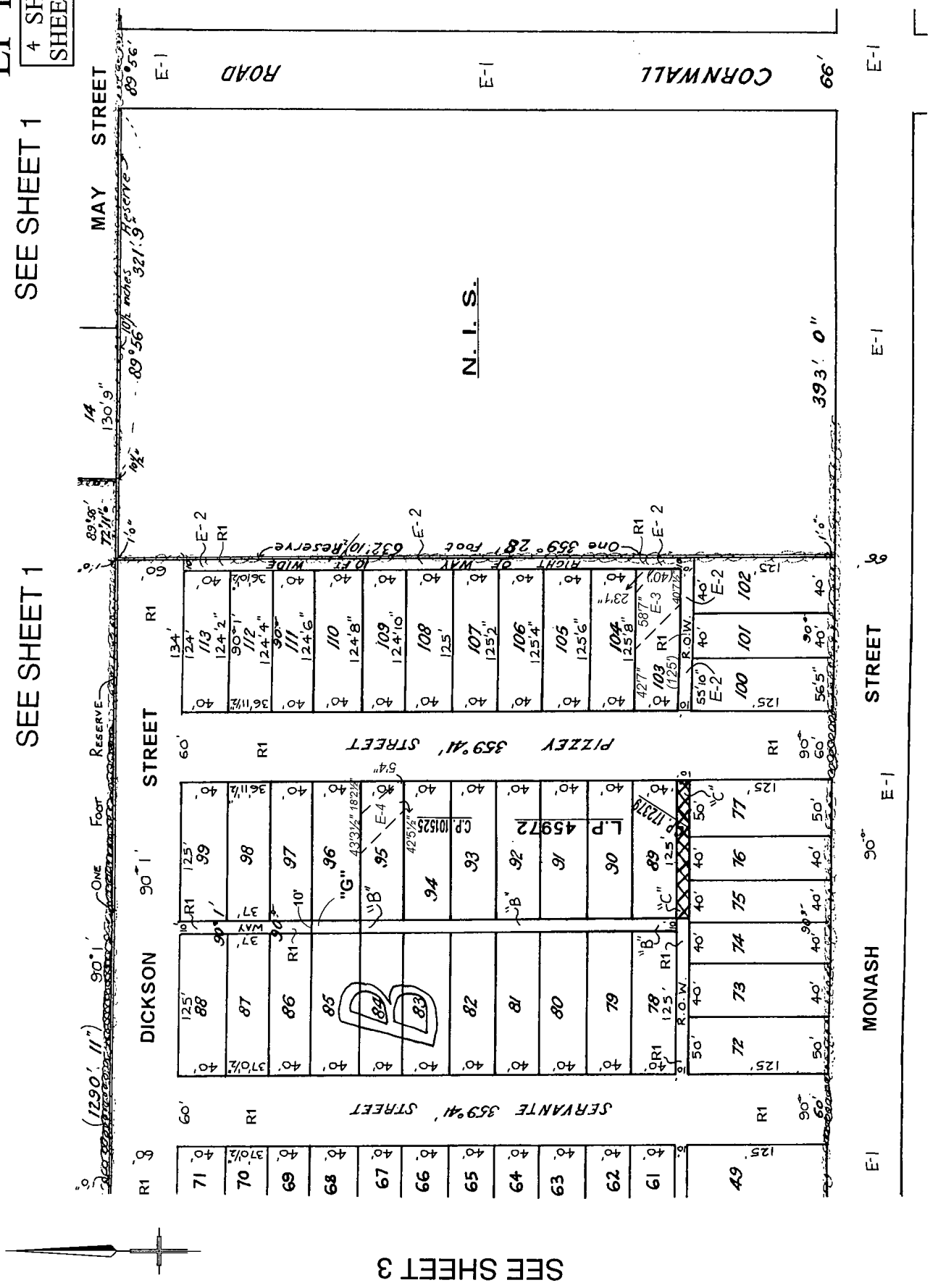


SEE SHEET 2

SEE SHEET 2

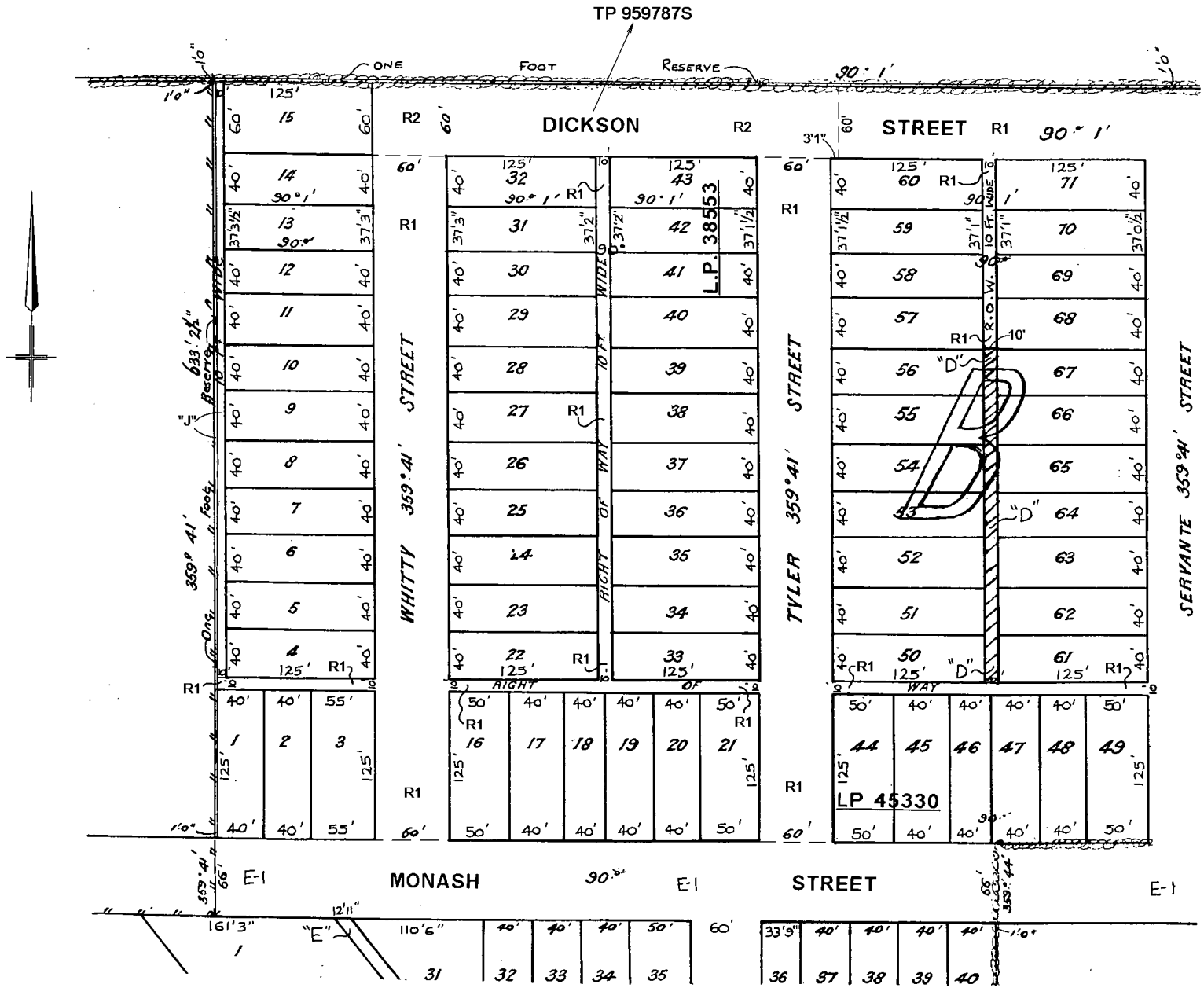
LP 1683

4 SHEETS
SHEET 2



LP 1683

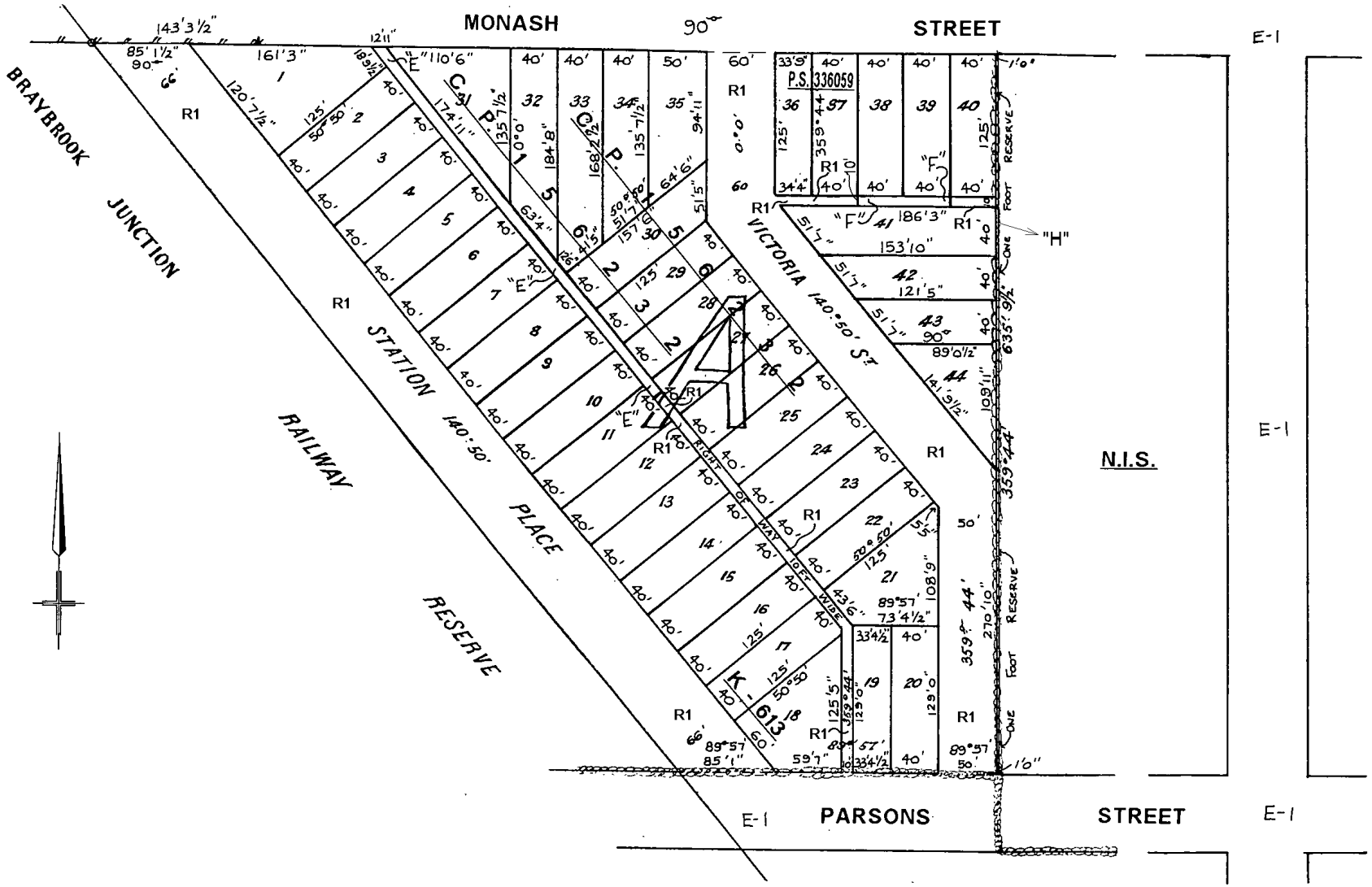
4 SHEETS
SHEET 3



LP 1683

4 SHEETS
SHEET 4

SEE SHEET 3



MODIFICATION TABLE

RECORD OF ALL ADDITIONS OR CHANGES TO THE PLAN

PLAN NUMBER
LP 1683

AFFECTED LAND / PARCEL	LAND / PARCEL / IDENTIFIER CREATED	MODIFICATION	DEALING NUMBER	DATE	TIME	EDITION NUMBER	ASSISTANT REGISTRAR OF TITLES
"A"		ROAD DISCONTINUED	L.G.D.588			1	
"B"		ROAD DISCONTINUED	L.G.D.7063			1	
"C"		ROAD DISCONTINUED	L.G.D.5480			1	
"D"		ROAD DISCONTINUED	L.G.D.4802			1	
"E"		ROAD DISCONTINUED	L.G.D.8190			1	
"F"		ROAD DISCONTINUED	L.G.D.7581			1	
		STREET NAMES AMENDED	CORR.40/4731			1	
		STREET NAME AMENDED	GAZ.1928 P.1393			1	
		STREET NAME AMENDED	GAZ.1973 P.74			1	
		STREET NAME AMENDED	GAZ.1973 P.2007			1	
		STREET NAME AMENDED	CORR.53/22752			1	
"G"		ROAD DISCONTINUED	AB63198Q (x207D)			2	IT

MODIFICATION TABLE

RECORD OF ALL ADDITIONS OR CHANGES TO THE PLAN

WARNING: THE IMAGE OF THIS PLAN/DOCUMENT HAS BEEN DIGITALLY AMENDED. NO FURTHER AMENDMENTS ARE TO BE MADE TO THE ORIGINAL PLAN/DOCUMENT.

PLAN NUMBER
LP 1683

AFFECTED LAND/PARCEL	LAND/PARCEL IDENTIFIER CREATED	MODIFICATION	DEALING NUMBER	DATE	TIME	EDITION NUMBER	ASSISTANT REGISTRAR OF TITLES
THIS PLAN		APPURTENANT EASEMENTS ENHANCED				3	AD
THIS PLAN		APPURTENANT EASEMENTS ENHANCED				4	AD
LOT 103 BLOCK B	E-3	CREATION OF EASEMENT	1520304			4	AD
LOT 95 BLOCK B	E-4	CREATION OF EASEMENT	1519240			4	AD
"H"		**EXCISED**	**AP125174R**			**5**	**TSG**
"J"		ROAD CLOSED AND RESERVE EXCISED	PS 417159M			6	AD
ROADS	R1 & R2	EASEMENTS ENHANCED				6	AD

Imaged Document Cover Sheet

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Document Type	**Plan**
Document Identification	**TP466027Q**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**10/02/2021 16:41**

TITLE PLAN		EDITION 1	TP 466027Q

Location of Land

Parish: CUT-PAW-PAW
Township:
Section:
Crown Allotment:
Crown Portion:

Last Plan Reference: LP1683
Derived From: VOL 4881 FOL 002
Depth Limitation: NIL

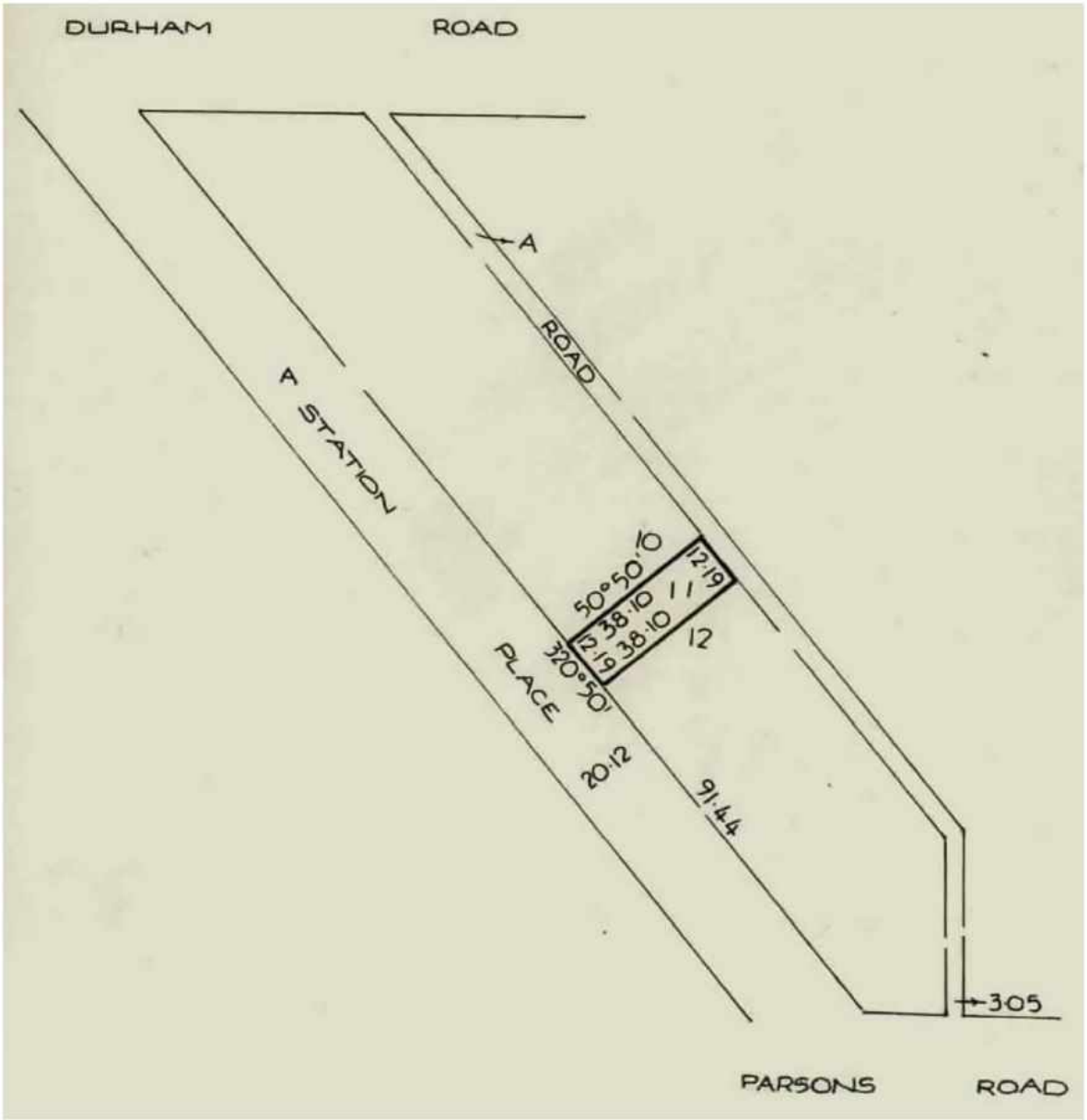
Notations

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

all that piece of land in the Parish of Cut Paw Paw County of Bourke being- - Lot Eleven Block A on Plan of Subdivision No.1683 which land is shown- - - -- enclosed by continuous lines on the map
TOGETHER WITH a right of carriage way over the roads shown marked A on the- - said map- -

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 14/01/2004
VERIFIED: L.S.



LENGTHS ARE IN METRES	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets

Appendix B
Sustainable Design Assessment

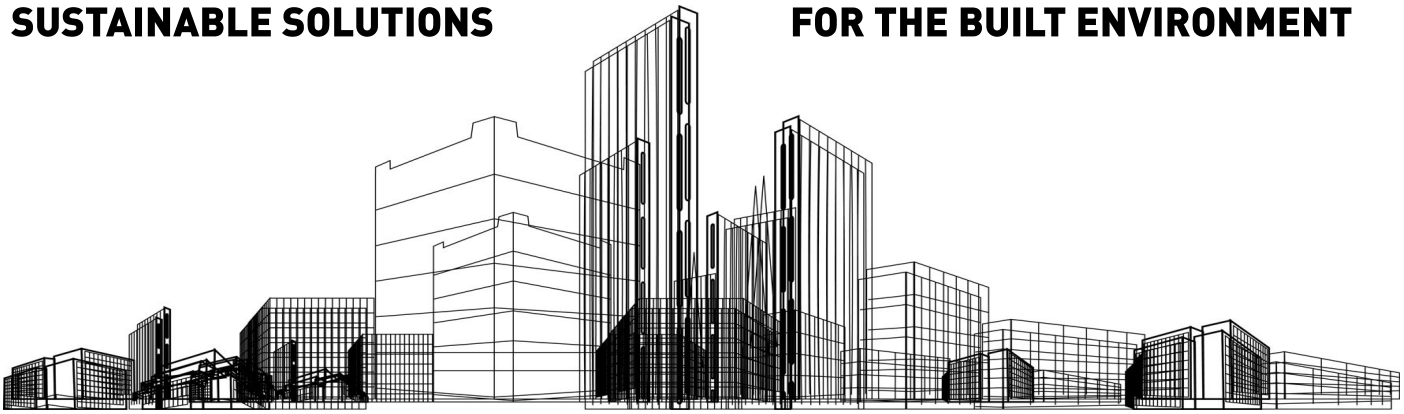
ENERGY
WATER
ENVIRONMENT

OUR LADY OF THE IMMACULATE CONCEPTION SUNSHINE PRIMARY SCHOOL

SUSTAINABLE DESIGN ASSESSMENT V1

22ND APRIL, 2021

SUSTAINABLE SOLUTIONS FOR THE BUILT ENVIRONMENT



Date:	22/4/2021
Project Number:	PJ516
Project Title:	Our Lady of the Immaculate Conception Sunshine Primary School
To:	Wilson Lau (Clarke Hopkins Clarke) Brimbank City Council
From:	Patrick Phelan

Document Title: Sustainable Design Assessment Version 1

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WWW.EWENVIRONMENT.COM.AU
ABN:50 800 554 305

1. Executive Summary

The purpose of this Sustainable Design Assessment (SDA) is to show the sustainable design initiatives proposed for the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building at the planning stage. The school is located at 32 Station Place, Sunshine. It is subject to the ESD requirements of Brimbank City Council. At the planning stage, the proposed development has been assessed against Brimbank City Council Planning Scheme requirements and the National Construction Code energy efficiency regulations.

Table 1 below is a checklist showing compliance with the various environmentally sustainable design requirements.

Table 1 : SDA Checklist for Our Lady of the Immaculate Conception Sunshine Primary School Learning Building

Item	In Documents / Will be achieved	Required / Recommended by	Reference if Applicable
JV3 Assessment for all conditioned components of the development	✓	National Construction Code and BESS	Refer to Section 3.2 and Appendix A
Water Sensitive Urban Design	✓	Brimbank City Council planning scheme	Refer to Section 4.4 and Appendix B.2.
BESS sustainability tool assessment	✓	Brimbank City Council planning scheme	Refer to Section 3.3 and Appendix B
An SDA describing sustainable initiatives for the development, targets and implementation	✓	Brimbank City Council planning scheme.	Refer to Section 4

The implementation of the initiatives within the Sustainable Design Assessment are the responsibility of the design team, the Our Lady of the Immaculate Conception Sunshine Primary School and the lead and sub-contractors.

Where operational practices are required they will be carried out by the management of the Our Lady of the Immaculate Conception Sunshine Primary School.

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ABN:50 800 554 305

2. Introduction

The purpose of this Sustainable Design Assessment (SDA) is to show the sustainable design initiatives proposed for the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building at the planning stage. The school is located at 32 Station Place, Sunshine. It is subject to the ESD requirements of Brimbank City Council. At the planning stage, the proposed development has been assessed against Brimbank City Council Planning Scheme requirements and the National Construction Code energy efficiency regulations.

3. Performance Requirements

3.1 National Construction Code 2019 Part J – Class Type

This development is an education development and contains the following class types (to ultimately be confirmed by the building surveyor):

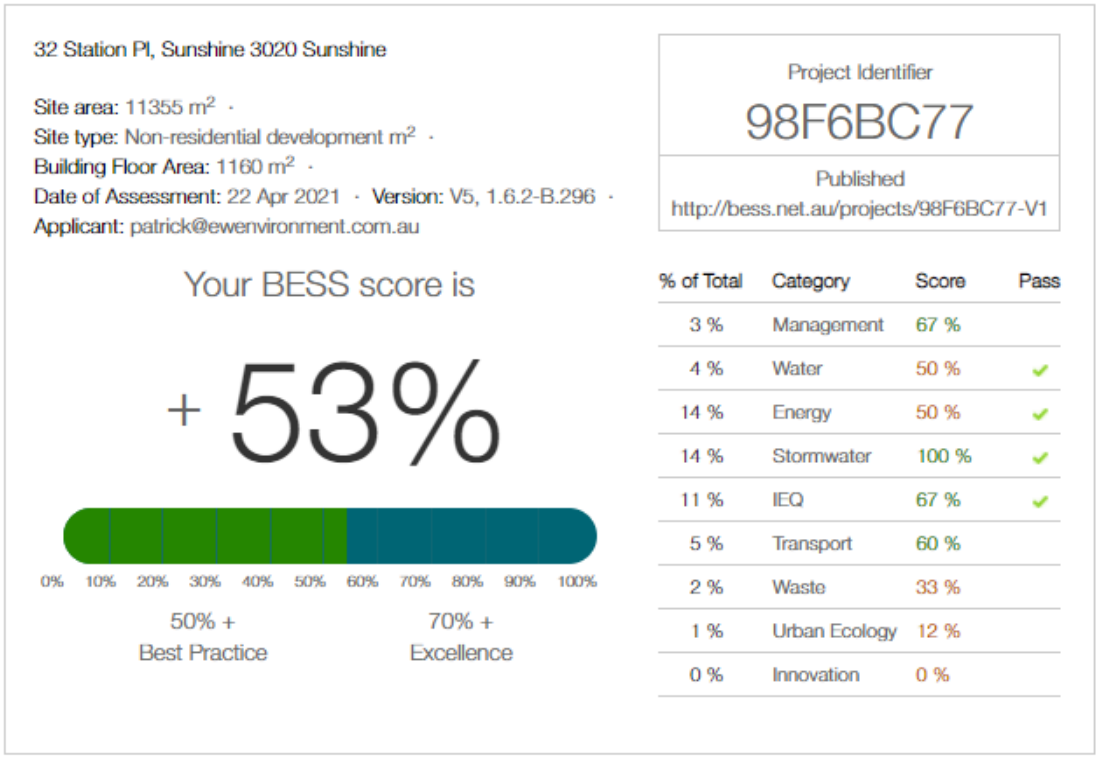
- Class 9b assembly building

As a part of further iterations of the ESD reports and submissions, JV3 modelling shall show compliance with the NCC Part J.

3.2 BESS Assessment

Built Environment Sustainability Scorecard (BESS) is an assessment tool created by CASBE council which is now widely used to benchmark proposed residential building developments. Based on the initiatives listed in Section 4 below, an initial BESS assessment has been undertaken for the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building design. The results of the BESS assessment are shown on the overleaf.

Table 2 : BESS Minimum Requirements and Calculated Scores for Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Design



32 Station Pl, Sunshine 3020 Sunshine

Site area: 11355 m² ·
Site type: Non-residential development m² ·
Building Floor Area: 1160 m² ·
Date of Assessment: 22 Apr 2021 · Version: V5, 1.6.2-B.296 ·
Applicant: patrick@ewenvironment.com.au

Project Identifier
98F6BC77
Published
http://bess.net.au/projects/98F6BC77-V1

Your BESS score is

+ 53%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

50% + Best Practice

70% + Excellence

% of Total	Category	Score	Pass
3 %	Management	67 %	
4 %	Water	50 %	✔
14 %	Energy	50 %	✔
14 %	Stormwater	100 %	✔
11 %	IEQ	67 %	✔
5 %	Transport	60 %	
2 %	Waste	33 %	
1 %	Urban Ecology	12 %	
0 %	Innovation	0 %	

Refer to Appendix B.1 and B.2 for the BESS and STORM calculations respectively.

4. ESD Initiatives

The following sections outline the ESD initiatives and management processes that are proposed for the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building development. These are based on consideration of the following categories:

- Indoor Environment Quality (IEQ)
- Energy Efficiency
- Water Efficiency
- Stormwater Management
- Building Materials
- Transport
- Waste Management
- Urban Ecology
- Innovation
- Construction and Building Management

Each of the above categories have been broken down into sub-categories and then into particular initiatives in the tables below.

The implementation of the initiatives within the Sustainable Design Assessment are the responsibility of the design team, the Our Lady of the Immaculate Conception Sunshine Primary School and the lead and sub-contractors.

Where operational practices are required they will be carried out by the management of the Our Lady of the Immaculate Conception Sunshine Primary School.

4.1 Indoor Environment Quality (IEQ)

Table 3 : IEQ Sub-Categories and Initiatives

IEQ Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target	Schedule of Initiatives and Responsibility
Daylight	▪ Habitable spaces achieve 64% of area coverage over daylight factor of 2%	▪ BESS benchmarking Refer to Appendix C for daylight calculations	▪ Design phase: Architect ▪ Construction phase: Builder, window contractor
Hazardous Materials	▪ No hazardous waste shall be used in construction materials	▪ No hazardous waste shall be used in construction materials	▪ Implemented as part of construction of design drawings (mechanical contractor responsibility)
Acoustics	▪ All mechanical equipment shall meet the Australian Standards for noise levels	▪ To meet Australian Standards for noise levels	▪ Design phase: Architect ▪ Construction phase: Builder
Natural Ventilation	▪ Openable doors and windows.	▪ Achieve NCC requirements	▪ Design phase: Architect ▪ Construction phase: Builder

4.2 Energy Efficiency

Table 4 : Energy Efficiency Sub-Categories and Initiatives

Energy Efficiency Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target and Implementation	Schedule of Initiatives and Responsibility
Operating Energy and Building Fabric	▪ JV3 assessment shows an improvement of over 10% of NCC Part J benchmarks	▪ 10% improvement on NCC Part J	▪ Design phase: Architect ▪ Construction phase: Builder
Heating and Cooling	▪ Cooling shall be provided via VRV systems to all habitable spaces. The nominated COP for the systems is minimum 3.5	▪ COP of 3.5	▪ Design phase: Architect, mechanical designer ▪ Construction phase: Builder, mechanical contractor
Lighting Power Density	▪ Lighting power density shall be 20% lower than those stipulated by the National Construction Code in Part J6 for all NCC class types components. LED lighting will be implemented	▪ Lighting power density of <= 3.5w/m^2 shall be implemented to meet the 20% reduction target. ▪ National Construction Code requirements. ▪ BESS benchmarking (refer Appendix B.1)	▪ Design phase: Architect, Electrical Designer ▪ Construction phase: Electrical Contractor
Domestic Hot Water	▪ Domestic hot water shall be electric hot water	▪ BESS benchmarking (refer Appendix B.1)	▪ Design phase: Architect, hydraulic designer ▪ Construction phase: Hydraulic contractor
External Lighting	▪ External lighting will be controlled via a time switch and motion detection	▪ BESS benchmarking (refer Appendix B.1)	▪ Design phase: Architect, Electrical Designer ▪ Construction phase: Electrical Contractor

4.3 Water Efficiency

Table 5 : Water Efficiency Sub-Categories and Initiatives

Water Efficiency Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target	Schedule of Initiatives and Responsibility
Minimising Amenity Water Demand	▪ The fittings and fixtures proposed for the development will meet the following Star Ratings under the Water Efficiency Labeling Scheme: ▪ Toilets – 4 Star ▪ Basin Taps – 6 Star ▪ Kitchen Taps – 6 Star	▪ As per star rating targets specified. ▪ BESS benchmarking (refer Appendix B.1)	▪ Design phase: Architect / Hydraulic Designer ▪ Construction phase: Builder and hydraulic contractor
Heat Rejection Water	▪ Air conditioning units shall use air-cooled condenser components.	▪ No water to be used in cooling.	▪ Design phase: Architect / Mechanical Designer ▪ Construction phase: Builder and Mechanical Contractor
Water Efficient Landscaping	▪ Water efficient garden	The landscape schedule is yet to be finalised however drought tolerant tree, shrub and grass species shall make up the majority of the landscaping	▪ Design phase: Architect / Landscape Designer ▪ Construction phase: Builder and Landscape Contractor

4.4 Stormwater Management

Table 6 : Stormwater Management Sub-Categories and Initiatives

Stormwater Management Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target	Schedule of Initiatives and Responsibility
STORM rating	▪ The calculated STORM rating is 101%. Refer to Appendix B.2 for the STORM report.	▪ A minimum of 100% in STORM.	▪ Design phase: Architect / ESD Consultant / Hydraulic Designer / Civil Designer / Landscape Consultant ▪ Construction phase: Builder, civil contractor, landscape contractor and hydraulic

			contractor
Discharge to Sewer	▪ Low flow fittings and fixtures shall be used and shall reduce the discharge to sewer.	▪ The fittings and fixtures proposed for the development will meet the following Star Ratings under the Water Efficiency Labeling Scheme: ▪ Toilets – 4 Star ▪ Basin Taps – 6 Star ▪ Kitchen Taps – 6 Star	▪ Implemented as part of construction of design drawings (contractor responsibility)
Watercourse Pollution	▪ Raingardens are proposed for the development to meet the watercourse pollution requirements of Council. These raingardens will be designed to have minimal maintenance and sustainable plantations. Refer to Appendix B for the STORM report, rain garden cross-sections and maintenance plan.	▪ A minimum of 100% in STORM.	▪ Design phase: Architect / ESD Consultant / Hydraulic Designer / Civil Designer / Landscape Consultant ▪ Construction phase: Builder, civil contractor, landscape contractor and hydraulic contractor

4.5 Building Materials

Table 7 : Building Materials Sub-Categories and Initiatives

Building Materials Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target and Implementation	
Storage for Recycling Waste	▪ Appropriate bin storage space including space for recycling bins has been allocated.	▪ Refer to Waste Design Assessment for details.	▪ Design phase: Architect ▪ Construction phase: Builder
Environmental Toxicity	▪ Both refrigerants and insulation materials shall be specified to be non-ozone depleting in both composition and manufacture.	▪ Zero ozone depleting materials used in both composition and manufacture.	▪ Design phase: Architect ▪ Construction phase: Builder

4.6 Transport

Bicycle racks on other parts of the site to be used by staff and students.

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4.7 Waste Management

Table 8 : Waste Management Sub-Categories and Initiatives

Waste Management Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target and Implementation	Schedule of Initiatives and Responsibility
Construction Environmental Management Plan	▪ A construction environmental Design Assessment will be required to be implemented by the lead contractor.	▪ Production and implementation of an EMP.	▪ Architectural preliminaries to require a CEMP ▪ Lead contractor responsibility
Waste Management Plan	▪ Construction phase environmental Design Assessment to be implemented.	▪ Minimum 80% of construction waste to be reused or recycled. ▪ BESS benchmarking (refer Appendix B.1)	▪ Architectural preliminaries to require a WMP ▪ Lead contractor responsibility
Operational Waste	▪ Green and garden waste and recycling waste shall be separated from general waste and disposed / re-used accordingly	▪ Waste initiatives, requirements and instructions for both garden waste and recycling shall be incorporated into the building users guide.	▪ Architect in the design phase and schooling in the operation phase

4.8 Urban Ecology

Table 9 : Urban Ecology Sub-Categories and Initiatives

Urban Ecology Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target and Implementation	Schedule of Initiatives and Responsibility
Landscaped Areas	▪ Landscaping will be provided as shown in Landscape drawings.	▪ The landscape schedule is yet to be finalised however drought tolerant tree, shrub and grass species shall make up the majority of the landscaping	▪ Design phase: Architect / Landscape Architect ▪ Construction phase: Builder / Landscape Contractor

4.9 Innovation

There are no initiatives that cannot be categorised within the other 9 categories, therefore the innovation category is not applicable.

4.10 Construction and Building Management

Table 10 : Construction and Building Management Sub-Categories and Initiatives

Construction and Building Management Sub-Categories	Proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building Initiatives	Performance Target and Implementation	Schedule of Initiatives and Responsibility
Construction Environmental Design Assessment	▪ A construction environmental Design Assessment will be required to be implemented by the lead contractor.	▪ Production and implementation of an EMP.	▪ Architectural preliminaries to require a CEMP ▪ Lead contractor responsibility
Stormwater Construction Design Assessment	▪ A stormwater construction Design Assessment will be implemented as part of the construction environmental Design Assessment.	▪ Council requirements.	▪ Architectural preliminaries to require a SDA ▪ Lead contractor responsibility
Building User Guide	▪ A building user guide to be handed over to all	▪ Sustainability and maintenance	▪ Lead contractor responsibility

	owners after construction.	information to be included in building user guide. ▪ The building user guide shall be based on City of Port Phillip's *Building User's Guide – Expected Content*. See Appendix E for attachment of this template document ▪ Waste initiatives, requirements and instructions for both garden waste and recycling shall be incorporated into the building users guide.	

5. Conclusion

The ESD components for the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building development have been proposed with reference to current construction code standards, the industry benchmarking tool BESS and Brimbank City Council Planning Scheme ESD requirements. At the planning stage, the proposed design meets best practice as set out by these items.

Appendix A –NCC Part J Assessment

National Construction Code 2019 Part J – Non-Residential JV3 Report

Introduction – JV3 Report

The purpose of this component of the SDA is to show compliance of the proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building design with the energy efficiency requirements of the National Construction Code 2019. This report is for the information of the building surveyor and shows, based on the documentation used in the calculation and associated assumptions, the proposed Our Lady of the Immaculate Conception Sunshine Primary School Learning Building design complies with the requirements and will meet a 21% improvement on heating and cooling based on the assumptions made in this section of the SDA. The overall JV3 assessment shows an improvement of 20%.

The proposed building fabric requirements (assumptions) are shown in the table below.
Table 11 : Proposed Building Fabric Requirements

Element of Model	Proposed Model – Design Requirements
Walls	**Metal stud walls (450mm spaces) with thickness of BMT1.15 (assumption) - insulation batts of R2.5 (standard insulation between metal studs). No further thermal break required**
Floor	**Concrete slab on ground with no additional insulation**
Roof	**Metal roof sheeting. Ceiling insulation of R3.5 (whole system R3.7)**
External Glazing	**U-values of a maximum of 5.0 (including the frame) and solar heat gain coefficient of 0.5 – single glazing**

Compliance has been shown using the verification method JV3. Computer simulation energy modeling has been undertaken using IES Virtual Environment Software Version 2019. Three models were created and each yielded an annual energy calculation for the purposes of comparison. The figure below shows the calculation requirements for the JV3 method with regards to the three models that are required to be produced.

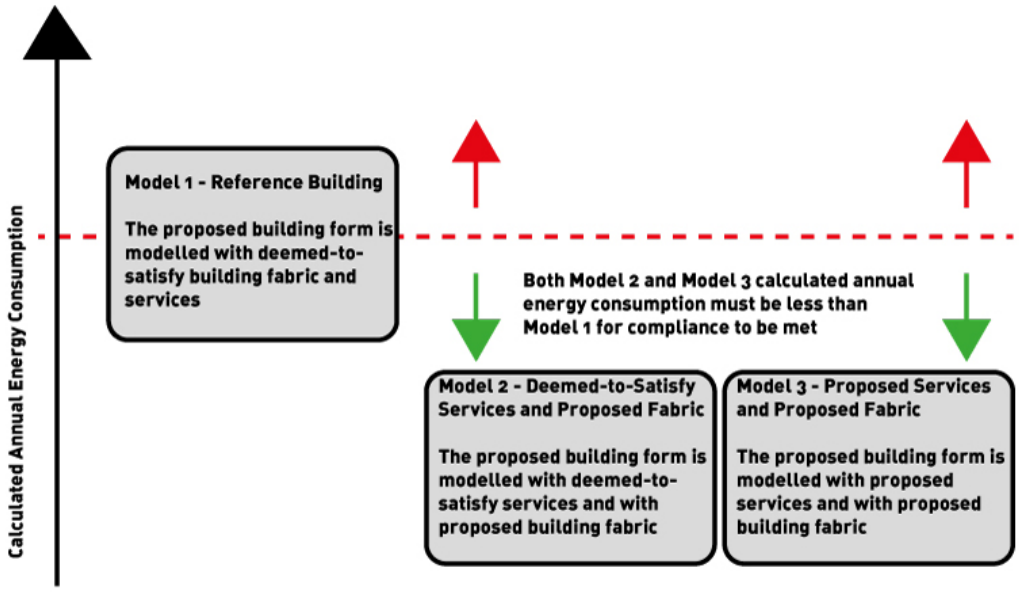

Figure 1 Illustration of the 3 Model Calculation System Required by JV3

Results JV3 Report

Table 1 below shows the calculated annual energy consumption of the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building for all three models.

Table 12 : Calculated Energy Consumption for 3 Models

Model	Calculated Annual Energy Consumption (MWh / annum)
Model 1 – Deemed-to-Satisfy Building Fabric and Services	99.06 (Reference)
Model 2 – Deemed-to-Satisfy Services and Proposed Building Fabric	96.93 (lower than reference)
Model 3 – Proposed Services and Proposed Building Fabric	60.49 (lower than reference)

As Model 2 and Model 3 have a lower energy consumption than Model 1, the design is compliant with the National Construction Code energy efficiency requirements.

The BESS inputs and breakdowns are show below:

BESS Energy Input	OLOTICSPS Calculated Annual Energy Consumption (kWh/annum)
Heating, Cooling & Comfort Ventilation - Electricity Reference fabric & services (kWh/annum)	76,200
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & reference services (kWh/annum)	74,066
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services (kWh/annum)	60,452
Gas Heating- Reference fabric & services (MJ/annum)	Not applicable
Gas Heating - Proposed fabric & reference services (MJ/annum)	Not applicable
Gas Heating - Proposed fabric & services (MJ/annum)	Not applicable
Hot Water - Electricity -Reference (MJ/annum)	2,265
Hot Water - Electricity -Proposed (MJ/annum)	2,265
Lighting – Reference (kWh/annum)	22,860
Lighting – Proposed (kWh/annum)	18,288
Peak Thermal Cooling Load Reference fabric and services kW	91
Peak Thermal Cooling Load Proposed fabric and services kW	68

Modelling Inputs

Element of Model	Deemed to Satisfy Model (Not for Construction)	Proposed Model – Minimum Design Requirements
Walls	Lightweight cladding as detailed in Clarke Hopkins Clarke planning documentation. Insulation level of entire wall construction R2.8	Metal stud walls (450mm spaces) with thickness of BMT1.15 (assumption) - insulation batts of R2.5 (standard insulation between metal studs). No further thermal break required
Floor	Concrete slab on ground	Concrete slab on ground with no additional insulation
Roof	Metal roof sheeting. Insulation of entire roof construction R3.2	Metal roof sheeting. Ceiling insulation of R3.5 (whole system R3.7)
External Glazing	Deemed-to-satisfy façade calculator in next section	U-values of a maximum of 5.0 (including the frame) and solar heat gain coefficient of 0.5 – single glazing
Ceilings	Ceiling tiles	As per deemed-to-satisfy model
Internal Partitions	Plasterboard as detailed in Clarke Hopkins Clarke documentation	As per deemed-to-satisfy model
Artificial Lighting	Illumination power densities and usage profile as per deemed-to-satisfy requirements of Part J6 and Specification JV respectively	Design illumination power densities shall be at least 20% lower than NCC requirements
HVAC System	A VRV system for heating and cooling to nominated spaces. The COP for cooling is 2.8. Temperature setpoint is 18-26 degrees Celsius for heating and cooling respectively Air flow rate as required by Part F4	A VRV split system for heating and cooling to nominated spaces. The COP for cooling shall be minimum 3.5. Temperature setpoint is 18-26 degrees Celsius for heating and cooling respectively Air flow rate as required by Part F4
HVAC Operation	HVAC usage profile as per Specification JV	As per deemed-to-satisfy model
Location and Weather File	Melbourne 1971 TRY weather file	As per deemed-to-satisfy model
Domestic Hot Water	Not required for this calculation	
Lift Energy	Not applicable	
Infiltration Rate	Pressurised areas have an infiltration rate of 1 air change per hour, non-pressurised areas have an infiltration rate of 1.5 air changes per hour	As per deemed-to-satisfy model
Occupancy	Occupancy heat gains are 75W/person for sensible heat gain and 55W/person for latent heat gain	As per deemed-to-satisfy model
Appliances	Appliance heat gains and usage profile as per Specification JV	As per deemed-to-satisfy model
Information	Information is based on planning package supplied to Energy Water and Environment by Clarke Hopkins Clarke	As per deemed-to-satisfy model

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Deemed to Satisfy Façade Calculator Reference - Ground Floor

Wall U-Value (W/m².K)	Method 2 Glazing U-Value (W/m².K)	SHGC
0.36	4.81	0.36

Deemed to Satisfy Façade Calculator Reference – Level 1

Wall U-Value (W/m².K)	Method 2 Glazing U-Value (W/m².K)	SHGC
0.36	5.80	0.46

Appendix B – BESS and STORM Calculations

B.1 BESS Assessment

The full BESS assessment is shown on the overleaf.

BESS Report

This BESS report outlines the sustainable design commitments of the proposed development at 32 Station Pl Sunshine VIC 3020. 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 Brimbank 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.

32 Station Pl, Sunshine 3020 Sunshine

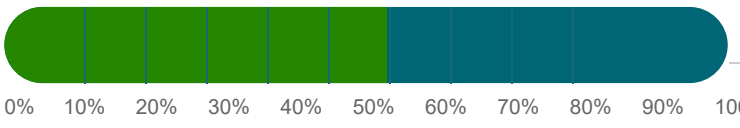
Site area: 11355 m^2 ·
Site type: Non-residential development m^2 ·
Building Floor Area: 1160 m^2 ·
Date of Assessment: 22 Apr 2021 ·
Version: V5, 1.6.2-B.296 ·
Applicant: patrick@ewenvironment.com.au

Project Identifier
98F6BC77

Published
http://bess.net.au/projects/98F6BC77-V1

Your BESS score is

+ 53%



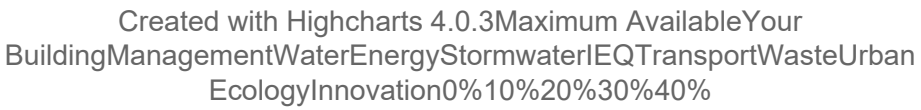
50% +
Best Practice

70% +
Excellence

% of Total	Category	Score	Pass
3 %	Management	67 %	
4 %	Water	50 %	✓
14 %	Energy	50 %	✓
14 %	Stormwater	100 %	✓
11 %	IEQ	67 %	✓
5 %	Transport	60 %	
2 %	Waste	33 %	
1 %	Urban Ecology	12 %	

0 %	Innovation	0 %

How did this Development Perform in each Environmental Category?



Sustainable design commitments by category

The sustainable design commitments for this project are listed below. These are to be incorporated into the design documentation and subsequently implemented.

Management

67% - contributing 3% to overall score

Credit	Disabled Scoped out Score
Management 2.3 Thermal Performance Modelling - Non-Residential	100 %
Management 2.4 Thermal Performance Modelling - Non-Residential	100 %
Management 3.2 Metering	100 %

Management 3.3 Metering	100 %
Management 4.1 Building Users Guide	100 %

Management 2.3 Thermal Performance Modelling - Non-Residential

100%

Score Contribution	This credit contributes 22.2% towards this section's score.
Aim	To encourage and recognise developments that have used modelling to inform passive design at the early design stage

Questions

Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star? *

Yes

Management 2.4 Thermal Performance Modelling - Non-Residential

100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To encourage and recognise developments that have used modelling to inform passive design at the early design stage

Questions

Has a preliminary Section J facade assessment been undertaken? *

Yes

Management 3.2 Metering

100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To provide building users with information that allows monitoring of energy and water consumption
Notes	Metering shall be provided to the building as part of monitoring the overall school energy use

Questions

Have utility meters been provided for all individual commercial tenants? *

Yes

Management 3.3 Metering 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To provide building users with information that allows monitoring of energy and water consumption

Questions

Have all major common area services been separately submetered? *

Yes

Management 4.1 Building Users Guide 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	To encourage and recognise initiatives that will help building users to use the building efficiently

Questions

Will a building users guide be produced and issued to occupants? *

Yes

Water 50% - contributing 4% to overall score

Credit	Disabled	Scoped out	Score
Water 1.1 Potable water use reduction			40 %
Water 3.1 Water Efficient Landscaping			100 %
Water 4.1 Building Systems Water Use Reduction		✔	N/A

Water Approachs

What approach do you want to use Water?	Use the built in calculation tools
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?	No

Water fixtures, fittings and connections

	Learning Building (Type is Office as School is Not an Option)
Showerhead	Scope out
Bath	Scope out
Kitchen Taps	>= 6 Star WELS rating
Bathroom Taps	>= 6 Star WELS rating
Dishwashers	Scope out
WC	>= 4 Star WELS rating
Urinals	Scope out
Washing Machine Water Efficiency	Scope out
Which non-potable water source is the dwelling/space connected to?	-1

Water 1.1 Potable water use reduction 40%

Score Contribution	This credit contributes 83.3% towards this section's score.
Aim	Water 1.1 Potable water use reduction (interior uses) What is the reduction in total water use due to efficient fixtures, appliances, and rainwater use? To achieve points in this credit there must be >25% potable water reduction. You are using the built in calculation tools. This credit is calculated from information you have entered above.
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.

Calculations

Reference (kL) *

1591

Proposed (excluding rainwater and recycled water use) (kL) *

1016

Rainwater or recycled water supplied (Internal + External) (kL) *

-

Proposed (including rainwater and recycled water use) (kL) *

1016

% Reduction in Potable Water Consumption * Percentage %

36 %

Water 3.1 Water Efficient Landscaping 100%

Score Contribution	This credit contributes 16.7% towards this section's score.
Aim	Are water efficiency principles used for landscaped areas? This includes low water use plant selection (e.g. xeriscaping). Note: food producing landscape areas and irrigation areas connected to rainwater or an alternative water source are excluded from this section.

Questions

Will water efficient landscaping be installed? *

Yes

Water 4.1 Building Systems Water Use Reduction N/A

This credit was scoped out: No water to be used in heat rejection

Aim	Will the project minimise water use for building systems such as evaporative cooling and fire testing systems?

Energy

50% - contributing 14% to overall score

Credit	Disabled	Scoped out	Score
Energy 1.1 Thermal Performance Rating - Non-Residential			12 %
Energy 2.1 Greenhouse Gas Emissions			100 %
Energy 2.2 Peak Demand			100 %
Energy 2.3 Electricity Consumption			100 %
Energy 2.4 Gas Consumption	✔	✔	N/A
Energy 3.1 Carpark Ventilation		✔	N/A
Energy 3.2 Hot Water			100 %
Energy 3.7 Internal Lighting - Non-Residential			100 %
Energy 4.1 Combined Heat and Power (cogeneration / trigeneration)	✔	✔	N/A

Use the BESS Deem to Satisfy (DtS) method for Energy?	No

Non-Residential Spaces Energy Profiles

	Learning Building (Type is Office as School is Not an Option)
Heating, Cooling & Comfort Ventilation - Electricity Reference fabric & services kWh	76200.0
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & reference services kWh	74066.0
Heating, Cooling & Comfort Ventilation - Electricity Proposed fabric & services kWh	60452.0
Hot Water - Electricity Reference kWh	2265.0
Hot Water - Electricity Proposed kWh	2265.0
Lighting - Reference kWh	22860.0
Lighting - Proposed kWh	18288.0
Peak Thermal Cooling Load Reference fabric and services kW	91.0
**Peak Thermal Cooling Load ** kW	68.0

Proposed fabric and services

Energy 1.1 Thermal Performance Rating - Non-Residential 12%

Score Contribution	This credit contributes 44.4% towards this section's score.
Aim	Reduce reliance on mechanical systems to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?

Calculations

Total Improvement * Percentage %

2 %

Energy 2.1 Greenhouse Gas Emissions 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	Reduce the building's greenhouse gas emissions
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?

Calculations

Reference Building with Reference Services (BCA only) * kg CO2

80034.3

Proposed Building with Proposed Services (Actual Building) * kg CO2

63971.3

% Reduction in GHG Emissions * Percentage %

20 %

Energy 2.2 Peak Demand 100%

Score Contribution	This credit contributes 5.6% towards this section's score.

Aim	Reduce demand on electrical infrastructure during peak cooling periods
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?

Calculations

Peak Thermal Cooling Load - Baseline * kW

91.0

Peak Thermal Cooling Load - Proposed * kW

68.0

Peak Thermal Cooling Load - % Reduction * Percentage %

25 %

Energy 2.3 Electricity Consumption 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	Reduce consumption of electricity
Criteria	What is the % reduction in annual electricity consumption against the benchmark?

Calculations

Reference * kWh

78465.0

Proposed * kWh

62717.0

Improvement * Percentage %

20 %

Energy 2.4 Gas Consumption N/A

This credit was scoped out: No gas connection in use

This credit was disabled: No gas connection in use

Aim	Reduce consumption of gas
Criteria	What is the % reduction in annual gas consumption against the benchmark?

Energy 3.1 Carpark Ventilation N/A

This credit was scoped out: No car park as part of this project

Energy 3.2 Hot Water 100%

Score Contribution	This credit contributes 5.6% towards this section's score.
Criteria	What is the % reduction in annual hot water system energy use (gas and electricity) against the benchmark?

Calculations

Reference * kWh

2265.0

Proposed * kWh

2265.0

Improvement * Percentage %

0 %

Energy 3.7 Internal Lighting - Non-Residential 100%

Score Contribution	This credit contributes 11.1% towards this section's score.
Aim	Reduce energy consumption associated with internal lighting

Questions

Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J6.2a of the NCC 2019 Vol 1? *

Yes

Energy 4.1 Combined Heat and Power (cogeneration / trigeneration)

N/A

This credit was scoped out: No cogeneration or trigeneration system in use.

This credit was disabled: No cogeneration or trigeneration system in use.

Aim	Reduce energy consumption
Criteria	Does the CHP system reduce the class of buildings GHG emissions by more than 25%?

Stormwater

100% - contributing 14% to overall score

Credit	Disabled Scoped out Score
Stormwater 1.1 Stormwater Treatment	100 %

Which stormwater modelling are you using?	Melbourne Water STORM tool

Stormwater 1.1 Stormwater Treatment

100%

Score Contribution	This credit contributes 100.0% towards this section's score.
Aim	To achieve best practice stormwater quality objectives through reduction of pollutant load (suspended solids, nitrogen and phosphorus)
Criteria	Has best practice stormwater management been demonstrated?

Questions

STORM score achieved *

101

Calculations

Min STORM Score *

100

IEQ

67% - contributing 11% to overall score

Credit	Disabled	Scoped out	Score
IEQ 1.4 Daylight Access - Non-Residential			67 %

IEQ 1.4 Daylight Access - Non-Residential

67%

Score Contribution	This credit contributes 100.0% towards this section's score.
Aim	To provide a high level of amenity and energy efficiency through design for natural light.
Criteria	What % of the nominated floor area has at least 2% daylight factor?

Questions

% Achieved ? *

64 %

Transport

60% - contributing 5% to overall score

Credit	Disabled	Scoped out	Score
Transport 1.4 Bicycle Parking - Non-Residential			100 %
Transport 1.5 Bicycle Parking - Non-Residential Visitor			100 %
Transport 2.1 Electric Vehicle Infrastructure		✔	N/A
Transport 2.3 Motorbikes / Mopeds		✔	N/A

Transport 1.4 Bicycle Parking - Non-Residential

100%

Score Contribution	This credit contributes 40.0% towards this section's score.
Aim	To encourage and recognise initiatives that facilitate cycling
	Have the planning scheme requirements for employee bicycle

Criteria	parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)?
Notes	Existing bike parking is provided on site

Questions

Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)? *

Yes

Bicycle Spaces Provided ? *

15

Transport 1.5 Bicycle Parking - Non-Residential Visitor 100%

Score Contribution	This credit contributes 20.0% towards this section's score.
Aim	To encourage and recognise initiatives that facilitate cycling
Criteria	Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)?
Notes	Existing bike parking is provided on site

Questions

Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)? *

Yes

Bicycle Spaces Provided ? *

3

Transport 2.1 Electric Vehicle Infrastructure N/A

This credit was scoped out: Not applicable as no car parking has been provided

Aim	To facilitate the expansion of infrastructure to support electric vehicle charging

Transport 2.3 Motorbikes / Mopeds

N/A

This credit was scoped out: Not applicable as no car parking has been provided as part of these works

Aim	To encourage and recognise initiatives that help to minimise the use of private passenger cars

Waste

33% - contributing 2% to overall score

Credit	Disabled Scoped out Score
Waste 2.2 - Operational Waste - Convenience of Recycling	100 %

Waste 2.2 - Operational Waste - Convenience of Recycling

100%

Score Contribution	This credit contributes 33.3% towards this section's score.
Aim	To minimise recyclable material going to landfill
Notes	As part of existing waste plan recycling facilities are provided

Questions

Are the recycling facilities at least as convenient for occupants as facilities for general waste? *

Yes

Urban Ecology

12% - contributing 1% to overall score

Credit	Disabled Scoped out Score
Urban Ecology 1.1 Communal Spaces	100 %

Urban Ecology 1.1 Communal Spaces

100%

Score Contribution	This credit contributes 12.5% towards this section's score.
Aim	To encourage and recognise initiatives that facilitate interaction between building occupants
Criteria	Is there at least the following amount of common space measured in square meters : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251?
Notes	External space around the building = 270, there are further spaces internally

Questions

Common space provided * Square Metres

270.0

Calculations

Minimum Common Space Required * Square Metres

71

Innovation

0% - contributing 0% to overall score

Items to be marked on floorplans

Management 3.2: Individual utility meters annotated — To be printed

Floorplans & elevations - Check meters shall be provided to the building as part of wider school monitoring

Management 3.3: Common area submeters annotated — To be printed

Floorplans & elevations - Check meters shall be provided to the building as part of wider school monitoring

Water 3.1: Water efficient garden annotated Floorplans & elevations - Refer to architectural plans	To be printed
Stormwater 1.1: Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips) Floorplans & elevations - Refer to SDA with marked up raingarden location in Appendix B	To be printed
Transport 1.4: All nominated non-residential bicycle parking spaces Floorplans & elevations - Refer to site plan which shows existing bike racks	To be printed
Transport 1.5: All nominated non-residential visitor bicycle parking spaces Floorplans & elevations - Refer to architectural site plan which shows existing bike racks	To be printed
Waste 2.2: Location of recycling facilities Floorplans & elevations - Refer to architectural site plans which shows existing bin store	To be printed
Urban Ecology 1.1: Size and location of communal spaces Floorplans & elevations - Refer to architectural plans which show communal external and internal spaces for the building for students	To be printed

Documents and evidence

Management 2.3: Preliminary modelling report Refer to Appendix A of SDA - Refer to Appendix A of SDA	To be printed
Management 2.4: Section J glazing assessment Refer to Appendix A of SDA - Refer to Appendix A of SDA	To be printed
Energy 1.1: Energy Report showing calculations of reference case and proposed buildings Refer to Appendix A of SDA - Refer to Appendix A of SDA	To be printed
Energy 3.7: Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used. Refer to SDA - Refer to SDA	To be printed
Stormwater 1.1: STORM report or MUSIC model	To be printed

Refer to Appendix B of the SDA - Refer to Appendix B of the SDA

IEQ 1.4: A short report detailing assumptions used and results achieved. Refer to SDA Appendix C - Refer to SDA Appendix C — To be printed

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.

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B.2 STORM Report

Melbourne Water STORM Rating Report

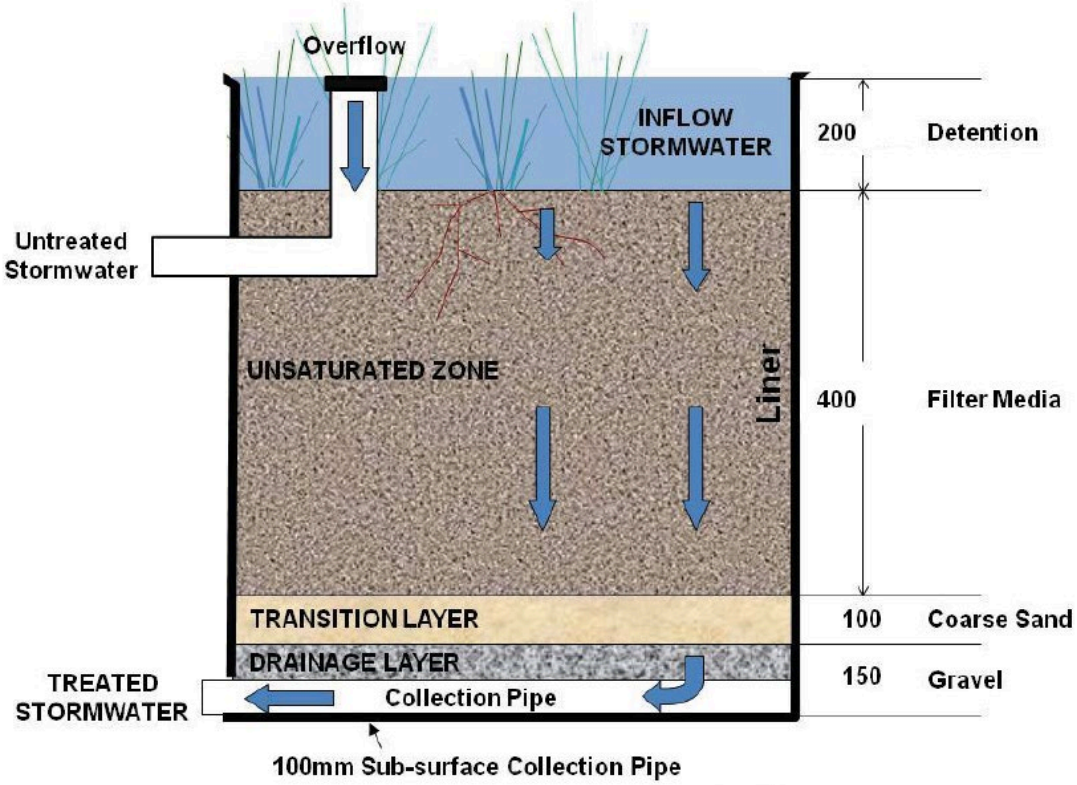
TransactionID:	1139410	
Municipality:	BRIMBANK	
Rainfall Station:	BRIMBANK	
Address:	32 Station Place	
	Sunshine	
	VIC	3020
Assessor:	Patrick Phelan	
Development Type:	Other	
Allotment Site (m2):	11,355.00	
STORM Rating %:	101	

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof Area and Learning Courts	740.00	Raingarden 100mm	9.00	0	117.75	0.00
Deck and Hard Surface Around Sandpit	126.00	None	0.00	0	0.00	0.00

B.3 Details of Water Treatment

Confirming that the water treatment quality standards of Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO 1999 are met by this design.
The diagrams on the overleaf show the cross section and isometric section of the rain gardens proposed for the development. The raingardens will be built and maintained in accordance with the document on Melbourne Water's website. Refer to overleaf for attached document.

Raingardens will be maintained half yearly as a part of the body corporate maintenance plan.



B.4 Raingarden Quality, Filtration and Maintenance

The filtration of the raingardens will meet the water quality standards as per 1 point in the Green Star Design and As Built V1.3 tool. The following table shows the standards.

Pollutant	**Reduction Target** (% of the typical urban annual load).
	A
Total Suspended Solids (TSS)[1]	80%
Gross Pollutants	85%
Total Nitrogen (TN)[2]	30%
Total Phosphorus (TP)[2]	30%
Total Petroleum Hydrocarbons[3]	60%
Free Oils[3]	90%

[1] Load based on the following particulate size distribution (by mass): 20% <20 µm; 20% 20-60 µm; 20% 60-150 µm; 20% 150-400 µm; 20% 400-2000 µm

[2] Load includes particulate and dissolved fraction.

[3] This requirement is not applicable where the site contains less than a total of 200m2 of uncovered areas where vehicles are likely to transit and/or park e.g. roads, loading docks, refuelling bays, car parking etc.

A raingarden maintenance plan has been specified for the proposed OLOTICSPS Learning Building and is attached on the overleaf.

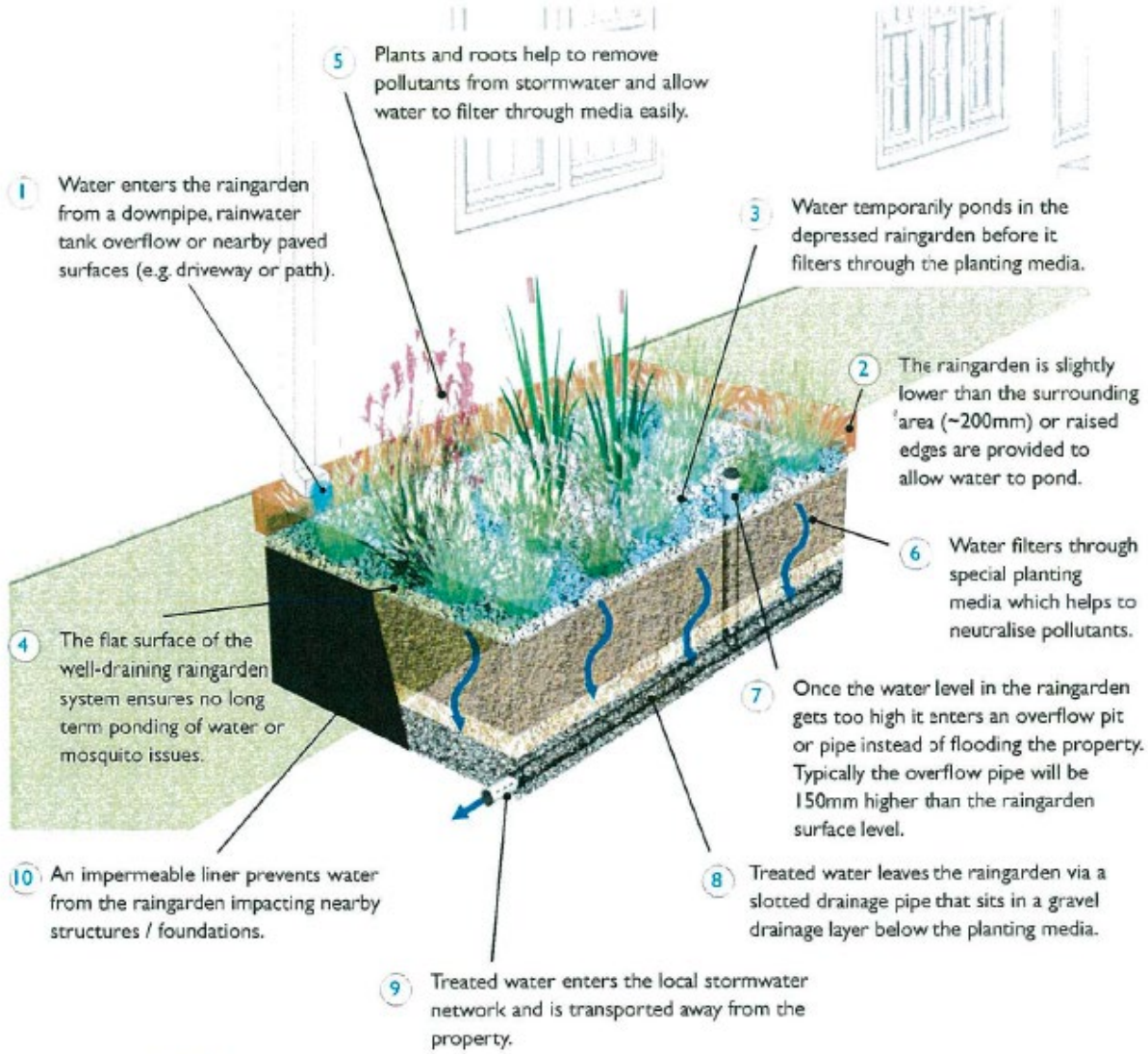
Tips for undertaking maintenance

Things to look for and how to fix them.

Scour or erosion	**Weeds**
Erosion and scour reduce the overall area of treatment by directing flows to certain areas only. Erosion or scour can be re-profiled with hand tools, limiting the damage to adjacent vegetation. If fill material is required to create a flat surface, use an appropriate raingarden planting media mix. If erosion / scour keeps happening at the inlet, place some small rocks where erosion occurs.	Weeds can take over the plants which are needed in the raingarden for treatment. Hand pull weeds and dispose of appropriately. Plant bare patches if needed. Weeding should take place before the plants flower to reduce the likelihood of seed dispersal and further regeneration.
Rubbish, leaf litter or sediment	**Moss or clay on surface**
A lot of rubbish or leaf litter at the inlet or on the surface of the raingarden can affect how well water can enter and filter through the raingarden. This material can be removed easily by hand or with tongs / rakes. Collected litter should be placed into bags or similar for disposal.	Moss or clay on the surface of the raingarden can result in a crust forming which prevents water from filtering and being treated. Use hand tools to scrape off the clay or moss and dispose of appropriately. Check raingarden drains.
Uneven surface	**Raingarden outlets not draining**
An uneven surface may result in some areas not getting wet during rain events, reducing the area of treatment. Depressions or mounds can be flattened with hand tools, limiting the damage to vegetation.	Blockages of outlet pits and pipes can cause a flooding risk for the property as water is unable to leave the raingarden. Blockages are typically caused by sediment, leaf litter and rubbish. Blockages should be removed manually, by hand or with hand tools such as tongs and shovels. Large blockages in pits may require vacuuming or other appropriate machinery.
Elevated surface level / lots of excess sediment on surface	**Impermeable liner**
If sediment has entered the system and has raised the level of the surface, this reduces the amount of water which can be filtered. Use hand tools to remove/scrape sediment from around the plants. Remove sediment from the raingarden and dispose of appropriately.	An impermeable liner (e.g. geotextile or flexible membrane) is sometimes used to ensure water does not move into the surrounding soils. This may be required if the surrounding soils are very sensitive to any added moisture (e.g. sodic soils, shallow groundwater or close proximity to significant structures such as building foundations).
Unhealthy or dying plants / bare patches	**Raingarden holding water on the surface because of blocked planting media**
Good plant cover is critical for raingardens so if plants are looking stressed in dry periods, irrigation may be required. Remove (prune) any areas affected by disease or pests. If the plants are dying and have created bare patches, the plants need to be replaced. If the plants keep struggling, replace with a plant type which is growing well in the raingarden.	Generally raingardens should be able to filter water at a rate of ~100mm per hour. If the surface of the raingarden is clogged (by clay or moss etc.) or the underlying filter media is not appropriate then water will not be able to drain through the system to be treated. If the surface is clogged use hand tools to scrape off the clay or moss. If this doesn't fix the drainage issue remove an area of planting media to expose the filter media. Check that water can pass through the filter media by pouring water on its exposed surface. If the water can drain then replace the top planting media and check for blockages elsewhere. If the water does not drain the filter media will need to be replaced.

Raingarden Maintenance

This diagram depicts an in-ground raingarden. Raised bed raingardens are also common (refer to photograph).



Note: It is important not to add fertiliser, compost or floatable mulch to a raingarden as the nutrients will pass through the raingarden and pollute the Bay. The plants best suited to raingardens will grow well in the planting media and take nutrients for their growth from the water entering the raingarden.

Maintenance Checklist

The property owner is responsible for checking the maintenance items in this checklist at the recommended frequency at the bottom of the table. The maintenance log at the bottom of the page should be filled in once each maintenance check is complete. Upkeep of this maintenance log should continue throughout the life of the raingarden.

Item	Raingarden element	Inspection item	Y/N	Likely maintenance task
1	Raingarden inlet	Is there scour or erosion where water enters the raingarden?		Re-profile with hand tools, place gravel or stones at the inlet.
		Is there rubbish, leaf litter or sediment blocking the inlet?		Remove by hand and dispose responsibly.
2	Raingarden surface level	Is the level of the raingarden surface sitting less than 5 cm below the raingarden edges/borders?		Remove sediment from the surface so it is sitting about 10-20 cm below surrounding areas.
3	Raingarden temporary detention	Is there moss or clay on the surface of the raingarden which seem to be slowing the filtration of flows?		Remove the crust from the top of the raingarden and check water will filter through exposed media.
4	Raingarden surface	Are there areas which appear to be higher and are not getting wet during rain events?		Smooth out surface so it is flat with hand tools.
		Are there areas which have been eroded away or scoured?		
5	Plants	Are the plants looking unhealthy or dying?		Prune diseased sections, irrigate and/or replace dead plants. If plants keep dying, replace with a different type which is doing well. Do not use fertilizer to improve plant health as this will pollute the raingarden.
		Are there bare patches forming between plants?		
		Are there weeds present?		Remove weeds by hand and dispose responsibly.
6	Planting media	Is the raingarden holding water for more than a couple of hours after the rain has stopped?		Remove and replace the top 100 mm of planting material (loamy sand).
7	Overflow pit / pipe	Is there anything blocking the top of the overflow pit / pipe preventing water from entering?		Remove blockages and dispose responsibly.
8	Underdrainage	Is there rain draining to the bottom of the raingarden following heavy rain?		Flush the underdrain or uncover it to check for blockages.
9	Stormwater network connection	Is there water ponding in the overflow pit or pipe and not entering the stormwater network?		Remove blockages and dispose responsibly.

Maintenance frequency

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			x						x		

+ after heavy rainfall

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B.5 Locations of Raingardens

Refer to attached architectural Ground Floor Plan for locations and notes on raingardens.

Legend -

- SETOUT POINT
- EXISTING BUILDING TO REMAIN - NO WORKS
- REFURBISHMENT WORKS TO EXISTING BUILDING
- NEW BUILDING WORKS
- EXISTING RELOCATABLES
- EXISTING BUILDINGS AFTER RELOCATION
- ASPHALT PAVING
- CONCRETE PAVING

VICTORIA STREET

MONASH STREET

SECONDARY SCHOOL ENTRY

EXISTING GATE

CHURCH

CHESS

PASSIVE PLAY

EXISTING TREES

(ASTROTURF)

HANDBALL

CRICKET/ HANDBALL

BASKETBALL/ NETBALL

MARY MACKILLOP VILLAGE

SITE STORE

BUILDING 4: MARY MACKILLOP CENTRE

BUILDING 2: ART/STAFF

EXISTING BIKE PARK (18 BICYCLE SPOTS)

BITUMEN PLAY AREA (PARISH CARPARK WEEKENDS)

TREE 7 2300 SRZ TPZ 4200

TREE 6 2300 SRZ TPZ 4200

TREE 5 2300 SRZ TPZ 4200

TREE 9 SRZ 1.5 TPZ 2.0

SPITE

EXISTING SITE ACCESS

POTENTIAL AREA FOR NEW LINEMARKING OVAL

EXISTING SHADESAILS & PLAY EQUIPMENT

EXISTING TREES/ GRASS TABLES & SEATS

Civil pit and pump to raingarden to collect all roof and learning court areas. To be coordinated with civil

9m2 (minimum size) raingarden

PLAYING FIELD (ASTROTURF)

PROPOSED LEARNING BUILDING

1180m²

29920

20626

LEARNING COURT

TYRES

SANDPIT

DECK

SAND PLAY

EXISTING PATH

BUILDING 7: FOUNDATION & YR 1 CLASSROOMS

BUILDING 3: MULTIPURPOSE HALL

PARISH HALL

BUILDING 1: ADMINISTRATION

GARDEN

AC COMPOUND

EX PLANTER

TREE 11 2700 SRZ TPZ 5400

TREE 10 2600 SRZ TPZ 5100

TREE 2 2200 SRZ TPZ 4400

TREE 3 2700 SRZ TPZ 5400

EXISTING TREES

GRASSED AREA

EXISTING GARDEN

EXISTING FENCE

EXISTING GATE

MAIN SCHOOL ENTRY

EXISTING TREE

ON STREET ANGLED PARKING (NO TIME RESTRICTION)

ON STREET ANGLED PARKING (2HR TIME RESTRICTION)

ON STREET PARKING (2HR TIME RESTRICTION)

ON STREET PARKING

STATION PLACE

TOWN PLANNING

Revision/Issue		Date
P 1	Preliminary	04.03.2021
P 2	Issued for Coordination	06.04.2021

ClarkeHopkinsClarke

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www.chc.com.au

Sydney
3/78 Campbell Street
Surry Hills NSW 2010
Telephone (02) 9221 9200
Email studio@chc.com.au
www.chc.com.au

Scale	1 : 200 @ A1
Date	January 2021
Drawn	W.L
Architect	S.L

Project
Our Lady of The Immaculate Conception Parish Primary School, 32 Station Place, Sunshine

Drawing
Proposed Site Plan

Drawing No.
200174/TP02 P2

Appendix C – Daylight Assessment

A daylight assessment has been carried out for the Our Lady of the Immaculate Conception Sunshine Primary School Learning Building using the IES VE Software.

The analysis showed that for the primary usable spaces the percentage of area achieving a daylight factor of 2% or above was 64% of area.

The following table shows the daylight factor for each level and the total weighted daylight factor.

Area	Area of Primary Space Above DF 2% (m^2)	Area of Primary Space (m^2)	% Area of Primary Space Above DF 2%
Ground	307	509	60.3%
Level 1	348	507	68.0%
		Weighted Average	64.4%

The assumptions mate for the daylight analysis are shown in the following table.

Element	Description
Weather file	ACADS-BSG/CSIRO Melbourne Regional Office Test Reference Year
Sky	Uniform Design Sky
Software	Integrated Environmental Solutions – Virtual Environment 2019 with Radiance Toolkit
Working Plane	Daylight factors taken at floor level
Floor / Roof Reflectance	0.3
Wall Reflectance	0.7
Ceiling Reflectance	0.8
Ground Reflectance	0.2
External Wall Reflectance	0.5 (Medium paint colour)
External Glazing VLT	Single glazing with VLT 58% Note- this is similar to the glass selected to meet the energy efficiency requirements for these spaces
Internal glazing VLT	Not Applicable

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Appendix D – Sample Building User Guide

The sample building user guide – *Building User's Guide – Expected Content* has been attached on the overleaf.

Building User's Guide -

Expected Content

City of Port Phillip ASSIST
03 9209 6777 www.portphillip.vic.gov.au/contact_us.htm

General Building Information

Building Orientation

Location of the building on a map with surrounding services (train stations, tram/bus stations, post office, shopping centres, schools and childcare centres).

Brief description of the building.

Building's access

Location of bike, motorcycle and car parking, including all modes of visitors' parking on a site plan + site specific pictures.

Communal spaces

Location and description of communal and shared spaces on architectural/ landscape drawings.

Disabled facilities

Provide information on ramp locations, disabled toilets, lifts, disabled refuge areas.

Security

CCTV

Provide information on the CCTV system, operation and purpose.

Access control

Provide description and pictures of security systems to control access to the building.

Building Environment

Heating:

Description of the operating and maintenance of the heating system.

A picture of the installed system is to be provided.

Receipts, warranties and product users notice are to be annexed to the Building user's guide.

Cooling and ventilation

Description of the operating and maintenance of the cooling/ventilation system.

A picture of the installed system is to be provided.

Receipts, warranties and product users notice are to be annexed to the Building user's guide.

Lighting

Description of the lighting system (detection lighting, passive infrared lighting, etc.).

Receipts, warranties and product users notice are to be annexed to the Building user's guide.

External shading

Description, operation and purpose of the external shading device.

Picture of the installed device and operating system.

Water management

Cold Water system

Description of WC water flush systems.

Description of the potable water system.

Description of the grey water system.

Description of the purple water system (tap and third pipe location).

Description of the black waster system (pipe location).

Water tanks location, description, picture and maintenance.

Receipts, warranties and product users notice of the water tank are to be annexed to the Building user's guide.

Hot Water System

Description, operation, location and maintenance of the Hot Water System.

Receipts, warranties and product users notice are to be annexed to the document.

Water reduction strategy

Description and location of the metering system.

WELS certificate of water appliances.

Picture of the water meter, submeters.

Power

Energy production

PV: location and maintenance of PVs systems.

Receipts, warranties and product users notice are to be annexed to the document.

Energy saving strategy

Description and location of energy meters and systems.

Cleaning and Waste Management

Cleaning of windows, facades and common areas.

Required cleaning frequency and description of products to be used.

Waste management

Location and pictures of bins and waste facilities, including organic waste disposal systems and opportunities within the development where compost can be used.

Waste reduction strategy

Compost guide.

Soft Plastic strategy.

E Waste.

Open space management

Description of the open space (landscape plan), irrigation and maintenance strategies.

Picture of the open space and the irrigation systems to be provided.

Emergency Information

Fire safety

Description of the fire/smoke alarm system and maintenance.

Location of Emergency exist and assembly points on a site plan.

Accident/incident reporting

Contact details of appropriate emergency services.

Location of first kit aid + picture of kit.

Appendix C
Water Sensitive Urban Design Assessment

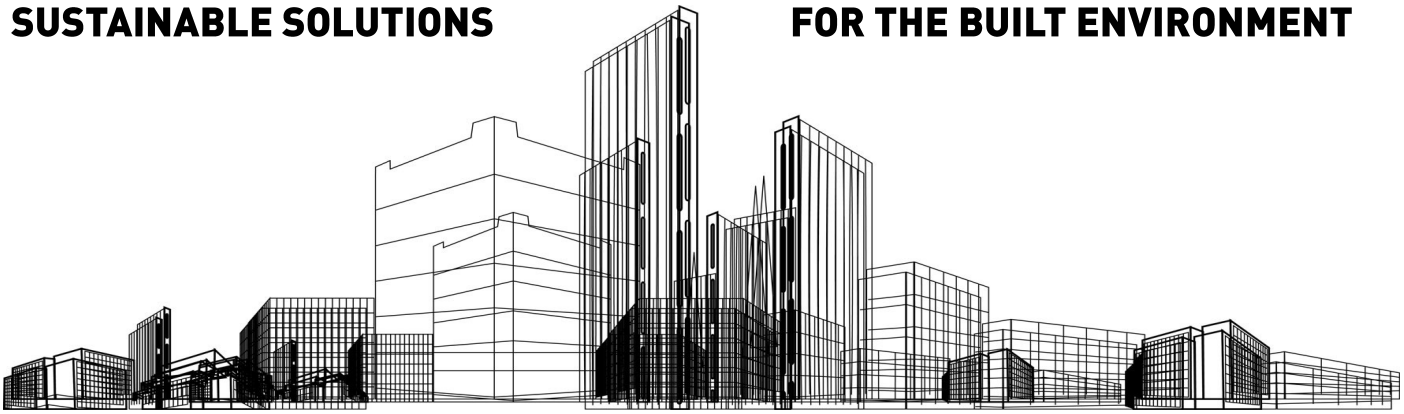
ENERGY
WATER
ENVIRONMENT

OUR LADY OF THE IMMACULATE CONCEPTION SUNSHINE PRIMARY SCHOOL

WATER SENSITIVE URBAN DESIGN REPORT V1-DRAFT

21ST JUNE, 2021

SUSTAINABLE SOLUTIONS FOR THE BUILT ENVIRONMENT



Date:	21/6/2021
Project Number:	PJ526
Project Title:	Our Lady of the Immaculate Conception
To:	Gabrielle Lewis (Clarke Hopkins Clarke) Brimbank City Council
From:	Patrick Phelan

Document Title: Water Sensitive Urban Design Report Version 1

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2. Results 2

3. Conclusion 3

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A.3 Details of Water Treatment 6

A.4 Raingarden Quality, Filtration and Maintenance 8

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Appendix C Flow and Detention Calculations 13

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1. Introduction

The purpose of this Water Sensitive Urban Design (WSUD) Report is to show the compliance of the Our Lady of the Immaculate Conception Sunshine Primary School development with Clause 53.18 Stormwater Management in Urban Development of the Brimbank Planning Scheme. Clause 53.18 stipulates that water sensitive urban design must be integrated into the proposed design and measured with an accepted WSUD performance measurement tool. The tool used to undertake the calculation for the Our Lady of the Immaculate Conception proposed design is Melbourne Water's STORM tool.

Brimbank City Council recognizes the importance of stormwater management and the effects on the surrounding environment. Part of the SMP includes addressing how the proposed development responds to the principles and requirements of Water Sensitive Urban Design (WSUD). The main objectives for WSUD are:

- To achieve the best practice water quality performance objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victoria Stormwater Committee 1999 (as amended). Currently, these water quality performance objectives are:
  - Suspended Solids - 80% retention of typical urban annual load;
  - Total Nitrogen - 45% retention of typical urban annual load;
  - Total Phosphorus - 45% retention of typical urban annual load; and
  - Litter - 70% reduction of typical urban annual load.
- To promote the use of water sensitive urban design, including stormwater re-use.
- To mitigate the detrimental effect of development on downstream waterways, by the application of best practice stormwater management through water sensitive urban design for new developments.
- To minimise peak stormwater flows and stormwater pollutants to improve the health of water bodies, including creeks, rivers and bays.
- To reintegrate 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 wellbeing.

2. Results

The minimum STORM rating for an effective WSUD is 100% using the STORM rating calculator. The STORM rating for the proposed Our Lady of the Immaculate Conception development is 101%. Refer to Appendix A for the STORM Rating Report which shows all inputs and the STORM Rating Score.

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The rating is achieved by the utilisation of a 9m^2 raingarden treating 740m^2 of the roof area and learning courts. Note that flow and detention requirements of Clause 53.18 are being undertaken by others. These are attached in Appendix C.

3. Conclusion

The proposed Our Lady of the Immaculate Conception development complies with Clause 53.18 by meeting the minimum STORM rating requirement of 100%. It achieves a STORM rating of 101% via the implementation of 9m^2 raingarden treating 740m^2 of the roof area and learning courts.

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Appendix A Stormwater Treatment Calculations and Requirements

A.1 STORM Rating Report

The Melbourne Water STORM Rating Tool report is shown below. Refer to architectural drawings for locations and sizes of raingardens.

Melbourne Water **STORM Rating Report**

TransactionID:	1139410	
Municipality:	BRIMBANK	
Rainfall Station:	BRIMBANK	
Address:	32 Station Place	
	Sunshine	
	VIC	3020
Assessor:	Patrick Phelan	
Development Type:	Other	
Allotment Site (m2):	11,355.00	
STORM Rating %:	101	

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Roof Area and Learning Courts	740.00	Raingarden 100mm	9.00	0	117.75	0.00
Deck and Hard Surface Around Sandpit	126.00	None	0.00	0	0.00	0.00

A.2 Treatment Areas

Total Catchment of roof and learning courts are shown on the attached drawings together with raingarden location.

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BUILDING 4: MARY MACKILLOP CENTRE

EXISTING SHADESAILS & PLAY EQUIPMENT

PROPOSED NEW OVAL LINEMARKING

740m2 of area to drain to raingarden

Raingarden

PLAYING FIELD (ASTROTURF)

COVERED AREA

ACC WC 5 m²
CLNR 4 m²
WC
WC
STAFF
STORE 5 m²
LIFT
MSB
DATA
CREATIVE ACTIVITIES 28 m²
STAFF 35 m²
QUIET 10 m²
RL 36.95
GLA 61 m²
COLLAB 87 m²
GLA 60 m²
STORY CORNER 30 m²
NOOK 5 m²
QUIET 13 m²
STAIR 10 m²
GLA 64 m²
GLA 60 m²
SEATS
LEARNING COURT
NEW GARDEN BED
CONDENSER UNITS
EXISTING PLANTERS
GRASSED AREA
NEW GARDEN BED
EX GRASSED AREA
NEW RAINGARDEN 9m²
NEW SAND PIT
NEW DECK
TYRES
NEW SAND PLAY
BUILDING 7: FOUNDATION & YR 1 CLASSROOMS
TREE 11
TREE 10
TREE 2
TREE 3
SRZ
TPZ
PROPERTY BOUNDARY LINE
GM

8820 6162 8100 8688
31770

Legend -

- ASPHALT PAVING
- CONCRETE PAVING
- PAVING UNITS
- RUBBER SURFACE
- SANDPIT
- GARDEN BED AREA
- GRASSED AREA
- SYNTHETIC TURF
- FFL 79.40 FLOOR LEVEL

TOWN PLANNING

Revision/Issue		Date
TP1	Town Planning Application	30.04.2021
TP2	Town Planning RFI	02.06.2021

ClarkeHopkinsClarke

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Surry Hills NSW 2010
Telephone (02) 9221 9200
Email studio@chc.com.au
www.chc.com.au

Scale	As indicated @ A1
Date	January 2021
Drawn	W.L
Architect	S.L

Project
Our Lady of the Immaculate Conception Sunshine Primary School, 32 Station Place, Sunshine

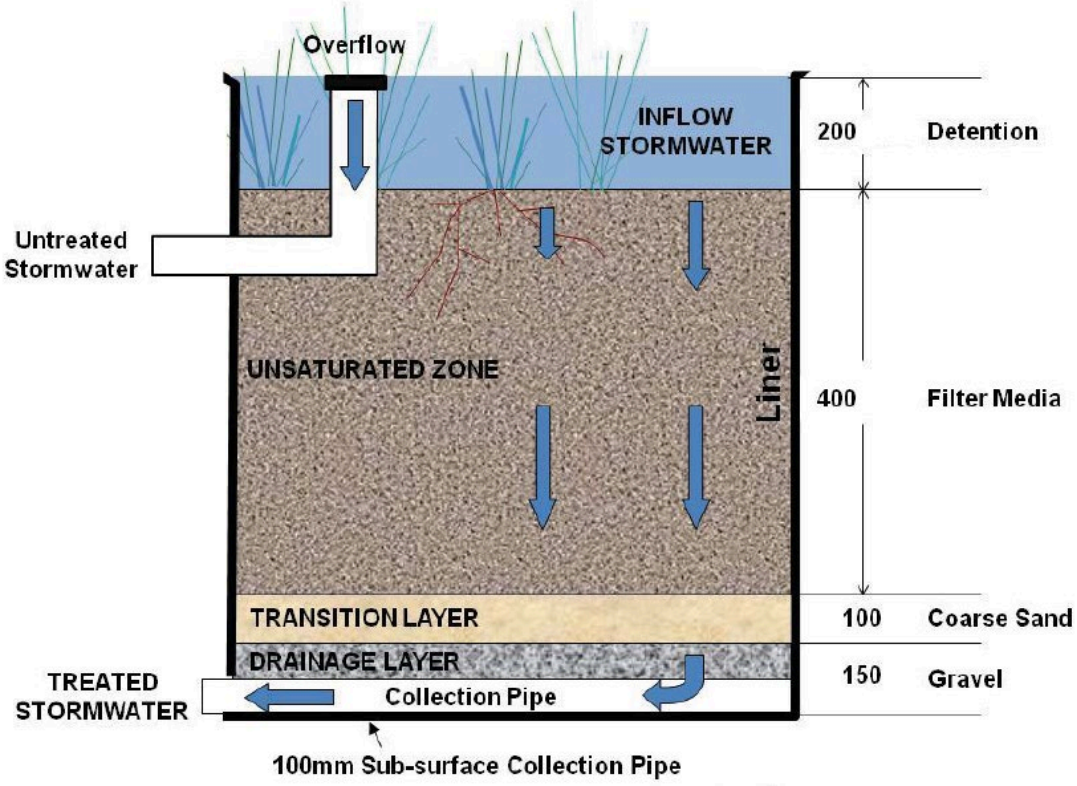
Drawing
Proposed Ground Floor Plan

Drawing No.
200174/TP03 TP2

A.3 Details of Water Treatment

Confirming that the water treatment quality standards of Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO 1999 are met by this design.
The diagrams on the overleaf show the cross section and isometric section of the rain gardens proposed for the development. The raingardens will be built and maintained in accordance with the document on Melbourne Water's website. Refer to overleaf for attached document.

Raingardens will be maintained half yearly as a part of the body corporate maintenance plan.



A.4 Raingarden Quality, Filtration and Maintenance

The filtration of the raingardens will meet the water quality standards as per 1 point in the Green Star Design and As Built V1.3 tool. The following table shows the standards.

Pollutant	**Reduction Target** (% of the typical urban annual load).
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[1] Load based on the following particulate size distribution (by mass): 20% <20 µm; 20% 20-60 µm; 20% 60-150 µm; 20% 150-400 µm; 20% 400-2000 µm

[2] Load includes particulate and dissolved fraction.

[3] This requirement is not applicable where the site contains less than a total of 200m2 of uncovered areas where vehicles are likely to transit and/or park e.g. roads, loading docks, refuelling bays, car parking etc.

A raingarden maintenance plan has been specified for the proposed OLOTICSPS Learning Building and is attached on the overleaf.

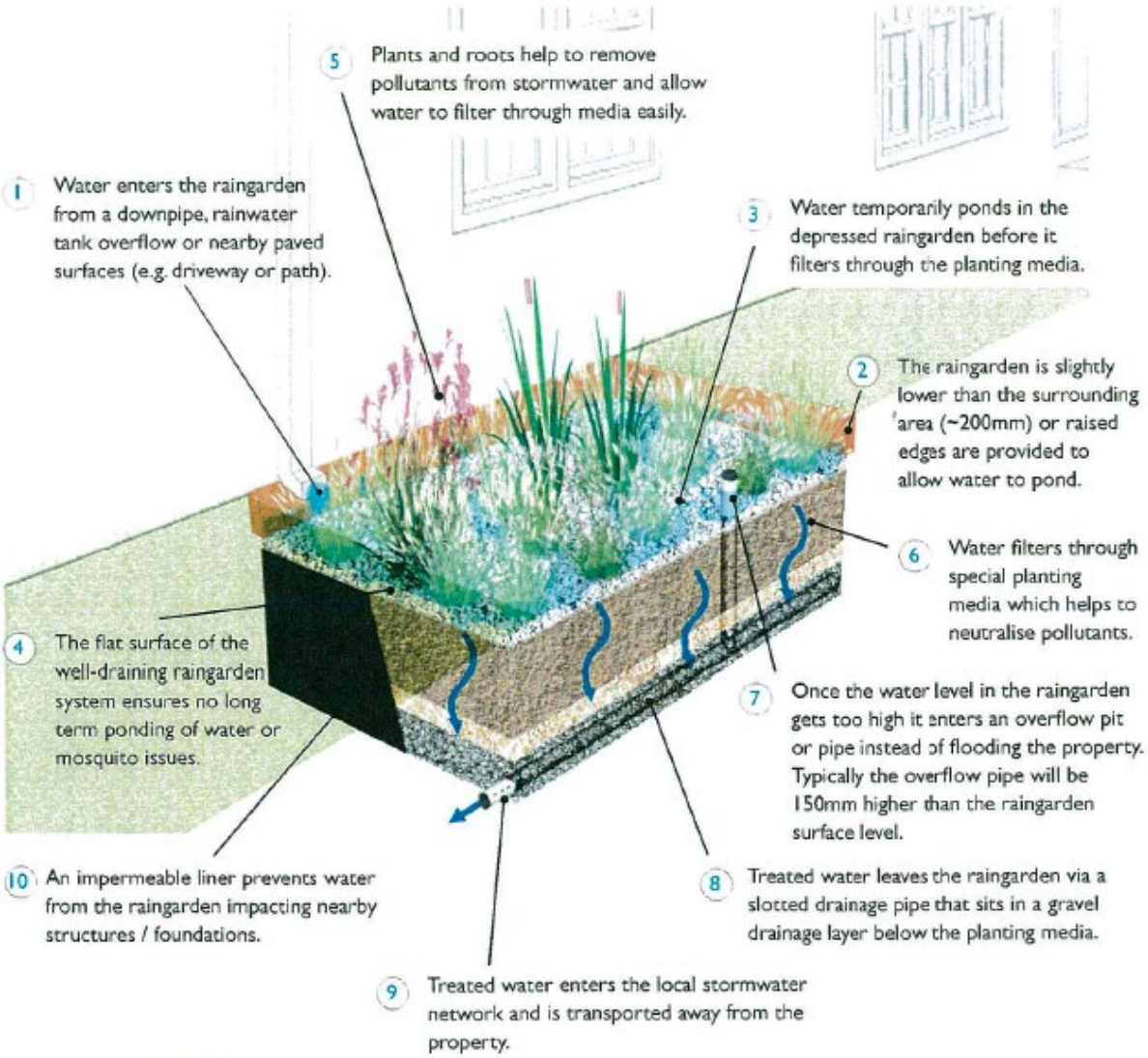
Tips for undertaking maintenance

Things to look for and how to fix them.

Scour or erosion	**Weeds**
Erosion and scour reduce the overall area of treatment by directing flows to certain areas only. Erosion or scour can be re-profiled with hand tools, limiting the damage to adjacent vegetation. If fill material is required to create a flat surface, use an appropriate raingarden planting media mix. If erosion / scour keeps happening at the inlet, place some small rocks where erosion occurs.	Weeds can take over the plants which are needed in the raingarden for treatment. Hand pull weeds and dispose of appropriately. Plant bare patches if needed. Weeding should take place before the plants flower to reduce the likelihood of seed dispersal and further regeneration.
Rubbish, leaf litter or sediment	**Moss or clay on surface**
A lot of rubbish or leaf litter at the inlet or on the surface of the raingarden can affect how well water can enter and filter through the raingarden. This material can be removed easily by hand or with tongs / rakes. Collected litter should be placed into bags or similar for disposal.	Moss or clay on the surface of the raingarden can result in a crust forming which prevents water from filtering and being treated. Use hand tools to scrape off the clay or moss and dispose of appropriately. Check raingarden drains.
Uneven surface	**Raingarden outlets not draining**
An uneven surface may result in some areas not getting wet during rain events, reducing the area of treatment. Depressions or mounds can be flattened with hand tools, limiting the damage to vegetation.	Blockages of outlet pits and pipes can cause a flooding risk for the property as water is unable to leave the raingarden. Blockages are typically caused by sediment, leaf litter and rubbish. Blockages should be removed manually, by hand or with hand tools such as tongs and shovels. Large blockages in pits may require vacuuming or other appropriate machinery.
Elevated surface level / lots of excess sediment on surface	**Impermeable liner**
If sediment has entered the system and has raised the level of the surface, this reduces the amount of water which can be filtered. Use hand tools to remove/scrape sediment from around the plants. Remove sediment from the raingarden and dispose of appropriately.	An impermeable liner (e.g. geotextile or flexible membrane) is sometimes used to ensure water does not move into the surrounding soils. This may be required if the surrounding soils are very sensitive to any added moisture (e.g. sodic soils, shallow groundwater or close proximity to significant structures such as building foundations).
Unhealthy or dying plants / bare patches	**Raingarden holding water on the surface because of blocked planting media**
Good plant cover is critical for raingardens so if plants are looking stressed in dry periods, irrigation may be required. Remove (prune) any areas affected by disease or pests. If the plants are dying and have created bare patches, the plants need to be replaced. If the plants keep struggling, replace with a plant type which is growing well in the raingarden.	Generally raingardens should be able to filter water at a rate of ~100mm per hour. If the surface of the raingarden is clogged (by clay or moss etc.) or the underlying filter media is not appropriate then water will not be able to drain through the system to be treated. If the surface is clogged use hand tools to scrape off the clay or moss. If this doesn't fix the drainage issue remove an area of planting media to expose the filter media. Check that water can pass through the filter media by pouring water on its exposed surface. If the water can drain then replace the top planting media and check for blockages elsewhere. If the water does not drain the filter media will need to be replaced.

Raingarden Maintenance

This diagram depicts an in-ground raingarden. Raised bed raingardens are also common (refer to photograph).



Note: It is important not to add fertiliser, compost or floatable mulch to a raingarden as the nutrients will pass through the raingarden and pollute the Bay. The plants best suited to raingardens will grow well in the planting media and take nutrients for their growth from the water entering the raingarden.

Maintenance Checklist

The property owner is responsible for checking the maintenance items in this checklist at the recommended frequency at the bottom of the table. The maintenance log at the bottom of the page should be filled in once each maintenance check is complete. Upkeep of this maintenance log should continue throughout the life of the raingarden.

Item	Raingarden element	Inspection item	Y/N	Likely maintenance task
1	Raingarden inlet	Is there scour or erosion where water enters the raingarden?		Re-profile with hand tools, place gravel or stones at the inlet.
		Is there rubbish, leaf litter or sediment blocking the inlet?		Remove by hand and dispose responsibly.
2	Raingarden surface level	Is the level of the raingarden surface sitting less than 5 cm below the raingarden edges/borders?		Remove sediment from the surface so it is sitting about 10-20 cm below surrounding areas.
3	Raingarden temporary detention	Is there moss or clay on the surface of the raingarden which seem to be slowing the filtration of flows?		Remove the crust from the top of the raingarden and check water will filter through exposed media.
4	Raingarden surface	Are there areas which appear to be higher and are not getting wet during rain events?		Smooth out surface so it is flat with hand tools.
		Are there areas which have been eroded away or scoured?		
5	Plants	Are the plants looking unhealthy or dying?		Prune diseased sections, irrigate and/ or replace dead plants. If plants keep dying, replace with a different type which is doing well. Do not use fertilizer to improve plant health as this will pollute the raingarden.
		Are there bare patches forming between plants?		
		Are there weeds present?		Remove weeds by hand and dispose responsibly.
6	Planting media	Is the raingarden holding water for more than a couple of hours after the rain has stopped?		Remove and replace the top 100 mm of planting material (loamy sand).
7	Overflow pit / pipe	Is there anything blocking the top of the overflow pit / pipe preventing water from entering?		Remove blockages and dispose responsibly.
8	Underdrainage	Is there rain draining to the bottom of the raingarden following heavy rain?		Flush the underdrain or uncover it to check for blockages.
9	Stormwater network connection	Is there water ponding in the overflow pit or pipe and not entering the stormwater network?		Remove blockages and dispose responsibly.

Maintenance frequency

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			x						x		

+ after heavy rainfall

Appendix B Construction Stormwater Management Plan

Stormwater management during the construction phase shall be undertaken by mitigation of the following pollutants generated by construction site during a rainfall event.

- Dust
- Silt
- Mud
- Gravel
- Stockpiled materials
- Spills/oils
- Debris/litter

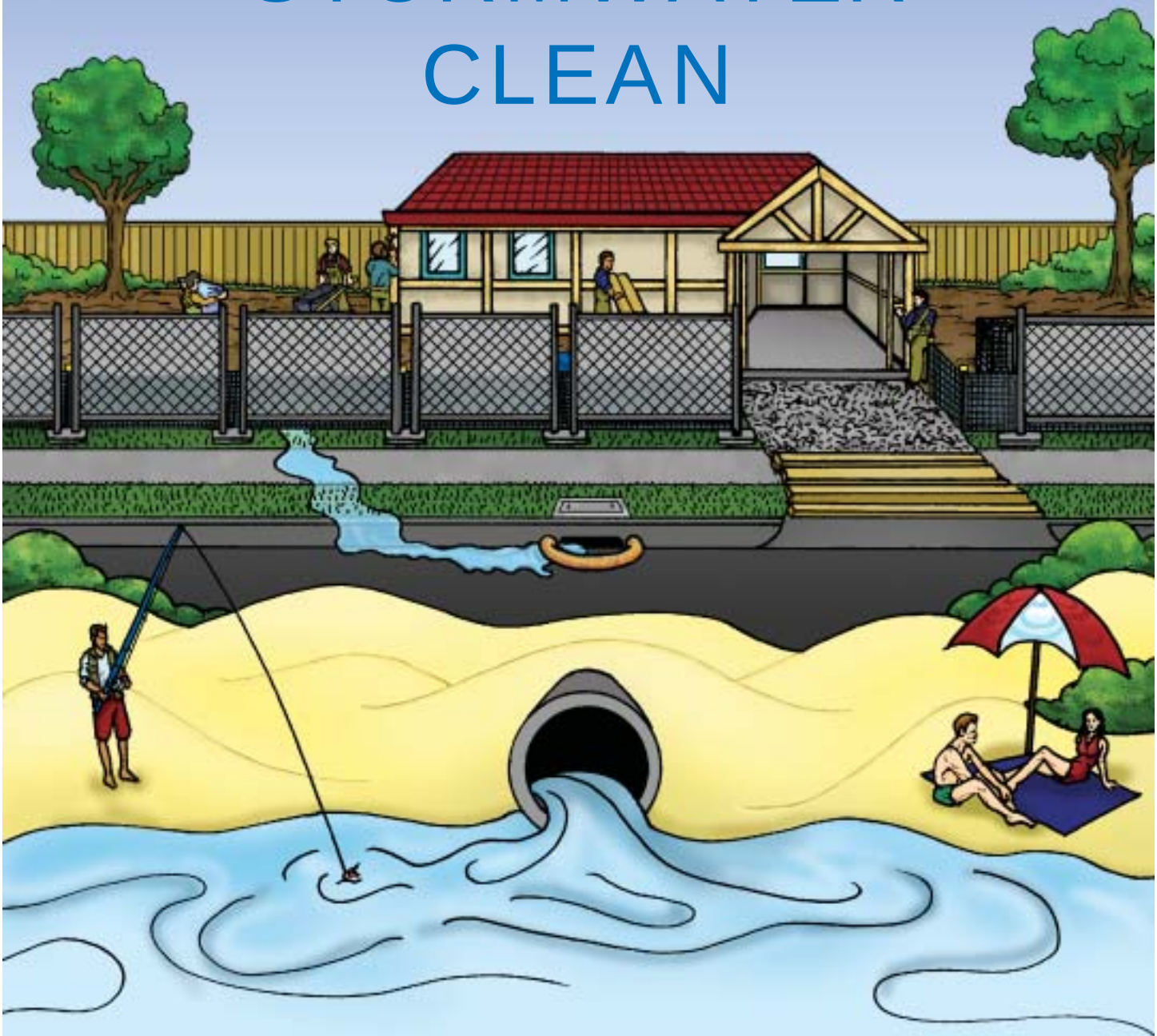
The treatment mechanisms suggested are as follows but not limited to:

- Construction rubbish strategy where site is kept clean from debris and litter
- Temporary grids to stop mud from the site being deposited on the roadway
- Silt filters under grates to prevent silt from entering the stormwater system
- Gravel filters

More information is available from “Keeping Our Stormwater Clean – A Builder’s Guide” by Melbourne Water which is attached. A comprehensive and site specific construction stormwater management plan shall be undertaken by the lead contractor prior to commencement of site works based on this document.

Attachment: Keeping Our Stormwater Clean – A Builder’s Guide

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

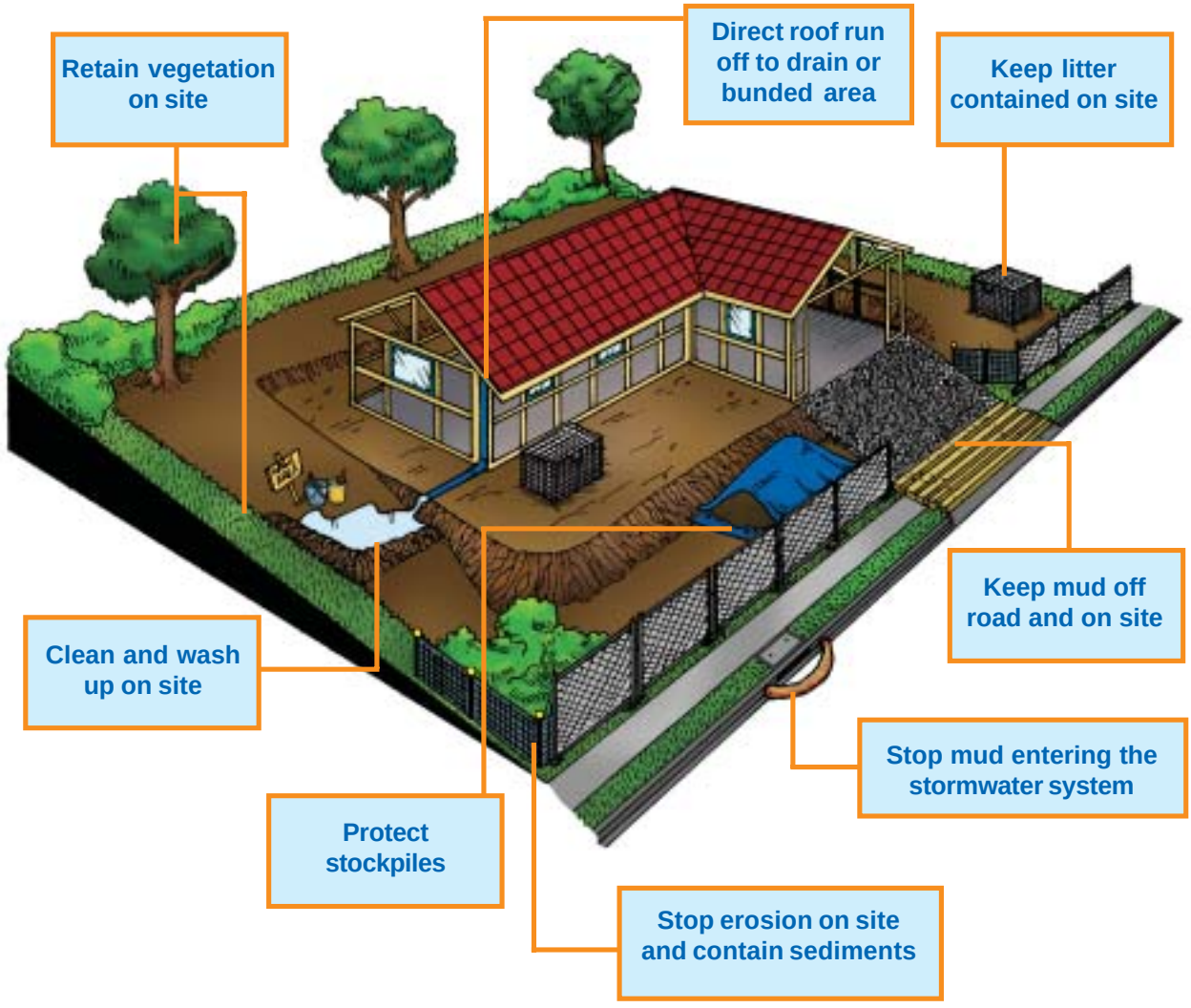
Victoria The Place To Be

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

SITE RULE 1 — Check Council requirements and plan before you start work on site. ..... Page 4

SITE RULE 2 — Stop erosion onsite and contain sediments. ..... Page 6

SITE RULE 3 — Protect stockpiles. ..... Page 12

SITE RULE 4 — Keep mud off road and on site. ..... Page 16

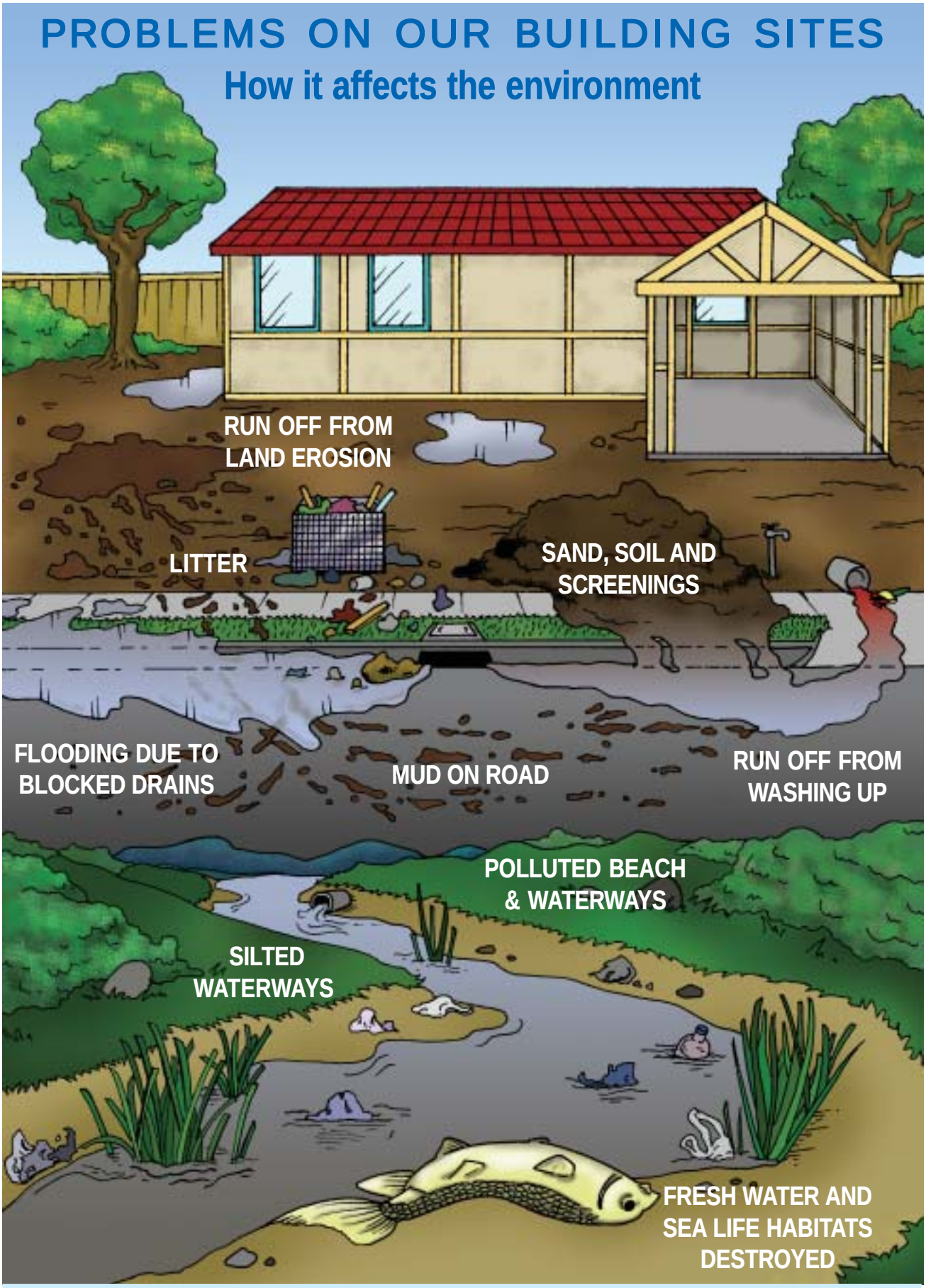
SITE RULE 5 — Keep litter contained on site. ..... Page 18

SITE RULE 6 — Clean and wash up on site. ..... Page 21

Use the Site Management Plan..... Page 23

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.

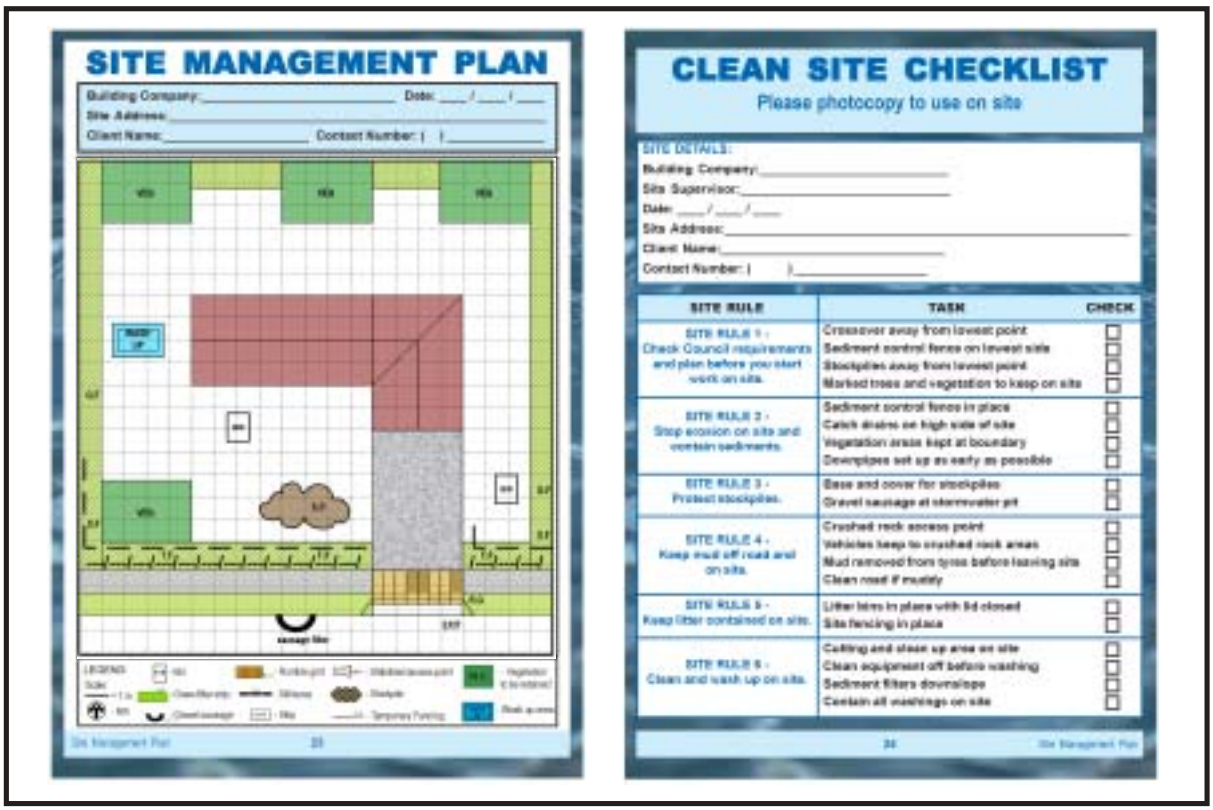
Which trees and vegetation will be kept on site?

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.]

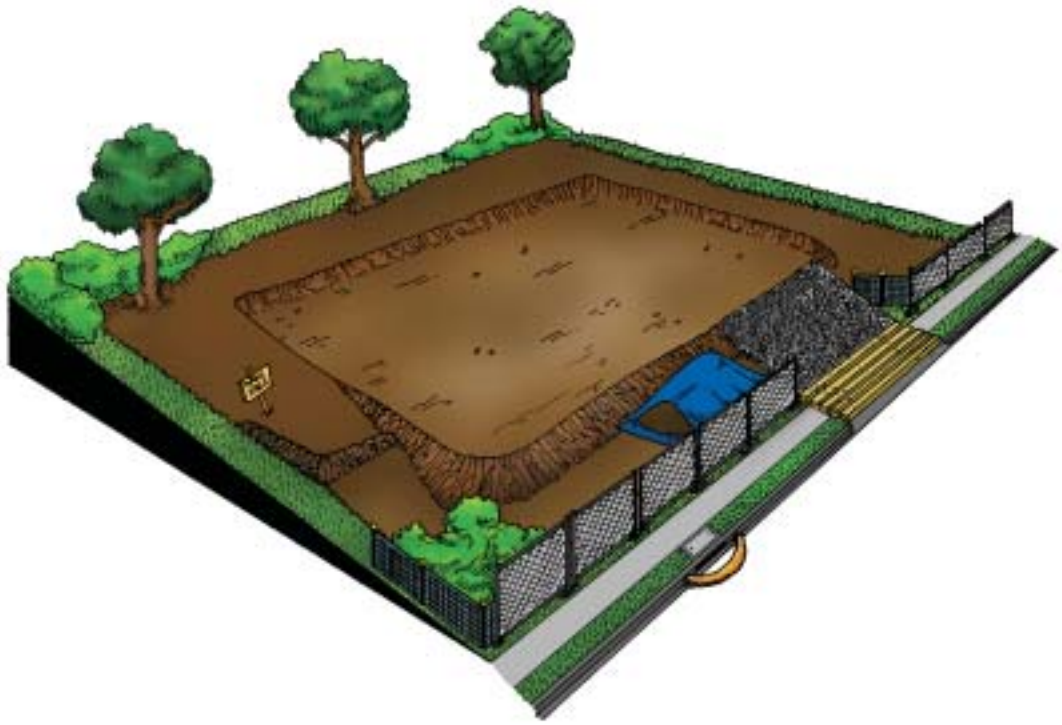
Why fence my site?

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

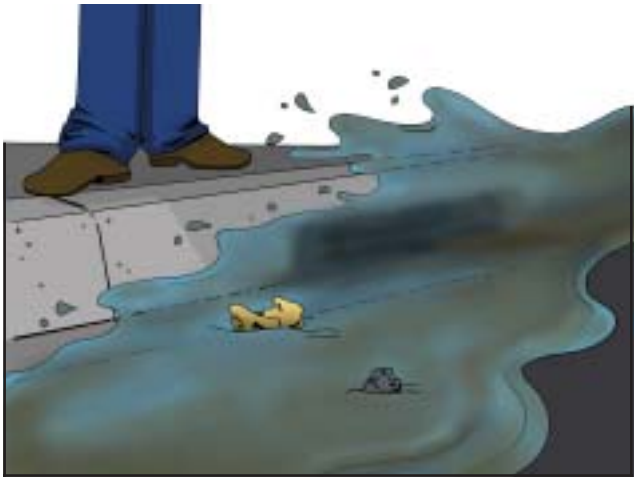
Stop erosion and keep sediment on site

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.



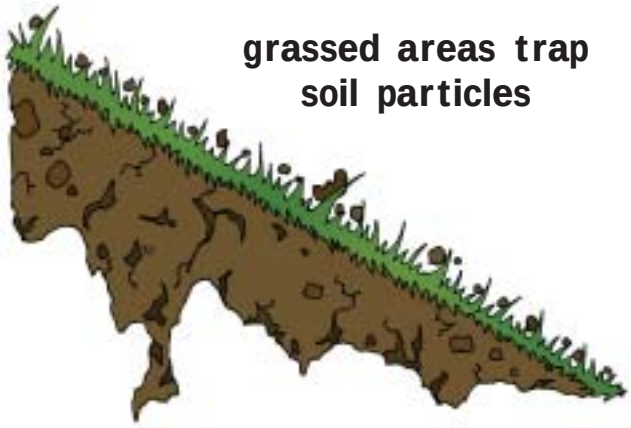
3. Cause blockages to the stormwater system including the side entry pit and pipes, increasing the chance of flooding and requiring regular cleaning.

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.

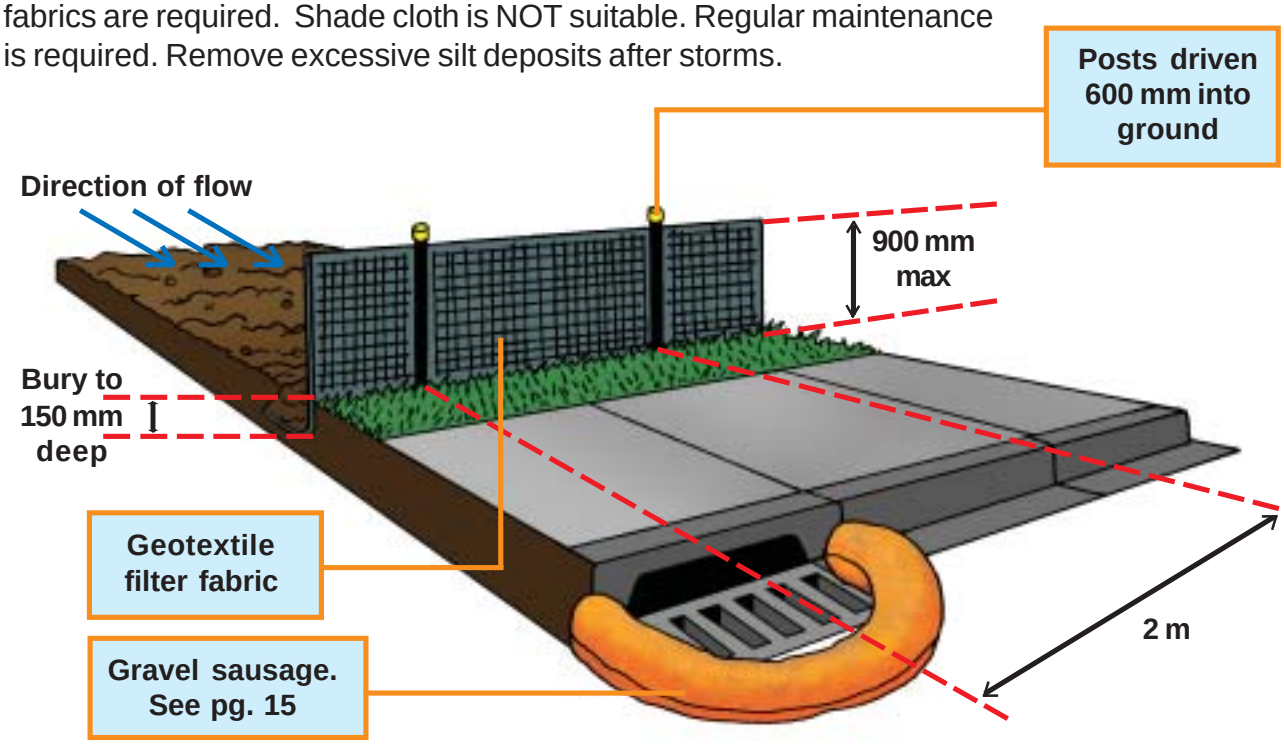
If you cannot connect to the stormwater system, pipe the water away from the building onto a vegetated area where there is good ground cover or to a bunded area.

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

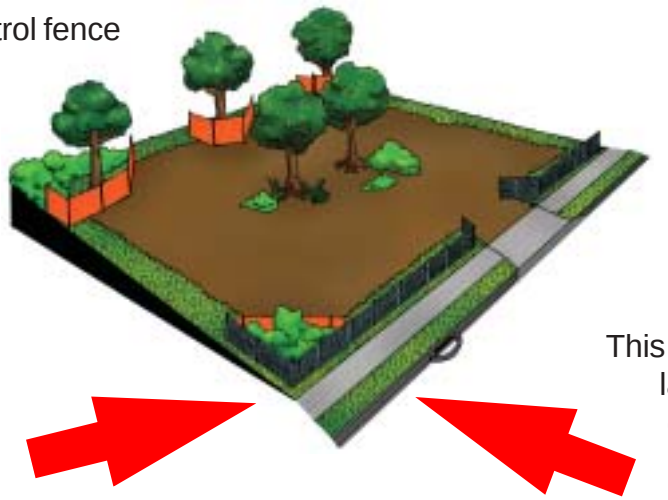
Sediment control fences stop sediment from being washed off site. The fence allows muddy water to pond behind it and for sediment to settle as the water slowly filters through. Geotextile fabrics are required. Shade cloth is NOT suitable. Regular maintenance is required. Remove excessive silt deposits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



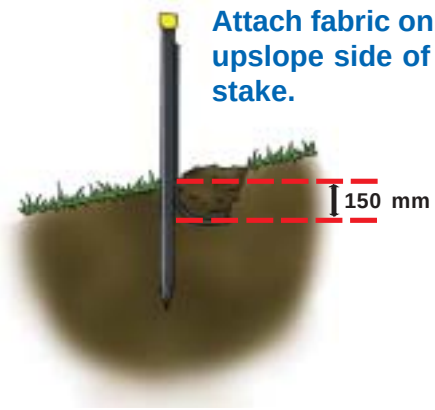
TO BUILD A SEDIMENT CONTROL FENCE:

a) Identify the low point of 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.

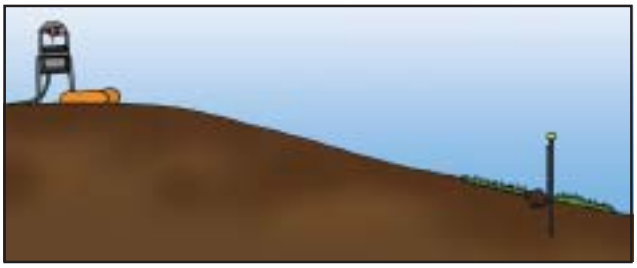
Method 2 - Control dust and slurry from cutting

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

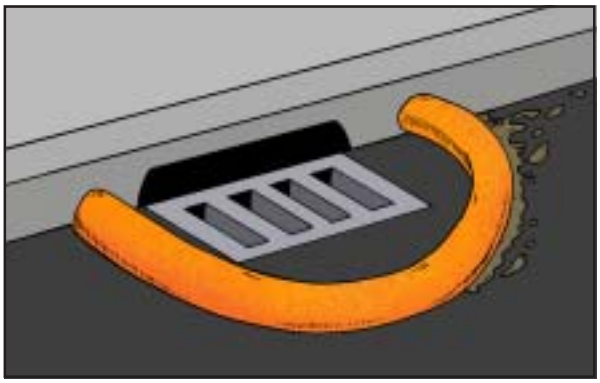
Choose a set area to do all your cutting. This area should be on the building site and away from all stormwater drains.

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

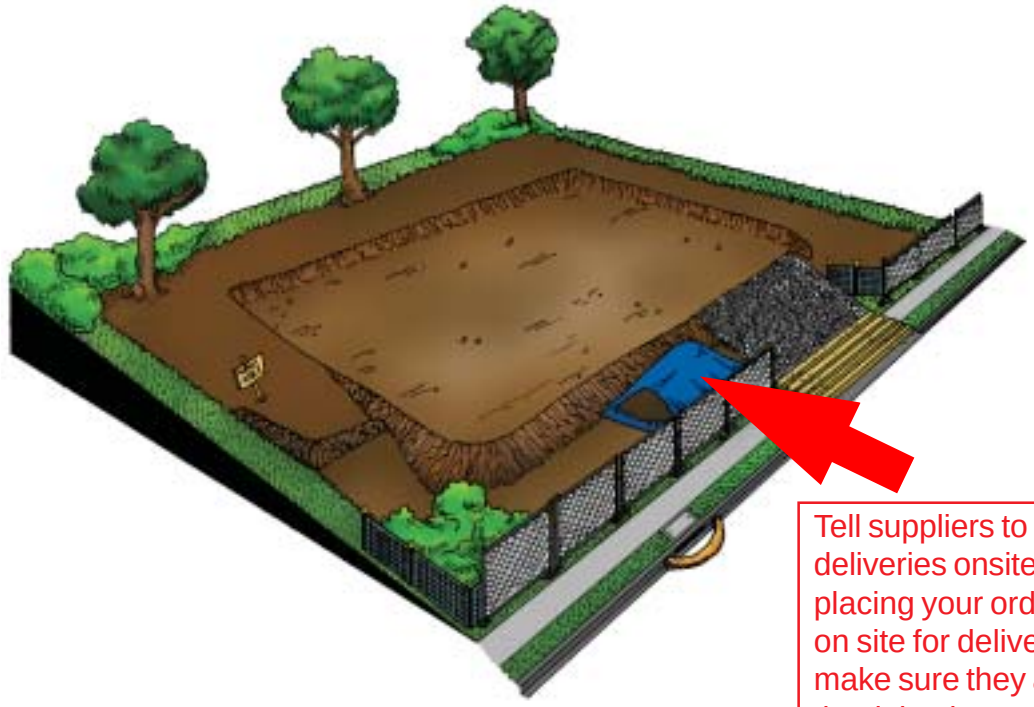
Why are sand, soil and screenings a problem?

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

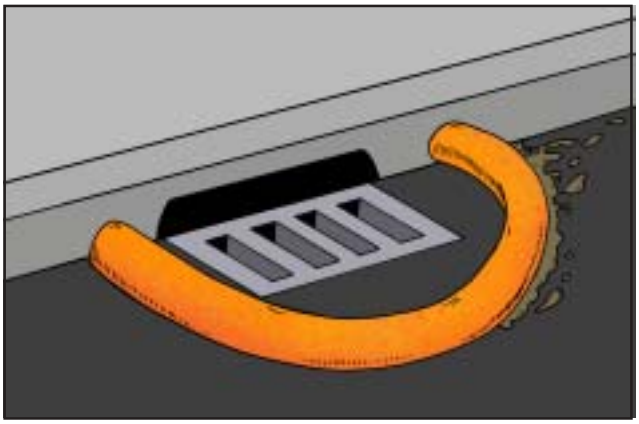
a) Place a tarp, plastic or bunded pallet under the area where the stockpile will be placed.

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.

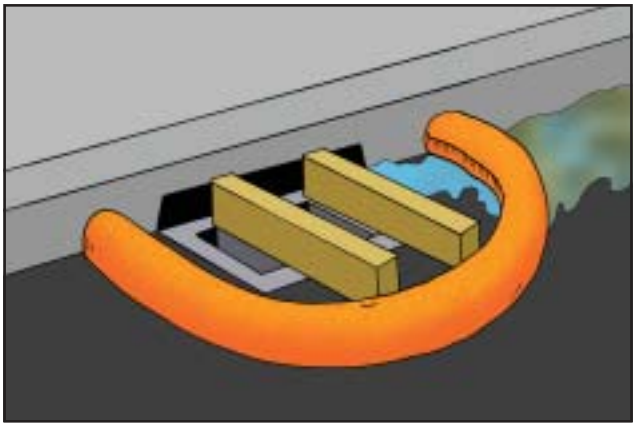


TO BUILD A GRAVEL SAUSAGE:

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?

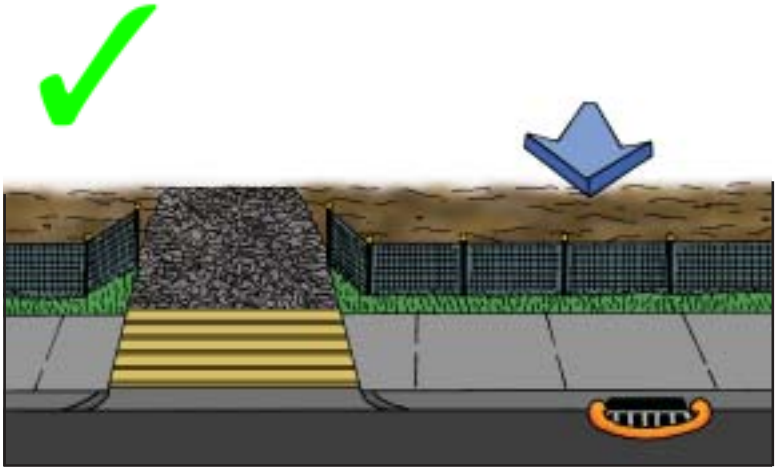
Two things happen when vehicles go on and off the site:

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

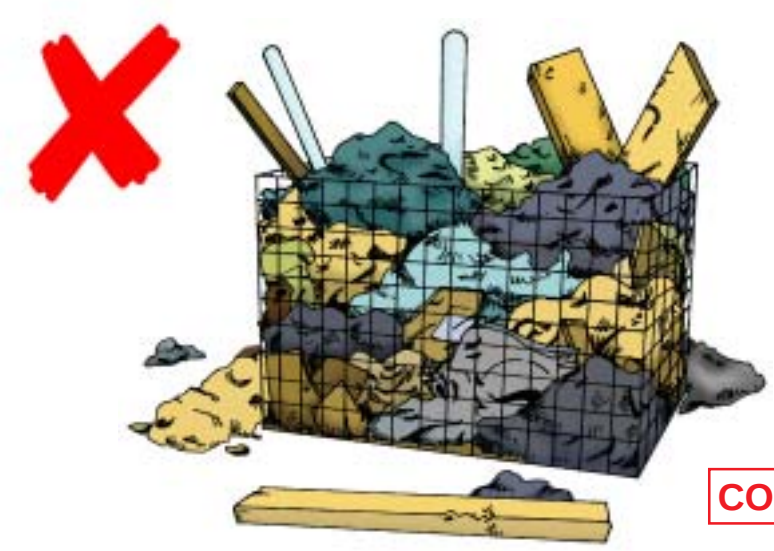
The following simple methods will help you to stop litter leaving your site or being a hazard on site.

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.

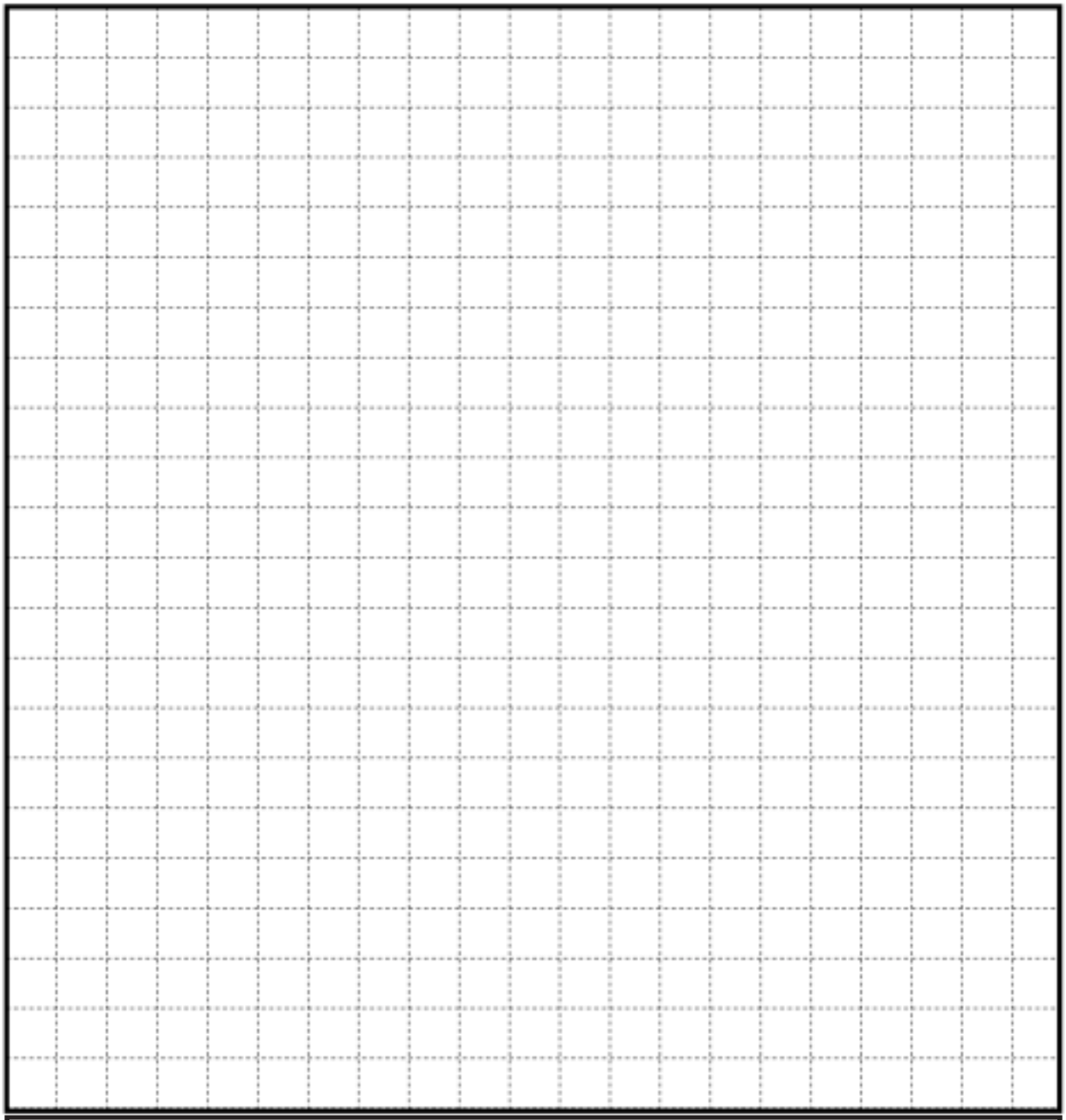
Wash oil based paints in solvent baths until clean. DO NOT PUT THE SOLVENT ON THE GROUND. Contact a waste disposal company for removal.

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

VEG. - 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

For copies of this guide please contact:
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Appendix C Flow and Detention Calculations

Civil Engineers have completed stormwater flows and detention calculations. These are attached on the overleaf.