Attachment 1: DPO Track Changes

Proposed changes to the DPO should be read consistently, and no weighting should be given to the difference in colour.

SCHEDULE 8 TO THE DEVELOPMENT PLAN OVERLAY

Shown on the planning scheme map as DPO8.

FLEMINGTON ESTATE

This Schedule applies to the Flemington estate, being 12-71 Holland Court, 120-130 Raccourse Road and 24-66 Victoria Street, Flemington (referred to in this Schedule as ‘the site’). Refer to the boundaries shown on the Development Concept Plan included in this Schedule.

1.0 Requirement before a permit is granted

A permit may be granted for use or to subdivide land or to construct a building or to construct or carry out works that is not in accordance with the development plan.

A permit may be granted before a development plan has been approved for the following:

- The removal or demolition of any building that is carried out in accordance with a Construction Management Plan prepared in accordance with this Schedule;
- Earthworks and site preparation works that are carried out in accordance with a Construction Management Strategy and Arboicultural Assessment Report prepared in accordance with this Schedule;
- The construction of minor buildings or works that are carried out in accordance with a Construction Management Strategy prepared in accordance with this Schedule;
- Consolidation or subdivision of land; and
- Removal, variation or creation of easements or restrictions.

Before granting a permit the Responsible Authority must be satisfied that the permit will not prejudice the future use and integrated and orderly development of the site in accordance with the development plan requirements specified in this Schedule.

2.0 Conditions and requirements for permits

The following conditions and/or requirements apply to permits:

- Except for a permit granted before a development plan has been approved in accordance with Clause 1.0 of this Schedule, conditions that give effect to the provisions and requirements of the approved development plan;
- Prior to the commencement of any permitted demolition, buildings or works, a detailed Construction Management Strategy as relevant to that demolition or those buildings or works must be prepared to the satisfaction of the Responsible Authority. The plan must include, but not be limited to, the requirements detailed in Clause 3.0 of this schedule for a Construction Management Plan (CMP) Strategy (CMS).

3.0 Requirements for development plan

A development plan must be generally in accordance with the Development Concept Plan forming part of this schedule to the satisfaction of the responsible authority.

A development plan must include the following requirements.

General

The development plan must be prepared to the satisfaction of the Responsible Authority in consultation with Moonee Valley City Council.

The development plan must seek to achieve the following objectives;
• To maximise the social, economic and environmental ‘return’ of public land assets, and ensure the economic viability of the project.
• To deliver a sustainable and high quality development that contributes to the longevity of housing stock and reduces the cost of living.
• To create safe buildings and spaces throughout the site.
• To provide a minimum of 10% affordable housing stock throughout the development.
• To achieve an appropriate level of dwelling diversity across the site, being a maximum of 40% with a range of 1 bedroom dwellings, a maximum of 50% 2 bedroom dwellings and a minimum of 20% and 3 bedroom plus dwellings.
• To provide intergenerational / adaptable apartments in accordance with AS 4799 (Adaptable housing) at a rate of 1 in 50 for 2 bedroom dwellings and 1 in 10 for 3 bedroom plus dwellings.
• To respond to the features of the site, such as context, aspect, topography and significant vegetation.
• To integrate with the surrounding area by responding to existing or preferred neighbourhood character, enhancing the public realm and existing networks and delivering ‘good neighbour’ outcomes.
• To balance issues of equity in the successful delivery of social and private housing that is ‘tenure blind’ — each new building within the site must be provided with an appropriate inclusion of social housing.
• To provide retail, commercial or community uses to meet an identified local need or stimulate local activity and participation in nominated areas.
• To prioritise pedestrian and bicycle access within the site.
• To establish legible access and address points for the site, buildings and spaces, including defining private, communal and public spaces.
• To foster social connections between residents and the wider community.
• To provide high levels of residential amenity and liveability in accordance with the objectives of the Better Apartments Design Standards, as a minimum.
• To provide landscaping and communal open space that is resilient, well connected and enhances the sense of place, sustainability and liveability of the site and local area.
• To deliver buildings and spaces that are accessible and practical for people of all abilities and adaptable to respond to the future needs of residents.
• To provide buildings and spaces accessible to people with a disability in accordance with the Disability Discrimination Act (DDA).
• To deliver an exemplary environmentally sustainable development in accordance with the sustainability targets of the Better Apartments Design Standards, involving the use of recycled and environmentally friendly materials.
• To deliver an exemplary environmentally sustainable development, incorporating sustainability principles into building design, construction and use.
• To deliver an exemplary environmentally sustainable development, incorporating sustainability principles into the use of building materials.
• To deliver an exemplary environmentally sustainable development, incorporating sustainability principles into the use of energy-efficient building materials.
• To ensure that CPTED design principles are used to determine the siting of buildings, access ways and dwelling design.

Land Use

The development plan should show or make provision for:
• Non-residential uses such as retail and commercial to meet the needs of the local community, in appropriate locations such as selected locations on the corner of Racecourse Road and Stubbins Street, the new open space area and. Along the new corridor.
MOONEE VALLEY PLANNING SCHEME

- South corridor that visually connects to Stubb Street to the South of Racecourse Road; to the satisfaction of Council; and
- Community facilities in appropriate locations; to the satisfaction of Council.

Built Form
The development plan should show or make provision for:
- Buildings that do not exceed the building heights provided in the table below.

<table>
<thead>
<tr>
<th>Precinct (refer to Development Concept Plan)</th>
<th>Building Height</th>
<th>Side and Rear Setbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40-610 storeys</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>62-120 storeys</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12 storeys</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>40-610 storeys</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10 storeys</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>30-70 storeys</td>
<td></td>
</tr>
</tbody>
</table>

- The minimum building setbacks and other interface conditions in accordance with the diagrams below.

Interface Treatment A (Buildings fronting Victoria Street)

Interface Treatment B (Buildings fronting Debneys Park)
A 30m-35m minimum separation of new buildings from the existing residential towers on the site:
MOONIE VALLEY PLANNING SCHEME

- A 6 metre minimum separation between new buildings of between 86 – 10 storeys;
- A 20 metre minimum separation between new buildings of above 124 storeys;
- Development above 5 storeys are required to provide a podium to define the street wall. All building podiums should:
  - Be oriented to complement the street system and work;
  - Be of a scale that provides an appropriate level of street enclosure having regard to the width of the streets;
  - Include high quality treatments to side walls where visible above adjoining buildings.
  - Be designed to interrelate above-ground car parking behind active uses such as dwellings to ensure a visual relationship between occupants of upper floors and pedestrians to improve surveillance of the public realm.
  - Be able to mitigate wind impacts at street level.
- Higher built form on street corners;
- For Precinct 1, a 3m minimum building setback from the southern boundary and a 4 storey built form transition to the Hopeov Early Years Centre;
- Active frontages to Victoria Street, Racecourse Road, Debneys Park, internal roads, communal open space areas and internal connections, through the following:
  - Avoiding large expanses of blank wall, large service areas, garbage storage areas, car parking and co-located or continuous garage doors along ground floor frontages; and
  - Provision of DDA compliant individual entrance to ground floor dwellings that have frontages to a road or internal connection;
  - Dedicated access to bicycle parking must be provided at primary frontages in proximity pedestrian access ways;
- For Precinct 6, provision of the following:
  - Setbacks from Racecourse Road greater than 6m as required to protect existing trees to be retained;
  - A minimum 4m floor to floor height at ground floor level and 3.2m for any commercial areas above ground level;
  - An entrance and/or clear glazed window at the ground level street frontages of each individual non-residential use;
  - Weather protection at the street frontages of the non-residential uses;
- Visual bulk of buildings reduced through the placement of balconies and use of discontinuous forms, articulated facades and varied materials, particularly in the Activation Zones shown on the above sections. Buildings and works such as architectural features, sunshades, screens and artworks may be constructed within setback areas, provided they demonstrate a positive contribution to the overall facade composition;
- The location of car parking spaces within basement levels or suitably concealed within buildings or behind features such as active podium frontages;
- Cohesive architectural design throughout the site, with the use of high quality, durable and low maintenance materials;
- Orientation and overshadowing demonstrating how development within the proposed building envelopes can comply with the following requirements:
MOONSE VALLEY PLANNING SCHEME

- A minimum of 50 hours of sunlight available to at least 50% of the following spaces between 9:00am and 3:00pm on 21 June:
  - Communal outdoor open space areas around the existing residential towers;
  - The outdoor play area of the Hopetoun Early Years Centre;
  - The new open space areas on the site;
  - Communal outdoor open space areas associated with new buildings;
- No increased overshadowing of the footpath on the southern side of Racecourse Road as well as any future designated pedestrian spine between 10:00am and 2:00pm on 22 September; and
- Reasonable levels of sunlight will be provided to other areas of the public realm on 22 September.

- Appropriate mitigation measures to minimise the adverse impacts on existing or potential future sensitive uses in proximity of the site;
- Appropriate noise attenuation measures to minimise noise impacts on proposed dwellings from the Tullamarine Freeway City Link, the Upfield Railway Line, Racecourse Road and any non-residential uses on the site;
- Building forms that will minimise the adverse impacts of wind on streets and public spaces, and provide weather protection where appropriate.
- A Wind Effects Analysis should be prepared to ensure the built form arrangement achieves acceptable standards in regard to pedestrian comfort and safety. The design should give consideration to management measures such as stepped facades, articulated facades and wind screening in order to ensure a hospitable environment for trees and residents is retained.

Landscape and Open Space

The development plan should show or make provision for:

- A new 1,900sqm open space area, generally located as shown on the Development Concept Plan and containing significant trees to be retained;
  - Retention of trees assessed in the required Arboricultural Assessment Report as having moderate or high retention value, unless it is demonstrated that their retention significantly affects the feasibility of development of the relevant precinct;
  - Retention of trees identified in the Homewood Consulting Arborist Report submitted by Council dated 19 July 2017 where mitigation measures can be deployed to ensure their retention;
  - Replacement of the 9 trees assessed in the Homewood Consulting Arborist Report and listed for removal with trees that provide equivalent amenity value to residents and the public realm;
  - Replacement of the row of trees in Precinct 6 fronting Racecourse Road;
  - Replacement of trees assessed in the required Arboricultural Assessment Report as having moderate or high retention value with trees that provide equivalent amenity value to residents and the public realm;
  - New street trees along the Victoria Street frontage; and
  - New canopy trees along internal roads and pedestrian connections and within new open space areas.
  - An unimpeded buffer zone of at least 50m to the south of Debruy Meadowood Primary School.
Circulation

The development plan should show or make provision for:

- A legible vehicle circulation system within the site, generally as shown on the Development Concept Plan and with the following external access points:
  - The existing signalised intersection onto Racecourse Road;
  - Holland Court, but with the Racecourse Road intersection redesigned to allow vehicle access by left-in left-out movements only or otherwise to the satisfaction of VicRoads;
  - The 2 existing vehicle access points to Victoria Street provided no significant increase in vehicle movements in order to maintain the existing function of the street;
- Car parking in each precinct for residents and visitors;
- Bicycle parking in each precinct for residents and visitors, and bicycle servicing facilities;
- An off-road bicycle path (separate from pedestrian path) along the Racecourse Road frontage of the site, to the satisfaction of VicRoads and Moonee Valley City Council;
- A dedicated, separated bicycle lane in all internal roads with connections through to Debnays Park and residential areas west of Victoria Street,
- A legible pedestrian circulation system within the site, particularly between external access points, building entries, car parking areas and communal open space areas, and linking with pathways within Debnays Park and along adjoining roads.
- Minimum footprint widths of 3m for internal streets and along Victoria Street.
- Minimum width of internal roads to be 20 metres with cross-sections to be established under the direction of Council. Internal roads should feature dedicated pedestrian and bicycle treatments and room to accommodate large boulevard trees. Additional, dedicated on-street parking will be required at the discretion of Council.

Required documents, plans and reports

The following documents, plans and reports must form part of any development plan (as applicable if the development plan is approved in stages):

1. A Planning Report prepared to the satisfaction of the responsible authority that demonstrates how the recommendations of the Integrated Transport and Traffic Management Plan, Construction Management Plan/Strategy, Environmental Site Assessment, Stormwater Drainage Master Plan and Ecologically Sustainable Development Plan have been incorporated into the proposed development of the land;
2. A Site Context Analysis prepared in accordance with Clause 52.35 or Clause 55.01 of the Planning Scheme that includes, but is not limited to, the following:
   - The urban context and existing conditions showing topography, the surrounding and on-site land uses, buildings, noise and odour sources, access points, adjoining roads, cycle and pedestrian paths and public transport;
   - Views to be protected and enhanced, including views of and from the site; and
   - Key land use and development opportunities and constraints.
3.3 **Preliminary Architectural Plans** that show the distribution and design of built form on the site in accordance with the Development Concept Plan included in this Schedule, including, but not limited to, the following:

- A design response to the Site Context Analysis in accordance with Clause 52.35 or Clause 55.01 of the Planning Scheme;
- Demolition works;
- Building envelopes including maximum building heights, building setbacks, and building depths;
- The proposed built form edge and interface treatments to Victoria Street, Racecourse Road and Debnays Park;
- Conceptual elevations and cross-sections, indicating level changes across the site;
- Shadow diagrams;
- Images which show how the proposed built form will be viewed from the Racecourse Road corridor and Debnays Park;
- The mix of dwelling types and sizes;
- The mix of land uses, including non-residential uses such as retail, commercial, recreational, educational, and community facilities;
- Vehicle access, circulation and parking locations;
- Pedestrian and bicycle access and circulation. The building footprints and internal connections shown on the Development Concept Plan are indicative only and further connections within the site and through the building envelopes should also be provided to ensure a highly permeable urban structure;
- Open space areas; and
- The relationship between proposed buildings and works and surrounding land uses and development, including:
  - Existing residential towers to be retained on the site;
  - Existing residential properties on the opposite side of Victoria Street;
  - Debnays Park;
  - Debnay Meadows Primary School and Hopeoun Early Years Centre;
  - Racecourse Road and the Arden-Macaulay Urban Renewal Area on the opposite side; and
  - CityLink and the Upfield Railway Line.

3.4 **An Integrated Transport and Traffic Management Plan** that addresses, but is not limited to, the following:

- The range and scale of uses that will be anticipated on the site;
- The estimated population of residents, visitors and workers;
- Estimated vehicle trip generation levels resulting from use and development within the site;
- Vehicle ingress and egress points and estimated levels of usage;
- The likely impacts of the proposed development on the arterial and local roads and any mitigating works required such as off-site traffic management treatments;
- An indicative layout and hierarchy of internal roads that:
MOONEE VALLEY PLANNING SCHEME

- Complements the form and structure of the surrounding network;
- Recognises the primacy of pedestrian and bicycle access within the site;
- Provides a high level of amenity and connectivity, whilst managing the movement of vehicles travelling through the site;
- Are of sufficient width to accommodate footpaths and street trees;
- The location of on-site car parking for residents, visitors and staff, including that associated with the existing residential towers on the site. The location of car parking spaces should be situated at basement level or suitably concealed within buildings;
- Provision for loading and unloading of vehicles and means of access to them, including waste, delivery and furniture removalist vehicles; and
- The provision of a network of safe and accessible pedestrian and bicycle accessways through the site that:
  - Maintains access to the existing residential towers on the site; and
  - Connects with the surrounding area and adjoining pedestrian and bicycle paths and public transport stops within walking distance;
- Green Travel Plan initiatives that can be adopted to reduce private car usage by residents, workers and visitors, including a new resident awareness and education program and opportunities for the provision of a car share program;
- Provision for secure bicycle storage for residents and workers, end of bicycle trip facilities for workers and short term bicycle parking for visitors;
- The views of VicRoads and Moonee Valley City Council.

4.5 An Arboricultural Assessment Report that addresses, but is not limited to, the following:
- Assessment of trees on or adjacent to the site, including retention value;
- Recommendations for the protection of trees to be retained to ensure long-term health, including designation of tree protection zones and structural root zones; and
  - Recommendations for trees to replace any trees of moderate or high retention value required to be removed where replacement trees provide equivalent amenity value to residents and the public realm.

4.6 A Landscape and Open Space Plan that addresses, but is not limited to, the following:
- Existing vegetation to be retained;
- A planting theme which complements existing trees to be retained and the surrounding neighbourhood character, and that demonstrates water sensitive urban design outcomes;
- New canopy trees and landscaping within the public realm and communal areas / open spaces;
- Landscaping areas within private open spaces;
- Street trees along Victoria Street, Racecourse Road and internal roads;
- Typical cross-sections of Victoria Street, Racecourse Road and internal roads
MOONIE VALLEY PLANNING SCHEME

- Delineation of public, communal and private open spaces and the treatment of these interfaces;
- Hard and soft landscaping treatments of the public realm and communal open spaces;
- Interface treatments between Victoria Street, Racecourse Road, Dobneys Park and the Hopetoun Early Years Centre, including boundary fences;
- Integration of sustainability and water sensitive urban design (WSUD) measures, with WSUD measures informed by the Stormwater Drainage Master Plan;
- Opportunities for communal gardens; and
- Maintenance responsibilities.

7. A Dwelling Diversity & Affordable Housing Report must be prepared to the satisfaction of the responsible authority. The report must:

- Demonstrate how the development will achieve an appropriate level of dwelling diversity across the site, being a maximum of 50% "1 bedroom" dwellings, a maximum of 50% "2 bedroom" dwellings and a minimum of 20% "3 bedroom plus" dwellings. The report should include an analysis of both projectivities of dwelling typology needs and the existing dwelling stock on the site, to inform the proposed proportioning of dwelling types as part of the development;

- Demonstrate how the development will provide adaptable apartments at a rate of 1 in 50 for "2 bedroom" dwellings and 1 in 10 for "3 bedroom plus" dwellings, in accordance with AS 4199:Adaptable Housing;

- Demonstrate how the development proposes to provide a minimum of 10% of the housing stock throughout the development as affordable housing. The report must also include criteria for determining affordable housing stock. The provision of this affordable housing must be in addition to any commitments made in relation to the proposed uplift in social housing stock across the estate;

- Demonstrate how the development achieves a "tenure blind" approach, ensuring that each building within the site is provided with an appropriate mix of social housing.

6.6. An Ecologically Sustainable Development Plan that demonstrates how development on the site will achieve best practice standards and incorporate innovative initiatives on a precinct-wide scale. The Plan is to address the areas of energy efficiency, on-site renewable energy systems, resilience to climate-related impacts, water resources, indoor environment quality, stormwater management, transport, waste management, innovation and urban ecology. The Plan must meet the requirements of Clause 21.04.3 and all buildings must achieve a minimum of 6+ star rating against the Green Building Council of Australia’s Green Star rating system for design and construction (or achieve an equivalent standard using an equivalent rating tool).

2.0. A Services and Infrastructure Plan that addresses, but is not limited to, the following:

- An assessment of the existing engineering infrastructure servicing the site and its capacity to service the proposed development;
- A description of the proposed provision of all appropriate utility services to development parcels;
- Preparation of a Stormwater Drainage Master Plan, including proposed stormwater treatment, capture and reuse, and water sensitive urban design, measures to ensure appropriate protection of the Moonie-Moonie Ponds Creek adjacent to the land; and
MOONSEE VALLEY PLANNING SCHEME

- The identification of the location of any on-site drainage retention facilities.
- The undergrounding of overhead powerlines and services on all streets throughout the DeBeers Park precinct and abutting streets of Victoria Street and Racecourse Road to improve the pedestrian experience.
- The Development must meet the requirements of Clause 22.03 of the Moonsee Valley Planning Scheme – Stormwater Management (Water Sensitive Urban Design).

10. A Construction Management Plan (CMP) / Strategy (CMS) must be prepared prior to any works including demolition. The CMP / CMS must detail how the development of the land will be managed to ensure the protection of the amenity, access and safety of adjoining residents.

The CMP / CMS must address: demolition, bulk excavation, management of the construction site, land disturbance; hours of construction, noise, control of dust, public safety, construction vehicle road routes and traffic management (including location of construction vehicle access and worker parking), soil and cleaning of runways, discharge of any polluted water and stormwater, security fencing, disposal of site waste, location of cranes, location of site offices, storage of plant and equipment, redirection of any above or underground services and the protection of trees on or adjacent to the site to be removed in accordance with an Arboricultural Assessment Report prepared in accordance with this schedule.

8.1. An Environmental Site Assessment prepared by a suitably qualified professional and to the satisfaction of the Responsible Authority, that addresses, but is not limited to, the following:

- Site history and current site uses;
- The extent of filling that has occurred on the site, including area, depth and fill material;
- The presence and depth of groundwater at the site;
- Underground infrastructure that has contamination source potential;
- The contamination status of soil on the site; and
- If intrusive works are likely to occur during redevelopment works, an acid sulphate soil assessment.

Advice on the need for a full statutory environmental audit on all or part of the site, and the need for a Site Remediation Strategy Plan to be prepared.

8.2. Where the development will be undertaken in stages, a Staging Plan that addresses, but is not limited to, the following:

- The delivery of infrastructure and shared facilities within each stage to ensure the orderly development of the site; and
- Site management, such as resident amenity, vehicle access and parking, pedestrian access and protection of existing buildings, infrastructure and vegetation.

13. A Waste Management Plan prepared by a suitably qualified professional and to the satisfaction of the Responsible Authority. The Waste Management Plan must be in accordance with the City of Moonee Valley’s “Waste Management Plan – Guidelines for Applicants” and must address the following:
MOOSIE VALLEY PLANNING SCHEME

- A cohesive approach to waste and recycling collections for the entire development, (both social housing and private residences);
- A waste management system that diverts organic waste from landfill;
- Centralised and easily accessible areas, located within the development where waste compactors could be stationed for all residents of the development to utilise;
- The option of an underground vacuumed waste collection system;
- The option of a small onsite waste to energy plant;
- Demonstrate that bin storage areas are sufficient to cater for the amount of waste that will be produced;
- Specify the type of bins to be used;
- Show where bins will be stored;
- Provide details of screening and ventilation of bin storage areas;
- Identify responsibility for taking bins out for collection and returning them to the bin storage area;
- Identify collection points;
- Specify how recycling materials will be managed and collected;
- Specify bin collection times; and
- If a private waste collection is utilised, show access routes for private waste collection vehicles that do not rely on reversing movements.
Overview of Construction Impact

for

Moonee Valley City Council

Assessment of Significant Trees within the Flemington Housing Estate Redevelopment Project

Prepared by
Homewood Consulting Pty Ltd
150 Junction Road
Nunawading VIC 3131

Prepared For
David Kilroe
Strategic Planner
Moonee Valley City Council
9 Kellaway Avenue
Moonee Ponds VIC 3039

Consulting Arborist
Emma Barrett
Bachelor of Science (Horticulture)
Advanced Diploma of Horticulture (Arboriculture)
Email: emmabarrett@homewood.com.au
Mobile: 0400 160 998

19 July 2017
Executive Summary

Homewood Consulting Pty Ltd has been engaged to provide an overview of the construction impact on significant trees recommended for inclusion into the 2017 Significant Tree Register within the Flemington Housing Estate. It is proposed to redevelop the site.

A total of 16 records containing 42 trees have been assessed. These consist of 8 individual trees and 8 records containing multiple trees 34 trees in total. The Tree Reference Number (TRN) given to each tree relates to the Schedule to the Environmental Significance Overlay (ESO) within the Moonee Valley Planning Scheme. Each individual tree within a tree group record has been allocated a letter for ease of identification.

The majority of these trees have been nominated for the Significant Tree Register due to their 'Outstanding Size' and 'Location of Landscape'. Some rows of trees provide shaded, cooling, screening and greenery in a predominantly built up residential area. All of the trees are mature specimens, have good or fair health and structure, are of a large size, have a high individual and landscape significance and a high retention value.

The proposed design and subsequent construction will have a 'Major' encroachment (greater than 10%) into the TPZ of 18 trees (Table 1). Nine of the these have an encroachment of greater than 34% and require removal as works are proposed to go up to or over their trunks. Two trees, T247 and T247a have a 'Major' encroachment into their TPZs by a proposed car park on the southern side of the site. These two trees are already located in a car park and some minor modifications to the design could retain these two trees.

The remaining 5 trees with a 'Major' encroachment (between 10-20%) require mitigation measures such as mulching, irrigation and arborist supervision within their TPZ to be able to remain successfully in the landscape.

The proposed design will have a 'Minor' encroachment into the TPZ of 4 trees and no encroachment into the TPZ of 22 trees. All of these should be able to remain successfully in the landscape provided that the trees are adequately protected. Table 1 shows the individual trees encroachment, impact and retention status.

<table>
<thead>
<tr>
<th>TRN</th>
<th>No of Trees</th>
<th>TPZ Encroachment</th>
<th>Construction Impact</th>
<th>Retention Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>T242, T242a, T243, T244, T245, T246, T248, T251, T252g</td>
<td>9</td>
<td>Major 34-100%</td>
<td>High</td>
<td>Remove Major design changes required to retain these trees</td>
</tr>
<tr>
<td>T247, T247a</td>
<td>2</td>
<td>Major 100%</td>
<td>High</td>
<td>Minor design modifications to car park will enable retention of these trees</td>
</tr>
<tr>
<td>T250, T252f, T253a, T253b, T253c</td>
<td>5</td>
<td>Major 10-20%</td>
<td>High</td>
<td>Retain with TPZ fencing and arborist supervision</td>
</tr>
<tr>
<td>T241, T249, T253, T273a</td>
<td>4</td>
<td>Minor (less than 10%)</td>
<td>Low</td>
<td>Retain with TPZ fencing</td>
</tr>
</tbody>
</table>

Reference: 3190
<table>
<thead>
<tr>
<th>TRN</th>
<th>No of Trees</th>
<th>TPZ Encroachment</th>
<th>Construction Impact</th>
<th>Retention Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>T241a, T241b, T250a,</td>
<td>22</td>
<td>None</td>
<td>None</td>
<td>Retain with TPZ</td>
</tr>
<tr>
<td>T250b, T250c, T252,</td>
<td></td>
<td></td>
<td></td>
<td>Fencing</td>
</tr>
<tr>
<td>T252a, T252b, T252c,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T252d, T252e, T254a,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T254a, T273, T273a,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T273c, T273d, T273e,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T273f, T273g, T273h,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T317</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The design response used to determine impact does not show construction techniques or methods, or proposed underground utilities and a further review of final plans by a qualified arborist is required to determine any further impact to retained trees.

In order to ensure the significant trees that are to be retained remain successfully in the landscape the following is recommended:

- When designing buildings, car parks and infrastructure including construction methods and techniques within the TPZ of trees, consideration should be given to root sensitive construction techniques and methods.
- Modifications to the car park on the southern side of the site in the vicinity of Trees T247 and T247a requires minor modification to enable these two trees to remain in the landscape.
- The final design should be assessed by a qualified arborist to determine further impact on the trees.
- Following an approved design:
  - All site workers must be familiar with the mitigation measures outlined in this and any other subsequent reports prior to any works commencing on site.
  - TPZs must be installed around all significant trees to be retained using the dimensions set out in 6.8, Table 2.
  - TPZ fencing should be a minimum of 1.8m high
  - TPZ fencing should be inspected by a qualified arborist prior to demolition and construction to ensure it is adequate. All TPZs should be checked at regular intervals by a qualified arborist (recommended every 6-8 weeks) during the construction phase.
  - Within the TPZ there are to be:
    - No excavation other than discussed in this report within any TPZ.
    - No storage of materials, liquids or vehicular equipment.
    - No soil changes, ie grade changes, other than what is discussed in this report.
    - No pedestrian or vehicular access into the TPZs.
  - TPZs where works are being carried out should be mulched to a depth of 150mm, irrigated periodically as determined by a qualified arborist and supervised by a qualified arborist.
  - Any demolition of buildings or infrastructure carried out within the TPZ of retained trees should be undertaken with care and under arborist supervision. No large roots are to be severed.
- When the time comes to construct within the TPZ of any tree, the TPZ fencing can be moved back to the construction footprint and all work must be carried out from within the footprint. No other works should be carried out within the TPZs other than that approved following a final design.
- All works within TPZs including demolition and construction should be supervised by a qualified arborist to ensure minimal damage to roots.
- Any underground services should be bored under TPZs, rather than trenched.
Contents

1. Introduction .................................................................................................................. 6
2. Key Objectives .............................................................................................................. 6
3. Methodology ................................................................................................................ 6
   3.1 Site Inspection .......................................................................................................... 6
5. Site Map ....................................................................................................................... 7
6. Observations / Discussions ........................................................................................ 8
   6.1 Site Details ............................................................................................................... 8
   6.2 Tree Details ............................................................................................................ 8
   6.3 Tree Protection Zone Specifications ....................................................................... 11
   6.4 Tree Protection Zone Guidelines ........................................................................ 12
   6.5 TPZ and Design Response Plan ........................................................................... 13
   6.6 Design Proposal ..................................................................................................... 14
   6.7 TPZ Encroachment (AS 4970) ............................................................................. 15
       6.7.1 Minor encroachment ...................................................................................... 15
       6.7.2 Major encroachment ..................................................................................... 15
       6.7.3 Structural Root Zone ................................................................................... 15
   6.8 Construction Impact ............................................................................................... 16
   6.9 Design Considerations ........................................................................................... 22
       6.9.1 Tree Sensitive Footings ............................................................................... 22
       6.9.2 Soil Compaction or Fill ............................................................................... 23
       6.9.3 Boring of underground utilities ................................................................... 23
       6.9.4 Permeable Materials ..................................................................................... 23
   6.10 Impact Mitigation ................................................................................................... 24
7. Ideal Work Flow .......................................................................................................... 25
8. Conclusion .................................................................................................................... 26
9. Recommendation ......................................................................................................... 26
10. References ................................................................................................................... 26

Appendix 1. Data Collection Definitions ........................................................................ 27
Appendix 2. Significant Tree Details Records ............................................................... 34
1. Introduction

Homewood Consulting Pty Ltd has been engaged to provide a report on the construction impact on significant trees located within the Flemington Housing Estate on Racecourse Road, Flemington. It is proposed to redevelop the site and Moonee Valley City Council has requested an overview of the impact likely to occur to trees recently recorded for inclusion on the Significant Tree Register.

Sixteen records on this site, containing a total of 42 trees, have been nominated and recommended to be included in the 2017 Moonee Valley Significant Tree register. When assessing trees in groups for the Significant Tree Register, a representative from the group was selected and assessed to provide a benchmark Tree Protection Zone (TPZ) for the entire group. For the purposes of this report, a DBH (diameter at breast height) measurement of each tree within the group is required to provide accurate TPZs. A site visit to measure the DBH of each tree was carried out on 14 July 2017.

The Tree Reference Number (TRN) assigned to each tree relates to the Schedule to the Environmental Significance Overlay (ESO) within the Moonee Valley Planning Scheme and this will be the number that is referred to in this report for significant trees. Trees within groups will be affixed with a letter following the number for easy identification.

A base survey plan has been supplied by the Department of Health and Human Services (DHSS) and this plan has been used to locate the trees on-site. A proposed design response has also been supplied by DHSS and has been used to assess the impact on the trees. The plans do not detail construction techniques and/or methods, proposed utilities or underground works and so impact has been assessed only on the building, car parks and path network footprint.

2. Key Objectives

- Record DBH measurements and calculate Tree Protection Zones for all trees proposed for inclusion on the Significant Tree Register.
- Assess and determine construction impact to trees.
- Provide recommendations for managing retained trees to maintain their health and structure throughout the construction process.

3. Methodology

3.1 Site Inspection

In December 2016 a site inspection was conducted to assess 42 individual trees or trees within a group for inclusion into the Significant Tree Register (16 records). A second site visit on Friday, 14 July 2017 was carried out to measure each tree’s DBH within a group to enable accurate TPZs to be calculated for each tree. No other information was collected at the site visit on 14 July 2017.
4. Site Map

Significant Trees located at Flemington Housing Estate

Trees
6. Observations / Discussions

6.1 Site Details

The subject site occupies approximately 6.3 hectares and includes four large high rise buildings containing individual flats, and approximately 12 smaller 3- and 4-storey walk up buildings (See site map). There are numerous car parks, parkland, play grounds, community gardens and paths to service the buildings. There is a mixture of vegetation ranging from large old mature trees scattered throughout the site to smaller tree specimens, shrubs and grasses.

6.2 Tree Details

This report only details the trees assessed for the 2017 Moonee Valley Significant Tree Register. These consist of 16 records (8 individual trees and 8 records containing multiple trees 34 trees in total). Details of the significant trees can be found in Appendix 1.

In order to be included on the Significant Tree Register, trees must have good or fair health and structure and must fulfil one of the significant tree criteria based on the National Trust’s Register of Significant Trees in Victoria. Details of these can be found in Appendix 1.

The majority of trees on this site filled the criteria of ‘Outstanding Size’ and/or ‘Location of Landscape’ (Figure 1 and Figure 2). All of the trees assessed have good or fair health and structure, a high individual significance and landscape significance and long life expectancies.

The most common species was Platanus xacerifolia (London Plane). Most of these were in rows and line the car parks offering shading and aesthetic value. They are large specimens that are taller than 25m. Five trees, all Eucalyptus species are in excess of 30m in height.

All of the trees assessed have a ‘High’ landscape contribution. They provide screening and greenery in a built up environment and add charm and character to the surrounding landscape. They all have a ‘High’ retention value and as many as possible should be retained and protected during construction.
Figure 1: Standing at 33m in height, Tree T244 *Eucalyptus salignus* was nominated for ‘Outstanding Size’ and ‘Outstanding example of the species’.
Figure 2: T250 a row of *Planatus xacelifolia* was nominated for 'Location of Landscape' and 'Outstanding Size'
6.3 Tree Protection Zone Specifications

Damage to trees during development can be direct and indirect.

Direct damage includes mechanical injury to the trunk, the severing of roots, or alterations to the soil environment in the immediate vicinity of tree roots (i.e. compaction or loss of organic matter).

Indirect effects of site development are usually related to soil hydrology. This includes alterations to soil moisture content, changes in the level of the water table and drainage patterns (Coder 1995).

TPZs have been calculated according to the Australian Standard (AS 4970-2009) method on all trees to be retained. This method calculates the DBH as 12 times the trunk diameter at 1.4m above ground level. 15m radius TPZ is the maximum and 2m is the minimum. Palms are calculated using their canopy width plus 1 as they have fibrous root systems that do not spread out. TPZ dimensions for each tree can be found in 6.8, Table 2.

The TPZ acts as a physical barrier of protective fencing that is a minimum of 1.8m high. It is erected around retained specimens (at the edge of the TPZ) before site works commence (Figure 3).

![Figure 3: TPZ fencing is erected around retained trees prior to site works](image)

Reference: 3190
6.4 Tree Protection Zone Guidelines:

Careful adherence to the following exclusions and inclusions will maintain the health and longevity of retained tree specimens.

**Include** the following procedures in setting up and maintaining any TPZ (adapted from AS 4970-2009):

- Erect warning signs at regular intervals along the entire length of any protective TPZ fencing (Figure 4).
- Construct TPZ fencing to prevent pedestrian access into the protected area.
- Mulch the TPZ area to a depth of 150mm with woodchips (if available, use woodchips generated from on-site tree clearing).
- Irrigate TPZs periodically, as determined by the consulting arborist.

**Exclude** the following from taking place within any TPZ (adapted from AS 4970-2009):

- built structures or hard landscape features (i.e., paving, retaining walls)
- materials storage (i.e., equipment, fuel, building waste or rubble)
- soil disturbance (i.e., stripping or grade changes)
- excavation works including soil cultivation (specifically surface-dug trenches for underground utilities)
- placement of fill
- lighting of fires
- preparation of chemicals, including preparation of cement products
- pedestrian or vehicular access (i.e., pathways).

TPZ guidelines need to adhere to all stages of the design and construction process and are relevant to all on-site utilities.

![Tree Protection Zone](image)

**Figure 4:** Example of a TPZ warning sign clearly displayed on TPZ fencing.
6.6 Design Proposal
The design proposal includes (Figure 5):
- Demolition of buildings and car parks.
- Six new parcel areas for residential development with two or more multistorey buildings within each parcel
- Car parks and street access network within the parcels
- One multistorey carpark on the eastern boundary.
6.7 TPZ Encroachment (AS 4970)

Some of the trees will be impacted upon by the proposed design response and subsequent construction. The construction impact on trees is determined by using methodology as set out in the Australian Standard for Protection of Trees on Development Sites (AS 4970-2009). Some encroachment into the TPZ is allowed by the AS 4970.

6.7.1 Minor encroachment

Encroachment of less than 10% of the TPZ and outside the Structural Root Zone (SRZ) is deemed to be minor encroachment according to AS 4970-2009. Detailed root investigations should not be required but must be compensated with an extension to the TPZ elsewhere (Figure 6). Variations must be made by the project arborist considering other relevant factors including tree health, vigour, stability, species sensitivity and soil characteristics.

![Figure 6: Example of TPZ encroachment and compensatory offset (image from AS 4970)](image)

6.7.2 Major encroachment

Encroachment of more than 10% of the TPZ or into the SRZ is deemed to be major encroachment according to AS 4970-2009. The project arborist must demonstrate that the trees would remain viable. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. This may require root investigation by non-destructive methods and consideration of relevant factors tree health, vigour, stability, species sensitivity and soil characteristics.

6.7.3 Structural Root Zone

The proposed construction will encroach into the Structural Root Zone (SRZ) of some trees. Such construction must not impact on the trees’ SRZ.

The SRZ is the minimum volume of roots required by the tree to remain stable in the ground. If the SRZ is breached the chances of windthrow are significantly increased, especially if roots are cut on the same side as prevailing winds. Windthrow is an event where the entire tree fails/falls over. Often, the tree is completely uprooted with devastating results.

It is important to note that the SRZ is not related to tree health. It refers to the physical volume of roots required for the tree to remain stable in the ground. It is in no way related to the physiological requirements of the tree, but is the minimum volume of roots required for the tree to remain standing (Matteck and Breloer 1994).
6.8 Construction Impact

The proposed design encroaches into the TPZ of 20 significant trees.

- 4 of these trees have a ‘Minor’ TPZ encroachment according to AS 4970, 2009 and
- 16 have a ‘Major’ TPZ encroachment.

Table 2 summarises encroachment and construction impact.

Nine of the trees with a ‘Major’ encroachment (greater than 34%) require major design changes to be able to remain in the landscape. Any new design needs to keep out of the TPZ of these trees. If this is not possible, then they will require removal as works are proposed to go up to or over their trunks. Two trees with a ‘Major’ encroachment T247 and T247a are already located in a carpark and, some minor design changes incorporating them into a new carpark, will enable these two trees to remain in the landscape.

The remaining 5 trees with a ‘Major’ TPZ encroachment (between 10-20%) should be able to remain in the landscape providing some mitigation measures are carried out. Encroachment does not enter the SRZ of these trees and so they should be able to remain in the landscape without the risk of windthrow. Due to the major encroachment their health may suffer and some mitigation measures such as mulch and irrigation should be undertaken to assist their health throughout the construction process. Providing these measures are undertaken they should be able to remain successfully in the landscape.

Twenty-two trees have no encroachment or impact into their TPZs. Mitigation measures for all trees to be retained are outlined in section 6.10.

Demolition of buildings and carparks has the potential to cause damage to trees. Demolition within TPZs of retained trees should be carried out with care, under arborist supervision and with no roots severed.

Figure 7 and Figure 8 show a close up of encroachment and Table 3 shows a table showing retention status for all trees.
Figure 7: Proposed construction works and TPZ Encroachment (light pink – Major encroachment, dark pink – Minor encroachment) Northern end of site
Figure 8: Encroachment at southern end of site.
### Table 2: TPZ Dimensions, TPZ Enroachment and Construction Impact for all trees

<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>DTH (cm)</th>
<th>TPZ Width (m)</th>
<th>TPZ Length (m)</th>
<th>TPZ Enroachment %</th>
<th>Construction Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>T241</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>88</td>
<td>10.32</td>
<td>3.10</td>
<td>5</td>
<td>Minor</td>
</tr>
<tr>
<td>T241a</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>79</td>
<td>9.48</td>
<td>2.98</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T241b</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>75</td>
<td>9</td>
<td>2.93</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T242</td>
<td>Ulmus globosa 'Lutescens'</td>
<td>Golden Elm</td>
<td>54</td>
<td>8.48</td>
<td>2.55</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T242a</td>
<td>Ulmus globosa 'Lutescens'</td>
<td>Golden Elm</td>
<td>58</td>
<td>6.96</td>
<td>2.63</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T243</td>
<td>Corymbia maculata</td>
<td>Spotted Gum</td>
<td>60</td>
<td>7.20</td>
<td>2.67</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T244</td>
<td>Eucalyptus saligna</td>
<td>Sydney Blue Gum</td>
<td>114</td>
<td>13.88</td>
<td>3.49</td>
<td>44</td>
<td>Major</td>
</tr>
<tr>
<td>T245</td>
<td>Eucalyptus globulus</td>
<td>Blue Gum</td>
<td>100</td>
<td>12</td>
<td>3.50</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T246</td>
<td>Eucalyptus saligna</td>
<td>Sydney Blue Gum</td>
<td>79</td>
<td>9.48</td>
<td>2.93</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T247</td>
<td>Eucalyptus saligna</td>
<td>Sydney Blue Gum</td>
<td>74</td>
<td>8.88</td>
<td>2.51</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T247a</td>
<td>Eucalyptus saligna</td>
<td>Sydney Blue Gum</td>
<td>74</td>
<td>8.88</td>
<td>2.51</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T248</td>
<td>Eucalyptus globulus</td>
<td>Blue Gum</td>
<td>113</td>
<td>13.86</td>
<td>3.48</td>
<td>34</td>
<td>Major</td>
</tr>
</tbody>
</table>

References: 2061

---

### Table 2: TPZ Dimensions, TPZ Enroachment and Construction Impact for all trees

<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>DTH (cm)</th>
<th>TPZ Width (m)</th>
<th>TPZ Length (m)</th>
<th>TPZ Enroachment %</th>
<th>Construction Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>T249</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>75</td>
<td>9</td>
<td>2.93</td>
<td>1</td>
<td>Minor</td>
</tr>
<tr>
<td>T250</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>85</td>
<td>7.62</td>
<td>2.77</td>
<td>19</td>
<td>Major</td>
</tr>
<tr>
<td>T250a</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>71</td>
<td>8.52</td>
<td>2.86</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T250b</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>76</td>
<td>9.12</td>
<td>2.94</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T250c</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>80</td>
<td>9.60</td>
<td>3.01</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T251</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>98</td>
<td>10.32</td>
<td>3.10</td>
<td>45</td>
<td>Major</td>
</tr>
<tr>
<td>T252</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>82</td>
<td>7.44</td>
<td>2.70</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T252a</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>58</td>
<td>8.95</td>
<td>2.63</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T252b</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>57</td>
<td>8.84</td>
<td>2.81</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T252c</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>88</td>
<td>8.18</td>
<td>2.81</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T252d</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>75</td>
<td>9</td>
<td>2.93</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T252e</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>96</td>
<td>7.92</td>
<td>2.77</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T252f</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>75</td>
<td>9</td>
<td>2.93</td>
<td>11</td>
<td>Major</td>
</tr>
<tr>
<td>T252g</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>73</td>
<td>8.10</td>
<td>2.89</td>
<td>100</td>
<td>Major</td>
</tr>
<tr>
<td>T253</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>70</td>
<td>8.40</td>
<td>2.84</td>
<td>2</td>
<td>Minor</td>
</tr>
<tr>
<td>T253a</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>73</td>
<td>8.76</td>
<td>2.89</td>
<td>10</td>
<td>Major</td>
</tr>
<tr>
<td>T253b</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>68</td>
<td>8.10</td>
<td>2.81</td>
<td>17</td>
<td>Major</td>
</tr>
<tr>
<td>T253c</td>
<td>Platanus Xacmnhbha</td>
<td>London Plane</td>
<td>72</td>
<td>8.64</td>
<td>2.88</td>
<td>18</td>
<td>Major</td>
</tr>
</tbody>
</table>

References: 2061
<table>
<thead>
<tr>
<th>Tree No</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Diameter</th>
<th>TRZ (m)</th>
<th>SRZ (m)</th>
<th>TRZ Envelopment (%)</th>
<th>Construction Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>T264</td>
<td>Phoenix canariensis</td>
<td>Canary Island Date Palm</td>
<td>90</td>
<td>3.50</td>
<td>2.67</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T264a</td>
<td>Phoenix canariensis</td>
<td>Canary Island Date Palm</td>
<td>88</td>
<td>3.50</td>
<td>2.81</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>88</td>
<td>8.16</td>
<td>2.81</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273a</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>88</td>
<td>11.88</td>
<td>3.08</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273b</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>88</td>
<td>9.49</td>
<td>2.59</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273c</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>75</td>
<td>9.93</td>
<td>2.93</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273d</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>64</td>
<td>7.68</td>
<td>2.74</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273e</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>78</td>
<td>9.36</td>
<td>2.98</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273f</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>80</td>
<td>9.80</td>
<td>3.01</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273g</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>75</td>
<td>9.12</td>
<td>2.84</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T273h</td>
<td>Corymbia macleayi</td>
<td>Spotted Gum</td>
<td>74</td>
<td>8.88</td>
<td>2.91</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>T317</td>
<td>Phelantus Xerophila</td>
<td>London Plane</td>
<td>105</td>
<td>12.6</td>
<td>3.37</td>
<td>0</td>
<td>None</td>
</tr>
</tbody>
</table>
Table 3 shows the expected retention status for each tree with the current design proposal. Final plans showing construction methods and techniques and underground utilities will need reviewing by the arborist, prior to commencement of demolition and construction, to determine impact more accurately.

<table>
<thead>
<tr>
<th>TRN</th>
<th>No of Trees</th>
<th>TPZ Encroachment</th>
<th>Construction Impact</th>
<th>Retention Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>T242, T242a, T243, T244, T245, T246, T248, T251, T252g</td>
<td>9</td>
<td>Major 34-100%</td>
<td>High</td>
<td>Remove Design changes to buildings required to retain trees</td>
</tr>
<tr>
<td>T247, T247a</td>
<td>2</td>
<td>Major 100%</td>
<td>High</td>
<td>Minor design changes to car park required to retain trees</td>
</tr>
<tr>
<td>T250, T252f, T253a, T253b, T253c</td>
<td>5</td>
<td>Major 10-20%</td>
<td>High</td>
<td>Retain with TPZ fencing and arborist supervision</td>
</tr>
<tr>
<td>T241, T249, T253, T273a</td>
<td>4</td>
<td>Minor (less than 10%)</td>
<td>Low</td>
<td>Retain with TPZ fencing</td>
</tr>
<tr>
<td>T241a, T241b, T250a, T250b, T250c, T252a, T252b, T252c, T252d, T252e, T254a, T273, T273b, T273c, T273d, T273e, T273f, T273g, T273h, T317</td>
<td>22</td>
<td>None</td>
<td>None</td>
<td>Retain with TPZ Fencing</td>
</tr>
</tbody>
</table>

### 6.9 Design Considerations

To minimise impact from construction within the TPZ of retained trees, the following factors should be considered at the design stage.

#### 6.9.1 Tree Sensitive Footings

If and where possible within TPZs of retained trees, buildings should be constructed on 'Pier and Beam', 'Screw Pile' or ‘Stump’ footings rather than trench foundations within the TPZs of retained trees, as these generally have a lower impact on surrounding vegetation because soil excavations are kept to a minimum. Individual holes are less likely to damage tree roots compared with a continual open trench. If a Pier and Beam system is to be utilised the beam must be above ground level and not submerged (i.e. no excavation). Using these tree sensitive footings to construct any proposed building within a TPZ will reduce potential root impact.

Some flexibility in the placement of the footings is required to ensure that, if any major roots are discovered (i.e. 40mm plus), footings can be moved slightly. If stump/pier holes are excavated manually and significant tree roots are not severed, it is unlikely that any proposed construction will impact on the health and structure of the trees.

Reference: 2051
6.9.2 Soil Compaction or Fill
Where possible soil compaction or placement of fill (>50mm) should be avoided within the TPZ of retained trees.

- Compacting or filling the soil level is detrimental because:
  - It changes soil conditions dramatically.
  - The tree’s root system does not have enough time to adapt to the changed conditions.
  - It can lead to a decline in tree health and even death.

Changing the surface level and/or surface type near a tree’s root system effectively starves the roots in that area of water and oxygen. Continuous pedestrian traffic, cars, trucks and earth moving machinery can all cause soil compaction.

6.9.3 Boring of underground utilities
Underground piping and utilities going within TPZs should be bored under the root system rather than trenching to. This will have a lesser impact on roots and minimise severance. All boring should start and finish outside of the TPZ, be at least 1m from the trunk of the tree to avoid tap roots and root complexes close to the trunk and be at least 0.8m deep.

6.9.4 Permeable Materials
Hard surfaces within the TPZ of remaining trees, including car parks, path and other outdoor areas should be designed to be permeable (paving, asphalt, deckings ‘no fines concrete’ etc). Permeable materials reduce runoff, allow for water to penetrate down to the soil and a continuous exchange of air with the atmosphere, thereby maintaining a high soil oxygen level (Ferguson 2005). Figure 9 provides an example of porous paving using Eco-Trihex pavers, which may be applicable for paved areas.

Figure 9: Example of Eco-Trihex paving
6.10 Impact Mitigation

In order to ensure the significant trees that are to be retained remain successfully in the landscape the following should be carried out:

- When designing buildings, carparks and infrastructure including construction methods and techniques within the TPZ of trees, consideration should be given to root sensitive construction techniques and methods.
- Modifications to the car park on the southern side of the site in the vicinity of Trees T247 and T247a requires minor modification to enable these two trees to remain in the landscape.
- The final design should be assessed by a qualified arborist to determine further impact on the trees.
- Following an approved design:
  - All site workers must be familiar with the mitigation measures outlined in this and any other subsequent reports prior to any works commencing on site.
  - TPZs must be installed around all significant trees to be retained using the dimensions set out in 6.8, Table 2.
  - TPZ fencing should be a minimum of 1.8m high
  - TPZ fencing should be inspected by a qualified arborist prior to demolition and construction to ensure it is adequate. All TPZs should be checked at regular intervals by a qualified arborist (recommended every 6-8 weeks) during the construction phase.
  - Within the TPZ there are to be:
    - No built structures other than discussed in this report.
    - No excavation other than discussed in this report within any TPZ.
    - No storage of materials, liquids or vehicular equipment.
    - No soil changes, ie grade changes, other than what is discussed in this report.
    - No Pedestrian or vehicular access into the TPZs.
  - TPZs where works are being carried out should be mulched to a depth of 150mm, irrigated periodically as determined by a qualified arborist and supervised by a qualified arborist.
  - Any demolition of buildings or infrastructure carried out within the TPZ of retained trees should be undertaken with care and under arborist supervision. No large roots are to be severed.
  - When the time comes to construct within the TPZ of any tree, the TPZ fencing can be moved back to the construction footprint and all work must be carried out from within the footprint. No other works should be carried out within the TPZs other than that approved following a final design.
  - All works within TPZs including demolition and construction should be supervised by a qualified arborist to ensure minimal damage to roots.
  - Any underground services should be bored under TPZs, rather than trenched.
7. Ideal Work Flow

Figure 10 is a recommended flow diagram illustrating development progression and arborist involvement. Following this path will ensure that optimal protection is afforded to the trees, thereby promoting tree health and stability and allowing for long-term retention in the landscape.

Figure 10: Ideal work flow and arborist involvement.
8. Conclusion

Sixteen significant tree records containing 42 trees in total have been assessed for potential impact from construction plans to redevelop Flemington Housing Estate. The trees are all large valuable specimens with good or fair health and structure. They all have a high landscape contribution and a high retention value.

The proposed design encroaches into the TPZ of 20 significant trees. Four of these trees have a ‘Minor’ TPZ encroachment and 16 have a ‘Major’ encroachment.

Nine of the trees with a ‘Major’ encroachment (greater than 34%) require removal as works are proposed to go up to or over their trunks. Two trees require minor modifications to the design of a carpark and the remaining 5 trees with a ‘Major’ TPZ encroachment (between 10-20%) require mitigation measures carried out to be able to remain successfully in the landscape.

Twenty-two trees have no encroachment or impact into their TPZs.

All trees to be retained require TPZs installed, mitigation measures adhered to and root sensitive designs to be considered.

9. Recommendation

See Summary

10. References


Ferguson, B. K., 2005, Porous Pavements, CRC Press, Florida

Appendix 1. Data Collection Definitions

The information collected on each specimen was based on the assessor’s experience and opinion of each of the trees. Included are the descriptions for each of the listed categories. The following information was collected on each tree.

1.1 Unique ID
Tree id number

1.2 Name
The genus, species, common name and origin of the tree.

1.3 Height
Measured with a laser range finder to the nearest metre.

1.4 Width
Measured diameter of the tree to the nearest whole metre in an East/West and North/South direction.

1.5 DBH
Measured using a diameter tape at 1.4m above ground level to the nearest centimetre.

1.6 Number of Trunks
The number of trunks that were measured to calculate the DBH.

1.7 Approximate Age
Approximate or known age of the tree in categories: 0-20, 21-40, 41-60, 61-80, 80-100, 100+

1.8 SRZ measurement
Diameter of trunk above the root flare measured with a diameter tape.
1.9 Maturity

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>The tree has recently been planted (within the last 3 – 5 years). The tree’s age is considered to be within the first 10% of the total ULE for that species.</td>
</tr>
<tr>
<td>Semi-mature</td>
<td>The tree has become established in the site and its age is more than 10% but less than 30% of the total ULE for that species. The tree may be approaching its expected mature size. If correctly maintained the specimen will continue to grow to maturity.</td>
</tr>
<tr>
<td>Mature</td>
<td>The tree’s age is more than 30% of the total ULE for that species. Usually the tree will have reached the expected size for the species in the site. It is expected that the tree will slowly increase in size and girth and require normal periodic inspection until in senescence.</td>
</tr>
</tbody>
</table>

1.10 Health

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>The tree is demonstrating excellent or exceptional growth. The tree should exhibit a full canopy of foliage and be free of pest and disease problems.</td>
</tr>
<tr>
<td>Good</td>
<td>The tree is demonstrating good or exceptional growth. The tree should exhibit a full canopy of foliage, and have only minor pest or diseases problems.</td>
</tr>
<tr>
<td>Fair</td>
<td>The tree is in reasonable condition and growing well. The tree should exhibit an adequate canopy of foliage. There may be some deadwood present in the crown. Some grazing by insects or possums may be evident.</td>
</tr>
<tr>
<td>Poor</td>
<td>The tree is not growing to its full capacity; extension growth of the laterals is minimal. The canopy may be thinning or sparse. Large amounts of deadwood may be evident throughout the crown. Significant pest and disease problems may be evident or symptoms of stress indicating tree decline.</td>
</tr>
<tr>
<td>Very Poor</td>
<td>The tree appears to be in a state of decline. The tree is not growing to its full capacity. The canopy may be very thin and sparse. A significant volume of deadwood may be present in the canopy or pest and disease problems may be causing a severe decline in tree health.</td>
</tr>
<tr>
<td>Dead</td>
<td>The tree is dead.</td>
</tr>
</tbody>
</table>
1.11 Structure

Table 6. Structure Definition

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>The tree has a well-defined and balanced crown. Branch unions appear to be</td>
</tr>
<tr>
<td></td>
<td>strong, with no defects evident in the trunk or the branches. Major limbs</td>
</tr>
<tr>
<td></td>
<td>are well defined. The tree is considered a good example of the species.</td>
</tr>
<tr>
<td>Fair</td>
<td>The tree has some minor problems in the structure of the crown. The crown</td>
</tr>
<tr>
<td></td>
<td>may be slightly out of balance, and some branch unions may be exhibiting</td>
</tr>
<tr>
<td></td>
<td>minor structural faults. If the tree has a single trunk, it may be on a</td>
</tr>
<tr>
<td></td>
<td>slight lean or exhibiting minor defects.</td>
</tr>
<tr>
<td>Poor</td>
<td>The tree may have a poorly structured crown. The crown may be unbalanced</td>
</tr>
<tr>
<td></td>
<td>or exhibit large gaps. Major limbs may not be well defined. Branches may</td>
</tr>
<tr>
<td></td>
<td>be rubbing or crossing over. Branch unions may be poor or faulty at the</td>
</tr>
<tr>
<td></td>
<td>point of attachment. The tree may have suffered root damage.</td>
</tr>
<tr>
<td>Very Poor</td>
<td>The tree has a poorly structured crown. The crown is unbalanced or exhibit</td>
</tr>
<tr>
<td></td>
<td>large gaps with possibly large sections of deadwood. Major limbs may not be</td>
</tr>
<tr>
<td></td>
<td>well defined. Branches may be rubbing or crossing over. Branch unions may</td>
</tr>
<tr>
<td></td>
<td>be poor or faulty at the point of attachment. Branches may exhibit large</td>
</tr>
<tr>
<td></td>
<td>cracks that are likely to fail in the future. The tree may have suffered</td>
</tr>
<tr>
<td></td>
<td>major root damage.</td>
</tr>
<tr>
<td>Failed</td>
<td>The tree has a very poorly structured crown. A section of the tree has</td>
</tr>
<tr>
<td></td>
<td>failed or is in imminent danger of failure.</td>
</tr>
</tbody>
</table>

1.12 Useful Life Expectancy (ULE) Rating

Useful Life Expectancy is approximately how long a tree can be retained safely and usefully in the landscape.

Table 7. ULE Definition

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe</td>
<td>The tree is considered dangerous in the location and has no significant</td>
</tr>
<tr>
<td></td>
<td>amenity value.</td>
</tr>
<tr>
<td>Less than 5 yrs</td>
<td>The tree, under normal circumstances and without extra stresses being</td>
</tr>
<tr>
<td></td>
<td>imposed on it, should be safe and have value for up to five years, but</td>
</tr>
<tr>
<td></td>
<td>will need to be replaced. During this period, normal inspections and</td>
</tr>
<tr>
<td></td>
<td>maintenance will be required. If possible, replacement trees should be</td>
</tr>
<tr>
<td></td>
<td>planted.</td>
</tr>
<tr>
<td>5 – 10 yrs</td>
<td>The tree, under normal circumstances and without extra stresses being</td>
</tr>
<tr>
<td></td>
<td>imposed on it, should be safe and of value for up to ten years. During</td>
</tr>
<tr>
<td></td>
<td>this period, normal inspections and maintenance will be required.</td>
</tr>
<tr>
<td>11 – 20 yrs</td>
<td>The tree, under normal circumstances and without extra stresses being</td>
</tr>
<tr>
<td></td>
<td>imposed on it, should be safe and of value for up to twenty years. During</td>
</tr>
<tr>
<td></td>
<td>this period, normal inspections and maintenance will be required.</td>
</tr>
<tr>
<td>20 – 40 yrs</td>
<td>The tree, under normal circumstances and without extra stresses being</td>
</tr>
<tr>
<td></td>
<td>imposed on it, should be safe and of value for up to forty years. During</td>
</tr>
<tr>
<td></td>
<td>this period, normal inspections and maintenance will be required.</td>
</tr>
<tr>
<td>Greater than 40 years</td>
<td>The tree, under normal circumstances and without extra stresses being imposed on it, should be safe and of value for greater than forty years. During this period, normal inspections and maintenance will be required.</td>
</tr>
</tbody>
</table>
1.13 Defects
The defects field will list defects that are a significant issue associated with the tree that may require management/attention in the short to medium-term. They are generally divided into defects associated with the roots, trunk or canopy and can list multiple defects.

This will include defects such as:
- Soil Compaction
- Exposed Roots
- Unstable in the ground
- Mechanical damage to roots
- Ground Heave
- Filled Soil
- Trunk Codominant
- Trunk Decay
- Trunk Lean
- Trunk Lopped
- Trunk Included Bark
- Trunk Active Split
- Trunk Bracket Fungi
- Trunk Mechanical Damage
- Trunk Cavity
- Canopy Hollow
- Canopy Codominant
- Canopy Extended Branches
- Canopy Deadwood
- Canopy Included Bark
- Canopy Active Split
- Canopy Mechanical Damage
- Canopy Broken Branch
- Canopy Lopped
- Pest and Disease
1.14 Significance Criteria
The significance criteria are based on the National Trust of Victoria Significant Tree Register.

1.14.1 Horticultural or Genetic Value
Any tree which is of horticultural or genetic value and could be an important source of propagating stock, including specimens that are particularly resistant to disease or exposure. This could include Australian native, locally indigenous or exotic tree species.
A tree or group of trees that are of ecological or environmental significance. These trees may provide habitat value or contribute significantly to a greater habitat corridor.

1.14.2 Unique Location or Context
The tree or trees occur in a unique location or context, so as to provide a unique contribution to the landscape. This includes the following categories:
- Historic Garden or Park
- Historic Cemetery
- Important Landmark
- Habitat Trees
- End of Natural Range
- Contribution to Landscape
- Historic Town
- Historic Planting Style
- Environmentally sensitive site (eg. Riparian, wetland)
1.14.3 Rare or Localised Distribution
Any tree of a species or variety that is rare, or is of very localised distribution. This could include:
- A threatened indigenous or endemic species within its locality
- End of natural range
- Disjunct community
- A rare exotic specimen

1.14.4 Particularly Old Specimen
Any tree that is particularly old or venerable.

1.14.5 Outstanding Size (Girth height spread)
The outstanding size of a tree will relate specifically to the tree species and may vary considerably depending:
- Height
- Canopy Spread
- Diameter at Breast Height (DBH)

1.14.6 Aesthetic Value
The tree is a particularly well formed example of the species that is in a location that makes it striking in the landscape. The loss of a tree in this category would result in a substantial change to the local landscape.

1.14.7 Curious Growth Habit
Any tree which exhibits a curious growth form or physical feature such as abnormal outgrowths, natural fusion of branches, severe lightning damage or unusually pruned forms.
- Abnormal Outgrowths
- Fusion of Branches
- Unusually Pruned
- Unusually Damaged

1.14.8 Historical Significance
The tree is of importance in the culture and natural history of the City of Moonee Valley. Any tree commemorating a particular occasion, individual or associated with an important historical event may be considered in this category. This includes but is not limited to:
- Cultural Groups
- Important Individuals
- Commemorative Plantings
- Public Feature
- World War I and II
- Avenues of Honour
- British Royalty
Overview of Construction Impact

- Non-British Royalty
- Visiting Dignitary
- Australian Public Figure
- Victorian Public Figure

1.14.9 Connection to Aboriginal Culture
A tree associated with aboriginal activities or culture. For example:
- Scarred trees
- Corroboree trees

1.14.10 Outstanding example of species
Any tree that is an outstanding example of the species at an International / National / State / Regional / Local level or of particular aesthetic value.

1.14.11 Remnant
Any tree that is likely to predate European development of the area. This puts the trees in the region of 100-200 years old.

1.14.12 Outstanding habitat
The tree is observed to have significant hollows for avian fauna or is clearly being used as a major food source for fauna. The presence of large raptor nests or numerous nests may qualify a tree in this category.
Appendix 2. Significant Tree Detail Records
### Assessments for City of Moonee Valley’s Significant Tree Study

#### Proposed TRN: T241

- **Botanical Name:** *Pinus radiata* D. Don.
- **Common Name:** London Plane
- **Graphics:** Emote
- **Height (m):** 27
- **Width (m):** 17
- **Circumference (m):** 17
- **Significance:** Location of Landscape
  - Central Espalier

**Approximate Age:** 84+40 years

- **USL:** 21-40 years
- **Health:** Good
- **Structure:** Fair
- **Failure Probability:** Low
- **Failure Size:** 3.1-2.0m
- **Target:** 3.1m
- **Risk Score:** 1
- **Risk Category:** Low

**Defects:** None

- **Trunk:** None
- **Crown:** None

**Remarks:**
- Works: None
- Priority: None

**Comments:**
- This specimen is part of a row of large trees all in good condition. They dominate the surrounding landscape and add character to their built surrounds.

#### Proposed TRN: T242

- **Botanical Name:** *Liriodendron tulipifera*
- **Common Name:** Golden Elm
- **Graphics:** Emote
- **Height (m):** 21
- **Width (m):** 17
- **Circumference (m):** 17
- **Significance:** Aesthetic Value, Location of Landscape
  - Central Espalier

**Approximate Age:** 41-65 years

- **USL:** 21-40 years
- **Health:** Good
- **Structure:** Fair
- **Failure Probability:** Low
- **Failure Size:** 3.1-2.0m
- **Target:** 3.1m
- **Risk Score:** 1
- **Risk Category:** Low

**Defects:**
- Central crown holes

**Remarks:**
- Works: None
- Priority: None

**Comments:**
- This is one of a pair of Golden Elms both in good condition especially in context with their built surrounds. They will continue to add character to the landscape.
## Assessments for City of Moonee Valley’s Significant Tree Study

### Proposed TRN T243

<table>
<thead>
<tr>
<th>Approximate Age</th>
<th>80-100 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ULG</td>
<td>21-40 years</td>
</tr>
<tr>
<td>Health</td>
<td>Good</td>
</tr>
<tr>
<td>Structure</td>
<td>Fair</td>
</tr>
<tr>
<td>Failure Probability</td>
<td>Moderate</td>
</tr>
<tr>
<td>Failure Size</td>
<td>4.0-10/102mm</td>
</tr>
<tr>
<td>Target</td>
<td>9. Pedestrian, 2.7m</td>
</tr>
<tr>
<td>Risk Score</td>
<td>Low</td>
</tr>
<tr>
<td>Risk Category</td>
<td>Low</td>
</tr>
<tr>
<td>No. of Trees</td>
<td>1</td>
</tr>
<tr>
<td>Significance</td>
<td>Standing at 30 metres in height, it is a tree that makes the surrounding landscape. It is a large specimen in good condition especially in contrast with its built surroundings.</td>
</tr>
</tbody>
</table>

### Proposed TRN T244

<table>
<thead>
<tr>
<th>Approximate Age</th>
<th>50-70 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ULG</td>
<td>21-40 years</td>
</tr>
<tr>
<td>Health</td>
<td>Good</td>
</tr>
<tr>
<td>Structure</td>
<td>Good</td>
</tr>
<tr>
<td>Failure Probability</td>
<td>Moderate</td>
</tr>
<tr>
<td>Failure Size</td>
<td>4.0-10/102mm</td>
</tr>
<tr>
<td>Target</td>
<td>9. Pedestrian, 2.7m</td>
</tr>
<tr>
<td>Risk Score</td>
<td>Low</td>
</tr>
<tr>
<td>Risk Category</td>
<td>Low</td>
</tr>
<tr>
<td>No. of Trees</td>
<td>1</td>
</tr>
<tr>
<td>Significance</td>
<td>This is an excellent example of the species. It has good form, a full canopy and towers over the nearby buildings.</td>
</tr>
</tbody>
</table>
Assessments for City of Moonee Valley’s Significant Tree Study

**Proposed TRN** T245

- **Botanical Name:** Eucalyptus globulus
- **Common Name:** Blue Gum
- **Status:** Native
- **Height (m):** 35
- **Width (m):** 17
- **Condition (m):** 14

**Significance:** Location of Landscape, Context, Outstanding Size

- **Approximate Age:** 8-90 years
- **Life Span:** 21-40 years
- **Health:** Good
- **Restoration:** No work recommended
- **Works Priority:** None
- **Target:** Pedestrian, 2.7m
- **Risk Score:** 1 in 30000
- **Recent Topic:** Single Tree
- **Significance:** This is a large specimen in good condition, particularly in context with its bulk surrounds.

---

Assessments for City of Moonee Valley’s Significant Tree Study

**Proposed TRN** T246

- **Botanical Name:** Eucalyptus globulus
- **Common Name:** Sydney Blue Gum
- **Status:** Native
- **Height (m):** 35
- **Width (m):** 21

**Significance:** Location of Landscape, Context, Outstanding Size

- **Approximate Age:** 8-90 years
- **Life Span:** 21-40 years
- **Health:** Good
- **Restoration:** No work recommended
- **Works Priority:** None
- **Target:** Pedestrian, 2.7m
- **Risk Score:** 1 in 30000
- **Recent Topic:** Single Tree
- **Significance:** This is a large specimen in good condition, particularly in context with its bulk surrounds.
Assessments for City of Moonee Valley’s Significant Tree Study

**Proposed TRN** T249

- **Botanical Name:** Phallicodia xanthophloea
- **Common Name:** London Plane
- **Height (m):** 35
- **Width (m):** 10
- **Combined GIS (m):** 1

**Significance:** Outstanding Size Location of Landscape Context

**Approximate Age:** 51-55 years
- **ULG:** 21-40 years
- **Health:** Good
- **Structure:** Good
- **Failure Probability:** Low
- **Failure Size:** 3-101-236mm
- **Target:** 3 Pedestrian, 2.1m

**Risk Score:** 1 in 533,333
- **Risk Category:** Low
- **No. of Traps:** 4

**Significance:** This is a large specimen in good condition, particularly in context with its built surrounds. It provides shade and adds character to the landscape.

**TPZ radius (m):** 0.5
- **SRZ measured (m):** 66
- **SRZ radius (m):** 3.14

**Location:** Field in playground adjacent Pennanour Road

**Homewood ID:** 305

**Inspection Date:** 13/12/2018

---

**Proposed TRN** T250

- **Botanical Name:** Phallicodia xanthophloea
- **Common Name:** London Plane
- **Height (m):** 35
- **Width (m):** 10
- **Combined GIS (m):** 1

**Significance:** Outstanding Size Location of Landscape Context

**Approximate Age:** 91-95 years
- **ULG:** 21-40 years
- **Health:** Good
- **Structure:** Good
- **Failure Probability:** Low
- **Failure Size:** 3-101-236mm
- **Target:** 3 Pedestrian, 2.7m

**Risk Score:** 1 in 533,333
- **Risk Category:** Low
- **No. of Traps:** 4

**Significance:** These are four large London Plane trees located in the centre of a car park. They are in good condition and provide shade and character to the surrounding landscape.

**TPZ radius (m):** 9
- **SRZ measured (m):** 66
- **SRZ radius (m):** 3.18

**Location:** In car park

**Homewood ID:** 704

**Inspection Date:** 13/12/2018
Assessments for City of Moonee Valley’s Significant Tree Study

Proposed TRN: T251

Botanical Name: Phyllocladus asplenifolius
Common Name: American Holly

Significance: Outstanding Size Location of Landscape Context

Approximate Age: 81-147 years
LULC: 21-40 years
Health: Good
Structure: Good
Failure Probability: Low
Failure Size: 101-200mm
Target: 3 Pedestrians, 2.7m
Risk Score: 1 in 300000
Risk Category: Low
Miss Category: Single Tree
No. of Misses: 1

Defects: None

Comments: This tree is a large example of the species located in a prominent position. It provides shade and cooling and adds character to the local landscape.

TPZ radius (m): 10.32
SRZ assessment (m): 120
SRZ height (m): 3.44
Owner: Council
Metro Map Ref: 29 A2
Easting: 381179.7399
Northing: 3810715.9106
Property Address: 126 CRESCENT, ROAD, PLEMINSTON, 3051
Location: St Leonards
Homewood ID: 205
Inspection: No
Inspection Date: 19/12/2016

Assessments for City of Moonee Valley’s Significant Tree Study

Proposed TRN: T252

Botanical Name: Phyllocladus asplenifolius
Common Name: American Holly

Significance: Outstanding Size Location of Landscape Context

Approximate Age: 81-147 years
LULC: 21-40 years
Health: Good
Structure: Good
Failure Probability: Low
Failure Size: 101-200mm
Target: 3 Vehicles, stationary
Risk Score: 1 in 300000
Risk Category: Low
Miss Category: Multiple Trees
No. of Misses: 6

Defects: None

Comments: One of a group of eight large London Plane trees located in a park. They are large specimens with large canopies surrounding the entire complex. They provide cooling and shade in summer and add character to the landscape.

TPZ radius (m): 9.12
SRZ assessment (m): 67
SRZ height (m): 3.12
Owner: Council
Metro Map Ref: 29 A2
Easting: 381179.7399
Northing: 3810715.9106
Property Address: 126 CRESCENT, ROAD, PLEMINSTON, 3051
Location: St Leonards
Homewood ID: 206
Inspection: No
Inspection Date: 19/12/2016
## Assessments for City of Moonee Valley's Significant Tree Study

### Proposed TRN T253

**Botanical Name:** *Phyllocladus asplenoides*

**Common Name:** Carries Island Date Palm

**Height (m):** 35

**Width (m):** 16

**Combined DBH (m):** 13

**Number of Trees:** 1

**Significance:** Outstanding Size Location of Landscape Context

**Approximate Age:** 11-40 years

**U/L/G:** 21-40 years

**Health:** Good

**Recommends:** No works

**Structure:** Good

**Works Priority:** None

<table>
<thead>
<tr>
<th>Failure Probability</th>
<th>4 Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure Size</td>
<td>3-101-250mm</td>
</tr>
<tr>
<td>Target</td>
<td>3: Birds, walking, stationary</td>
</tr>
</tbody>
</table>

**Risk Score:** 1 in 2022000

**Recent Tapps:** Multiple Trees

**No. of Trees:** 4

**Significance:** One of a row of four trees located in the centre of a carpark providing cooling and shade in summer. These are large trees that can be seen from afar and add character to the landscape.

### Proposed TRN T254

**Botanical Name:** *Phyllocladus asplenoides*

**Common Name:** Carries Island Date Palm

**Height (m):** 12

**Width (m):** 4

**Combined DBH (m):** 5

**Number of Trees:** 1

**Significance:** Location of Landscape Context Aesthetic Value

**Approximate Age:** 11-40 years

**U/L/G:** 21-40 years

**Health:** Good

**Recommends:** No works

**Structure:** Good

**Works Priority:** None

<table>
<thead>
<tr>
<th>Failure Probability</th>
<th>4 Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure Size</td>
<td>3-101-250mm</td>
</tr>
<tr>
<td>Target</td>
<td>3: Pedestrians, 2:7m</td>
</tr>
</tbody>
</table>

**Risk Score:** 1 in 2022000

**Recent Tapps:** Multiple Trees

**No. of Trees:** 1

**Significance:** A pair of Canary Island Date Palm located at the entrance to building 13 in Flemington Estate. These add aesthetic value, character and greenery to a grey environment.
Assessments for City of Moonee Valley's Significant Tree Study

**Proposed TRN** T273

- **Botanical Name:** Cypresella ovata
- **Common Name:** Spotted Gum
- **Height (m):** 39
- **Width (m):** 13
- **Risk Scoring:** 1
- **Significance:** Outstanding Size

**Attributes:**
- **Approximate Age:** 80-100 years
- **ULG:** 40 years
- **Health:** Good
- **Structure:** Good
- **Failure Probability:** 2 - High
- **Failure Size:** 3 - 100-200mm
- **Target:** 4 - Pedestrians, 5 - 8
- **Risk Score:** 1 - 200000
- **Significant:** This is one of nine large Spotted Gums ranging up to 50 m in height. They have attractive bark and add a sense of grandeur to the Derwent Park.

**Defects:**
- **Deadwood**
- **Recommended:** Deadwood removal
- **Works Priority:** None
- **Comments:**

**Additional Information:**
- **T2/Z radius (m):** 12.24
- **SRZ measurement (mm):** 113
- **SRZ radius (m):** 3.40
- **Owner:** Council
- **Melway Map Ref:** 1A/1B
- **Nortthing:** 5015875.90
- **Property Address:** ROAD, FLUMINENTI
- **Locations:** Southern boundary of Derwent Park
- **Inspection:** 15/05/2017

---

**Proposed TRN** T317

- **Botanical Name:** Podocarpus neriifolia
- **Common Name:** London Plane
- **Height (m):** 29
- **Width (m):** 29
- **Risk Scoring:** 1
- **Significance:** Outstanding Size

**Attributes:**
- **Approximate Age:** 80-100 years
- **ULG:** 40 years
- **Health:** Good
- **Structure:** Good
- **Failure Probability:** 4 - Low
- **Failure Size:** 4 - 30-100mm
- **Target:** 4 - Pedestrians, 5 - 8
- **Risk Score:** 1 - 20000000
- **Significant:** This is a large tree in good condition. It has a good form and a large canopy shading character to the surrounding landscape.

**Defects:**
- **None**
- **Recommended:** None
- **Works Priority:** None
- **Comments:**

**Additional Information:**
- **T2/Z radius (m):** 12.40
- **SRZ measurement (mm):** 115
- **SRZ radius (m):** 3.81
- **Owner:** Council
- **Melway Map Ref:** 1A/1B
- **Nortthing:** 5015801.97
- **Property Address:** ROAD, FLUMINENTI
- **Locations:** 20-24 Fluminenti Drive
- **Inspection:** 15/05/2017