



**Bluestone Views
Development Plan**

Development Plan approved
by the City of Whittlesea in
accordance with
Clause 43.04 Schedule 12
of the Whittlesea Planning
Scheme

28/08/2003

Rosemarie
.....
Signature for the
Responsible Authority

Bluestoneviews

**DEVELOPMENT
PLAN**



DEVELOPMENT PLAN

**BLUESTONE VIEWS ESTATE
50 MASERATI DRIVE, EPPING**

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FEBRUARY 2003

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1.0 INTRODUCTION

1.1 OVERVIEW

This Development Plan has been prepared for the proposed **Bluestone Views Estate** at 50 Maserati Drive, Epping. The Plan provides a framework to guide and integrate the future development of approximately 200 residential allotments which are proposed for construction over the next two years. The subdivision will provide for up to 650 new residents when completed.

The Bluestone Views Estate forms part of the recently approved Epping North urban growth area which will provide for an estimated population of approximately 50,000 people over the next 20 years in accordance with the Epping North Strategic Plan (ENSP). The location of the subject land in the context of this broader Strategic Plan area is shown in Figure 1

The ENSP provides for a number of neighbourhood-based precincts which form the basis for more detailed planning investigations. Two of these neighbourhoods have recently been approved east and west of Epping Road (south of Harvest Home Road). The neighbourhood to the east of Epping Road is known as the Harvest Home Local Structure Plan (HHLSP) area. The Bluestone Views Estate occupies approximately one-fifth of this area. Figure 2 shows the location of the land in the context of the approved HHLSP.

The Bluestone Views Estate Development Plan comprises of an area of approximately 18ha which is located at the northern end of Maserati Drive, Epping. The Plan has been prepared for Urban Investment Holdings Pty Ltd who is the contracted purchaser/ developer of the estate. Urban Investment Holdings and associated individuals have more than 20 years experience in residential land development and a demonstrated commitment to providing quality residential design and sustainable urban development. Previous projects undertaken by the group include Peppercorn Park Estate, Pascoe Vale; Bayview Gardens Estate and Walter Street, Williamstown; and the Williamstown Junction Estate.

1.2 DEVELOPMENT PLAN CONTENT

The Bluestone Views Estate Development Plan comprises both this report and the associated plans and diagrams. The Development Plan includes the following elements:

- Summary of strategic planning and policy context
- Site analysis
- Design philosophy, description of intended urban and landscape forms
- Proposed housing diversity outcomes
- Assessment of environmental values and approaches to water sensitive urban design
- Assessment of Aboriginal and European cultural heritage values
- Review of open space and recreation needs
- Analysis of the traffic network and identification of likely impacts on surrounding road networks
- Summary of infrastructure servicing requirements
- Summary of community needs
- Details of required development contributions and proposed staging

2.0 PLANNING AND POLICY CONTEXT

2.1. REGIONAL PLANNING CONTEXT

The Bluestone Views Development Plan occupies part of the larger Epping North urban growth area (refer Figure 1). The broad planning framework for this area is expressed in the ENSP which was approved as part of Amendment C12 to the Whittlesea Planning Scheme on 13 September 2002. The ENSP, which is now incorporated into the Whittlesea Planning Scheme, seeks to ensure a coordinated approach to planning by providing opportunities for residential development and local employment, roads and public transport, conservation areas and open space. The Development Principles contained in this Plan have been incorporated into the HHLSP and are, in turn, further reflected in the context of this Development Plan.

2.2 LOCAL PLANNING CONTEXT

The HHLSP (refer Figure 2) provides a framework to integrate the planning and management of neighbourhood areas. The Plan has a vision to create a ‘vibrant, attractive and effective new residential community.’

The objectives of the HHLSP area include:

- To ensure that development of the LSP area is coordinated and integrated with the proposals for the adjacent LSP areas, as expressed in the ENLSP and ENSP
- To ensure the Harvest Home community is integrated with the existing Epping community by appropriate physical connections to the south of the plan area
- To retain the natural and cultural features of the plan area in future development
- To incorporate identified landscape/ natural features such as River Red Gums, rock walls, watercourses and rocky rises into the subdivision design
- To conserve, enhance and manage the aesthetic, recreational, environmental and water quality of the Findon and Darebin Creeks
- To protect features of environmental significance and local character by adopting a sensitive approach to subdivision design, especially within areas of ‘sensitive design’
- To provide a range of housing opportunities to meet the housing needs of the whole community
- To ensure that the development is energy efficient in respect of site layout and transport options
- To make provisions for identified community service requirements to ensure the establishment of appropriate community infrastructure
- To provide a framework for the coordinated and timely provision of physical infrastructure
- To minimise the impact of the transmission easement on residential development
- To provide a framework for the identification and collection of development contributions

The Bluestone Views Development Plan is required pursuant to the Development Plan Overlay provisions at Clause 43.04 (Schedule 12) of the Whittlesea Planning Scheme. These provisions require the submission of a Development Plan which is generally consistent with the HHLSP. The Schedule also sets out a number of particular requirements which are addressed as part of this report.

2.3 STATE AND LOCAL PLANNING POLICY FRAMEWORK

This Development Plan has regard to other planning requirements expressed in the State and Local Planning Policy Framework of the Whittlesea Planning Scheme. This includes recent provisions expressed in the State Government's Metropolitan Strategy: *Melbourne 2030*. Where relevant, these provisions have been considered in the preparation of the Plan.

3.0 SITE ANALYSIS

3.1 SITE DESCRIPTION

The subject land (Development Plan area) is located at 50 Maserati Drive, Epping. This land is more particularly described as Lot 42B PS 345242A (refer to Appendix B for copy of current title). The land occupies an area of 18.31ha. Other than a reserve for municipal purposes which has been previously excised from the southeast corner of the Plan area, the land is rectangular in shape, generally having a depth of 570m and width of 350m.

The southern boundary of the land is defined by a 105m wide high voltage power transmission line easement. South of this easement the subject land abuts existing residential lots which have access from Findon Road via Maserati Drive.

The western boundary abuts a municipal reserve containing the Findon Creek. The Development Plan area is separated from the creek by a distance of 25 to 80m. A number of mature River Red Gums are located within the reserve.

The northern boundary of the Development Plan abuts a large 40ha property on which a Development Plan is currently being finalised. This Development Plan, which has access from Epping Road is known as the Hayston Valley Estate and will provide for approximately 375 lots both to the west and east of Findon Creek. The Bluestone Views Development Plan has been prepared having regard to this adjoining estate and provides for an appropriate level of subdivision integration.

The eastern boundary of the Development Plan area abuts a further area of the HHLSP for which no Development Plan has yet been prepared. The immediate area abutting the Development Plan is predominantly set aside for future open space forming part of the Darebin Creek corridor.

Figures 3 to 6 show the existing site context of the Development Plan area.

3.2 LANDSCAPE CHARACTER

The existing landscape context of the Development Plan area is characterised by open and gently undulating topography which affords views to the nearby Quarry Hills to the east. More immediate to the Development Plan area are the stony knolls, mature River Red Gums and the Findon and Darebin Creek valleys bordering the site.

There are good views from the southeast of the site across to Darebin Creek and moderate views from the east towards Findon Creek. Viewlines to the northeast and the south of the site are dominated by two high voltage power transmission lines and associated pylons.

3.3 ACCESS

Current access to the site is from the northern termination of Maserati Drive which is approximately 350m north of the intersection with Findon Road. Maserati Drive currently provides access to approximately 60 lots. The road reserve is 16.5m wide and has an existing pavement width of 7.5m.

3.4 PLANNING CONTROLS AND EASEMENTS

The subject land is zoned **Residential 1** pursuant to Clause 32.01 of the Whittlesea Planning Scheme. This zone allows for residential development at a range of densities with a variety of dwellings to meet the housing needs of all households.

The subject land is affected by a **Development Plan Overlay** (Clause 43.04 Schedule 12). This Development Plan fulfils the requirement of this Overlay and will allow the further staged subdivision of the land under a planning permit process.

The subject land is affected by a **Vegetation Protection Overlay** (Clause 42.02 Schedule 2). This Overlay requires a planning permit to remove native vegetation. The Development Plan provides for the retention of all indigenous River Red Gums on the land.

The subject land is further affected by a **Development Contributions Plan Overlay** (Clause 45.06 Schedule 2). This provision sets out the contributions to be paid for physical and community infrastructure associated with the proposed development and subdivision of the land. These contributions are payable at the subdivision stage and are further discussed in Section 11.0.

Part of the land adjacent to the Darebin Creek is affected by the **Rural Floodway Overlay** pursuant to Clause 44.03. The extent of this Overlay is currently being refined to better reflect the 1:100 year flood level. An amendment to the Planning Scheme may be necessary to revise the extent of this Overlay prior to the commencement of residential development.

Approximately 2ha of land within the southern portion of the Development Plan is encumbered by a 105m wide high voltage power transmission line easement. A further small area of easement also affects the northeast corner of the Plan area.

4.0 THE PLAN

4.1 URBAN DESIGN VISION

The vision expressed in the Bluestone Views Development Plan is consistent with the principles outlined in the HHLSP which are outlined below:

- *A street network based on a traditional grid pattern with distinct east-west and north-south links to adjoining, existing and proposed development areas*
- *Lots orientated to maximise views over open space and streams*

- *A diversity of lot sizes including provision for smaller lots and sites for medium density development*
- *consideration of existing title boundaries to allow staged development to effectively occur*
- *Retention of River Red Gums and significant trees within open space reserve area and road reserves and where appropriate, within allotments*
- *The use of sensitive urban design, particularly in respect of road and lot layout to ensure the protection of natural features of the area with special attention being paid to groups of River red Gums, rocky rises, watercourses and rock walls*
- *Encouragement of a sense of local community and appreciation of the natural landscape through the creation of coordinated open space links along waterways and inclusion of environmental features within open space*
- *Creation of opportunities for higher residential densities around open space areas in order to increase the number of active frontages, encourage a sense of community ownership of open space areas and increase perceived safety of the community*
- *Provision of active frontages along open space areas to increase the natural surveillance of parks and take advantage of 'green' views*

The Bluestone Views Development Plan is also consistent with the Neighbourhood Principles expressed in Melbourne 2030. These principles seek to promote excellent neighbourhood design to create attractive, walkable and diverse communities. These principles are listed in Appendix D and include the following elements:

- Design for community safety
- Design for diversity and choice
- Relate the built environment to community and culture
- Provide quality built form
- Design for accessibility and inclusiveness
- Design for sustainability

The Bluestone Views development Plan will seek to ensure that future subdivision responds to and reinforces the special characteristics of the local environment and place by emphasising:

- The underlying natural landscape character

- The heritage values and built form that reflect community identity
- The values, needs and aspirations of the future community

The following design objectives have been devised to respond to these needs:

Protect significant vegetation

All viable River Red Gums and Peppercorns located on site are to be retained within areas of public open space. The root zone and drip line of these trees will be protected during construction works with exclusion fencing.

Protect and enhance remnant stony knolls

The main stony knoll located to the north of the transmission line easement is to be protected as an environmental landscape feature. The knoll will be revegetated and enhanced within a broader public open space context where its habitat values can continue to be appreciated by the future community.

Retain the integrity of the existing topography and take advantage of high amenity viewlines

A site responsive approach will ensure that the allotment orientation, location of open space and the road layout respond to the natural topography and positive viewlines across and beyond the site. Viewlines that can be enhanced are directed across the Darebin and Findon Creeks and the open space at the southern entrance to the estate.

Incorporate and interpret features of cultural significance

The bluestone dwelling, from which the name of the estate has been derived, will form a central focus of the estate. This heritage place will contribute to a sense of place and identity for the future community.

Improve and enhance the values of the adjacent Darebin and Findon Creek corridors

The creek corridors which abut the Development Plan will be improved in accordance with the recommendations of the HHLSP. These works will enhance habitat values

and water quality through sensitive earthworks, weed control and revegetation. Recreational values will also be enhanced through the provision of pedestrian and bicycle paths. Areas of Aboriginal archaeological significance will be protected from inappropriate development.

Provide safe, accessible and connected open space.

Opportunities for nature conservation, recreation and play have been incorporated into the open space design. These areas have adequate surveillance and are to be integrated with adjoining future development areas. They will be supportive environments for physical activity and social interaction.

Design a coherent and permeable subdivision layout

The ENSP requires an urban form that is permeable. It requires a grid-based road system allowing the site to be easily negotiated by private and public transport modes including by foot and bicycle. The Development Plan provides for this objective in the functional road layout and the proposed bicycle and pedestrian links which are to be constructed along the creek corridors and within the power transmission line easements.

Provide a diversity of lot sizes and housing types

The Development Plan provides for a variety of housing opportunities which include attached two storey terraces, dual occupancies, standard density residential lots and an integrated medium density housing site which is potentially available to meet affordable housing objectives.

Incorporate Water Sensitive Urban Design principles in to the subdivision design

The subdivision and functional road layout will be designed to protect and enhance natural water systems, integrate stormwater treatment into the landscape, protect the quality of water, reduce runoff and peak flows and minimise drainage and infrastructure costs.

Ensure that building and subdivision design improves efficiency in energy use

Currently State Government Legislation is being developed to ensure that all new buildings constructed in the future meet a five star rating. At this stage only medium

density housing is required to meet a four star rating in accordance with Clause 55 of the planning scheme.

The indicative Development Plan layout, formed in response to these objectives, is shown in Figure 7. Allotment boundaries are indicative only and will be refined at the subdivision application stage. Minor modifications to the functional road layout may also be made at this stage.

4.2 LANDSCAPE ARCHITECTURAL VISION

The landscape concept for the Bluestones Views Estate is shown in Figure 8 and 9. The Plan recognises the opportunities and constraints posed by the existing natural features, vegetation, waterways, power transmission lines and Yarra Valley Water (YVW) facility.

The landscape concept design objectives seek to:

- Provide a variety of safe and accessible open space experiences
- Utilize the transmission line easements as part of the open space network linking the Darebin and Findon Creeks and beyond
- Retain, enhance and interpret the stony knolls as an environmental feature of the open space network
- Retain and protect existing remnant River Red Gums and riparian vegetation
- Provide and incorporate, as a feature of the open space, a wetland system to treat urban stormwater runoff
- Incorporate a path system that provides a circuit within the Development Plan area and links to the wider path networks beyond the site
- Reinforce the landscape character of the site through the use of stone walls and indigenous planting
- Minimise the visual impact of the transmission line easement and YVW facility through the use of subtle grading and planting.
- Incorporate a bioretention trench and swale system as a feature of the streetscape.

These objectives are realised in the landscape concept plans which seeks to create an open, attractive and useable parkland area at the southern portion of the Development Plan area, linking the path system to the linear open spaces east and

west of the site. The focus of the parkland is a small wetland and pond bordered on the north by a low retaining wall structure providing informal seating. This wall continues across Maserati Drive to create a further informal area to the west, providing a visual focus towards Findon Creek.

The stony knoll within the main open space area will be protected and revegetated with appropriate indigenous species. A native grassland buffer around most of the perimeter of the knoll will help to dissuade inappropriate use of the area that may degrade its landscape and habitat value.

Within the easement area, Maserati Drive crosses a simple ornamental ford comprising a box culvert and allowing drainage of the wetland to Findon Creek. This ford is to comprise a simple pavement of bluestone pitchers to create a “rumble” strip on the roadway. A timber boardwalk will seek to reinforce the character of the wetland and pond area.

Throughout the balance of the estate, simple street tree plantings are proposed to provide individual identity to each residential street. Evergreen trees are proposed on north-south streets.

The streetscapes will also feature a bioretention trench and swale drainage system. The swale will have a varied treatment to provide visual interest.

In order to minimise the visual impact of the high voltage power transmission line, planting will be undertaken directly adjacent to the easement to help conceal both the lines and associated pylons but still allow for visual surveillance of the land within the easement.

4.3 HOUSING

The Whittlesea Planning Scheme Municipal Strategic Statement emphasises the need to provide a diverse range of housing opportunities, enabling the changing accommodation requirements of the community to be met over the longer term.

This Development Plan seeks to meet these requirements, also reflected in the HHLSP, through the provision of a variety of lot sizes and housing types comprising:

- Standard density residential lots of up to 638m².
- Medium density housing comprising terrace or townhouse forms which have outlook to areas of open space and incorporating natural light.
- Dual occupancy sites on corner locations which have good solar access.
- An integrated medium density housing site suitable for affordable housing needs.

The indicative subdivision shown in the Development Plan will promote housing diversity and interest, providing a range of family and single living opportunities.

Allotments comprising terrace-style housing range in size from 195 to 373m², with frontages of between 7 to 10m. These lots provide for traditional two-storey attached housing with rear laneway access. Figures 10a, b & c show three dwelling concept designs consisting of:

- living downstairs and three bedrooms upstairs
- living upstairs and three bedrooms downstairs
- bedrooms and living on both levels.

These options will be positioned having regard to site context, available views, access to open space and likely household requirements. Alternative designs will provide for a variety of household needs and 'whole of life' living opportunities. For example singles; couples; families with parent's area upstairs and children's area downstairs; and elderly persons who can live entirely on the ground floor if necessary.

Within the Development Plan, terrace-style lots have been located adjacent to and overlooking open space areas, allowing increased surveillance, amenity and access to these areas. The upper-level living-type terraces are ideal for proposed lots along the creek reserves, providing elevated view lines and surveillance into the creek areas and above the passing traffic.

The elevations included on Figures 10a, b and c and the images referred to in Figures 10d and e are indicative of the contemporary style of housing proposed for the estate. To assist developers, builders and landowners, urban design guidelines will be prepared, in conjunction with Council, at the subdivision applications stage to

ensure that an appropriate residential character is achieved. The guidelines will also ensure issues of energy efficiency are considered in the design process.

The majority of the terrace style lots are less than 300m² in area and will require a planning permit for construction pursuant Clause 54 of the Whittlesea Planning Scheme. Further controls in the form of building envelopes will apply to all lots less than 450m² (Refer to Figure 7a).

Proposed lots 53 to 58 have been orientated to take advantage of views across the Darebin Creek (refer to figure 7). With good design, building envelopes and the use of energy efficient materials it will be possible improve the solar access and energy efficiency opportunities of these sites. It is anticipated that the dwellings will have either patios or verandahs constructed at the frontage to take advantage of the views. Lots 53 to 58 will receive good morning light in these areas due to their south easterly aspect. The rear yards for these lots have a north-west aspect and appropriate building envelopes will ensure adequate solar access. The orientation of future lots within Lot A (Stage 3) will be determined at permit stage.

Future dwellings within Lot A (Stage3) will be located a minimum distance of approximately 60m from any transmission tower. It is not anticipated that the amenity of these dwellings will be unreasonably affected.

4.4 LAND DEVELOPMENT ANALYSIS

The table below provides an analysis of the land available for development. Land within the two electricity easements and the YVW Flow Control Facility reduce the total developable area available for residential purposes.

4.4.1 Land Development Analysis

TOTAL SITE AREA	18.31ha
Encumbered Land	
- HV Transmission Line Easement	2.16ha
Developable Area	16.15ha
Public Open Space	

(unencumbered)	1.45ha
YVW Flow Control Facility	1.08ha
Net Residential Land	13.62ha

Notes:

- Development Contributions are payable on the Developable Area and will be paid in accordance with Schedule 2 of Clause 45.06 of the Whittlesea Planning Scheme.
- Minor adjustments to this table may be made at the subdivision stage.

Based on a proposed lot yield of 214 lots (which includes the medium density site), it is envisaged that a total residential population of approximately 700 persons could ultimately be accommodated in the estate (on the basis of an average of 3.3 persons per household).

5.0 ENVIRONMENTAL CHARACTERISTICS

5.1 FLORA & FAUNA HABITAT SIGNIFICANCE

The HHLSP seeks to ensure that the existing natural environment is carefully considered in the Development Plan process. A flora and fauna assessment of the subject land has previously been undertaken as part of the HHLSP investigations. This report (*Flora and Fauna Assessment of Land East of Epping Road, Epping, Victoria*, A.J. Hill and L.M. Williams, 1999, Project No. 1433, Biosis Research) has shown that the subject land has been significantly altered from its original condition. Due to past land use practices, vegetation throughout most of the Development Plan area has now been significantly altered from its original condition and is now dominated by introduced pasture and weed species.

Previously the site would have supported the following Ecological Vegetation Classes:

- Plains Grassy Woodland dominated by River Red Gums

- Escarpment Shrubland on the exposed basalt escarpment along the Darebin Creek
- Stony Knoll Shrubland along the elevated rocky rises

No species of National or State conservation significance have been recorded within the HHLSP area. However, 14 species of Regional Significance were identified within and adjacent the HHLSP area. The majority of these occupy the Findon and Darebin Creek corridors which lie adjacent the Development Plan area.

The following areas have been assessed as having 'High Local' conservation significance (refer Figure 11):

- *Rocky Rises:* Although highly modified, these features retain some fauna habitat values. Most of the rock structure is still intact and soil has not undergone the physical disturbance to the same extent as surrounding areas.
- *Southern end of Darebin Creek:* Several Regionally significant flora species of the Escarpment Scrubland have been identified in this location.
- *Southern end of Findon Creek:* Patches of native and introduced grasses amongst scattered basalt floaters provide potential flora and fauna habitat value.

The HHLSP provides the following conservation management objectives:

- *Provision of contiguous habitat links*
- *Incorporation of River Red Gums into the open space network.*
- *Weed control and revegetation to increase ecological values*
- *Management of impacts caused by pest animals including domestic animals*
- *Fencing of sensitive sites so that public access can be managed.*
- *Revegetation of the watercourse areas as part of subdivision and landscape plans in order to create a visual feature, complement existing vegetation, and provide fauna habitat.*
- *Community education to inform future residents of environmental values and appropriate planting species*
- *Promotion of the use of indigenous and other native species in private landscaping (particularly in areas close to waterways) as part of sales information and estate marketing*

These objectives will be realised in the Bluestone Views Development Plan in the following ways:

- *The main stony knoll area which lies immediately north of the high voltage power transmission line easement will be set aside and protected as part of the broader open space network. This area will be managed and enhanced for its conservation values through revegetation with indigenous species and fencing if deemed appropriate. No soil or rock disturbance will occur within this area.*
- *Areas within the high voltage power transmission line easement will be revegetated with indigenous species to improve habitat values in the context of a broader habitat link to the east and west within the easement.*
- *Revegetation works will be undertaken in the Darebin Creek corridor. These works will enhance the escarpment which currently provides habitat opportunities amongst rock boulders and tumblers. (The eastern brown snake has been recorded in the southern section of the creek as has the Regionally Significant Cunningham's Skink).*
- *Information will be made available in the display and sales office promoting the benefits of planting indigenous vegetation within domestic gardens. This information will be sourced from relevant authorities, such as Melbourne Water and the Shire of Whittlesea.*
- *Appropriate signage could be erected in public open space reserves (including the Darebin and Findon Creek reserves) to request animal owners to keep them under control (i.e. on leashes).*
- *Due to the need to preserve conservation values and the integrity of habitat links along the Darebin and Findon Creeks, no local road crossings are proposed as part of this Development Plan.*

River Red Gums

Four indigenous River Red Gums are located within the Development Plan area. Further trees extend into the site from adjoining areas. A tree survey (*Arboricultural Report, D. Galwey, 2001, Tree Dimensions Arboriculture*) (Appendix A) has established the condition and health of these trees including a number of mature exotic trees. As a consequence of this survey, all mature River Red Gums are to be protected and incorporated within the open space design. No trees are proposed within private allotments. Although the habitat value of these trees is compromised by their relative isolation, they will still provide an important environmental and visual

asset for the estate. The trees will be protected and managed in accordance with Council's *River Red Gum Protection Policy* forming part of Clause 22.10 of the Whittlesea Planning Scheme. This will include the erection of exclusion fencing during the subdivision construction stages.

The River Red Gums which extend into the northwest corner of the Development Plan area from the adjoining Hayston Valley Estate will be protected via a realignment of the main north-south collector road within Council's Findon Creek reserve.

5.2 WATERWAY MANAGEMENT AND WATER SENSITIVE URBAN DESIGN

5.2.1 Waterway Management

The Development Plan sensitively integrates future development with the two waterways which abut the eastern and western boundary of the Plan area. The ridgeline between the two catchments is located adjacent to the Darebin Creek and the bulk of the site will drain to Findon Creek.

The HHLSP refers to the *Darebin Creek Waterway Management Activity Plan* (2000) which designates a 'stream interest zone' along both the Darebin and Findon Creek corridors, (Findon Creek is a tributary of the Darebin Creek). The zone takes into account maximum likely flood prone land, key landscape features, sensitive waterway areas and locations for water quality and management facilities. The HHLSP states:

- *The approach adopted within the LSP is to ensure that the whole of this zone is not developed for residential purposes and included either within the open space network or within the undevelopable land.*

The HHLSP further notes that the open space network along these corridors will comprise the following elements:

- Development and upgrade of the water quality and surrounding landscape of the existing creek systems with easement widths between 60 and 120 meters. Creeks to provide both visual interest and areas for activity with varying grades, activities and flow.

- Extension of the creek reserves beyond the existing floodplain to provide habitat for native grasses and to incorporate areas of identified and potential archaeological sensitivity.

A section of Lot A (Stage 3) is within a Rural Floodway Overlay (RFO), however it is not contained within the 100 year floodway and can be developed.

The 1 in 100 year flood plain for Darebin Creek (correspondence from Melbourne Water 22 March 2001) is located outside of the Development Plan boundary. The 1 in 100 year flood plain is located from contour 140.7m (Australian Height Datum [AHD]) at the North Eastern Boundary down to 139.0 metres AHD at the Southern Boundary (Appendix E).

The Development Plan provides for a minimum creek reserve width of 60m and well in excess of 120m in appropriate locations to protect existing vegetation.

The Findon Creek Drainage Scheme (Draft 2001) has been prepared by Melbourne Water. The Development Plan is generally consistent with this Scheme.

5.2.2 Water Sensitive Urban Design

This Development Plan will seek to “break the connection” between pipes and the receiving waters. The estate will be developed using the latest best practice in *Water Sensitive Urban Design* (WSUD) techniques for the control and treatment of stormwater flows. All roadways and lots will drain directly or via some minor piped drainage to a swale and bioretention trench system. The system is detailed in Figures 12 and 13. The design techniques provide for an “at source” treatment of drainage flows for up to a 3 month ARI peak discharge. The 5 year ARI flows will be contained within the swale.

The swale and bioretention trench system provides a built-in retention system (longer discharge times), removal of pollutants and sediments, and the prevention of litter entering the drainage system (no side entry pits).

Approximately one third of the site will also discharge to a small wetland for further treatment prior to discharge into Findon Creek.

During the construction phase, erosion and sediment export from site is to be controlled and minimised through the implementation of best practice site management. A management plan prepared in accordance with EPA requirements will be submitted for approval to Council prior to the commencement of works.

In accordance with the requirements of the Development Plan Overlay, a Stormwater Management Plan has been completed (refer Figure 12).

6.0 ARCHAEOLOGICAL/HERITAGE SIGNIFICANCE

A cultural heritage assessment of the subject land has previously been undertaken as part of the HHLSP. This preliminary report: *(An Archaeological and Heritage Survey of Land East of Epping Road, Epping North, Victoria, 1999, O.E. Nicolson, Project No. 1453, Biosis Research)* examined both areas of potential Aboriginal archaeological significance and European heritage values.

6.1 ABORIGINAL ARCHAEOLOGICAL SITES

Within the HHLSP, areas of high and moderate potential Aboriginal archaeological sensitivity were identified. Areas of high sensitivity have been identified within the Riverine strip of Darebin and Findon Creeks (extending approximately 50 metres either side of the creeks). This area has generally been incorporated into the open space network. Areas of moderate sensitivity are located on the elevated rises in the northeast portion of the Plan area.

In accordance with the Development Plan Overlay requirements, a more detailed survey of Aboriginal archaeological sites has been undertaken by Terra Culture having regard to the Biosis Research investigation completed in 1999. The survey including subsurface testing within the areas of high and moderate sensitivity has been completed.

There are no known and/or registered sites within the Development plan area. The field survey undertaken did not discover any new sites. There appears to be no aboriginal heritage issues preventing the development of the plan area.

6.2 EUROPEAN HERITAGE SITES

The Biosis Research investigation identified the bluestone house located on the subject land as a place of local heritage significance. In accordance with the HHLSP requirements, this dwelling is to be protected, enhanced and integrated into the subdivision design. A detailed architectural conservation study is currently being undertaken of this structure, it is anticipated that this study will be completed by March 2003 (Allom Lovell & Associates Conservation Architects). The report will determine requirements for its conversion to a dwelling and other issues relating to sympathetic restoration, refurbishment and landscaping. An allotment has been created for the building, from this site there are views overlooking the Darebin Creek. The house is in a suitably prominent position where it can be appreciated by the future community.

A statement of significance will be prepared for the heritage place; this will be used as the basis for preparing a planning scheme amendment for inclusion of the place within a *Heritage Overlay* under the Whittlesea Planning Scheme.

7.0 OPEN SPACE AND RECREATION

7.1 POLICY FRAMEWORK

The open space design for the Bluestone Views Development Plan has been guided by the principles and objective of the HHLSP and Council's *Open Space Policy* which forms part of the Whittlesea Planning Scheme (Clause 22.01).

7.2 OPEN SPACE ALLOCATION

The proposed Neighbourhood Park designated under the HHLSP (Open Space No. 2) is indicatively located within the central portion of the subject land. However, this Development Plan seeks to relocate this area to incorporate a number of complementary environmental landscape elements which do not exist on the nominated site. This redesignation is considered to be a minor change and will not

disadvantage residents central to the Plan area as they will still be within an acceptable walking distance to open space areas.

The HHLSP requires a minimum unencumbered open space allocation for this area of 0.35ha. The Development Plan provides for 1.45ha of unencumbered land. A further 2.2ha within the high voltage power transmission line easement and 1.1ha within the YVW Flow Control Facility will further complement the open space provision.

7.3 DESCRIPTION OF OPEN SPACE AREAS

The design for open space and parkland areas is detailed in the concept plan shown in Figure 8 and 9. The concept includes the following elements:

7.3.1 Neighbourhood Park

The design of this space will:

- Provide a significant entry statement to the Development Plan area.
- Instill a sense of place through the inclusion of existing site features.
- Allow passive recreational activities.
- Provide strong links to the broader HHLSP lineal open space system
- Incorporate stony knolls as a significant geological/ landscape feature and habitat area.
- Incorporate an informal and formal path network.
- Include a wetland feature for drainage treatment.
- Retain all significant River Red Gums and structurally sound mature Peppercorn trees.
- Ensure that adjacent allotments are orientated to maximise surveillance and access across the open space.
- Minimise the visual intrusion of the power transmission line pylons through landscaping works.

The Neighbourhood Park includes land adjacent to the Darebin Creek above the 1:100 year flood line.

7.3.2 High Voltage Power Transmission Line Easement

This land will provide a complementary open space function to that of the main Neighbourhood Park referred to above. Land within the easement will be landscaped with suitable species in recognition of its role as a habitat link and to break up the expanse of the easement. Development and landscaping within and adjacent to the easement will be undertaken having regard to the requirements and guidelines of SPI PowerNet.

7.3.3 Local Park

A small local park is to be provided on the northern boundary of the site to protect two River Red Gums and to provide a focus for adjacent areas of proposed medium density development. The park has been integrated with the adjoining Hayston Valley Estate and will link with the east-west collector Road thus improving pedestrian permeability.

7.3.4 Creek Reserves

The Council-owned creek reserves which abut the Development Plan will be sensitively developed in conjunction with Council and Melbourne Water.

7.3.5 Yarra Valley Water Flow Control Facility

Within the Development Plan an area of 1.1ha is currently being acquired by YVW for the purpose of providing a sewer flow control facility. This utility installation will be housed underground in an area between the north-south collector road and the Neighbourhood Park (immediately north of the power transmission line easement). A small area of 400² comprising of a compound to house aboveground infrastructure will be sensitively fenced to exclude public access. However, the balance of the land has the potential to be integrated with the adjacent Neighbourhood Park. Figure 9 shows a detailed concept for the site which includes landscaping and earth mounding. A joint management approach to this area between Council and YVW will be further investigated.

The proposed facility will be located, designed and operated so as to be compatible with surrounding residential uses. A planning permit (No. 707166) issued by Council for the facility (27 August 2002) provides a number of conditions to ensure relevant EPA standards of environmental safety and amenity are met.

The sewerage control facility will be screened by earth mounding and vegetation (refer to plan Figure 9). Implementation of these works will ensure the visual amenity of the Lots 8-10 is not unreasonably impacted by the facility.

8.0 TRANSPORT AND TRAFFIC

The ENSP seeks to:

- *Create boulevards to assist in the creation of a positive sense of place.*
- *Create or enhance viewlines and vistas.*
- *Promote a high level of internal accessibility.*
- *Incorporate traditional pavement widths with provision for on-street carparking.*

These objectives are further reflected in the HHLSP and have informed the functional road layout for the Development Plan area, figure 7 shows this layout.

The HHLSP states:

- *A key issue for the LSP is to enable linkages to the south so that the residents/ community of the LSP area can be integrated with the existing areas to the south. However, due to the existing road cross sections and development patterns this needs to be treated carefully to ensure that there are no negative impacts on the existing road network.*

The Development Plan recognises this constraint by providing road connections to the north to link with the east-west collector road to be constructed as part of the Hayston Valley Estate. This collector road provides direct access to Epping Road and will provide an alternative access point other than Maserati Drive for dwellings in the northern portion of the Development Plan area.

The Development Plan further addresses this issue by constructing traffic calming measures within the existing Maserati Drive road reserve and intersection improvements at Findon Road. Figures 14 and 15 show the extent of these proposed improvement works which are to be funded by the Developer.

East west road linkages across the Darebin and Findon Creeks to the east and west are not proposed due to the environmental impacts referred to previously.

An access road between the extension of Maserati Drive and the northern boundary of land at 42 Findon Road may be required to service any future residential development on this land.

8.1 ROAD NETWORK

A hierarchy of roads has been adopted which is generally consistent with the design specifications and cross sections outlined in the HHLSP. The network comprises a modified collector road/ boulevard, local roads and rear laneway.

8.1.1 Modified Collector Road/ Boulevard

The main collector road for the estate links Maserati Drive with the east-west collector road proposed within the Hayston Valley Estate. A T-intersection is proposed at this intersection. The proposed cross section will provide direct access to adjacent lots and a parking lane on the east side of the proposed allotments.

Part of the road alignment is to be extended out into the adjacent Findon Creek reserve, with the consent of Council, to provide variation in the alignment. The improvement works in Maserati Drive and at Findon Road intersection to the south of the development plan area have been accepted in lieu of these incursions.

8.1.2 Local Roads

Local roads within the Estate are integrated with adjacent development areas and will cater for the anticipated traffic volumes. A 7.5m wide pavement is to be provided for the most southerly and northerly east-west connecting roads and the north-south roadway along the eastern boundary (to provide a 'loop' through the estate). These roads will provide a limited through-traffic function with provision for parking on both sides (single through manoeuvre or two through lanes with a single parking lane). The 5.5m pavement will provide single parking and one through movement, discouraging through traffic movements.

8.1.3 Laneways

Laneway widths of 6 to 8m are proposed within the Development Plan area. Individual treatments will be developed to cater for vehicle movements, parking and landscaping.

8.1.4 Courtheads

Two T-shaped courtheads are proposed within the estate and will be designed to cater for the turning movement of a standard service vehicle.

8.2 PUBLIC TRANSPORT

8.2.1 Buses

The closest bus route (556) to the proposed estate is along Findon Road. The bus stop is approximately 630m from the southern boundary of the site. This route commences its journey at Young Street, Epping and terminates at Northland Shopping Centre. Passengers on this route can disembark at Epping Train Station for rail connections to the Melbourne city centre. Other routes include:

Route 555 near the corner of High Street and Memorial Avenue (approximately 1.1km from the southern boundary of the site). This route commences at Epping Plaza Shopping Centre and travels to Northland Shopping Centre via Lalor, Thomastown, Keon Park, Ruthven, Reservoir and East Preston.

Route 571 can be accessed from the corner McDonalds and Scarborough Roads which is approximately 1.1km from the southern boundary of the estate. This bus commences at Somerton and finishes its journey at South Morang.

The HHLSP encourages the extension of new bus routes through the Plan area. The potential for future bus routes along Maserati Drive will be determined at the subdivision stage.

8.2.2 Heavy Rail

The Epping train station is accessible from bus routes 564, 571 and 556. Bus route 555 drops off passengers near Epping Plaza Shopping Centre on High Street. In the longer term a train line will be extended in to Epping North west of Epping Road.

8.3 BICYCLE AND PEDESTRIAN LINKAGES

The HHLSP recognises the importance of providing safe and attractive paths for cyclists and pedestrians. This importance is also reflected in the Metropolitan Strategy which seeks to give greater priority to cycling and walking in planning for urban development and in managing the road system and neighbourhoods.

The bicycle and pedestrian network for the Development Plan area and adjacent land is shown in Figures 8 and 9. The network consists of:

- A shared trail on the east side of the Findon Creek, linking with the proposed trail network to the north (Hayston Valley Estate) and south.
- A shared trail along the Darebin Creek, linking with the proposed network to the north and existing trail to the south.
- A shared trail within the power transmission line easement which will ultimately extend to the east and west, across the Darebin and Findon Creeks.

The Development Plan area provides an important pedestrian and bicycle trail node which in the longer term will provide off-road access to a number of key destinations relevant to the needs of the local community.

The alignment of the bicycle and pedestrian path network and proposed creek crossing will be further revised and clarified as part of the detailed functional design and landscaping plan process.

9.0 PHYSICAL INFRASTRUCTURE

9.1 SEWER

The Development Plan area is to be connected to the Darebin Creek Sewer System which has the potential to service a further 2,500 lots within the HHLSP and Epping North Local Structure Plan areas. This additional capacity is conditional on the construction and completion of the Flow Control Facility comprising underground sewerage detention tanks within the Development Plan site. This facility, undertaken by YVW, will help regulate the discharge of flows during off-peak periods. A Planning Permit has recently been granted for this facility and the site has now been

incorporated into the Development Plan layout. Negotiations for the purchase and transfer of this land are currently nearing completion. In the longer term, the whole of Epping North, including the Development Plan area, will be diverted to the Merri Creek sewer system.

In addition to the local reticulation sewers the property would be serviced as follows:

- Findon Creek catchment via the Maserati Drive Branch Sewer (via Pumping Station SP658) and to the Darebin Creek North Branch sewer via a pressure main;
- Darebin Creek catchment via the Upper Darebin Creek Branch Sewer, Pumping Stations SPS658 and SPS658 via a pressure main; and
- Flow Control Facility SPS658 located on the subject land.

It is proposed the major elements of the sewerage infrastructure will be provided by others under a private financing agreement with YVW.

9.2 WATER SUPPLY

Water supply for the Development Plan area is to be made available in the short term from a 35ML storage tank located on the eastern side of the Quarry Hills. This supply will be augmented via a booster pump station to supply other areas in HHSLP. In the longer term the Development Plan area will be supplied from a new tank/ storage facility in the Quarry Hills. YVW are currently undertaking investigations to determine the location and requirements for this facility.

9.3 POWER, GAS AND TELECOMMUNICATIONS

The Development Plan area falls within the boundary of Origin Energy (gas supply) and TXU Electricity (electricity supply). Telstra is required to provide telecommunications to the site. All of these services will be connected to existing services along Maserati Drive.

9.4 INFORMATION TECHNOLOGY

Clause 22.13 of the Whittlesea Planning Scheme seeks to ensure the timely provision of optical fiber cabling to facilitate the installation of advanced telecommunications services. The conduits to facilitate this important infrastructure will be laid in accordance with the City of Whittlesea's *Planning Guidelines for*

Conduits for Optical Fibre Services. They will be located in a common services trench alongside Telstra conduits and electricity services. A conduit network concept plan to service each proposed allotment will be submitted for approval at the subdivision stage.

10.0 COMMUNITY/COMMERCIAL FACILITIES

The need for identified commercial and community services and facilities within the HHLSP area has been determined within the broader Epping North planning context. Given the anticipated population within the HHLSP area and the principles relating to the co-location of community facilities with schools and retail activity, a stand-alone community facility is not justified within the HHLSP area. The combined population of the HHLSP and Epping North Local Structure Plan areas falls within the threshold for the provision of one community centre which is to be provided in the Epping North Local Structure Plan area. The HHLSP (p.39) notes the following:

There is unlikely to be any commercial facilities permanently established within the area, and retail facilities will be limited. It is therefore important that strong links are established in the Harvest Home community, initially with existing suburbs to the south and to the Epping North community to the west of Epping Road. These links are important to ensure that the areas are integrated. Information regarding services as well as access to services via the road, public transport and bicycle networks is critical for this area

The road layout, public open spaces, pedestrian/cycle links have all been developed to ensure that there is good integration between this Development Plan area and the proposed and existing estates surrounding it.

11.0 DEVELOPMENT CONTRIBUTIONS

Development contributions will be payable on the subject land in accordance with Clause 45.06 (Schedule 2) of the Whittlesea Planning Scheme. Both the Schedule

and the HHLSP identify the full range of infrastructure and services required to satisfy the future needs of the HHLSP.

Development Contributions will be charged against developable land at a per hectare rate and will be paid on a stage by stage basis. Payment of the development contributions will be made prior to the issue of a Statement of Compliance for each particular stage. It is Council's preference that community infrastructure payments also be made at this time.

An amount of \$43,833/ha is payable generally in accordance with Table 1. (\$39,333/ha development infrastructure and \$4,500/ha community infrastructure).

The Community Activity Centre facility to be provided within the Epping North Local Structure Plan Area will also meet the needs of residents in the HHLSP area. Accordingly the cost of the facility will be apportioned equitably between the two LSP areas.

The total charge includes a road network charge of \$17,345/ha. Contributions also cover other infrastructure items including the Epping North Strategic Plan transport corridor to allow the extension of future heavy rail serve; the bicycle network and regional and local recreation facilities.

Contributions will be in the form of cash, land and/or works.

12.0 ENVIRONMENTAL AUDIT

A preliminary site inspection and assessment of the Development Plan area has been undertaken by IT Environmental (Australia) Pty Ltd (July 2002) for the purpose of evaluating potential land contamination issues. Based on their site inspection and a review of the site history and aerial photographs there appears to be no potential on-site contamination sources or hazards likely to cause adverse impact to future residents. More detailed intrusive soil assessment programs have not been recommended based on the site history and the minimal likelihood of soil contamination issues. A copy of the report is included as Appendix C.

13.0 STAGING

It is planned that housing development in the Bluestone Views Estate will commence in early to mid 2003. The three stages of development are detailed in Figure 7. It is envisaged that the subdivision will be completed within the next two years.



EPPING NORTH STRATEGIC PLAN

FIGURE 1





HARVEST HOME LOCAL STRUCTURE PLAN

FIGURE 2

DRAWING KEY

Total Site Area	146.3 ha
COUNCIL OWNED LAND	7.3 ha
OPEN SPACE - ENCUMBERED	
Diagonal Powerline Easement	11.0 ha
Southern Powerline Easement	12.5 ha
	21.5 ha
Findon Creek Easement	6.5 ha
Darby Creek Easement	2.3 ha
	8.8 ha

Total Encumbered Open Space 36.3 Ha

Gross Developable Area 102.7 Ha
(Site area - Less Encumbered & encumbered open space)

OPEN SPACE - UNENCUMBERED	
Area 1	0.45 ha
" 2	0.35 ha
" 3	0.35 ha
" 4	1.0 ha
" 5	1.0 ha
" 6	0.45 ha
" 7	1.0 ha
" 8	0.35 ha
" 9	0.85 ha
" 10	0.15 ha

Total Unencumbered Open Space 5.75 Ha (5.6%)

AREA OF SENSITIVE URBAN DESIGN

Roads (Indicative)

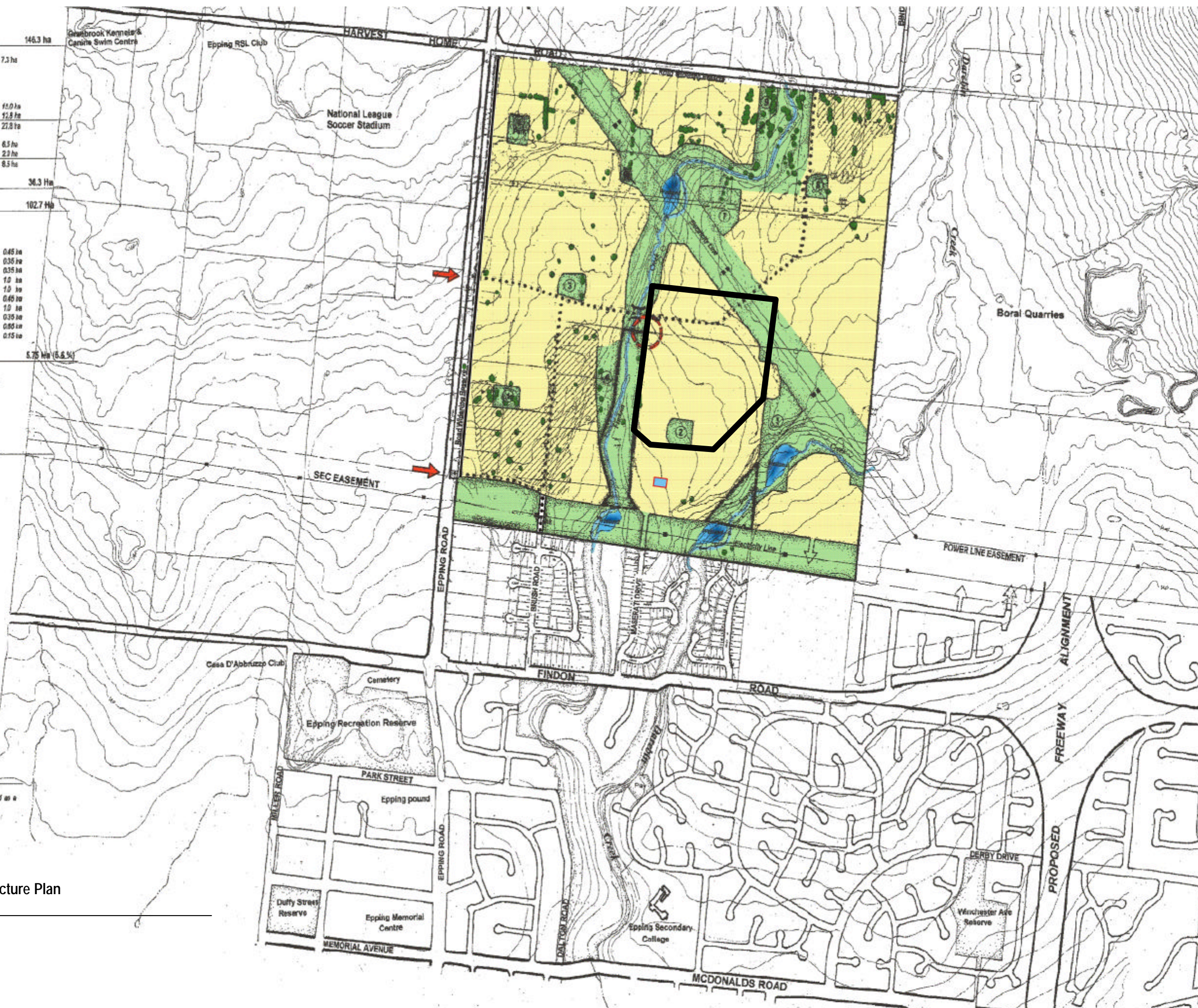
- COLLECTOR ROAD (22m wide road reserve)
- SERVICE ROAD (12m wide road reserve)
- POSSIBLE ROAD CONNECTION SUBJECT TO FURTHER INVESTIGATION
- ENTRY OF EPPING ROAD
- POTENTIAL FUTURE LINKS
- EXISTING TREES (tree location indicative only)
- WETLAND & HIGH FLOW BY PASS
- CONTOURS (1.0m intervals)
- POTENTIAL COMMUNITY / COMMERCIAL FACILITY
- PROPOSED EPPING NORTH (East) SEWERAGE SYSTEM

NOTE

This layout is indicative only and is only to be used as a guide. Collector road alignment is not as per the plan.

Harvest Home Local Structure Plan

Diagram February 2002





AERIAL PHOTOGRAPH

FIGURE 3



SITE IMAGES

FIGURES 4 AND 5



IMAGE 1: Lot 51 (638m²) has been proposed to include this dwelling.



IMAGE 2: Existing subdivision south of the ODP area.
Links to be created via road and public open space.



IMAGE 3: Stony Knolls. Located to the south east within the ODP area.
Stony knolls are to be included in the public open space reserve.



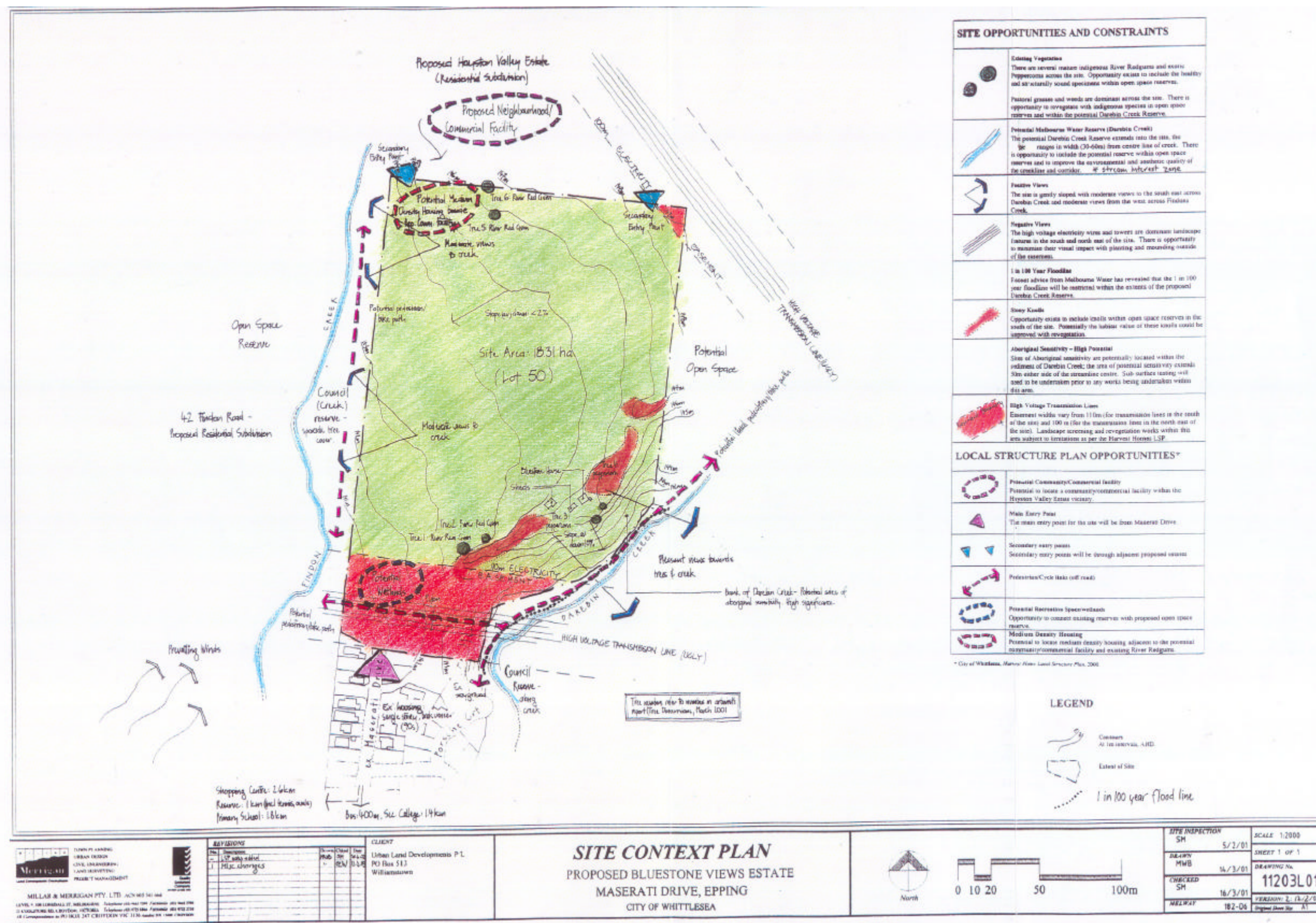
IMAGE 4: Peppercorn tree # 3, located in front of the Bluestone House.



IMAGE 5: River Redgum # 1 located to the west of the stony knolls to be retained in the open space reserve.

SITE CONTEXT PLAN

FIGURE 6





DEVELOPMENT PLAN LAYOUT

FIGURE 7





TYPICAL BUILDING ENVELOPES

FIGURE 7a

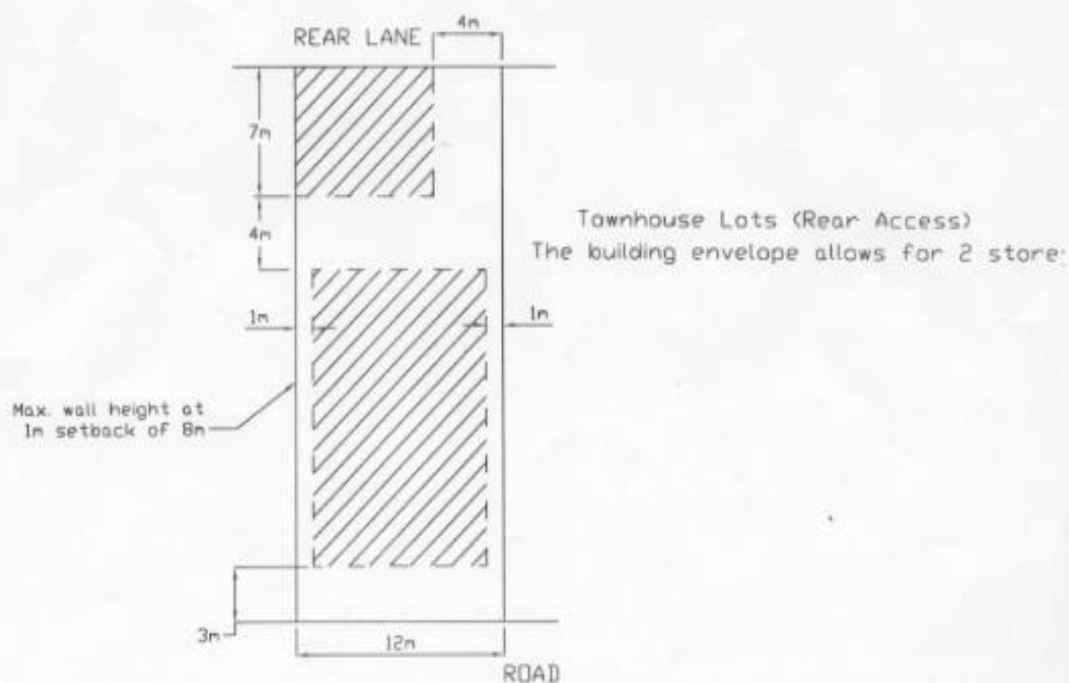
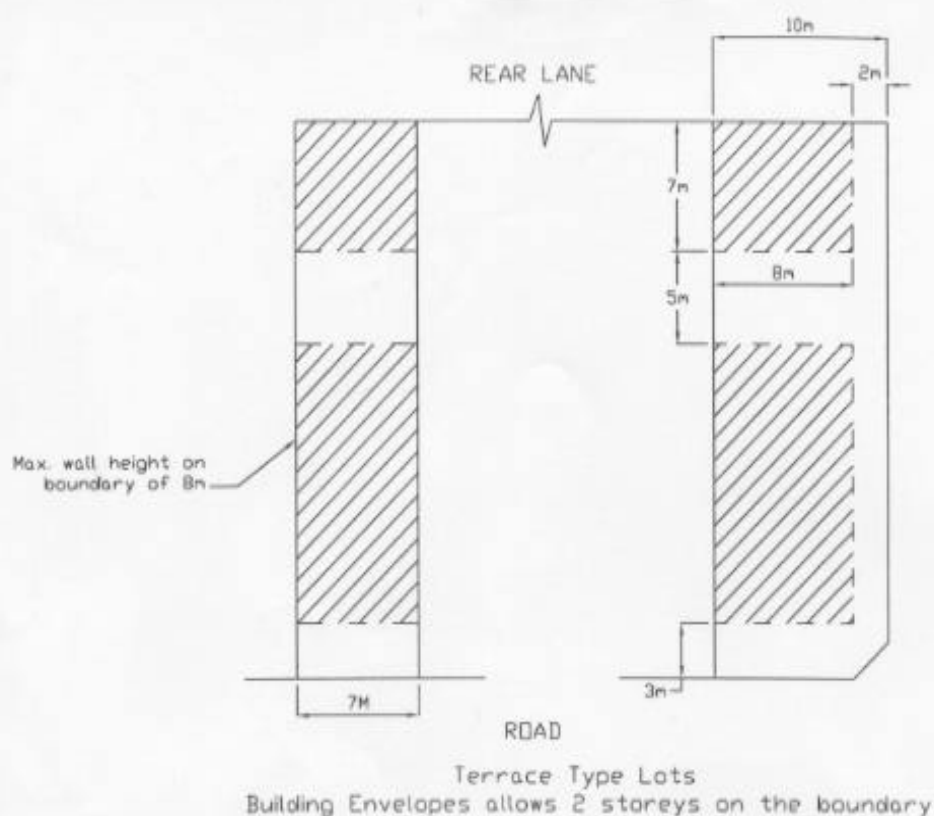
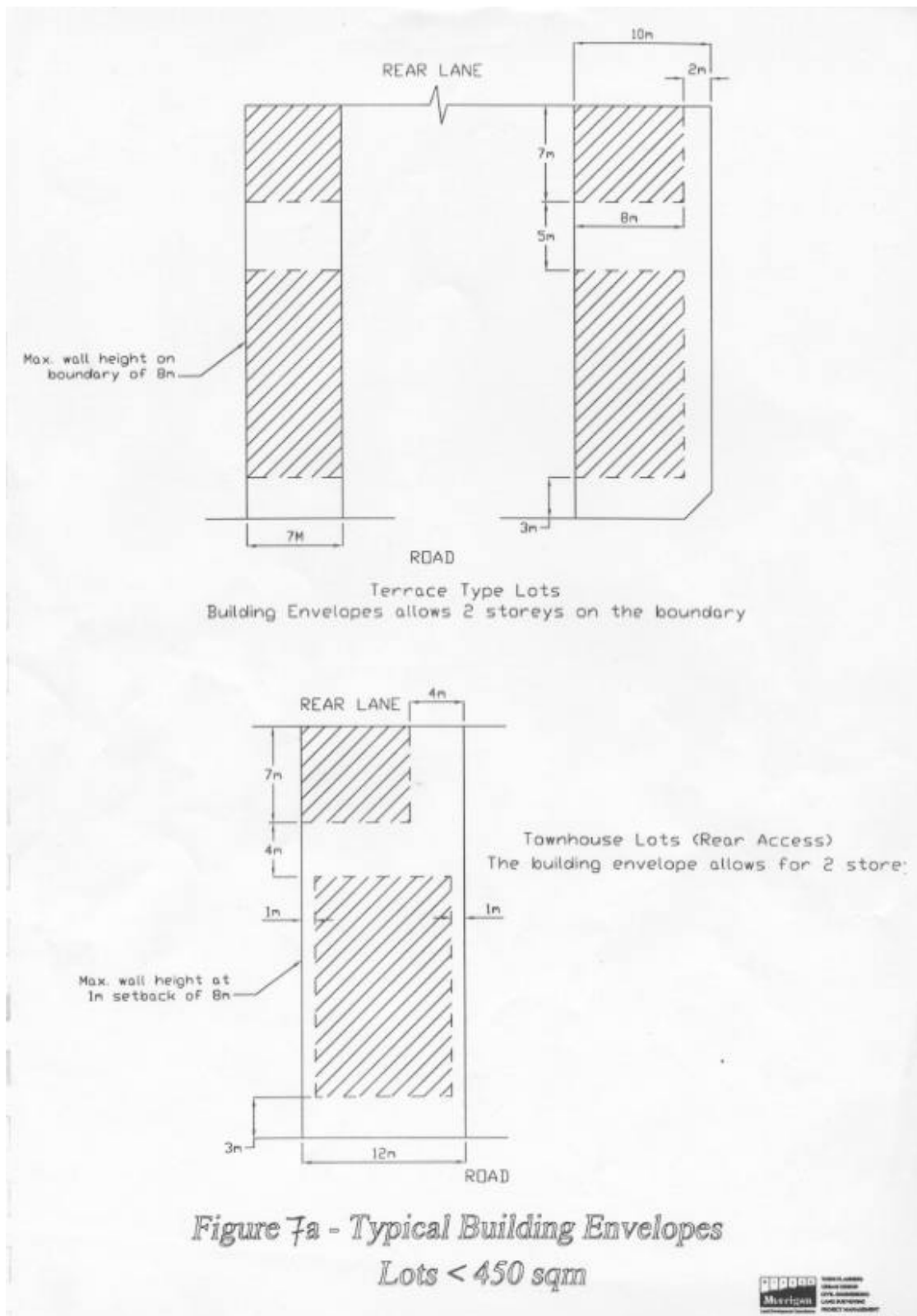


Figure 7a - Typical Building Envelopes
Lots < 450 sqm





LANDSCAPE CONCEPT

FIGURE 8





OPEN SPACE PLAN

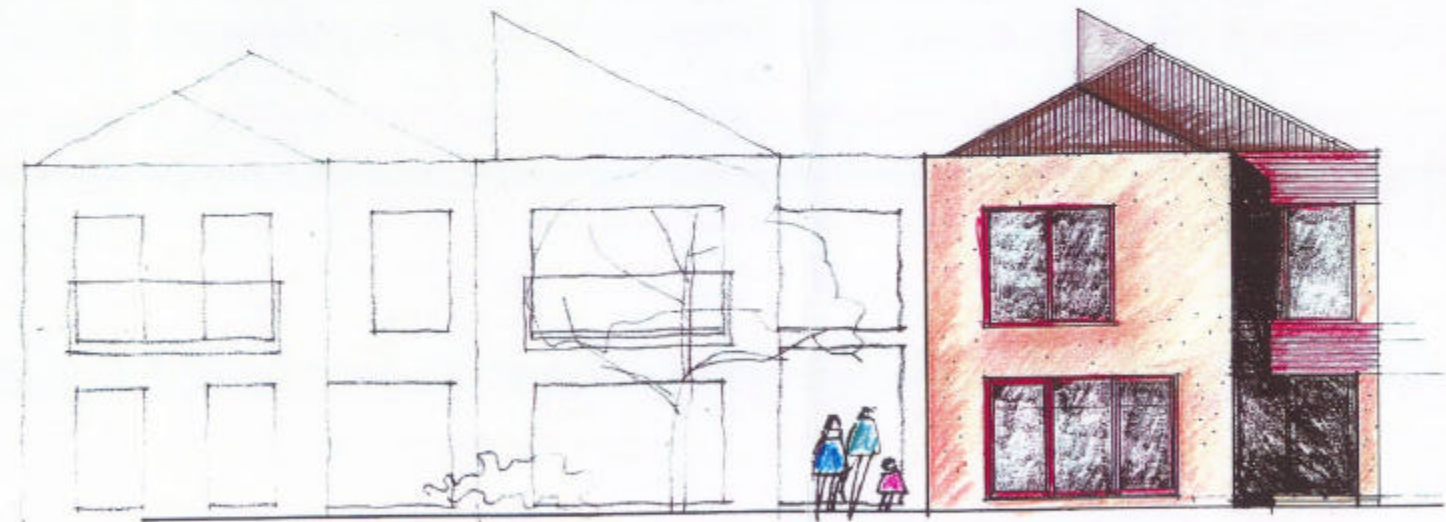
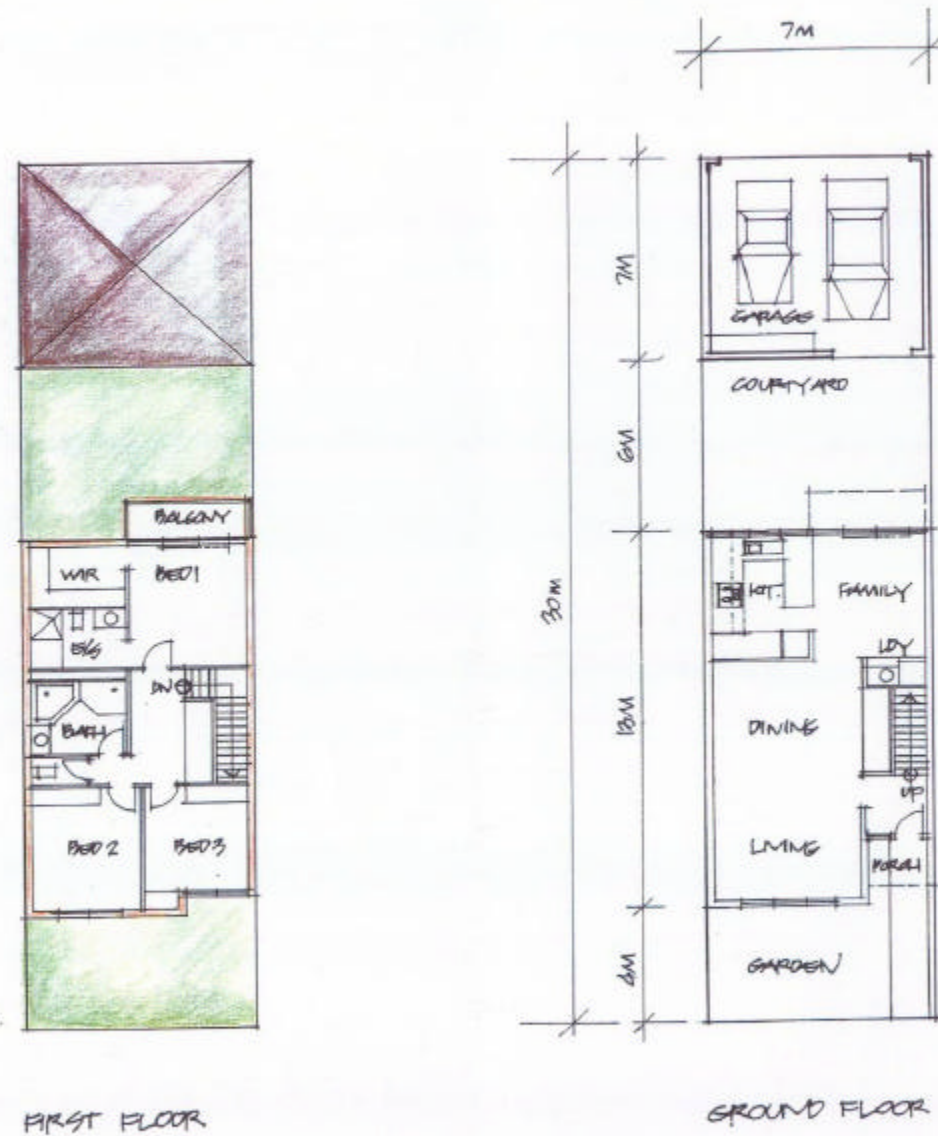
FIGURE 9





TERRACE STYLE HOUSES AND ELEVATIONS

FIGURES 10a, 10b and 10c



ELEVATION
TERRACE TYPE 1

Figure 7A

Bluestone Views Estate, Epping

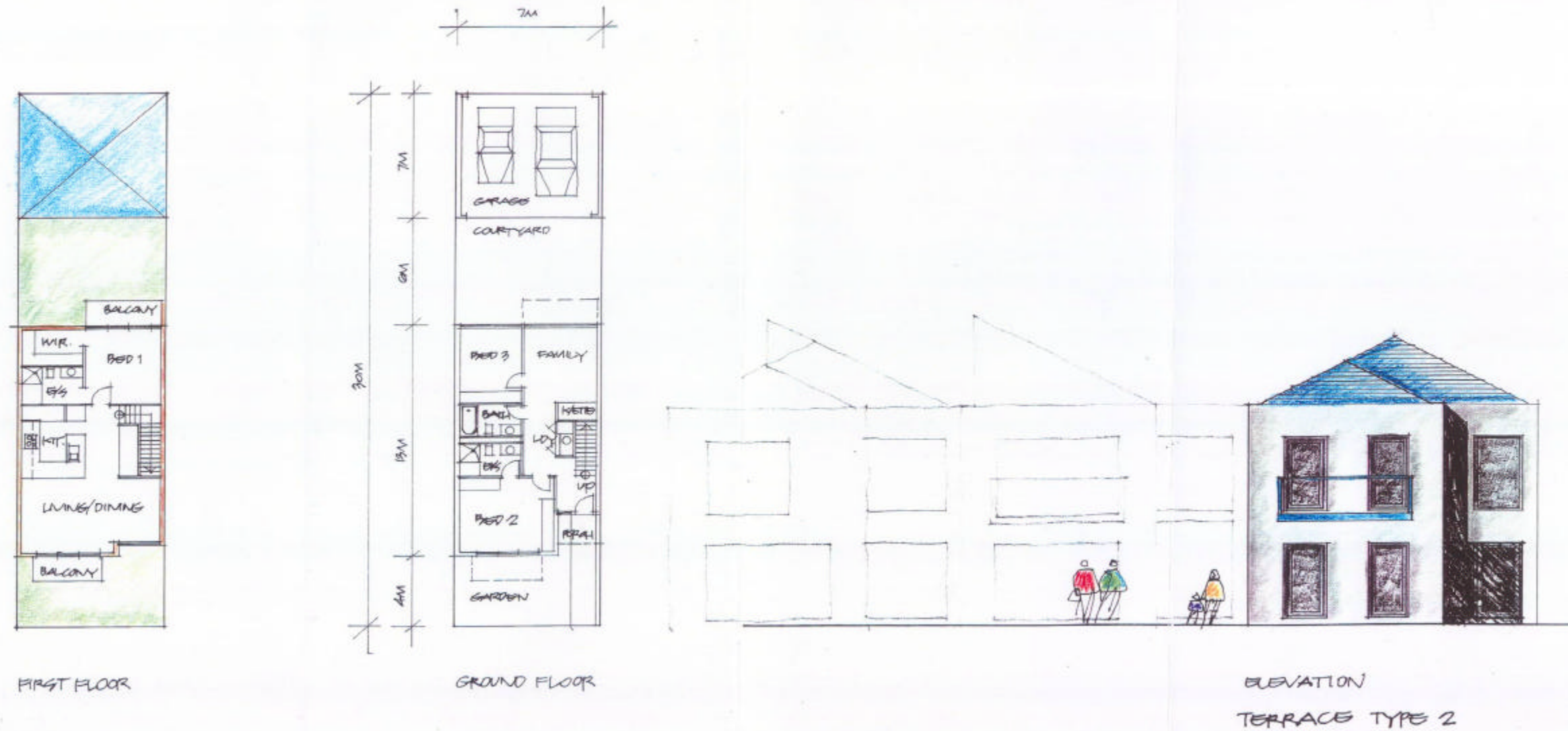


Figure 7b

Bluestone Views Estate, Epping

M I L L A R
TOWN PLANNING
URBAN DESIGN
CIVIL ENGINEERING
LAND SURVEYING
PROPERTY MANAGEMENT
MILLAR & MERRIGAN PTY. LTD. ACN 887 121 888

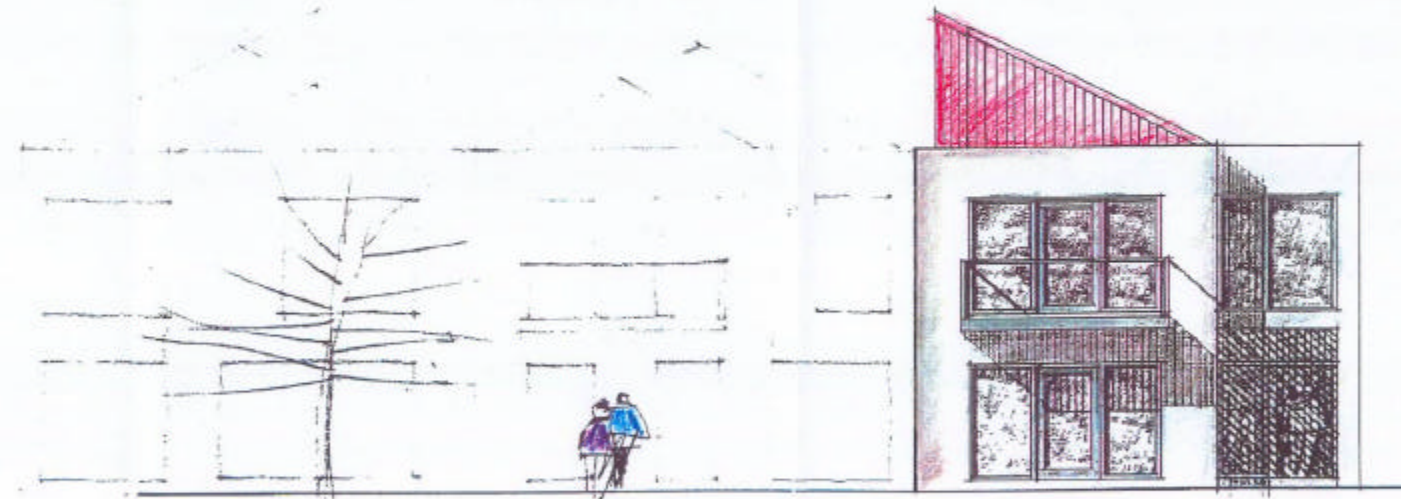
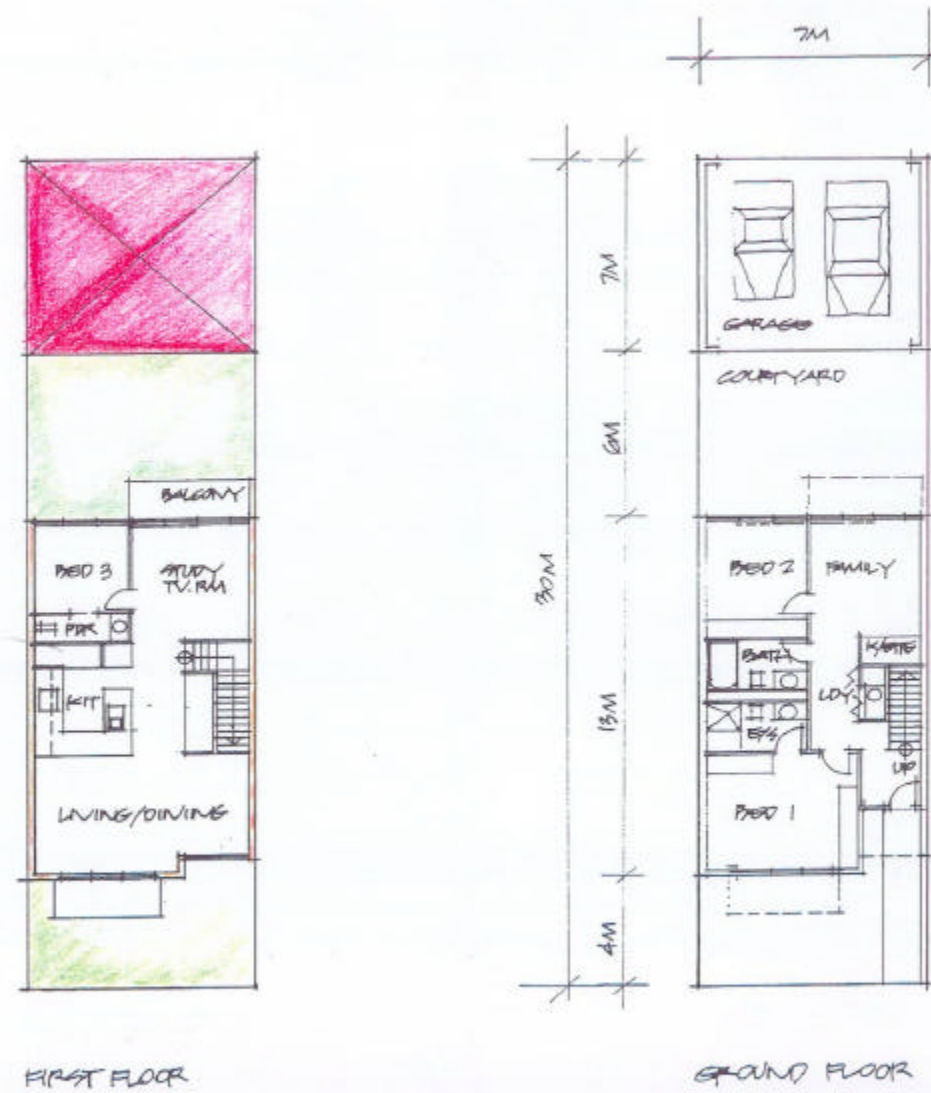


Figure 7C

Bluestone Views Estate, Epping



EXAMPLES OF TERRACE HOUSING

Figures 10d



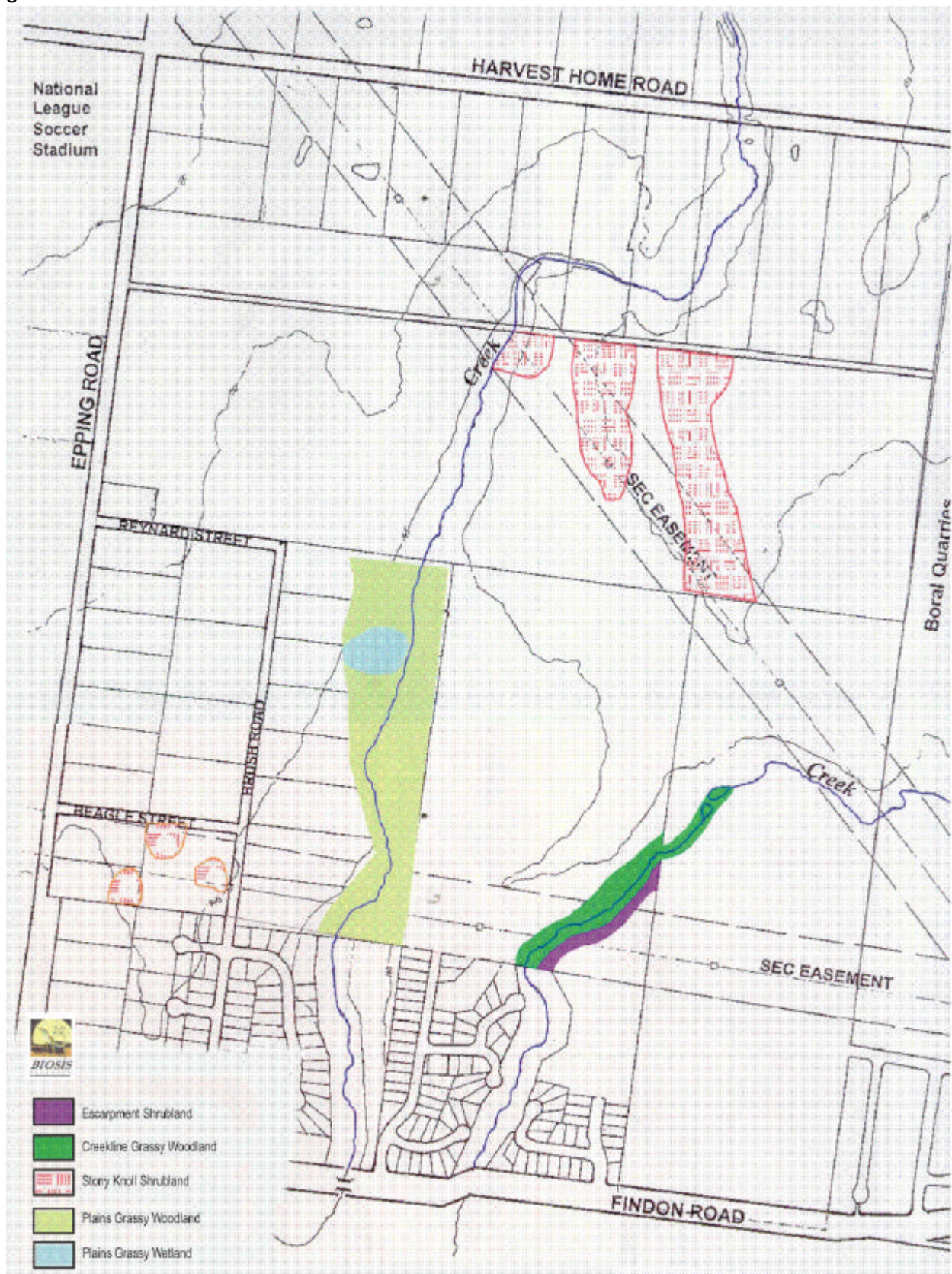


VEGETATION COMMUNITIES

FIGURE 11



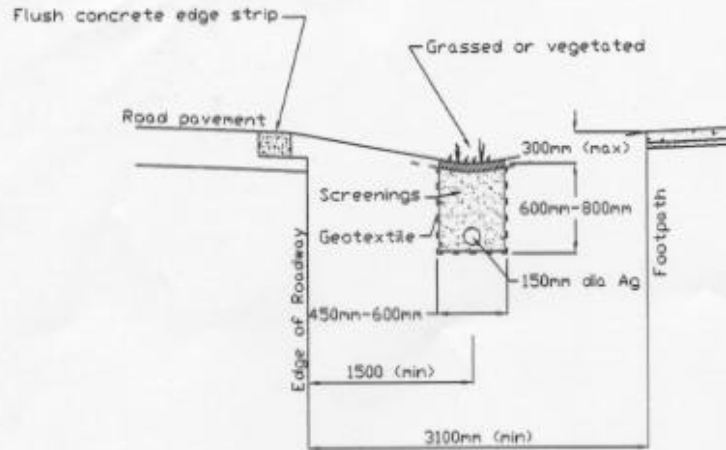
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DRAINAGE PLANS

FIGURES 12 and 13



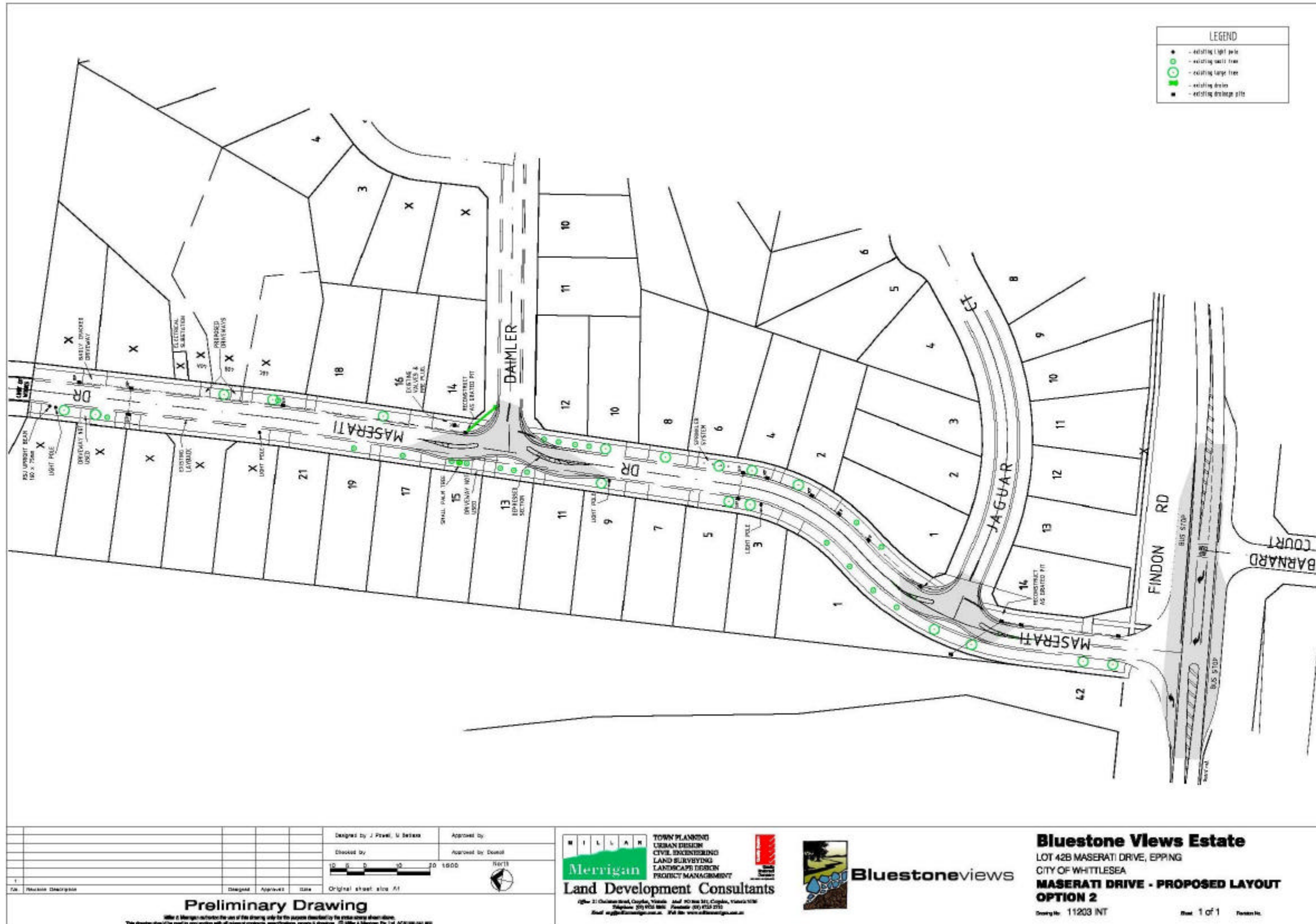


- Bioretention trench to carry first flush of high pollutants (approx. 3 months flow)
- Swale to contain 5 year return flows
- Road Reserve to contain 100 year return flows

Figure 13 - Drainage Swales

MASERATI DRIVE PLAN

FIGURE 14



MASERATI DRIVE INTERSECTION

FIGURE 15



ARBORICULTURAL REPORT

APPENDIX A



Bluestoneviews



TREE DIMENSIONS

ARBORICULTURE

AEN
24 374 459 649



Our Ref.: 186

TREE SURVEY & ARBORICULTURAL REPORT

Location:

Maserati Drive, Epping

Report prepared by:

David Galwey B.App.Sci.(Melb.) Ass.Dip.App.Sci.(Bunbury) Cert.Arb.(Ryde) MISA

Arboricultural Consultant

Report commissioned by:

Urban Land Developments

March 2001

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treed@netspace.net.au

1. Brief

Provide a tree survey and tree protection measures for the proposed subdivision site at Maserati Drive, Epping.

- Provide tree species, dimensions, health and condition.
- Recommend Tree Protection Zones for the trees to be retained.
- Recommend other measures to ensure the long-term viability of those trees.

2. Procedure

I visited the site on 12th March, 2001. Assessment of tree condition and structure was carried out visually from the ground. No aerial inspections have been done at this point.

3. Background

The property in Epping is currently used for grazing cattle. Being on the urban fringe, it is now being proposed for subdivision. Most of the property is pasture with basalt outcrops. There are 6 mature trees on the property – 4 indigenous and 2 introduced. This report identifies the trees and recommends protection measures for those trees worthy of retention.

4. Findings

The Tree Survey Table on the Page 3 lists the trees, their species, size, and condition.

The four indigenous trees (River Red Gums) are mature. Although not as large as some in the district, they still have significant amenity and environmental values. All trees have compacted root zones and damaged surface roots from the presence of stock.

Tree #1 is generally of good health and structure. Small amounts of deadwood are present in the crown. It contains a nesting hollow, and another nest in the crown.

Tree #2 leans to the south. The north side of the trunk has a large wound, with associated decay of heartwood and buttress roots. The crown has more deadwood than #1.

Tree #5 is generally of good health and structure.

Tree #6 is on the north side of the boundary. It contains a hollow in the trunk. The crown is in fair condition.

The two exotic trees (Peppercorns) are overmature. They both have compacted root zones and damaged surface roots from the presence of stock.

Tree #3 is in fair condition. Several large limbs are badly decayed and would be significantly hazardous if the target value is increased.

Tree #4 is structurally very poor. There is insufficient sound wood remaining in the trunk to support the crown. Failure is likely.

Many other Red Gums can be seen from the property. These, too, are on land likely to be subdivided in the near future.

5. Discussion

5.1 Introduction

Good design must include space for trees, above and below ground. When trees are being retained, the design and construction stages need to consider the tree's biological requirements. This takes the input of time and money. Usually only those trees that have value in the landscape, and that have a considerable life expectancy, will receive this input. Trees that will be unsafe, or that have a short life expectancy, generally are not worthy of retention. (Matheny & Clark, 1998)

An arboricultural assessment of the trees on a development site aims to identify which are suitable for retention, and what their requirements are. This report aims to assess the trees and their suitability, and to make appropriate recommendations to ensure that:

- Trees worthy of retention are retained
- Trees to be retained are not impacted significantly by the development.
- Trees will not damage buildings and infrastructure in the long term.

5.2 General Comments

The four Red Gums are worth retaining. Some pruning work is required, especially on tree #2, which needs weight-reduction of the crown. Root zones need to be improved by mulching and watering.

Of the two Peppercorns, tree #4 is structurally very poor. To retain this tree would require that it be fenced off entirely to reduce the risk of injury. Because the tree is not all that significant in the landscape, it is difficult to justify this. There are also liability risks involved when fencing off trees. For these reasons, I have recommended that this tree be removed.

The other Peppercorn, tree #3, is in fair condition. It will require weight-reduction of the canopy, especially the large decaying limbs. The root zone should be improved with mulching and watering.



Figure 1. Trees #1 & 2 – *Eucalyptus camaldulensis*



Figure 2. Tree #1



Figure 3. Nesting hollow in tree #1.



Figure 4. Base of tree #2.



Figure 5. Trees #3 and #4 – Peppercombs.



Figure 6. Tree #3 - Weight-reduction of major limbs required.



Figure 8. Trees #5 and #6 – *Eucalyptus camakulensis*.

Figure 7. Weak trunk of tree #4.



Figure 9. Tree #5.



Figure 10. Tree #6.

5.3 *Improvement of Root Zones*

Root zones of all trees can be assumed to extend to the radius of the Tree Protection Zones shown in the table on Page 3. The root zones of all trees being retained should be improved. Add a 5cm layer of organic mulch over the root zones. Pea straw is ideal. If wood chip is used, nitrogen should be added to avoid nitrogen depletion of the soil.

Irrigation systems should be installed and used weekly during dry periods. Deep watering is preferable, so the irrigation should be left on until the soil is wet to at least a depth of 300mm. Once this is achieved, the irrigation should remain off for a week to avoid waterlogging the root zones.

Indigenous grasses and flowering plants should be planted throughout the root zones. This benefits the trees as well as being aesthetically better than bare mulch.

5.4 *Requirements of trees to be retained*

Trees being retained require protection not only of their limbs and trunks, but also of their roots. Protection of roots is often overlooked because they are not usually visible.

The most important requirement of tree protection is the tree's Critical Root Zone. Apart from contributing to tree health, the roots in this zone hold the tree upright. These relatively thick roots extend radially outward from the trunk, tapering off toward the edge of the Critical Root Zone. The size of the Critical Root Zone is proportional to trunk diameter, as shown by Mattheck & Breloer (1994).

Beyond this zone extends the network of fine feeder roots. Most of the roots can usually be found in the top 300mm of soil. Trees can lose a portion of their feeder roots without being significantly affected in the long term. Different species tolerate different amounts of root loss. (Harris, Clark & Matheny, 1999)

The recommendation of optimal Tree Preservation Zones therefore aims to preserve all of the Critical Root Zone, along with enough of the feeder roots to ensure the tree's continued stability and health in the long term.

Ideally, no roads, services or buildings should be located within the Tree Protection Zones. If buildings or other infrastructure are to be located inside Tree Protection Zones, the consulting arborist should be included in the design process, and should also supervise any works which, by previous agreement, must occur within Tree Protection Zones.

The radius of each Tree Protection Zone is given in the TPZ column of the Tree Survey Table (page 3).

When works occur within a Tree Protection Zone, any roots encountered less than 50mm in diameter should be cut cleanly with a saw. Roots greater than 50mm diameter should be retained. Any services would have to be tunnelled beneath these roots. Building footings would have to be pier-and-beam construction, with the piers located clear of the roots, and the beam bridging over the roots.

5.5 *Conditions of Tree Protection Zones*

Tree Protection Zones should be fenced off temporarily, prior to any works beginning and until all works are complete. A consulting arborist should be present when building works are to occur within the Tree Preservation Zones.

The following conditions should apply within the Tree Protection Zones:

- No filling or excavation is to occur within Tree Protection Zones.
- Materials and machinery are not to be stored in this area. Waste is not to be dumped.
- No residual herbicides are to be used within the tree protection zone.
- If utilities pass through this zone, there will be no machine trenching. Rather, a consulting arborist should supervise hand digging, and determine if roots may be cut or if services must be tunnelled beneath the roots.
- Any pruning of the canopies required for vehicle clearance or other reasons to be done by a qualified arborist to Australian Standard 4373.
- A sprinkler system to be used to water the root zones of the trees during dry spells, as advised by a consulting arborist.
- A consulting arborist should inspect the tree when the works are completed, and then annually for 5 years.

5.6 Canopy Treatment

Any pruning of the tree canopies should be done by a qualified arborist, in accordance with Australian Standard for pruning amenity trees (AS 4373).

6. Summary

6.1 Tree removal

Of the six trees, the only tree that I have recommended for removal is the Peppercom, tree #4. Its extremely weak trunk is likely to fail in the short term. The only alternative to removal is to fence off the tree entirely. However this involves possible liability implications.

6.2 Protection of trees being retained

All trees being retained should have the Tree Preservation Zones (shown in Table 1) set aside. All buildings and services should remain outside these tree protection zones.

Deadwooding and canopy reduction is required on some of the trees, as outlined in this report.

Root zones should be improved through mulching and watering. Indigenous grasses and flowering plants could also be planted in the root zones.



7. References

Harris, R.W., Clark, J.R. and Matheny, N.P. 1999. *Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines*. 3rd Edition. Prentice-Hall, New Jersey.

Matheny, N. and Clark, J. 1998. *Trees and Development*. ISA, Champaign, Illinois.

Mattheck, C. and Breloer, H. 1994. *The Body Language of Trees: A handbook for failure analysis*. The Stationery Office, London.

8. Limiting Conditions

This report does not aim to give legal advice, which should be sought from legal professionals as necessary.

All due care has been taken when collecting information, however the consultant cannot guarantee information provided by others.

This report is not to be published or distributed, without the prior consent of the consultant.

Information on trees is correct at the time of inspection only.



Table 1. Tree Survey and Tree Protection Zones

Maserati Drive, Epping

March 2001

#	Species	Common Name	Height	Spread	DBH	Maturity	Health	Structure	Amenity	Comments	Recommendations	TPZ
1	<i>Eucalyptus camaldulensis</i>	River Red Gum	12 m	14 m	115 cm	Mature	Good	Good	Moderate	Habitat: 1 hollow, 1 nest.	Remove deadwood, but leave hollows.	13 m
2	<i>Eucalyptus camaldulensis</i>	River Red Gum	10 m	11 m	77 cm	Mature	Good	Fair	Moderate	Damaged, decaying trunk, some poor roots.	Remove deadwood. Weight-reduce crown by 20%.	9 m
3	<i>Schinus molle</i>	Peppercorn Tree	8 m	11 m	120 cm	Overmature	Fair	Poor	Low	Structurally poor but could be retained.	Weight-reduce crown by 30%.	13 m
4	<i>Schinus molle</i>	Peppercorn Tree	6 m	7 m	51 cm	Overmature	Fair	Very Poor	Low	Structurally very poor.	Remove.	(6 m)
5	<i>Eucalyptus camaldulensis</i>	River Red Gum	13 m	14 m	78 cm	Mature	Good	Good	Moderate	Good condition	Retain and protect.	9 m
6	<i>Eucalyptus camaldulensis</i>	River Red Gum	11 m	14 m	115 cm	Mature	Fair	Fair	Moderate	Habitat: hollow in trunk.	Retain and protect.	13 m

Notes

is the number of the tree, and corresponds to the tree numbers on the surveyed map.

Height and Spread were estimated. Spread is the average of the N-S and E-W axes of the canopy.

DBH (Diameter at Breast Height) was measured at 1.4m above ground level, except for multi-trunked trees, which were measured below the main fork.

Health summarises observations of tree health made in the field:

- Good - No significant pest or disease problems, expected growth rates, dense canopy, and good leaf colour.
- Fair - Minor pest or disease problems, average growth rates, canopy perhaps sparse in places, or some chlorosis.
- Poor - Serious pest or disease problems, poor growth rates, sparse canopy, or major leaf discolouration.
- Dead

Structure summarises observations of tree structure made in the field:

- Good - All forks sound, no major decay in limbs or trunk.
- Fair - Some poor forks developing, or decay developing in limbs or trunk. Major failure unlikely.
- Poor - Serious defects present, either poor forks, or decayed limbs or trunk; failure likely.

Amenity summarises the tree's contribution to the amenity value of the street or neighbourhood.

Comments summarise observations made in the field.

TPZ radius (Tree Protection Zone) indicates the recommended minimum distance from the trunk for protection of the tree's root zone during construction. This is based on the tolerance of the species to impacts, the age of the tree, and its DBH, using the formula described by Matheny & Clark (1998).

CERTIFICATE OF TITLE

APPENDIX B



REGISTER SEARCH STATEMENT Land Titles Office, Victoria Page 1

Enquiry no : 454634

Security no : 120320454636J

Customer code: 0012R

Volume 10267 Folio 274

Printed 01/02/2001 08:38 am

LAND

LOT 42B on Plan of Subdivision 345242A.

PARENT TITLE Volume 10095 Folio 559

Created by instrument PS345242A 18/01/1996

REGISTERED PROPRIETOR

ESTATE FEE SIMPLE

JOINT PROPRIETORS

CRAWLEY, ALFRED ARTHUR; 20 MASERATI DRIVE EPPING 3076

CRAWLEY, MARJORIE BRENDA; 20 MASERATI DRIVE EPPING 3076

PS345242A 18/01/1996

ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGES AND CHARGES IN PRIORITY RANKING

- 1 W478389D 20/12/1999 MORTGAGE
WESTPAC BANKING CORPORATION

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988.

Any other encumbrances shown or entered on the plan.

SEE PS345242A FOR FURTHER DETAILS AND BOUNDARIES

UNREGISTERED DEALINGS

Obtain Final Search Statement for unregistered dealings

STATEMENT END

FERNANDEZ
2001/02/01
1/03/2001 (DX 360)
9602 1438

LAND VICTORIA

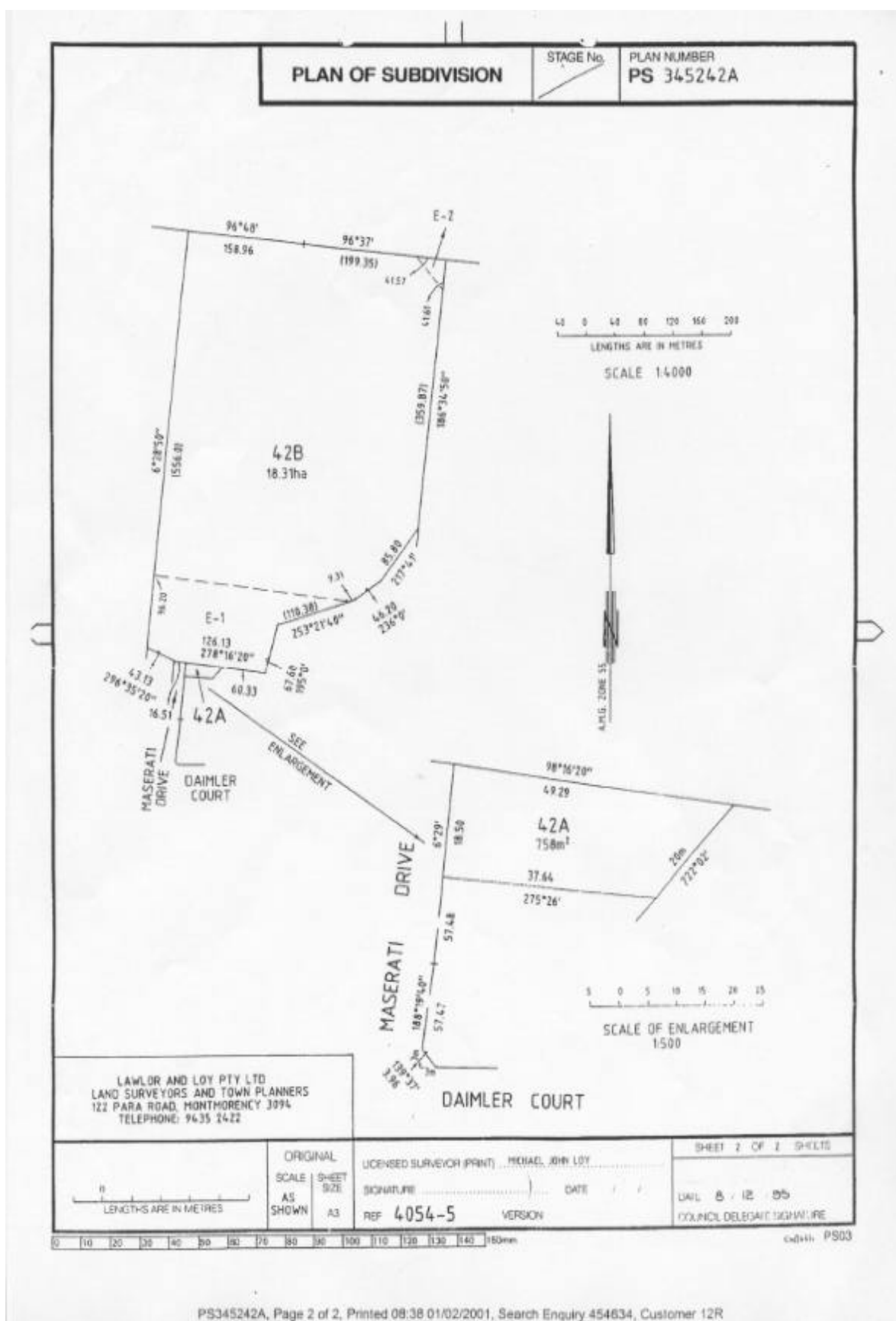
263 Queen Street, Melbourne 3000 DX 250639

Telephone: (03) 9603 5555 Facsimile: (03) 9603 5556



PLAN OF SUBDIVISION		STAGE No.	LTO USE ONLY EDITION 1	PLAN NUMBER PS 345242A
LOCATION OF LAND PARISH: WOLLERT TOWNSHIP: _____ SECTION: 10 CROWN ALLOTMENT: _____ CROWN PORTION: 3 (PART) LTO BASE RECORD: LITHO (3855) TITLE REFERENCES: C/T VOL.10095 FOL.557 LAST PLAN REFERENCE/S: LOT 42, PS 300666V POSTAL ADDRESS: 20 HASERATI DRIVE (At time of subdivision) EPPING, 3076 AMG Co-ordinates (of approx centre of land in plan) E 326 400 ZONE: 55 N 5 832 900		COUNCIL CERTIFICATION AND ENDORSEMENT COUNCIL NAME: WHITTLESEA CITY COUNCIL REF: 136403 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. OPEN SPACE (i) A requirement for public open space under Section 18 of the Subdivision Act 1988 has has not been made. (ii) The requirement has been satisfied. (iii) The requirement is to be satisfied in Stage Council Delegate Council Seal Date 8 / 12 / 95 Re-certified under Section 11(7) of the Subdivision Act 1988 Council Delegate Council Seal Date / /		
VESTING OF ROADS AND/OR RESERVES		NOTATIONS		
IDENTIFIER	COUNCIL/BODY/PERSON	STAGING: This was not a staged subdivision. Planning permit No.		
NIL	NIL	DEPTH LIMITATION DOES NOT APPLY		
		THE CONNECTION TO DAMLER COURT IS NOT SHOWN TO SCALE LOTS 1 TO 41 BOTH INCLUSIVE HAVE BEEN OMITTED FROM THIS PLAN		
SURVEY: THIS PLAN IS/IS NOT BASED ON SURVEY THIS SURVEY HAS BEEN CONNECTED TO PERMANENT MARKS N/A/N IN PROCLAIMED SURVEY AREA NO				
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	POWERLINE	SEE DIAGRAM	C/E C611135	S.E.C.V.
E-2	POWERLINE	SEE DIAGRAM	C/E D784637	S.E.C.V.
LTO USE ONLY STATEMENT OF COMPLIANCE/ EXEMPTION STATEMENT RECEIVED <input checked="" type="checkbox"/> DATE 20 / 12 / 95 LTO USE ONLY PLAN REGISTERED TIME 3:45 PM DATE 18 / 1 / 96 Assistant Registrar of Titles SHEET 1 OF 2 SHEETS				
LAWLOR AND LOY PTY LTD LAND SURVEYORS AND TOWN PLANNERS 122 PARA ROAD, MONTMORENCY 3894 TELEPHONE: 9435 2422		LICENSED SURVEYOR (PRINT) MICHAEL JOHN LOY SIGNATURE DATE 14 / 8 / 95 REF 4054-5 VERSION		
DATE 8 / 12 / 95 COUNCIL DELEGATE SIGNATURE UTM/DM SHEET SIZE A3				

G-B46 P501



ENVIRONMENTAL REPORT

APPENDIX C



IT Environmental (Australia) Pty Ltd
 ABN: 89 003 931 057

169 Burwood Road
 Hawthorn VIC 3122
 Tel: (03) 9819 0284
 Fax: (03) 9819 4079
 Email: Melbourne.Admin@itenviro.com.au

www.itenviro.com.au

FACSIMILE

To: Mr. Carl Wilkinson	Fax No.: 9725 2710
cc:	Fax No.:
From: John Watson	
Date: 11 July 2002	Page 1 of: 2

Re: Preliminary Site Inspection - Maserati Drive, Epping

IT have undertaken a preliminary site inspection at the above mentioned site. We understand your requirements to be a preliminary site inspection and assessment for the purposes of evaluating potential land contamination issues.

The following tasks were completed as part of this assessment:

- Site inspection undertaken on the 8th July 2002;
- Review of site history;
- Review of aerial photographs; and
- Report on findings.

The primary aim of the site inspection was to identify any potential contamination sources, and areas of the site which showed evidence of contamination. Typical indicators of contamination include;

- surface staining or surface discolouration;
- stressed or absent vegetation;
- presence of odours;
- evidence of waste pits or waste disposal areas;
- solid and liquid waste disposal areas;
- discoloured or odorous waterways and stormwater pits, and
- contamination sources such as fuel storage areas, underground and aboveground fuel storage tanks, fuel/chemical containers etc.

The site has been used in the past for agricultural purposes and the site remains undeveloped. Buildings and structures, including a residence and sheds associated with agricultural use, currently exist on the site.

Ref: Carl Wilkinson 11 July 2002.doc

Page 1 of 2

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IT Environmental (Australia) Pty Ltd
ABN: 89 003 931 057

The portion of the site most likely to exhibit signs of contamination or hazard is in the vicinity of the existing residence and sheds. Often, these are the areas within an agricultural use site where most impact occurs as a result of fuel and/or chemical storage areas, machinery maintenance areas, and machinery storage areas. During the site inspection, this portion of the site was investigated thoroughly and while some potentially contaminating activities appear to have occurred in this area, there were no obvious signs of potential contamination impact or hazard.

Based on the site inspection, review of site history, and review of aerial photographs there appears to be no potential on-site contamination sources or hazards likely to cause adverse impact to future users of the site. We note however that sub-surface conditions have not been assessed and while there were no obvious signs or history of waste dumping having occurred on the site, this can only be confirmed through an intrusive soil assessment program.

At this point in time, an intrusive soil assessment program is not warranted given the site history and the minimal likelihood of soil contamination issues. Based on the preliminary works undertaken to date there is little evidence of serious contamination issues or hazards on the site.

We trust that this information is adequate, however, if you have any questions please do not hesitate to contact the undersigned.

John Watson
Senior Project Manager

Ref: Carl Wilkinson 11 July 2002.doc

Page 2 of 2

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MELBOURNE 2030 PRINCIPLES

APPENDIX D

Melbourne 2030 planning for sustainable growth - Principles

(Extracted from the Melbourne 2030 Web site)

Sustainability	<p>Achieving sustainability requires an integrated approach to decision-making. This means taking a long-term view while ensuring that economic, social and environmental implications are considered.</p> <p>The National Strategy for Ecologically Sustainable Development provides a framework for achieving long-term sustainability. The core objectives are to:</p> <ul style="list-style-type: none"> safeguard the welfare of future generations improve equity within and between generations protect biological diversity and maintain systems essential to support life. <p>A key principle is that, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent the threat from being realised.</p>
Innovation	<p>Innovation and the creativity, cultural vitality, intellectual capacity and entrepreneurial skills that give rise to it are essential for all forms of growth and development. The Government is committed to finding new answers and approaches.</p>
Adaptability	<p>People can and must take into account past trends and indications of future directions. The Government is determined to plan for change and to be adaptable when faced with the unexpected.</p>
Inclusiveness	<p>The Government will consider the differing needs, values and aspirations of all individuals and groups in society while managing urban and regional growth and change, carrying out the processes of planning at all levels, and implementing Melbourne 2030.</p>
Equity	<p>The Government is committed to ensuring fairer access to the benefits of growth and change. All Victorians will benefit because, in providing social, economic and environmental infrastructure, we will focus on areas of need and current inequality. To ensure more equitable access to that infrastructure, the Government acknowledges the right of all people to be safe, and to feel safe.</p>
Leadership	<p>Leadership at individual, community and industry level is vital — to manage the rapid change that many communities are experiencing, and to achieve the desired outcome for metropolitan Melbourne and the surrounding region. Communities have an enormous capacity to influence their own destiny, but there is also an essential role for government. The Government is committed to providing direction while encouraging and supporting leadership at all levels.</p>
Partnership	<p>People operate in a complex urban system where no one level of government or organisation has dominance in decision-making. The Government is committed to working in a collaborative manner with local government, non-government organisations, the private sector and the community.</p>

CORRESPONDENCE FROM MELBOURNE WATER

APPENDIX E



**Melbourne
Water**

22 March, 2001

Millar & Merrigan Pty Ltd
DX 13608
Croydon VIC

Fax: 9725 2710

Att: Mr Max Bohnstedt

Melbourne Water Corporation
ABN 81 945 386 953
630 Church Street
Richmond 3121 Victoria
Locked Bag 4280
East Richmond 3121 Victoria
Telephone 03 9235 2100
Facsimile 03 9429 4285
www.melbournewater.com.au

Melbourne Water Ref: 70275

Dear Max

Property: End of Maserati Drive Epping 3076

Thank you for your flood level request of 13/03/2001 regarding the above property.

Waterway, Open Drain (Grading Flood Line)

The Darebin Ck (Middle) is located in the vicinity of the property. The applicable flood line for this property grades from 140.7 metres to Australian Height Datum (AHD) at the North Eastern Boundary down to 139.0 metres AHD at the Southern Boundary. A licensed surveyor should be engaged to determine the exact effect of the applicable flood line on the property. Melbourne Water would have no objections to a development on the property provided that all floor levels are set to a minimum of 600mm above the flood level.

Other Information

If you are considering property development it would be in your interest to note that:

- The above flood level is associated with a drainage issue which may impact upon development potential.
- Any additional information (ie. development plan) supplied with the application has not been assessed for development approval purposes.
- Any development must be constructed in accordance with Part 6 of the Building Regulations 1994 and the requirements of the applicable planning scheme.



- The above flood level information is current on the date of issue. If development is planned to take place at a later date then a current statement should be obtained.
- This correspondence does not constitute formal or implied consent by Melbourne Water for any proposed development.
- A separate application is required to obtain Melbourne Water's requirements for any proposed development.

Please note that Melbourne Water provides Floodplain Management services by delegated authority of the Minister responsible for the Water Act 1989.

Please contact me if you have any enquiries.

Yours sincerely

Jaana Strich
Land Development Officer

Enquires
Telephone: (03) 9235 2227
Facsimile: (03) 9429 4285
Email: jaana.strich@melbournewater.com.au