

Social Housing Renewal Standing Advisory Committee

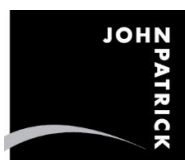
NEW STREET ESTATE PUBLIC HOUSING RENEWAL PROGRAMME

PREPARED FOR DEPARTMENT OF HEALTH AND HUMAN SERVICES (DHHS)
INSTRUCTED BY NORTON ROSE FULBRIGHT
SITE INSPECTION 27 OCTOBER 2017

PREPARED BY

John Patrick
John Patrick Landscape Architects Pty Ltd

October 2017



LANDSCAPE ARCHITECTS
ENVIRONMENTAL HORTICULTURISTS
LANDSCAPE HERITAGE CONSULTANTS
CONSULTANT ARBORISTS

JOHN PATRICK LANDSCAPE ARCHITECTS PTY LTD

324 Victoria Street, Richmond, VIC 3121, Australia
T +61 3 9429 4855 E admin@johnpatrick.com.au
F +61 3 9429 8211 W www.johnpatrick.com.au

1 NAME AND ADDRESS OF THE EXPERT

- 1.1 John William Patrick
324 Victoria Street
Richmond Victoria 3121

2 QUALIFICATIONS AND EXPERIENCE

- 2.1 M.Sc. Ecology (University of Durham).
- 2.2 M.Sc. Landscape Ecology, Design and Management (Wye College, University of London).
- 2.3 Associate Member of the Australian Institute of Landscape Architects.
- 2.4 John Patrick has worked in the discipline of Landscape Design since 1976. He established his practice in Australia in 1980 becoming full-time in 1988. From 1980-1988 he was Senior Lecturer in Amenity Horticulture at VCAH-Burnley.
- 2.5 In his practice John Patrick has undertaken an extended range of Landscape Architectural projects including:
- studies of Old Parliament House and Government House, Canberra;
 - studies of Fitzroy, Flagstaff, Treasury, Alexandra and Carlton Gardens, Melbourne;
 - provision of Landscape Architectural services to hospitals, schools, residential sub-divisions, private residences and parks etc;
 - design services for the City of Sydney 'Living Colour' Committee including street design for the Olympic and Paralympic Games 2000, and;
 - heritage studies and conservation management plans for numerous sites including Government House, Melbourne, The Domain, Eureka Stockade Parklands and Central Park, Caulfield.
- 2.6 He is a past presenter of Burke's Backyard and ABC's Gardening Australia, a past Board Member of the Royal Botanic Gardens, Melbourne, the Garden State Advisory Committee and Parks Victoria Dandenong Gardens Advisory Board and has written or contributed to 11 books.

3 AREA OF EXPERTISE

- 3.1 John Patrick has experience in Landscape Architecture, Landscape Heritage and Landscape Horticulture. During his tenure at VCAH Burnley he wrote Course Programmes and contributed to Associate Diploma, Degree and Post-Graduate level courses in Arboriculture.

4 EXPERTISE TO PREPARE THIS REPORT

- 4.1 John Patrick is regularly involved with the preparation of Landscape Architectural schemes for residential and commercial developments and has provided expert evidence to the Planning Panels and VCAT's Planning Division on many occasions.

5 INSTRUCTIONS THAT DEFINE THE SCOPE OF THIS REPORT

- 5.1 This report has been prepared following written and verbal instruction from Norton Rose Fulbright. I have no business or private relationship with Norton Rose Fulbright other than being instructed to prepare this statement.

6 THE FACTS, MATTERS AND ASSUMPTIONS ON WHICH THE REPORT PROCEEDS

- 6.1 The report assumes that the documents provided by Norton Rose Fulbright are correct as these have been used as the basis for this report.

7 DOCUMENTS VIEWED IN PREPARING THIS REPORT

- 7.1 In the preparation of this report I have viewed and reviewed the following items:

- Arboricultural Assessment prepared by Treetec, dated December 2016.
- Design Framework prepared by Baumgart Clark Architects, dated August 2017, including;
 - Introduction
 - Design Principles
 - Location and Site Context
 - Planning Context
 - Opportunities and Constraints
 - Site Analysis
 - Design Response
 - Proposed Development Plan Overlay, Schedule 3
 - Clause 32.04-9
 - Clause 43.04, Schedule 3
- Australian Standard AS 4970-2009 Protection of Trees on Development Sites.

8 IDENTITY OF THE PERSON WHO PREPARED THIS REPORT

- 8.1 The author of this report, John Patrick, has visited the site, reviewed the Arboricultural Assessment prepared by Treetec and has undertaken a visual assessment of the site and its context. I have reviewed the plans and reports provided to me and referenced above.

9 A SUMMARY OF THE OPINIONS OF THE EXPERT

The site

- 9.1 This report relates to the proposed re-development of public housing land fronting Elster Creek between New/Rusden Streets and Brickwood Street, Brighton known as the New Street public housing site.
- 9.2 A thorough review has been undertaken of the Arboricultural Assessment of the site completed by Tretec for the New Street site, Brighton. I have some differences in my view of the retention value of trees that were assessed and some tree management would appear to have been undertaken since the assessment was completed, including the removal of limbs that were close to existing buildings, but in general the report is accurate and appropriate.
- 9.3 I note from the Design Framework for the site prepared by Baumgart Clark Architects, that their design proposal was to respond to Site Features, including significant vegetation and to provide Integrated Landscape “that is resilient and enhances the sense of place, sustainability and liveability of the site and local area”. The Opportunities and Constraints Plan identifies existing vegetation of high and medium retention value as restraints. It fails to identify the removal of poor and senescent trees as an opportunity. Of the 108 trees assessed in the survey, only 50 were identified as having high, high/medium or medium retention value, indicating that there will be good opportunities for new planting to be established within the site.
- 9.4 It should be noted that of the high or medium retention value trees, the great majority are mature and in some cases I would suggest over-mature, so there is a clear need for recruitment of a new generation of appropriately selected trees to be introduced into the site to secure long term amenity values. It is my view that the quality of many of the trees on the site were over-stated and that many of the trees identified for retention could be removed.
- 9.5 The re-working of a site of this type is an opportunity to establish a programme of Sustained Amenity, by which the long-term qualities of a site can be guaranteed. There is no justification for the retention of poor trees or indeed for those that are over mature, just so that numbers of removals appear low. This is especially the case when it is realised that after completion of this programme of works, the site is unlikely to receive further attention for many years. Certainly, this type of detailed appraisal with its associated planting programme is unlikely to re-occur.
- 9.6 It is this that leads to my observation that I disagree with the retention value of some of the trees assessed in the Arboricultural Assessment. Among trees that I suggest might be removed and replaced are Trees 95, 100 and 101, all specimens of Bracelet Honey Myrtle (*Melaleuca armillaris*), that contain extensive deadwood and are likely to offer reducing levels of amenity over the next few years, and Trees 68, 69 and 70, all specimens of Bushy Yate (*Eucalyptus lehmannii*). Many the River She Oak (*Allocasuarina cunninghamiana*), especially those reviewed as groups, are of modest quality especially following the pruning process that has been implemented.
- 9.7 Management works have occurred on the site that have seen the removal of side limbs from several of the site’s larger trees, especially River She Oak (*Allocasuarina cunninghamiana*). While this may have an impact on the retention value of these trees, since they now lack the complete canopy that is so widely admired in trees, it has a more pertinent message for this site and others where a 3-metre setback has been established between buildings and the boundary.
- 9.8 While there are trees that will grow effectively close to buildings, for example Planes, there are others that produce and retain canopy even in circumstances where they are close to buildings; these canopies can be sufficiently dense to cause issues for residents particularly in terms of light loss. Clearly, such a tree is River She-oak. It reinforces the point that there would be benefits in providing greater setbacks than the 3 metres that is proffered on this site to achieve two outcomes; firstly, articulation in the built-form and secondly, the opportunity for the cultivation of trees with a more effective canopy spread. An increase in setbacks to 5 or 6 metres at key locations where canopy trees are to be established, would have merit.

- 9.9 It is also worth noting that the plant palette which has been considered in this Arboricultural Report differs significantly from that of other sites for which I have prepared reviews, sites at Racecourse Road, Flemington and Abbotsford Street, North Melbourne. While this has no impact upon the potential to grow trees, there is no doubt that the sandy, heathland soils of the Elster Creek margins support different vegetation from the heavier nutrient retaining soils of the inner northern suburbs of Melbourne.
- 9.10 In part, I suspect that the somewhat limited palette of trees assessed on the subject site reflects its ecological conditions. The site does not carry a diversity of remarkable trees, rather it tends towards a large number of one tree taxon that has proven successful in this environment and not surprisingly this tree, River She Oak is a species that grows in water side areas with occasional inundation and poor nutrient levels.
- 9.11 However, there is a significant number of specimens of this tree species of high retention value on the site and while there are other examples that are in poor condition, they do form the majority of the trees to be retained. If this is to occur, both they and other trees to be retained, need to have appropriate Tree Protection Measures implemented at all times throughout site works and this includes during site demolition.
- 9.12 Before works are implemented, the design process needs to recognise the needs for Tree Protection and understand the mechanisms that can be implemented to minimise damage. This includes not only the obvious direct damage resulting from excavation for buildings and especially basements but also collateral damage that may occur through the delivery of services, for example sewers, water, gas and the like to the site, as well as practices like scaffold construction, materials delivery, offices and sheds and materials storage. These requirements should be addressed in both the Architectural response and the site Construction Management Plan.
- 9.13 It requires too an understanding that damage to trees can be of two types. Direct Damage is the most apparent and most easily understood, there is clear evidence of the damage caused by an errant excavator, by severing roots during excavation, or by ripping away branches to allow construction of scaffolding; Indirect Damage by contrast is insidious, more covert, its impact often becomes apparent only in the medium to long term when a tree's health declines as a result in changes to drainage pattern, soil compaction with its impact on oxygen and moisture availability or spillage.
- 9.14 Tree Protection and retention begins with education, firstly of the project Architects to ensure that their design work and that of their sub-consultants conforms to the requirements of the Tree Management Plan for the site and then with the Building Contractors to ensure that their works conform to the Tree Management Plan. In the first case, there is merit in having plans reviewed and signed off by an Arborist appointed to review project plans, in the second case there is merit in the Project Arborist undertaking a training programme for the site team and linking this to a Tree Protection Bond.
- 9.15 Simple biological knowledge greatly assists in protection of trees. It should be remembered that for trees growing in the typical conditions to be found in Melbourne root growth is likely to be limited to the top 600-1000mm of soil, the area of the soil profile that provides oxygen and water essential for their survival. Generally, tree roots do not go deep into the ground. Woody trees depend for their stability on spreading plates of roots that are generally viewed as being radial around the trunk though the "ideal" picture of a root plate can be modified by deflection of roots by foundations and the like that offer a barrier to root growth.
- Roots are also opportunistic so that they follow lines of least resistance so long as oxygen and water are available to them. They may, therefore, proliferate in a non-compacted re-filled trench which distorts any normal root pattern.
- 9.16 Tree roots are not sentient so that a soil depth of 1 metre above a car park podium is no different to them than 1 metre of natural soil though being an artificial medium, the soil may be designed and manufactured to provide a better medium for growth than many natural soil profiles.
- 9.17 All proposed works on site should conform to *Australian Standard AS 4970-2009 Protection of Trees on Development Sites*. This document provides sound information about the Protection of Trees and will form the basis of any works by professional Arborists.

- 9.18 All trees to be retained should be documented and indicated accurately on plans with their Tree Protection Zones (TPZ) clearly identified. These are the areas around the base of trees that are identified as containing the bulk of the tree's roots. So far as is possible the entire Tree Protection Zone should be protected throughout the development from both direct and indirect damage. The best method of achieving this is to isolate the tree by construction of a 1.8-metre-high chain mesh fence carrying a sign reading "Tree Protection Zone-No Access".
- 9.19 Where a large tree population is involved it is possible to isolate the greater tree population from a works site by use of an enclosing fence that isolates the construction site. Individual trees within the site can be provided with specific isolation fencing. This situation may arise on the subject site given its extent and the large areas that will not be redeveloped.
- 9.20 The construction of Tree Protection Fencing ensures that trees are protected from activity within their TPZ. It should be noted that under any circumstances excavation should not occur within the TPZ together with storage, parking of vehicles and plant, storage and mixing of chemicals, dumping of waste or raising the natural soil level with fill, cleaning equipment, lighting fires or refuelling.
- 9.21 The Australian Standard accepts that there may be circumstances where an intrusion into the TPZ is unavoidable and recognises that trees are able to tolerate an extent of root severance. This should be limited to 10% of the TPZ and limited to one side only of the root plate and compensated for in an area contiguous with the TPZ; it is not acceptable to have two bites of say 5%. In such a situation, an Arborist should cut the roots appropriately prior to excavation to ensure that there is no tearing of the roots. Clean severance is important.
- 9.22 A TPZ has been provided for each of the trees surveyed. It represents a radial distance of 12x the trunk diameter at a height of 1400mm up the trunk. A 10% incursion, recognised as a "minor incursion" in AS 4970-2009 is represented by a distance 8.2x the trunk diameter at a height of 1400mm up the trunk applied to one side of the tree only. Calculations can be made for multiple trunk trees which effectively adds the areas of each trunk and offers a cumulative diameter for the total area of the trunks.
- 9.23 Use of protective fencing isolates trees from construction activities. There may be situations where there is a need for access within the root zone of a tree. In such situations, it is important that works are undertaken under the supervision of an Arborist. Protection should be given to the trunk by utilising timber battens to create a barrier around the trunk. A protective layer should be provided above the root plate to ensure that any compaction is taken up by the surface layer not by the soil within which the roots grow. The provision of rumble boards across the root plate or large pore size coarse mulch as a 200mm layer above a geotextile membrane laid on the soil surface can provide this protection.
- 9.24 There are circumstances where greater incursion into a root plate can be compensated, for example when a structure may have deflected a root system by providing a barrier to growth or where conditions poorly suited to root development may have existed, for example beneath some paved surfaces. In such cases root investigations can be undertaken to show the location and size of roots. The presence of no or few roots indicates that works may be able to come closer than would otherwise be permitted. It may be that a single larger root may be able to be cut on the basis that it represents only a modest incursion into the TPZ.
- 9.25 Where doubt exists about the potential for tree roots to be damaged, the use of non-destructive root investigations can clarify likely impacts and outcomes. Such procedures should be undertaken by agreement with the Site Arborist to ensure that appropriate interpretation of the results takes place.
- 9.26 The possibility of a greater incursion than the 10% prescribed by the Australian Standard may be acceptable in certain circumstances. Among these are incursions where the tree taxa involved is recognised as having a high tolerance of root incursion, for example Lilly Pillies (*Syzygium* spp.), tree taxa recognised as having an exaggerated TPZ because of a thick fibrous trunk, for example Melaleucas, age and size of the tree, young trees generally having greater tolerance of disturbance than more mature trees and, when it comes to compaction, greater tolerance is shown by trees able to tolerate inundation, the result of which is a reduced oxygen availability.

- 9.27 Should it be necessary to carry services through a root plate then the use of directional drilling offers an option. As with all on site Arboricultural work pre-implementation planning and supervision should be undertaken by an appropriately experienced and qualified Arborist. Open trenching should extend to the outer portion of the TPZ from where directional drilling can extend beneath the centre of the tree at a minimum depth of 600mm. Services can be directed through the bore line without impacting upon the root plate.
- 9.28 There is a need for the preparation of a Tree Management Plan for this site because while the Arboricultural Assessment offers some preliminary guidelines it lacks the detail and clear direction that should be provided at the time of site clearance which is likely to be the earliest works undertaken on the site.

Specific Issues

- 9.29 A review of sections provided within the Design Framework by Baumgart Clark Architects shows in Section A the plinth above the car park extending from site boundary to site boundary. The proposed Development Plan Overlay Schedule 3 seeks a 3m minimum building setback from the common boundaries with direct residential interfaces. This does not appear to be in place in the section.
- 9.30 In any case it is my opinion that there would be benefit in a greater setback not for the full length of boundaries but at appropriate spacing both to residential and to the public reserve interface to permit the establishment of trees of greater canopy size than a 3-metre setback might allow. Such a break would also permit a degree of articulation in the built form that would have clear benefits to the appearance and presentation of the project.
- 9.31 I additionally note that the scheme as proposed indicates no new tree planting to the interfaces with residential properties to the north-east nor between the proposed buildings, in this case higher structures at 6, 8 and 9 levels and the public open space along the Elster Canal.
- 9.32 Reference to proposed DPO3 clearly indicates that the 3 metre setbacks are to be "increased as required to provide a landscaped buffer (either retained existing trees or new canopy trees) and to manage potential amenity impacts outlined in Clause 32.04-9 (such as overshadowing, daylight access and overlooking). It is considered that this outcome will maintain acceptable amenity for adjoining properties".
- 9.33 Reference to the Design Response Plans-Landscape Tree Retention and New Trees suggests that little consideration has been given to these residential interfaces and the benefits landscape could bring to them especially in terms of addressing overlooking.
- 9.34 I especially note that while DPO3 offers guidance in relation to the interface treatment with direct residential interfaces, with New and Rusden Streets and with Brickwood Street there is no recommendation for the treatment of the interface with the adjacent public parklands.
- 9.35 A review of this interface within a broader context reveals that it is frequently tree lined and that the presence of vegetation in adjacent private property contributes positively to the character of the creek alignment. I consider that there should be some contribution made by landscape throughout the length of the site and not only at the central communal open space and the northern and southern extremities of the project.
- 9.36 Both Section A and Section B show proposed tree planting located above podium and the trees illustrated appear to have canopy widths in the order of 6-7 metres. The cultivation of trees in above podium contexts is increasingly common in urban contexts around the world and if appropriately designed for is entirely acceptable.
- 9.37 However, the sections prepared offer no indication of potential planter size. Research suggests that planters for trees should have a minimum depth of 800mm, 1 metre is preferable, and should be a minimum of 5 metres across. Research suggests that 0.6 cubic metres of appropriately irrigated planter volume will support a square metre of tree canopy. A tree of canopy diameter 7 metres will require a planter with a soil volume of 23 cubic metres.

- 9.38 The provision of open space as a significant single larger area rather than smaller spaces through the site has benefits, it will accommodate larger trees, allows for effective community spaces, offer site permeability and a sense of integration with the Elster Creek Reserve but it should not be ignored that the site currently provides a number of small scale garden spaces that are greatly valued by residents. These are used for growing fruit trees, herbs and vegetables and, while many of these areas are informal, they have been generally well maintained.
- 9.39 There would be value in providing community garden space within the site. This may be at ground level but the opportunity for north-facing roof top community gardens and gathering spaces on some of the three storey built forms should not be ignored.

Analysis of Planning Scheme Amendment

- 9.40 Observations provided in relation to Schedule 3 to Clause 43.04 Development Plan Overlay are based upon the revised document dated 31 October 2017.
- 9.41 I note that a permit may be granted before a development plan has been approved for "Earthworks and site preparation works that are carried out in accordance with a Construction Management Plan and Arboricultural Assessment Report" and that this is now to be accompanied by a Tree Management Plan before works can commence. This is an important modification securing as it does guidelines for the protection of the trees to be retained and requiring a specific Arboricultural Report. There is considerable difference in the quality of Tree Assessments prepared and this requirement addresses some of the inadequacies of the more limited reports.
- 9.42 The need to demonstrate that potential amenity impacts on nearby residential properties can be adequately managed brings with it the potential for vegetation to contribute to these mitigation procedures. Generally, where the development addresses Brickwood Street it addresses front garden open space associated with private housing to the opposite side of the street. Where there are Direct Residential Interfaces the interface in many cases is to private rear gardens. Yet the setback in this situation is 3 metres to 3 storeys, a smaller setback for what are frequently more sensitive interfaces. Consideration should be given to varying this in recognition of a need for building articulation and possible canopy tree recruitment.
- 9.43 Replacement of trees with moderate or high retention values on a two for one ratio is appropriate but it gains nothing if trees of low retention value or low retention value are removed and not also replaced. A fine large tree may have low retention value because it is over mature. In this scenario, it would appear not to need replacement with another tree at all yet its size and the impact its removal will have would suggest a ratio of 5:1 might be required to match the lost amenity. All trees removed from the site regardless of their rating should be replaced on a two for one ratio.
- 9.44 Planting is proposed as part of the Landscape and Open Space requirements with additional trees along the frontages of New, Rusden and Brickwood Streets however my review of the Neighbourhood Character as it relates to the Elster Creek alignment is that trees offer an element of the interface to the linear park. The opportunity to explore tree planting in this location should be pursued.

Conclusion

- 9.45 A review has been undertaken of the Arboricultural Assessment, the Town Planning Report and associated Town planning Clauses relating to the proposed Design Framework for the Public Housing Renewal Project at New Street estate, Brighton.
- 9.46 Comments have been made with respect to the tree assessment including a suggestion that tree ratings appear high for the quality of many of the trees reviewed.
- 9.47 I have assessed aspects of the Design Framework as it relates to Tree Retention, Open Space Design and Tree Recruitment and suggested a number of aspects of the work that warrant review.

- 9.48 I note and welcome the need for a Tree Management Plan as an integral part of the Arboricultural Assessment prior to the commencement of site works.
- 9.49 The changes I have suggested should be reviewed and considered for inclusion in the Design Framework and with this in place I believe an appropriate Arboricultural and Landscape outcome can be achieved on this site.

10 PROVISIONAL OPINIONS.

- 10.1 None.

11 INACCURACIES AND ADDITIONAL MATTERS.

- 11.1 To my knowledge, there are no inaccuracies in this report or matters related to landscape assessment and design which fall outside my expertise.
- 11.2 I have made all the enquiries that I believe are desirable and appropriate and no matters of significance, which I regard as relevant, have to my knowledge been withheld from the Tribunal.

A handwritten signature in black ink, appearing to read 'John Patrick', is positioned above the printed name and company details.

John Patrick
John Patrick Landscape Architects Pty Ltd