



# Canberra Brickworks and Environs Planning Strategy

## SUMMARY REPORT

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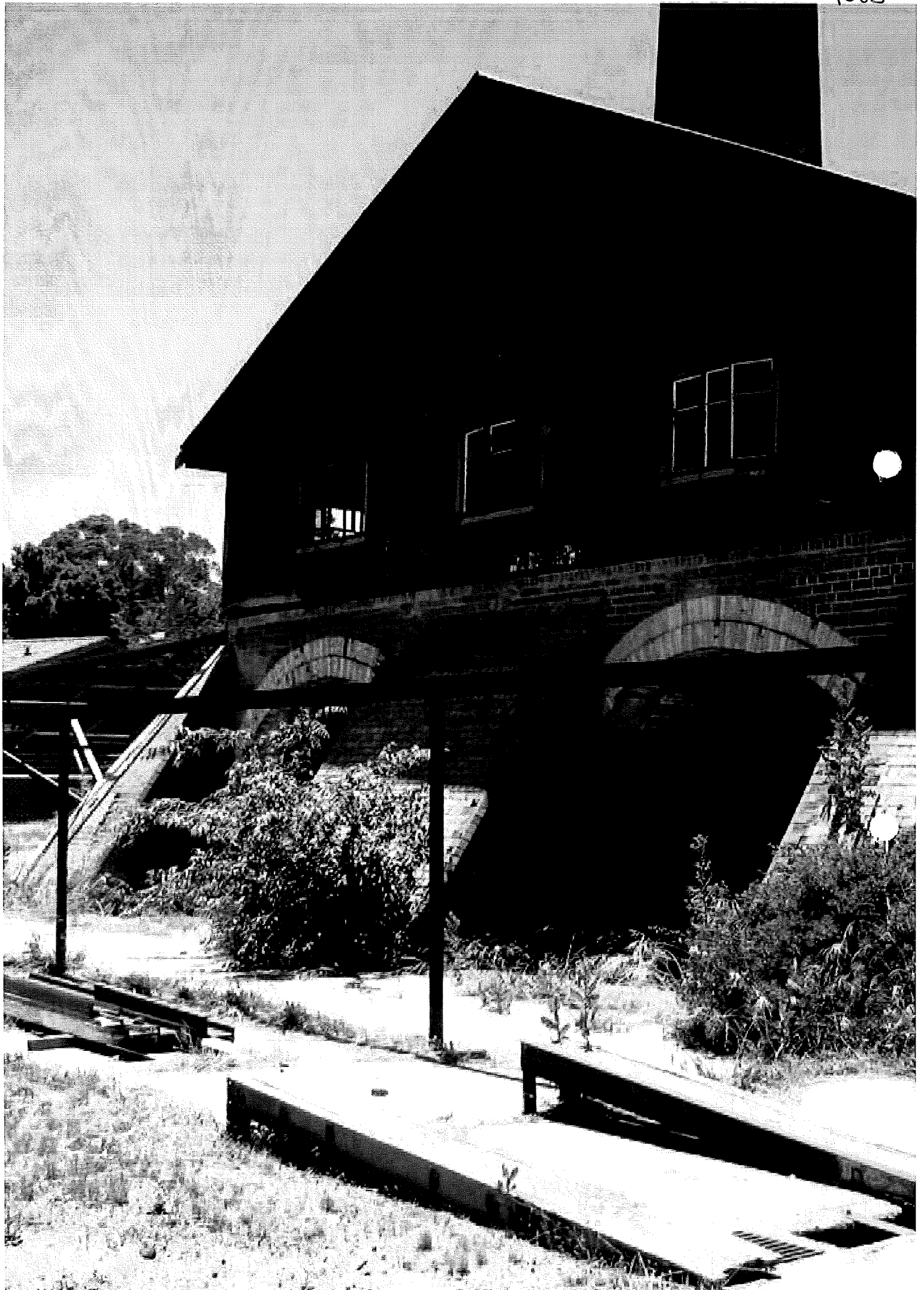
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# 1 Introduction

## 1.1 The consultation process

This Summary Report provides an overview of the key outcomes of the consultation process to support development of the Canberra Brickworks and Environs Planning Strategy.

The consultation process was designed to provide a robust engagement approach for the Canberra Brickworks and Environs Planning Strategy. It involved a wide range of opportunities for participation by diverse members of the community and stakeholders. The consultation program commenced early and was aligned with the planning program.

The consultation process was also designed to be both broad and inclusive – providing opportunities for participation by local residents as well as the wider Canberra community. The process acknowledged the importance of the Brickworks as a place within the local area including the suburbs of Yarralumla, Curtin and Deakin. It also recognised the role of the Brickworks as a key heritage site in the broader context of Canberra, and arguably Australia.

The planned approach to engagement, as an integral part of the Brickworks and Environs project, and broad engagement approach involving diverse and geographically dispersed communities of interest, has helped to identify a number of opportunities for the Brickworks and Environs Planning Strategy. Community and stakeholder feedback has been considered in development of the Final Draft Master Plan for the site, as documented in this report.

## 1.2 This report

Key steps in the consultation process for the Canberra Brickworks and Environs Planning Strategy are outlined in *Section 2 Process*.

A summary of the engagement activities conducted since the consultation process commenced in April 2010, is provided in *Section 3 Engagement summary*.

The main themes arising in community and stakeholder responses are identified in *Section 4 Key themes*.

The key issues raised in community and stakeholder feedback and the related Final Draft Master Plan response to these, are outlined in *Section 5 Issues and response*.

Lastly, the overall outcomes of the consultation process and relationship to the Canberra Brickworks and Environs Planning Strategy are discussed in *Section 6 Analysis*.



## 2 Process

The consultation process to support development of the Brickworks and Environs Planning Strategy was designed to provide a robust engagement approach, with a range of opportunities for participation by diverse members of the community and stakeholders.

The original consultation program was adapted to include a number of additional activities, in response to community interest and feedback. The consultation program commenced early and was aligned with the planning program. It was supported by a media and communications strategy.

The key consultation activities and events conducted as part of the consultation process are shown in Table 1, below. Please note, activities conducted in addition to the original consultation program are indicated by shading.

TABLE 1. Consultation process summary

Stage	Activity	Timing
<b>1: Understanding the site, community values, interests and aspirations</b>	Key stakeholder interviews	April - May 2010
	Project website	
	Community survey	
	Project Reference Group 1 (28 April)	
	Newsletter 1	
	Community Conversation 1 (19 May)	
<b>2: Strategy development – options/scenarios</b>	Project Reference Group 2 (16 June)	June - August 2010
	Newsletter 2	
	Community Conversation Workshop 2 (30 June)	
	Website update	
	Project Reference Group 3 (11 August)	
	Newsletter 3	
	Additional Community Conversation Workshop 3 (17 August)	
	Website update	
<b>3: Finalising the planning strategy</b>	Additional stakeholder meetings	September 2010 - February 2011
	Project Reference Group 4 (20 October)	
	Flyer/newsletter 4	
	Community Open Day (4 December)	
	Additional public displays	
	Additional phone survey	
	Final website update	

### 3 Engagement summary

The key engagement activities and events are described in Table 2, below.

TABLE 2. Summary of engagement activities and events

Activity/ event	Description	Participation	Community feedback/response
<b>Stage 1: Understanding the site, community values, interests, aspirations</b>			
<b>Key stakeholder interviews</b>	Individual conversations with identified key community representatives and others to explain the planning process and hear their views on the study area and its importance	» Total of seven interviews with neighbours, representatives of the local area, and the arts community	Key issues: <ul style="list-style-type: none"> <li>» Heritage conservation of the site</li> <li>» Improving onsite safety and security</li> <li>» Enhancing public access to the site</li> <li>» The site as an arts and cultural precinct</li> <li>» Contamination and remediation issues associated with potential redevelopment of the site</li> <li>» Appropriate development of the site</li> <li>» Management of potential impacts relating to development of the site, including increased traffic, parking, noise and other amenity issues.</li> </ul>
<b>Project website</b>	Provides information about project. Also invites comments and feedback	» Establishment of project website ( <a href="http://www.lda.act.gov.au">www.lda.act.gov.au</a> ) including online feedback form and project email address	-
<b>Community survey</b>	Statistically representative survey of residents of Yarralumla (plus smaller samples of residents of Deakin and Curtin) and wider Canberra, to identify why the study area is important to people and what their thoughts are on future uses, potential change and other issues	» Random sample of 835 residents from the local area (n=428) and wider Canberra (n=407)	Preferences: <ul style="list-style-type: none"> <li>» Total of 64% would support development of parts of the site to help fund preservation of onsite heritage conservation areas (incorporating 63% of local residents and 66% in wider Canberra)</li> <li>» Total of 21% would oppose development of parts of the site to help fund preservation of onsite heritage conservation areas (incorporating 22% of local residents and 19% in wider Canberra)</li> </ul>

Activity/ event	Description	Participation	Community feedback/response
			<p>Key issues:</p> <ul style="list-style-type: none"> <li>» Cultural heritage and open space highly valued by two thirds of participants</li> <li>» Appropriate development should:</li> <li>» Be subject to height/density restrictions</li> <li>» Incorporate community or cultural uses</li> <li>» Acknowledge and preserve the site's heritage.</li> </ul>
<p><b>Project Reference Group 1</b></p>	<p>Represents key stakeholder interests including community representation.</p> <p>Meeting purpose:</p> <ul style="list-style-type: none"> <li>» To introduce Project Reference Group (PRG) members and clarify the terms of reference for the group</li> <li>» To introduce the project and provide an overview of the site analysis work and the proposed engagement process</li> </ul>	<ul style="list-style-type: none"> <li>» Range of participants including representatives from Yarralumla Residents Association, Australian Institute of Architects, Australian Institute of Landscape Architects, Planning Institute of Australia ACT Division, Heart Foundation, Walter Burley Griffin Society, National Trust of Australia, ACT Heritage, Yarralumla Uniting Church, Canberra Business Council and Pedal Power ACT</li> </ul>	<p>PRG members provided feedback on key planning considerations and opportunities.</p>
<p><b>Newsletter 1</b></p>	<p>Informational newsletter introducing the project</p>	<ul style="list-style-type: none"> <li>» Distributed to approximately 5,000 households in and around the study area</li> <li>» Available on the project website</li> </ul>	<p>-</p>

Activity/ event	Description	Participation	Community feedback/response
<b>Community Conversation 1</b> (Wednesday 19 May 2010)	A workshop involving community members and members of the Project Reference Group to discuss vision, values and design principles – The workshop included presentations on site analysis and opportunities, and the Conversation Management Plan. Participants considered ideas on vision, community values and land use priorities for the site in a series of discussion forums.	» Over 100 participants, including approximately 80 participants from the local area	Key issues: » Heritage preservation and conservation » Appropriate development » Funding and delivery » Access and connectivity » Responding to community needs » Open space preservation and maintenance » Amenity and vibrancy
<b>Stage 2: Strategy development – options/scenarios</b>			
<b>Project Reference Group 2</b>	Meeting purpose: » To provide PRG members with an update on stakeholder and community feedback on the project » To discuss/comment on preliminary options/scenarios for the Planning Strategy.	» Range of participants (as above)	PRG members provided feedback on preliminary options/scenarios for the Planning Strategy.
<b>Newsletter 2</b>	Project update including key themes and preliminary scenarios	» Distributed to approximately 5,000 households in and around the study area » Available on the project website	-

Activity/ event	Description	Participation	Community feedback/response
<b>Community Conversation Workshop 2</b>	Discussion of key themes and preliminary scenarios – Participants provided feedback to the design team on the fundamental design principles that should underpin future options for the study area.	» Approximately 80 participants, including approximately 70 from the local area	<p>Key issues:</p> <ul style="list-style-type: none"> <li>» Heritage conservation</li> <li>» Preserve the Brickworks</li> <li>» Upgrade and improve the site</li> <li>» Retain arts/cultural focus</li> <li>» New development should be sympathetic</li> </ul> <p>Open space</p> <ul style="list-style-type: none"> <li>» Retain / enhance existing open space areas</li> <li>» Protect local flora and fauna (including retention of mature trees)</li> <li>» Provide good quality, dedicated open space areas</li> <li>» Retain walking trails and provide cycle paths</li> </ul> <p>Access and connectivity</p> <ul style="list-style-type: none"> <li>» Enhance community access to the Brickworks through safe and direct pedestrian and cycle connections</li> <li>» Limit / manage through traffic in Yarralumla</li> <li>» Provide access to public transport</li> </ul> <p>Amenity and vibrancy</p> <ul style="list-style-type: none"> <li>» Retain arts and cultural focus (eg public art, studios, music, museum, heritage interpretation strategy)</li> <li>» Potential commercial and retail uses such as offices, cafes, markets, shops</li> <li>» Provide community meeting space and opportunities for social interaction through a wide range of activities</li> </ul> <p>Appropriate development</p> <ul style="list-style-type: none"> <li>» Discussion of development costs and funding mechanisms</li> <li>» Some support for new housing to cater for range of household types</li> <li>» Range of views on housing type, height and density</li> </ul>





Activity/ event	Description	Participation	Community feedback/response
<b>Website update</b>	Loading of preliminary development options/ scenarios to website with facility for comment/ feedback	-	-
<b>Project Reference Group 3</b>	<p>Meeting purpose:</p> <ul style="list-style-type: none"> <li>» To provide PRG members with an update on the project, including stakeholder and community feedback</li> <li>» To discuss the revised development options/ scenarios for the study area</li> </ul>	<ul style="list-style-type: none"> <li>» Range of participants (as above)</li> </ul>	PRG members provided feedback on the revised development options/scenarios for the study area.
<b>Newsletter 3</b>	Project update including development options	<ul style="list-style-type: none"> <li>» Distributed to approximately 5,000 households in and around the study area</li> <li>» Available on the project website</li> </ul>	-
<b>Additional Community Conversation Workshop 3</b>	<p>Present and seek feedback on development options – Four options for the study area were presented. The design principles that underpin these options were also discussed. The four options presented for comment were:</p> <ul style="list-style-type: none"> <li>» Mothballed Option</li> <li>» Cold Shell Option</li> <li>» Adaptation Option</li> <li>» National Treasure Option</li> </ul>	<ul style="list-style-type: none"> <li>» Approximately 93 participants (including around 73% from Yarralumla)</li> </ul>	<p>Options ranked as first preference:</p> <ul style="list-style-type: none"> <li>» Adaptation and National Treasure 41%</li> <li>» Mothball and no development 40%</li> <li>» Cold Shell 9%</li> <li>» Key issues:</li> <li>» Density</li> <li>» Traffic</li> <li>» Open space</li> <li>» Linking conservation with development</li> <li>» Seen as providing 'benefits' to all of Canberra but 'costs' perceived to be borne locally</li> </ul>
<b>Website update</b>	Loading of development options to website	-	-

Activity/ event	Description	Participation	Community feedback/response
<b>Stage 3: Finalising the planning strategy</b>			
<b>Additional stakeholder meetings</b>	The LDA conducted a series of additional meetings with identified key stakeholders	» Range of participants including representatives of Royal Canberra Golf Club and Regional Development Australia	-
<b>Project Reference Group 4</b>	Meeting purpose: » To present and discuss a preferred development option for the project » To discuss the next steps in the project	» Range of participants (as above)	PRG members provided feedback on the preferred option for the Brickworks and environs.
<b>Flyer/newsletter 4</b>	Project update including information of preferred development option	» Distributed to approximately 5,000 households in and around the study area » Available on the project website	-

Activity/ event	Description	Participation	Community feedback/response
<b>Community Open Day</b>	<p>To present to the community and seek feedback on a preferred development option – In response to community feedback during the Community Conversation Workshops, the two options presented for comment were:</p> <ul style="list-style-type: none"> <li>» Mothballed Option</li> <li>» Adaptation Option</li> <li>» Materials at the Community Open Day included the 3D model, information display boards and flythrough.</li> </ul>	<ul style="list-style-type: none"> <li>» Approximately 200 participants</li> <li>» Date for community and stakeholder submissions to the LDA and completed feedback forms extended to 28 February 2011</li> <li>» Total of 41 submissions and 93 feedback forms received (the latter including around two thirds of respondents who lived in the local suburbs of Yarralumla, Deakin and Curtin)</li> </ul>	<p>Key issues (Submissions):</p> <ul style="list-style-type: none"> <li>» Do not support – traffic increase, loss of open space, population increase</li> <li>» Do support – vibrancy, amenity, heritage</li> <li>» Suggestions – seek Federal funding, separate development of land from conservation of Brickworks, establish a trust fund.</li> </ul> <p>Key issues (Feedback forms):</p> <ul style="list-style-type: none"> <li>» Traffic management</li> <li>» Liked most about mothball – preservation of heritage, retention of existing character of suburb, does not include development, retention of open space</li> <li>» Liked most about adaptation – open space and green areas, support for adaptive reuse and associated amenity, support for new housing</li> <li>» Adaptation rated more highly than mothball for heritage protection, public access, public amenity and vibrancy, provision of a range of housing types</li> <li>» Mothball rated more highly than adaptation for walking and bicycle connections and traffic management on local streets</li> </ul>



Activity/ event	Description	Participation	Community feedback/response
<b>Additional public displays</b>	To present to the community and seek feedback on a preferred development option – this additional display and information session was held at the Royal Canberra Golf Club. Some of the materials from the Community Open Day were used including the 3D model, a selection of information display boards and flythrough.	» Representatives and members of the Golf Club	-
<b>Additional phone survey</b>	Statistically representative survey to test responses to mothball and adaptation options	<ul style="list-style-type: none"> <li>» Random sample of 1,400 residents from the local area (n=500) and wider Canberra (n=900)</li> <li>» Verbal commitment to survey followed by mailout of 3D flythrough and print outs of mothball option, prior to conduct of phone survey</li> </ul>	<p>Preferences:</p> <ul style="list-style-type: none"> <li>» Total of 64.7% in favour of adaptation option (incorporating 52% of local residents and 65% of residents from wider Canberra)</li> <li>» Total of 44.6% in favour of mothball option (incorporating 42.5% of local residents and 44.6% of residents from wider Canberra)</li> </ul> <p>Key issues:</p> <ul style="list-style-type: none"> <li>» Trust – delivery and implementation <ul style="list-style-type: none"> <li>&gt; Financing / funding</li> <li>&gt; Design control</li> </ul> </li> <li>» Traffic management</li> <li>» Community involvement</li> </ul>
<b>Final website update</b>	Final update on overall process and project outcomes		-

## 4 Key themes

The key themes identified in the Stage 1 consultations were:

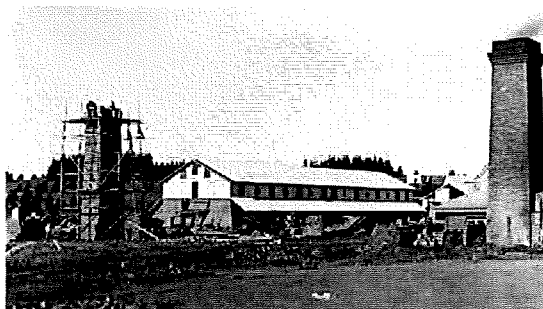
### 4.1 Heritage preservation and conservation

#### WHAT WE HEARD IN THE STAGE ONE CONSULTATIONS

- » Two-thirds of respondents in the Stage 1 Community phone survey (n=835) identified cultural heritage as the aspect they valued most about the Brickworks and environs
- » There were a variety of views on preservation of heritage buildings and areas. Some people suggested minimal intervention, while others identified adaptive re-use as key: 'retain the Brickworks' identity and make it a special place for all'.

#### SUGGESTED APPROACH

- » Actively conserve heritage through preservation, restoration, reconstruction and adaptation
- » Incorporate uses that respond to the unique qualities of the place within the retained heritage fabric, such as those that involve engagement and interaction with the public, and are non-residential
- » Incorporate environmental sustainability and minimised energy consumption.



### 4.2 Appropriate development

#### WHAT WE HEARD IN THE STAGE ONE CONSULTATIONS

- » Two-thirds of respondents in the Stage 1 Community phone survey (n=835) were supportive of 'appropriate' development on parts of the site not identified for heritage if development were to assist in funding heritage preservation
- » There were diverse views expressed on housing. Some participants identified the importance of a residential community living on the site. However, concerns were raised about size, scale, density and height of development
- » The site could showcase sustainability and incorporate community and cultural facilities.

#### SUGGESTED APPROACH

Three development scenarios were produced to inform the Community Conversation 2:

- » Development scenario 1
  - > Higher density
  - > Intense development around Brickworks and close to heritage buildings
  - > Development in quarry
  - > Loss of some heritage buildings
- » Development scenario 2
  - > Medium to high density housing
  - > Intense development around Brickworks and close to heritage buildings
  - > Development to quarry edges
  - > Provision of significant quarry park
  - > Maintain heritage items
- » Development scenario 3
  - > Varied medium density housing
  - > Minimised development around Brickworks
  - > Development to quarry edges
  - > Consolidated quarry park
  - > Maintain heritage items
  - > Greater cartilage to heritage items
  - > Opportunities for more urban parks and sustainability initiatives.

### 4.3 Access and connectivity

#### WHAT WE HEARD IN THE STAGE ONE CONSULTATIONS

- » The study area should be an accessible, well-connected place
- » Transport management and traffic management is a real concern for nearby residents – local cut-throughs and additional traffic need to be minimised
- » The site needs to be inclusive and encourage public access, rather than exclusive and closed off
- » There is an opportunity to plan major roads intersections and through-fares.

#### SUGGESTED APPROACH

- » Streets are our biggest public asset. They are about more than just cars; they are about walking, cycling, public life and they form our addresses
- » Develop 'green connections' – networks of cycling and walking tracks and trails
- » Streets should act as connectors of open space and facilities
- » Extend the opportunities for walking and cycling.

### 4.4 Open space preservation and maintenance

#### WHAT WE HEARD IN THE STAGE ONE CONSULTATIONS

- » 75% of respondents in the Stage 1 Community phone survey (n=835) identified open space as an appropriate use for the study area
- » There was a desire for both informal and formal areas with landscaping that is consistent with the heritage character
- » The Brickworks and environs should be a place to walk, cycle and exercise.

#### SUGGESTED APPROACH

- » Take significant parts of the existing landscape and improve or extend
- » Provide open space that is accessible, safe and designated as open space
- » Open up the Brickworks as open space
- » Provide for existing and future habitat
- » Landscapes that are long-lasting and sustainable relate to cultural and natural heritage.

### 4.5 Amenity and vibrancy

#### WHAT WE HEARD IN THE STAGE ONE CONSULTATIONS

- » The site should be 'a wonderful, beautiful place – a place where friends and family could meet to walk through gardens, eat at a café, watch a performance and where their children could play'
- » Feeling safe and secure is an important element of amenity
- » There is strong support for arts and cultural activities in the Brickworks and environs.

#### SUGGESTED APPROACH

- » Safe communities are walkable, have clear sightlines and connective streets
- » Great urban spaces are accessible to the whole city.





# 5 Issues and response

## 5.1 Key issues and master plan response

The key issues raised in community and stakeholder feedback and the related Final Draft Master Plan response to these, are outlined in Table 3, below.

TABLE 3. Summary of key themes, issues and master plan response

Specific issues	Master Plan Response
<b>Key Theme: Heritage conservation and preservation</b>	
Concern the Master Plan may result in loss of heritage. There is a desire for active heritage conservation of the Brickworks site through preservation, restoration, reconstruction and adaptation.	<p>According to the Australian Bureau of Statistics (ABS), Canberra is the only capital city with Heritage Activities comprising its top three industry specialisations (ABS, 2006). It therefore seems particularly fitting that the Master Plan aims to preserve, restore, reconstruct and adapt the Canberra Brickworks.</p> <p>These initiatives will prevent further deterioration and vandalism of the Brickworks by enhancing community knowledge and value of the site. Its restoration and adaptation into a desirable destination will encourage the local and wider community to develop a greater connection, appreciation, understanding and respect for the Brickworks, ensuring future protection for this heritage icon.</p>
The site should incorporate uses that respond to the unique qualities of the place, within the site's heritage fabric.	<p>The Master Plan seeks to maintain all elements of heritage value within the Canberra Brickworks, and with stabilisation and decontamination of the site, provide uses that will respond sensitively to the heritage value of the Brickworks complex.</p> <p>Particularly unique elements of the Brickworks have been integrated into the Master Plan. These include:</p> <ul style="list-style-type: none"> <li>» Reinventing the kilns to provide retail and artist spaces</li> <li>» Providing a quarry park that forms a unique parkland</li> <li>» Re-imagining the entire Canberra Brickworks complex</li> <li>» Celebrating the importance of the site within the National Capital.</li> </ul>
The site should incorporate environmental sustainability, and minimise energy consumption.	<p><i>"The impacts of outward urban expansion and low-density residential development have been a greater separation between residential areas and locations of employment, greater use of cars for mobility, higher costs of transport and vulnerability to oil price rises, and a loss of productive agricultural land or habitat"</i> (Major Cities Unit, 2010). The Canberra Brickworks and Environs site presents the perfect opportunity to mitigate some of the impacts Australian communities are placing on the environment.</p> <p>Urban infill is a principle of sustainable design practice, particularly the development of apartments and townhouses which are widely recognised as the most energy efficient style of development (ACT Government, Elton Consulting et al, 2010). Coupled with innovative design and the use of exemplar building materials, the Master Plan provides for a highly sustainable, sufficient, and low impact community to establish itself within the heart of Canberra.</p> <p>Furthermore, urban infill will consolidate the community into a smaller urban footprint. This community will lessen urban impact on the environment, and lower energy consumption through design solutions, thermal massing, and community consolidation.</p>

Specific issues	Master Plan Response
<p>The importance of the site’s heritage should be recognised in the context of the local area, wider Canberra and Australia.</p>	<p>The local residents of Yarralumla currently appreciate the Brickworks for its heritage value; however, to ensure this is preserved for future generations, the wider community must also value this heritage icon. The Master Plan aims to attract people to Canberra Brickworks, increasing awareness and community value, ensuring its preservation.</p> <p>The Brickworks has literally provided the building blocks for the creation of Canberra, and as such is nationally significant. Therefore, a place- making strategy is being developed for the Master Plan which includes integrating the site history into the design, so that visitors can understand the contribution of the Brickworks in developing Australia’s capital city.</p>

**Key Theme: Appropriate development**

<p>Development outside of the Brickworks was deemed appropriate by some, only if it assists in funding heritage preservation.</p>	<p>The Master Plan has been developed under the assumption of being a cost-neutral project. Urban development will ensure funding to contribute directly to the preservation of the Canberra Brickworks.</p> <p>Despite the Brickworks deterioration acting as a catalyst for immediate action, the Master Plan also contributes to urban infill, an important element for the ongoing sustainability of Canberra. As indicated in the Canberra Spatial Plan, urban infill will decrease negative effects on our surrounding environment, and increase amenity, public transport availability, and sustainability within the city (Chief Ministers Department, 2004).</p> <p>It is important to note that the proposed development around the Canberra Brickworks will contribute greatly to the current housing shortage in the ACT. Furthermore, it will encourage better public transport for the Inner South, provide sustainable homes, and contribute to the Canberra Spatial Plan initiative of providing 50% of all new development within a 7.5km radius of the City Centre.</p>
<p>Of the proposed new housing, there was some support to provide for a range of household types, to support various lifecycle stages (including older people).</p>	<p>More than 70% of dwellings within Canberra are detached houses (Major Cities Unit, 2010) which produce detrimental environmental impacts. The Master Plan has incorporated a wide range of housing types to enable diversity of development, and cater to a range of lifestyles and lifecycle requirements. The Master Plan promotes the creation of a diverse neighbourhood and community.</p> <p>The housing types proposed also respond to the Canberra Spatial Plan initiative to increase development density within a 7.5km radius of the City Centre; and acknowledge the Canberra 2030, Time to Talk (2010) findings that <i>“our current low density, [and] dispersed pattern of land development does not represent the most efficient use of land. Nor does it promote the efficient use of urban infrastructure...”</i>.</p> <p>The Canberra Brickworks and Environs Master Plan responds to these issues by delivering a sound mix of housing options adjacent to major transport routes, within close proximity to the City and to other amenity such as Lake Burley Griffin.</p>

Specific issues	Master Plan Response
Residential development should give appropriate consideration to size, scale, density and height. There were mixed views about the number of new dwellings, scale, height and densities proposed under the various development options.	<p>With a fast expanding population, since 2004 Canberra has been met <i>"with accelerated greenfields development...and proposed residential land releases across the border in New South Wales"</i> (ACTPLA, 2004). However, these sprawling communities do not achieve the optimum result for the sustainability of the National Capital.</p> <p>The Master Plan proposes a street layout that is effectively an extension of existing Yarralumla. Appropriate development size, scale, density and height have been considered to ensure a discrete transition between old and new.</p> <p>However, as noted in Canberra 2030, Time to Talk (2010), <i>"our historic land use pattern has not created a lot of diversity in our urban environments and this in turn, restricts people's choices"</i>. The Master Plan seeks to ameliorate this historic problem and intends to meet the '5-10 Year Goal' of the Canberra Social Plan (2004) to <i>"ensure that the type, size and location of housing in the ACT meets the needs of the community"</i>.</p>
Concern that the proposed medium and higher density housing would result in overdevelopment of the site.	<p>Canberra's population density, as of the 2006 Census, was 1,081 persons/km<sup>2</sup> (ABS, 2006). This represents a very low population density across the urban landscape of Canberra, and denotes a sprawling community. Furthermore, the average home size in Canberra exceeds the national average, with Australia considered to have the largest homes across all developed nations (ACT Government, Elton Consulting et al, 2010). This suggests that in terms of residential development, Canberra produces among the least environmentally-friendly residences in the world.</p> <p>Not only does urban sprawl promote car dependency, it also isolates communities, decreases air quality, depletes agricultural capable land, and does not promote sustainable living options.</p> <p>Further, the current character of Yarralumla, typified by its broad canopy street trees, is one of the key elements which the Master Plan seeks to retain. When considering proposed development heights, it is noted that the average tree in Yarralumla is between 12-14m high, and a three to four storey building is 9-12m in height. Development, in general, will remain second to the landscape of Yarralumla.</p>
Concern that the development will negatively impact the character of Yarralumla, currently described as a 'garden suburb', 'quiet neighbourhood', with preference expressed for the 'status quo'.	The Master Plan draws upon the existing character of Yarralumla and has incorporated extensive parkland, densely planted trees and ample public landscaping to ensure a smooth transition between old and new areas of Yarralumla.

Specific issues	Master Plan Response
<p>General support for more compact forms of urban development, in close proximity to the Canberra CBD, was found.</p>	<p><i>"The impacts of outward urban expansion and low-density development have been a greater separation between residential areas and locations of employment, greater use of cars for mobility, higher cost of transport and vulnerability to oil price rises, and a loss of productive agricultural land..."</i> (Major Cities Unit, 2010). To decrease these negative urban impacts, the Canberra Spatial Plan has indicated that 50% of all new development should occur within a 7.5km radius of the City Centre (ACTPLA, 2004).</p> <p>The steady deterioration of the Canberra Brickworks has acted as a catalyst for development within Yarralumla. Two key initiatives can be achieved through the implementation of the Master Plan: the protection and preservation of the Canberra Brickworks for years to come; and provision of sustainable development to meet the ACT's growing housing shortage.</p>
<p>The site should showcase sustainability, and incorporate community and cultural facilities.</p>	<p>The Canberra Brickworks Master Plan is committed to delivering key initiatives identified in the Canberra Social Plan, providing and enhancing <i>"community access to, and participation in, the arts and other cultural activities"</i> (Chief Minister's Department, 2004). Including cultural and community activities within the Canberra Brickworks will help to achieve this. Specifically, options for artist and gallery spaces are intended within the adapted heritage buildings.</p> <p>Furthermore, the Master Plan seeks to meet the '5-10 Year Goals' of the Canberra Social Plan to <i>"enhance Canberra's liveability, recognising the importance of environment to the overall health of the community; care for our parks... reduce water consumption, greenhouse gas emissions and waste; create and maintain inclusive public space for use by the entire community..."</i> (Chief Minister's Department, 2004).</p> <p>The Master Plan takes all of these aims into account.</p>
<p>Development of the site should seek to minimise impacts on the surrounding community.</p>	<p>The design team has taken great care to ensure minimal impact upon the existing community. Mitigation strategies include extensive traffic studies and design solutions to ensure little to no added pressure on Yarralumla streets, identifying the key character elements of Yarralumla, such as broad leaf street trees, and providing extensive open space and park land for the new and existing community.</p> <p>The Master Plan also provides a self-sustaining development which contains commensurate amounts of service and retail outlets that will ensure no additional pressure is exerted onto the services at the Yarralumla shops.</p>

Specific issues	Master Plan Response
Concern for appropriate provision of infrastructure to accompany development (including schools, retail, open space, public transport).	<p>The design team recognises the need to provide particular amenity to the area given the increase in projected population. The Master Plan responds to these demands.</p> <p>Infrastructure has been prioritised. New roads, public transport hubs and infrastructure have already undergone extensive planning and provide design solutions that will adequately meet the community requirements.</p> <p>Mixed-use developments will also ensure that any retail or commercial amenity can easily be accommodated within the site.</p> <p>Finally, open space is a key feature of the Master Plan ensuring that the existing and future residents of Yarralumla have easy access to a variety of safe green spaces for recreation, gathering and play.</p>
There were mixed views about proposed commercial development.	<p>With Canberra's growing population, it is important to ensure adequate infrastructure is delivered. Commercial development space is an important element of designing for the future of Canberra.</p> <p>It is also pertinent that commercial space is available in close proximity to the City Centre. Particular areas of the Inner South provide opportunities for rational urban planning options, particularly along major transport corridors. Currently, Canberra has not delivered enough development that supports living and working within close proximity. This is one of the contributors to personal motor vehicle reliance, and it is to the detriment of our public transport system, employment, family life and health.</p> <p>During 2005, Canberrans lost \$100 million from their businesses due to traffic congestion, as a result of high private motor vehicle use. This is estimated to increase upwards of \$200 million by 2020 (Chief Minister's Department, 2004). Furthermore, transport generates up to 24% off all greenhouse gas emissions within the ACT, resulting in air pollution and health deterioration (ACT Government, Elton Consulting et al, 2010).</p> <p>Future planning for commercial development within close proximity to the City and major transport routes means reduced travel time, better accessibility to amenity, and a healthier outcome for the future of Canberra and its people.</p>
Some perceived the funding mechanism for development of the site as inappropriate (ie heritage conservation works should be funded by the Territory or Commonwealth Government not by on site residential development).	<p>When the Commonwealth Government handed responsibility for the Canberra Brickworks to the ACT Government, no agreement was made for future funding of the site. Unfortunately the Canberra Brickworks is now deteriorating at a rapid pace.</p> <p>The realisation of this Master Plan will ensure that the Canberra Brickworks acquires the appropriate funds to complete a full-scale restoration of the site, while contributing to sustainable measures of development for the Capital.</p>

Specific issues	Master Plan Response
Some believed the proposals were too commercial and developer driven, with minimal benefits for the local community and potential impacts for this group.	<p>The designs presented to the community for comment were specifically to generate discussion and awareness of the site, in order to garner what an appropriate solution would be.</p> <p>The community feedback was then taken onboard, positive and negative, and the preferred Master Plan was developed. This design seeks to ensure existing residents of Yarralumla are not negatively affected by future development, and have access to the extensive amenity offered by the proposal.</p> <p>The Canberra Brickworks and Environs site is appropriately situated to provide for urban infill and thus reduce development impact on the environment and supply greatly needed housing to the ACT.</p> <p>Finally, the Master Plan provides extensive design features attributed to high quality of life measurements, both for future and existing residents.</p>

Key Theme: Access and connectivity	
Concern about increased traffic and congestion in Yarralumla, and the desire for appropriate management of additional traffic and cut-throughs in the local area (including Cotter Road).	<p>With a larger population, traffic within Yarralumla will increase. However traffic will be distributed across the new roads that will form the proposed development. Additionally, detailed traffic studies have allowed for appropriate mitigation strategies to be implemented into the Master Plan, ensuring little traffic disturbance.</p> <p>The proposed interchange configuration for the intersection of Cotter Road and Adelaide Avenue will allow for four-way movement at this junction. By providing this arrangement, the level of through-traffic in Yarralumla will be dissipated and the net traffic increase caused by the development will be negligible.</p> <p>Given Yarralumla's proximity to the City, Weston Creek and Woden, additional public transport should sufficiently provide for a large majority of the new and existing residents. With approximately \$9.4 billion of avoidable cost in 2005 attributed to traffic congestion throughout Australia's capital cities (Bureau of Transport and Regional Economics, 2007), it is essential that new communities are developed in order to maximise density, and therefore better utilise public transport.</p> <p>With traffic mitigation solutions already in place public transport patronage expected to increase for everyday tasks such as travelling to work, there should be no detrimental traffic effect to Yarralumla.</p>



Specific issues	Master Plan Response
There is an opportunity to plan major roads, intersections and through-fares (for instance, connections to Deakin, Yarralumla, Dunrossil Drive).	Australia's recent history has seen a greater boom in car dependency compared to population growth (Major Cities Unit, 2010) which is unsustainable for Canberra.  To ensure access to public transport from the site, the Master Plan details the inclusion of major roads, intersections and through-fares. In particular, links to a new bus interchange on Adelaide Avenue have been explored, and will provide improved access to, and from, the Brickworks and Environs development.
The site should be an accessible, connected place, which provides enhanced public access to the Brickworks, open space areas, and Lake Burley Griffin.	By extending the current street layout of Yarralumla, the Master Plan ensures that accessibility, particularly to Lake Burley Griffin, is maintained.  The inclusion of three major parks assists in walking and cycling accessibility throughout the suburb. In addition, the scale of parks provides extensive open space for existing and future residents.
The site needs to be inclusive, and encourage public access, rather than exclusive and closed off.	The Master Plan has been designed to encourage people to the site. In particular, the realignment of particular roads will provide ease of access, promoting public use. Pedestrians and cyclists have been generously catered for, with various entries to the site, enabling visitors to choose where they would most like to spend their time.  The Master Plan also anticipates that the Brickworks will incorporate a mix of uses, encouraging constant activity. This is likely to draw others and promotes a lively and open community.
The site should provide enhanced pedestrian and cycle access and connectivity to the local area.	The needs of pedestrians and cyclists have been considered in the development of the Master Plan. The Canberra Brickworks and Environs project places emphasis on promoting healthy lifestyles, and providing residents with amenity to enable this.  The Master Plan ensures that pedestrians and cyclists are have access to off-road trails, paths, and designated low speed streets to ensure public safety.

Specific issues	Master Plan Response
<p>There is a need for access to public transport.</p>	<p>Community feedback from Canberra 2030, Time to Talk returned positive community submissions that <i>“indicated support for infill development along transport corridors and around centres to achieve this shift to more sustainable transport options, and more convenient, affordable public transport”</i> (ACT Government, Elton Consulting et al, 2010). The Master Plan supports this and has integrated a new bus interchange on Adelaide Avenue.</p> <p>However, Adelaide Avenue is not the only well developed transport corridor bordering the Canberra Brickworks and Environs site; Cotter Road runs along the southern boundary, and also serves as an essential thoroughfare for Canberrans.</p> <p>Surrounded by transport corridors and with the ability to accommodate new bus routes through the Canberra Brickworks and Environs site, this development has the potential to be an exemplar sustainable precinct within Canberra.</p>
<p>How will adequate parking be ensured onsite?</p>	<p>The Territory Plan (ACTPLA, 2008) ensures that adequate parking regulations are met for any development within the ACT.</p> <p>However, given the high public transport amenity, it is anticipated that many visitors will make their way to the site in a sustainable manner. Those living nearby will have the ability to access the Brickworks and other amenities by bike or foot.</p>
<p><b>Key Theme: Open space preservation and maintenance</b></p>	
<p>Concern about loss of open space/green space; and a desire for the provision of open space that is accessible and safe.</p>	<p>The Master Plan includes three main public open space areas, with private open space generously attributed to individual dwellings and sites.</p> <p>All public open spaces have been carefully designed to ensure passive security for the safety of residents and visitors. Active environments surrounding these spaces, in particular residential development, and community activities and facilities achieve this.</p> <p>Detailed design will also result in the implementation of safety infrastructure, such as lighting. The Master Plan also has regard for the principles of Crime Prevention through Environmental Design (CPTED), which contributes significantly to the safety and comfort of residents.</p>
<p>Open spaces should provide landscapes that are long-lasting and sustainable (including retention of mature trees where appropriate and provision of more natural, grassland areas).</p>	<p>Landscape design has been a key contributor to the development of the Master Plan and as such, sustainability and longevity of the landscape have been considered. Notwithstanding exemplar amenity to residents, the design also provides for excellent landscape sustainability.</p> <p>There is the possibility to incorporate natural grassland into the detailed design of the major parks indicated within the Master Plan, and extensive tree surveys have indicated existing trees with the ability to contribute to public and environmental amenity.</p> <p>Appropriate planting will be implemented to ensure the sustainability and longevity of the landscape.</p>

Specific issues	Master Plan Response
Open space areas should recognise existing walking trails.	The existing walking trails within the area have been recognised as valuable to the community. Where possible, these have been integrated into the Master Plan design and will also be extended and enhanced to provide additional public amenity.
<b>Key Theme: Amenity and vibrancy</b>	
Concern about potential loss of public amenity, if the incoming community is too large.	<p>The Master Plan indicates mixed uses across the Canberra Brickworks and Environs site, which ensures that greater amenity is provided to the community.</p> <p>This will include, but is not limited to, art and cultural spaces, sustainable and generous parkland, retail and commercial use, designated and informal recreation spaces, extensive connections, heritage preservation, and high quality residential facilities.</p> <p>The Territory Plan (ACTPLA, 2008) will ensure that all amenity provided to the area is consistent with the projected incoming population.</p>
The site provides an opportunity to enhance the amenity of the suburb; there should be a place where friends and family can meet and engage in a wide range of activities (such as cafes and markets).	Extensive urban parkland within the residential areas and the Canberra Brickworks site will provide spaces for friends and family to gather and engage with one another. Wide ranges of inclusions are being considered for the residential parklands, including child playgrounds, bike paths, and formal and informal recreation spaces.
The Master Plan should be designed to help foster safety and security.	The Master Plan has regard for the principles of Crime Prevention through Environmental Design (CPTED), which contributes significantly to the safety and comfort of residents.
Arts and cultural activities should be accommodated on the site.	In line with the ACT Government's commitment to "...continue to support and facilitate the future of Canberra as a vibrant city, while also improving...heritage asset management, public art and events across the city..." (Chief Minister's Department, 2004), the Canberra Brickworks site may become a Territory hub for arts and culture. Examples of this could include artist design space, and a public gallery to view in-house artist works.
There is potential for the Brickworks to become a landmark for community and cultural uses.	The Master Plan will promote the site as a destination, encouraging local and interstate community use and appreciation. It is through this engagement with the community that the Canberra Brickworks will become a landmark.

Specific issues	Master Plan Response
Yarralumla is an ageing suburb. Provision of housing should address the needs of an ageing population.	<p>Given that Yarralumla is an aging suburb, the Master Plan aims to provide a mix of housing types to ensure variety and ease of use, in line with the Canberra Social Plan (2004) and the Canberra 2030, Time to Talk (2010) initiatives to enable aging-in-place.</p> <p>Whilst some developments will accommodate elderly and support aging-in-place, others will attract young people and families to the area. The Master Plan proposes to diversify the community, ensuring a sustainable and varied population within Canberra's Inner South.</p> <p>High urban amenity, through the inclusion of local shops, services and activities will greatly benefit the residents of Yarralumla. With these community assets places in proximity to appropriate housing and transportation, the site will provide older members of the community with ease of access to everyday necessities.</p>
There is a need to provide a healthy space for residents to live, and for the community to gather. With medium density development, where will this be included?	<p>The Master Plan is committed to providing a happy and healthy lifestyle for young and old.</p> <p><i>"The design of urban environments can contribute to the health and wellbeing of communities by supporting active living, active and passive recreation opportunities, public transport and social connectivity. Evidence suggests that well-designed public open space is restorative for the community, reducing mental fatigue and stress..."</i> (Major Cities Unit, 2010). This is what the Master Plan will deliver to the Yarralumla community.</p> <p>With three large parks, community and cultural facilities, links to the wider open spaces of Canberra and proximity to public transport, the Canberra Brickworks and Environs site is perfectly situated to provide the best opportunity for healthy lifestyles, within an environmentally sustainable urban setting.</p>

## 5.2 References

- ABS 2006, *Census of population and housing 2006, Capital City Social Atlas*, cat no. 2030. 1-8, Canberra
- ACT Chief Minister's Department 2004, *Building our city, building our community, The Canberra Spatial Plan*, Canberra
- ACTPLA 2004, *Towards our Second Century, The Canberra Plan*, Canberra
- ACT Chief Minister's Department 2004, *Building our Community, The Canberra Social Plan*, Canberra
- Major Cities Unit, Infrastructure Australia 2010, *State of Australian Cities 2010*, Canberra
- ACT Government, Elton Consulting et al 2010, *Time To Talk, Canberra 2030*, Canberra
- ACT Planning and Land Authority 2008, *ACT Territory Plan*, Canberra

## 6 Analysis

The consultation process for the Brickworks and Environs Planning Strategy has offered numerous and diverse opportunities for participation and attracted a high level of community and stakeholder interest and engagement. Those who participated in the consultation process have made a valuable contribution to planning for the study area.

Stage 1 of the consultation process identified the vision, values and land use priorities for the Brickworks and environs. Participant feedback from this stage was used to identify a series of key themes and preliminary scenarios for the study area which were tested in Stage 2. During the second stage, participants provided feedback to the design team on the design principles to underpin future options for the study area, and a series of four development options were presented for comment. These development options were refined in response to participant feedback, and two options were presented in Stage 3 for consideration by the community and stakeholders: Mothballed Option and Adaptation Option. The Adaptation Option has been further refined and now represents the Final Draft Master Plan for the Brickworks and environs.

Community and stakeholder feedback obtained through the various engagement activities suggests that the level of support for the Master Plan (formerly the Adaptation Option) has increased, as the consultation process has broadened. That is, as the number of participants in the consultation process has increased, and as the opportunities for participation and methods for participant selection have diversified.

The broad and inclusive approach to the consultation process has involved engaging with members of the community and stakeholders:

- » From within the local area including the suburbs of Yarralumla, Deakin and Curtin
- » From the wider community of Canberra
- » Who have higher levels of interest and are more likely to self select for participation in formal consultation activities and events (such as community workshops and Project Reference Group meetings)

- » Who may have lower levels of interest and or be less likely to participate in formal consultation activities. While these individuals may not choose to participate in a community workshop, they may come along to a Community Open Day or public display, or they may be randomly selected to take part in a random phone survey of residents).

The increased level of support for the Master Plan among the wider community is demonstrated by the results of a number of consultation activities. For instance:

- » The Community Survey conducted in Stage 1 identified a total of 64% of participants who would support development of parts of the site to help fund preservation of onsite heritage conservation areas (incorporating 63% of local residents and 66% in wider Canberra)
- » The 93 feedback forms received following the Community Open Day in Stage 3 (with around two thirds from respondents who lived in the local suburbs of Yarralumla, Deakin and Curtin) rated the adaptation option more highly than mothball for heritage protection, public access, public amenity and vibrancy, provision of a range of housing types.
- » The Stage 3 Community Survey found that 65% of all respondents were in favour of the adaptation option (incorporating 52% of local residents and 65% of residents from wider Canberra)

This contrasts with the results of the 41 submissions received following the Community Open Day in Stage 3 (equivalent to approximately 3.5% of Yarralumla households). Of these submissions, just under half (n=20) did not support the Master Plan, 14 did support the Master Plan and 16 indicated support for some level of development.





# **Bushfire Management Plan**

**For**

**Yarralumla Brickworks**

**July 2006**

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## SUMMARY TABLE OF TREATMENTS

<b>Zone</b>	<b>Treatment</b>	<b>Timeframe</b>	<b>Performance Measure</b>
Surrounding Brickworks Buildings			
Inner Protection Zone	Mow	4-6 times pa	Keep mow grass down to 200mm when grassed has cured to 75% to 30 metres
	Herbicide	2 times pa	Stop the build up of fine fines around buildings (grass) stop woody weeds from establishing
	Tree pruning	As required	To remove elevated fuels
Quarry Site			
Inner Protection Zone	Mow	4-6 times pa	Keep mow grass down to 200mm when grassed has cured to 75% to 30 metres
	Herbicide	2 times pa	Stop woody weeds from establishing
	Tree pruning	As required	Lifting elevated fuels and thinning to keep canopy separation
Outer Protection Zone	Tree pruning	As required	Lifting elevated fuels
	Prescribe burn	As required	When surface fuels reach high and above
Outside brickworks			
Inner Protection Zone	Mow	4-6 times pa	Keep mow grass down to 200mm when grassed has cured to 75% to 30 metres
	Herbicide	2 times pa	Stop woody weeds from establishing
	Tree pruning	As required	Lifting elevated fuels and thinning to keep canopy separation
Outer Protection Zone	Tree pruning	As required	Lifting elevated fuels
	Prescribe burn	As required	When surface fuels reach high and above
Between Brickworks and Golf Course			
Inner Protection Zone	Tree pruning	As funding becomes available	Lifting elevated fuels and some canopy thinning
	Herbicide	2 times pa	Once area has initial clean up and then to stop woody weeds from establishing

## **Bushfire Management Plan for Yarralumla Brickworks**

### **OVERVIEW**

On 29 December 2005 a fire started at the rear of the brickworks buildings, burning 9.6ha of land under a moderate westerly wind, destroying one house and severely damaging another two houses.

Bushfire risk cannot be eliminated altogether but can be reduced by managing fuels in and near the boundaries of residential properties. This can be achieved by reducing ground and near surface fuels through regular slashing programs, lifting tree branches to remove ladder fuels, control woody weeds and when the fuels loads build up again undertake controlled burns.

This report assesses the potential bushfire threat to residential dwellings and the brickworks infrastructure within the precinct and provides evaluations and recommendations on bushfire protection measures deemed necessary to reduce the risk from bushfires that may occur in the future. In addition it outlines the bushfire mitigation measures already undertaken in and surrounding the precinct.

The report forms part of an Integrated Facilities Management Plan for the precinct and will be used by the land managers and staff /contractors undertaking management, maintenance and operational activities.

Photo 1: Burnt pines from December 2005 fire

## SECTION 1 – BACKGROUND INFORMATION

### 1.1. Location

Located in the district of Canberra Central, Division of Yarralumla, Block 1, Section 102. The Brickworks and its brickpits (quarry) are located on the western edge of the suburb, Yarralumla and are within 5km of the city centre.

### 1.2. Site Description

#### *On site*

The Brickworks Block 1/102 Yarralumla comprise of a heritage landscape where the remaining buildings, structures, equipment and landscape features demonstrate a range of industrial processes associated with tile, brick and clay production over a 60 year period. The site is 9.6 hectares and is managed by the ACT Property branch of Territories and Municipal Services. Access to the site is via Denman Street.

#### *Off site*

The northern boundary of the site adjoins several townhouse developments accessed by Lane-Poole Place. Further to the north is the Federal Golf Course and CSIRO Forestry and Forest Products headquarters.

To the south is Urban Open Space on blocks 7/102, 3/94 and 2/103. These areas provide separation from roads such as Adelaide Avenue, Dudley Street and Dunrossil Drive. Block 7/102 and Block 3/94 have no formal use other than as a buffer zone between Adelaide Avenue and adjacent residential and community areas.

The eastern boundary of the site adjoins townhouse developments accessed by Woolls, Schomgurgk and Bentham Streets all constructed during the 1980's, beyond, which the suburb of Yarralumla extends further to the east.

The western boundary of the site adjoins a narrow band of Urban Open Space backed by, Westbourne Woods (approximately 50m wide) which extends to the Federal Golf Course. Westbourne Woods occupies much of 1/127 as well as extending into 3/94, 7/102, 9/102 and 20/102. Each of these blocks has been nominated to the Interim Heritage Places Register and is managed by Parks and Places.

### 1.3. Historical & Heritage Precinct

Operational from 1913 to 1976, the Yarralumla Brickworks is of historical value as the first industrial manufacturing facility within the ACT, and for its integral role in providing the base material used in the construction of the early buildings in the National Capital. The Yarralumla Brickworks is a relatively intact representative example of a large urban brickworks from the early 20<sup>th</sup> Century. The Brickworks has been placed on the Heritage Register for the ACT.

The brickpits and quarry site have historical value as a primary source of clay and are also of considerable geological value as the type locality for the 'Yarralumla Formation', dating from the Silurian Period 425 million years ago. It has the only marine fossils within the extensive volcanic marker horizons of South Canberra.

ACT Heritage council has agreed that the quarry landform should be retained in a manner whereby it is clearly evident to be a man made excavation, associated with the industrial use of the site. The shape of the quarry may be altered in a minor manner, however access points into and out of the quarry area should utilise existing openings and gradients within the landform.

Westbourne Woods occupies much of 1/127 as well as extending into 3/94, 7/102, 9/102 and 20/102 (Refer to Block boundary air photograph). Each of these blocks has been nominated to the Interim Heritage Places Register. The history of Westbourne Woods dates back to 1913 when Charles Weston established the Yarralumla Nursery and an arboretum on and near "Westridge". The woods are valued for their heritage significance in contributing to the landscape of early Canberra as well as for passive recreation use by local Yarralumla residents and the wider ACT community. These plantings vary in age from the 1920's Westbourne Woods to later amenity and inter-town visual buffer planting along the ridges within 3/94.

Photo 2: Heritage furnace chimneys

## SECTION 2 – BUSHFIRE ANALYSIS

A Strategic Bushfire Management Plan for the ACT has been prepared by Emergency Services Authority (ESA) as a sustainable ten year solution to the challenges of managing bushfires in the ACT. It establishes the framework for the efficient, effective and comprehensive management of fire and fire related activities for the protection of human life, property, assets and the environment. The overall strategic objective is to minimise the likelihood of bushfires and their consequences. These documents have been used to guide the analysis and management of the brickworks site.

When considering the risks related to possible impact by bushfire, it is necessary to identify factors that contribute to a fire. These include:

- Fire Runs;
- Fuel Load - availability and arrangement;
- Vegetation types;
- Topography; and
- Weather conditions.

### 2.1. Likely Fire Runs and Severity

An onsite fire run under the influence of westerly winds will run from the brickworks buildings towards the residential edge. Fires developing between the brickworks and the golf course are likely to stop at the brickworks given the amount of hard standing surfaces surrounding the buildings. Current use of the site is predominantly recycled timber. If the timber is kept to the hard standing surfaces and there is relatively little fine fuels associated with the timber it should not be easily combustible.

### 2.2. Vegetation Types and Fuel Hazard

#### *On site*

The brickpit site is vegetated mostly as grasslands on the lower flat areas of the quarry and as an open forest setting of *Pinus species* established on the top of the quarry site. Through out the site woody weeds have established consisting of *Pyracantha sp*, *Cotoneaster sp*, *Ligustrum sp* (Privot), some deciduous trees and *Rubus sp* (Blackberries). The Fuel hazard assessment is rated as **LOW**.

The dead pines will need to be removed before they start contributing to the bushfire risk in future years and live trees will need to have lower branches pruned to remove any elevated fuel risk.

Surrounding the Brickwork's buildings is mostly grassland, some single deciduous trees (which will also require lower branches pruned up) and a large patch of *Rubus sp* to the west. Fuel hazard assessment is rated as **MODERATE** the spreading of sawdust from the wood industry has contributed to surface fuel readings, but given the absence of elevated and bark fuels this does not pose a threat to the buildings and structures.

#### *Off site*

The vegetation within the urban open space surrounding the Brickwork is land managed by Territories and Municipal Services, Parks and Places.

The vegetation within 3/94 consists of grassy open woodlands, native grass sites and several large standards of *Pinus radiata* Monterey Pines. The fuel hazard assessment is rated as **MODERATE**.

The vegetation within 7/102 are stands of *Pinus radiata* as a continuation to the Westbourne Woods, grasslands and a 3<sup>rd</sup> of the area is covered with woody weeds and suckering deciduous trees fuel hazard assessment is rated as **MODERATE**.

To the west is a thin strip of land including *Pinus radiata* from Westbourne Woods that provides a separation between the residential area of Lane Poole Place and the Royal Canberra Golf Course. Westbourne Woods continues along the whole of the western edge. The tall pines provide visual containment and a backdrop to the brickworks setting when viewed from the south and east. Under the pines is a proliferation of woody weeds. Given the humidity and micro climate of the area, and it being adjacent to the golf course, even though the fuel loads are moderate to high the overall assessment of the fuel loads are rated as **MODERATE**.

### **2.3. Topography**

The topography is relative flat with steep quarry rock faces. These quarry faces, if vegetated, will allow a fire to rush up the slope and the flat areas are then affected by prevailing weather conditions.

Slope is a critically important factor when assessing fire risk and likely behaviour. The rate of fire spread doubles up a slope of 10 degrees or more as more fuels become available to the fire front. The whole site from the Brickwork buildings to the townhouse developments has a rise of 10 degrees and in the quarry there are steep banks rising up to 10 metres in height.

### **2.4. Wind**

Wind is an important factor in bushfire behaviour as it influences the rate of spread of the fire front and spreads burning embers, providing ignition sources for spot fires.

The eastern edge of the site is exposed to the influence of strong north-westerly winds that funnel upslope from the golf course pushing any fire up into the Schomgurgk, Woolls and Bentham Street townhouse units. The southern edge of the site is exposed to the influence of strong south westerly winds blowing across the vegetated areas to the south and within the Urban Open Space corridor to the south of the site.



## SECTION 3 – BUSHFIRE MANAGEMENT

Understanding constraints on the area like heritage, surrounding land uses, and factors affecting fires on the site allows development of appropriate measures to minimise the impact of any future fires. In arriving at the appropriate level of protection on the Brickworks site the following aspects have been considered:

- Asset Protection Zones;
- Recommended treatments; and
- Access for emergency vehicles.

It is essential that the Yarralumla Brickworks has a perimeter that enables it to have an appropriate defence from an approaching bushfire. An effective combination of fuel reduction will need to be continued around the edges of the site to separate any hazard from the dwellings. Asset protection zones provide this function and are divided into two areas the Inner Asset Protection Zone and the Outer Asset Protection Zone.

It is proposed that regular inspection, maintenance and auditing of the fuel levels in all the asset protection zones be undertaken and recorded. (Refer to map attached showing fuel management zones).

### 3.1. Inner Asset Protection Zone (IAPZ)

The purpose is to reduce fire intensity, ember load and the likelihood of crown fires to reduce the probability of asset damage and provide a defensible space for residents and emergency service personnel to protect property. Located adjacent to urban edge its width is variable, from 10 to 30m wide out from residential boundary.

The performance standards of the IAPZ must be such that:

- There is minimum fine fuel at ground level that could be set alight by a bushfire
- The provision of a few shrubs and single isolated trees in an Inner Asset Protection area are acceptable provided that they do not touch or over hang buildings, are well spread out and do not form a continuous canopy, 4-6m canopy spacing.
- Flammable materials such as woodpiles, combustible material storage areas, large areas/quantities of garden mulch, and stacked flammable building materials are not permitted in the IAPZ.

#### Treatment

##### *Onsite*

- Slash grass to maintain a height of 200mm out to a distance of 30m where possible along boundary fences. Where slashing is not achievable due to slope gradients less than 1:4 on the northern and eastern boundaries, spray herbicides biannually to keep woody weeds from establishing and to reduce the grass density.
- Slashing should continue every 4 - 6 weeks during the peak growing periods to reduce density and ensure that once the grass has cured to 75% that it is mown to maintain grass height at a maximum of 200mm.
- Herbicide program will be scheduled biannually in spring and autumn to remove pine wildings, woody weeds and unwanted sucker seed regeneration.

- Progressive high pruning up to 2 metres to allow slashing where possible and to remove elevated fuels.
- All tree stumps within the zone need to be ground down to ground level, to ensure slashable areas.

#### *Offsite*

The Yarralumla edge zoning identified in the current Urban Services' Bushfire Operation Plan is the boundary fences of the Brickworks, the southern boundary fence along Denman Street was identified as primary edge (treatment up to 30m out from fence line) and running along 1/127 a secondary edge (treatment up to 20m out from boundary fence line).

- Continue mowing along the primary zone out to 30m managing the grass at a height of 200mm.
- The secondary edge is not deemed as a high fire risk and fuel reduction activities should continue in this area as funding becomes available in future Bushfire Operation Plans.

### **3.2. Outer Asset Protection Zone (OAPZ)**

The reduction of fuel in this area will substantially decrease the intensity of an approaching fire and restrict the pathway to crown fuels, reducing the level of direct flame, radiant heat and ember attack on the Inner Asset Protection Zone. Location is typically abutting assets to the north and west or surrounding assets of very high vulnerability. Urban edge Outer Asset Protection Zone extends from 0 - 300m wide.

The performance standards of the OAPZ must be such that:

- There are minimum elevated fuels that could progress a fire into the crowns of the trees. This areas assumes all trees will remain but with a modified shrub / grass and litter layer. In some sparse vegetation communities the shrub layer may not require modification.

#### **Treatment**

##### *Onsite*

- Slash grasslands in and around the quarry and brickwork buildings sites at a minimum of 3 mows during the fire season (November, January, & March) to reduce grass density and fuel hazard.
- Biannual herbicide spraying to stop pine wildings and woody weeds from re-establishing on the site. Weeds and grasses grown in the joints of the hard surfaced areas will be sprayed to remove fine fuels that could assist in combusting the recycled timber.
- Prune pine trees up to 2m from ground level to remove elevated fuels, and progressively remove dead trees.
- Clear fence line of vegetation and repair where necessary to restrict access on to the site (Current land use under the Territory Plan is 'Restricted Access Recreation').
- Monitor fuel loads and once they build up to above moderate, conduct a low intensity burn to remove surface fuels under the pine trees when required.

##### *Offsite*

- Maintain grasslands at a fuel load of moderate during the fire season, this will require the OAPZ to be mown up to a minimum of 100m out from the boundary fence line.

- Biannual herbicide spraying is required to stop pine wildings and woody weeds from re-establishing on the site.
- Progressively high prune the remaining pines along the southwestern boundary fence
- Monitor fuel loads and once they build up to above moderate, conduct a low intensity burn to remove surface fuels under the pine trees.
- Bark fuels do not contribute to this site.

### 3.3 Access

Provide mineral earth fire trail from Denman Street entrance around to Bentham Street up to Lane Poole Place running in a north south direction. The fire trail is unable to carry around the entire boundary of the site due to the steep quarry wall along the Bentham Street area. There is a risk that the fire vehicles undertakings suppression duties will be become entrapped on the Bentham street side and gates will be provided in the fence.

The Brickworks building site have good access, providing the tenants do not stock pile timber or materials to impede access along the existing track.

#### Standards

- A minimum trafficable width of 4 metres with an additional 1 metre wide strip on each side of the road kept clear of bushes and long grass and a maximum grade of 28%
- A minimum clearance of 4.5 metres to any overhanging obstructions, including tree branches.
- The trail should have the capacity for the passing of vehicles at regular intervals.
- The fire trail system should be connected to the perimeter/edge road via gates with padlocks compatible with the ACT Emergency Services Authority (ESA) Access Agreement with Land Mangers.
- Must be trafficable under all weather conditions, and should be inspected annually by land managers.

Photo 3: Mineral Fire Access trail

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# **Appendix F**

**Brickworks Contamination Report**

# Contamination Report

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## Executive Summary

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The ACT government has recently commissioned Connell Wagner to prepare a Development Control Plan for the Old Canberra Brickworks site located at Yarralumla. The objectives of the plan will be to rehabilitate the site to create cultural and recreational facilities, which will provide commercial, and tourism opportunities.

As the current land use of the site is planned to change from industrial to commercial and recreational activities, it is necessary to undertake a site contamination assessment to determine the level of contamination and determine whether the site will require remediation.

The objectives of this study are to determine the likely contaminating activities, which have historically occurred, the location, type and extent of contamination and to recommend actions for additional studies to further assess the site contamination.

The scope of work for this report is to provide a preliminary (Phase 1) assessment of site contamination. The study is based on a site inspection, undertaken on 22 September 2000 and interviews with persons involved with the operations of the brickworks. A desktop study of the site has also been undertaken which draws on documented historic information.

The findings of the study have concluded that there are a number of locations on the site which are likely sources of contamination. These include;

- Coal and Oil Storage Bunkers (NE5). This location was initially used for the storage of coal then later oil
- Forklift Shed (A6) which is the location of a 1000L Underground Storage Tank (UST). No records were available to suggest that the UST had been removed.
- Model Railway Workshops (R1 and R2). These locations were initially used for the above ground storage of coal and later oil
- Septic tank, which is still in operation
- Blacksmiths shop, located adjacent to the Machine Shop
- Explosives Storage Area

Other possible sources of site contamination include imported fill and ash from the kilns, which may have been buried on site and possibly beneath site buildings.

Further details of the contaminants likely to be found at these locations are presented in Section 4 of this report.

Above ground contaminants and substances are also likely to exist. These include;

- Asbestos building materials (eg roof sheeting, electrical switchboards and insulation material)
- Synthetic Mineral Fibre (SMF) used as insulation material to pipework
- Poly-Chlorinated Biphenyls (PCB's) located in electrical transformers and capacitors of light fittings
- Lead based paints applied to walls and ceilings of buildings
- Potentially contaminated site runoff water

Within the limitations and constraints imposed by the study of background information, it is considered that the site is suitable for its intended use, subject to further investigation and possible remediation.

# 1. Scope of Work

The scope of work for this report is to provide a preliminary (Phase 1) assessment of site contamination at the Old Canberra Brickworks, which are located in Yarralumla, Canberra. The study is based on a site inspection, undertaken on 22 September 2000 and interviews with persons involved with the operation of the brickworks. A desktop study of the site has also been undertaken which draws on documented historic information.

This report has been prepared in accordance with the requirements of the National Environmental Protection (Assessment of Site Contamination) Measure (1999) for site contamination and the NSW EPA publication "Guidelines for Consultants Reporting on Contaminated Sites" (1997). The study does not include sampling or analysis of soil, surface or ground water contaminants.

Table 1 presents the key requirements of the NSW EPA for Phase 1 site contamination investigations. This table references the section of the report where specific issues have been addressed and, where appropriate, notes information gaps and comments regarding the EPA requirement.

**Table 1: Key EPA Requirements for Phase 1 Site Assessment**

EPA Requirement	Reference	Comment
<b>Executive Summary</b>		
Background.	Executive Summary	
Objectives of the investigation.	Executive Summary	
Scope of work.	Executive Summary	
Summary of conclusions and recommendations.	Executive Summary	
<b>Scope of work</b>		
A clear statement of the scope of work.	Section 1	
<b>Site Identification</b>		
Lot number and Deposited Plan number.	Section 2.1	
Geographic coordinates related to a nearby cadastral corner of a State Survey Control Mark.	Section 2.1	
Locality map.	Figure 1	
Current site plan with scale bar, showing north, local water drainage and other local environmental significant features.	Figures 1 and 2	
<b>Site History</b>		
Zoning-previous, present and proposed.	Section 2.1	
Land use previous, present and proposed.	Section 3	
Summary of council rezoning, relevant development and building approvals records.		Records not available
Chronological list of site uses indicating information gaps and unoccupied periods.	Section 3	
Review of aerial photographs.	Section 2.3	
Site photographs (with date and location indicated on site maps).	Appendix A	
Inventory of chemicals and wastes associated with site use and their on-site storage location.	Section 4	
Possible contaminant sources and potential off-site effects.	Section 4	
Site layout plans showing present and past industrial processes.	Figure 2	
Sewer and service plans.		Records not available
Description of manufacturing processes.	Section 3.5	
Details and locations of current and former underground and aboveground storage tanks.	Section 4.2	



**SCOPE OF WORK**

EPA Requirement	Reference	Comment
Product spill and loss history.		Records not available
Discharges to land, water and air.		Records not available
Disposal locations.		Records not available
Relevant complaint history.		Records not available
Local site knowledge of residents and staff-both present and former.		Interview with Bruce McDonald (Caretaker)
Summary of local literature about the site, including newspaper articles.	Section 3	
Details of building and related permits, licences, approvals and trade waste agreements.		Records not available
Historical use of adjacent land.	Section 2.3	
Local usage of ground/surface waters, and locations of bores/pumps.	Section 2.5 and 2.6	
Integrity assessment (assessment of the accuracy of information).	Section 5.3	
<b>Site condition and surrounding environment</b>		
Topography.	Section 2.5	
Conditions at site boundary such as type and condition of fencing, soil stability and erosion.	Section 2.2	
Visible signs of contamination such as discolouration or staining of soil, bare soil patches-both on-site, and off-site adjacent to site boundary.	Section 4.1	
Visible signs of plant stress.	Section 4.1	
Presence of drums, wastes and fill materials.	Section 4.1	
Odours.	Section 4.1	
Condition of buildings and roads.	Section 4.1	
Quality of surface water.	Section 4.1	
Flood potential.	Section 2.5	
Details of any relevant local sensitive environment-eg. rivers, lakes, creeks, wetlands, local habitat areas, endangered flora and fauna.	Sections 2.3 and 2.5	
<b>Geology and hydrogeology</b>		
Soil stratigraphy using recognised classification methods, e.g. Australian Standard 1726, Unified Soil Classification Table.		Records not available
Location and extent of imported and locally derived fill.	Section 2.5	
Site borehole logs or test pit logs showing stratigraphy.		Records not available
Detailed description of the location, design and construction of on-site wells.	Section 2.6	
Description and location of springs and wells in the vicinity.	Section 2.6	
Depth to groundwater table.	Section 2.6	
Direction and rate of groundwater flow.	Section 2.6	
Direction of surface water run-off.	Section 2.5	
Background water quality.		Records not available
Preferential water courses.	Section 2.5	
Summary of local meteorology.	Section 2.4	
<b>Site characterisation</b>		
Assessment of type of all environmental contamination, particularly soil and groundwater.	Section 4	
Assessment of extent of soil and groundwater contamination, including off-site effects.	Section 4.4	
Assessment of the chemical degradation products.		These would be assessed following further site contamination

**scope of work**

EPA Requirement	Reference	Comment
Assessment of possible exposure routes and exposed populations (human, ecological).	Section 4.4	Investigation
<b>Conclusions and Recommendations</b>		
Brief summary of all findings.	Section 4	
Assumptions used in reaching the conclusions.	Section 5.3	
Extent of uncertainties in the results.	Section 5.3	
Where remedial action has been taken, a list summarising the activities and physical changes to the site.		Remedial action has not been taken at the site
A clear statement that the consultant considers the subject site to be suitable for the proposed use (where applicable).		Not applicable until detailed investigations are undertaken
A statement detailing all limitations and constraints on the use of the site (where applicable).		Not applicable until detailed investigations are undertaken
Recommendations for further work, if appropriate.	Section 5.3	

## 2. Site Description

### 2.1 Site Location and Legal Description

The site is located on approximately 9.6 Ha of land, and comprises blocks 1321 and 764 (amended) of Deposited Plan 5452. The approximate geographical coordinates for the site are 149° 89'E and 35°17'S. The majority of the site has been cleared and filled with overburden from quarrying operations. The site contains some 48 identified buildings, structures and sites. The site is located approximately 3km to the west of Capital Hill and is bordered by Royal Canberra Golf Course to the West, Bentham St and Lane Pool Pl to the North and Schomburgk st and Woolls streets to the East and South. Access to the site is via Denman St.

Figure 1 shows the location of the site.

### 2.2 Site Features

The main site features include the old brickwork buildings, which are in dilapidated condition. These include brick firing kilns, chimney stacks, power house, sheds, fanhouses and workshops.

Other prominent site features include the disused quarry, artificial lake and several geological formations which contain fossilised materials. The site is surrounded by a mesh fence approximately 2m high. The perimeter of the site is generally well vegetated which provides protection against soil erosion.

The location of these features is shown on Figure 2.

### 2.3 Surrounding Land Uses

Based on the observations by Connell Wagner and a review of site plans and aerial photographs, the adjoining land uses comprise;

- North East – Bentham St which provides access to Royal Canberra Golf Course. North of Bentham St is the CSIRO Forest Research Centre
- North – Directly to the North of the site is a residential area which is defined by Lane Poole Pl and Bentham St. These residences back directly onto the brickworks site
- West and North West – Royal Canberra Golf Course
- South – Denman St, which is the site access road. The area to the south of Denman St is currently unused and is planned for residential development.
- East and South East – The Area to the East and South East of the site is dominated by residential buildings. Dwellings which are adjacent to the brickworks are located on Woolls, Schomburgk and Banks Streets.

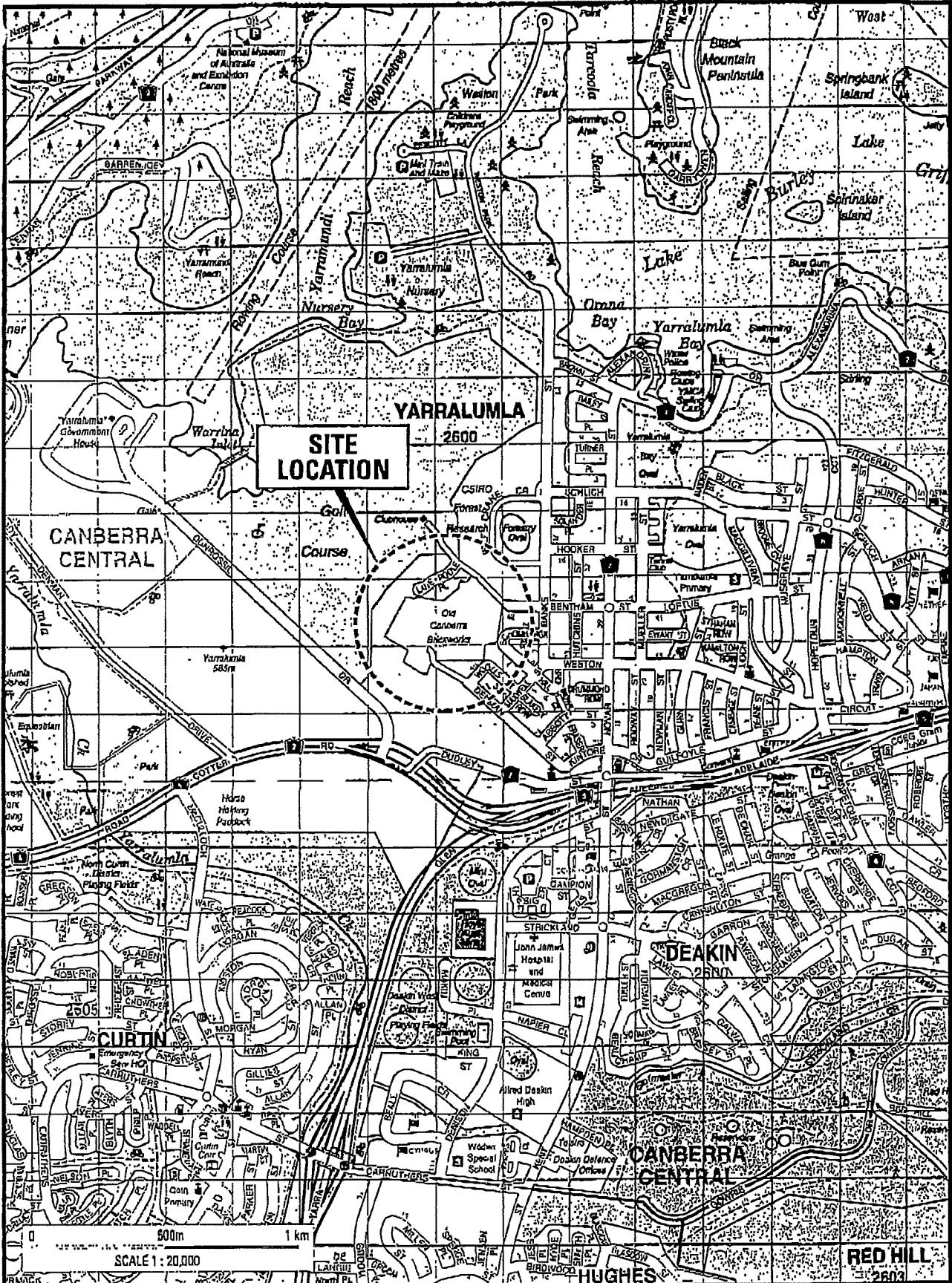
Prior to their current land use, it is understood that these properties were used for sheep grazing.

### 2.4 Climate and Meteorology

A warm temperate continental climate over the Canberra region is typified by hot summers and cold winters. The proximity of Canberra to the coast (120km) means that southeasterly humid onshore sea breezes may reach inland to bring temporarily cooler or more humid conditions during summer months.

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Connell Wagner



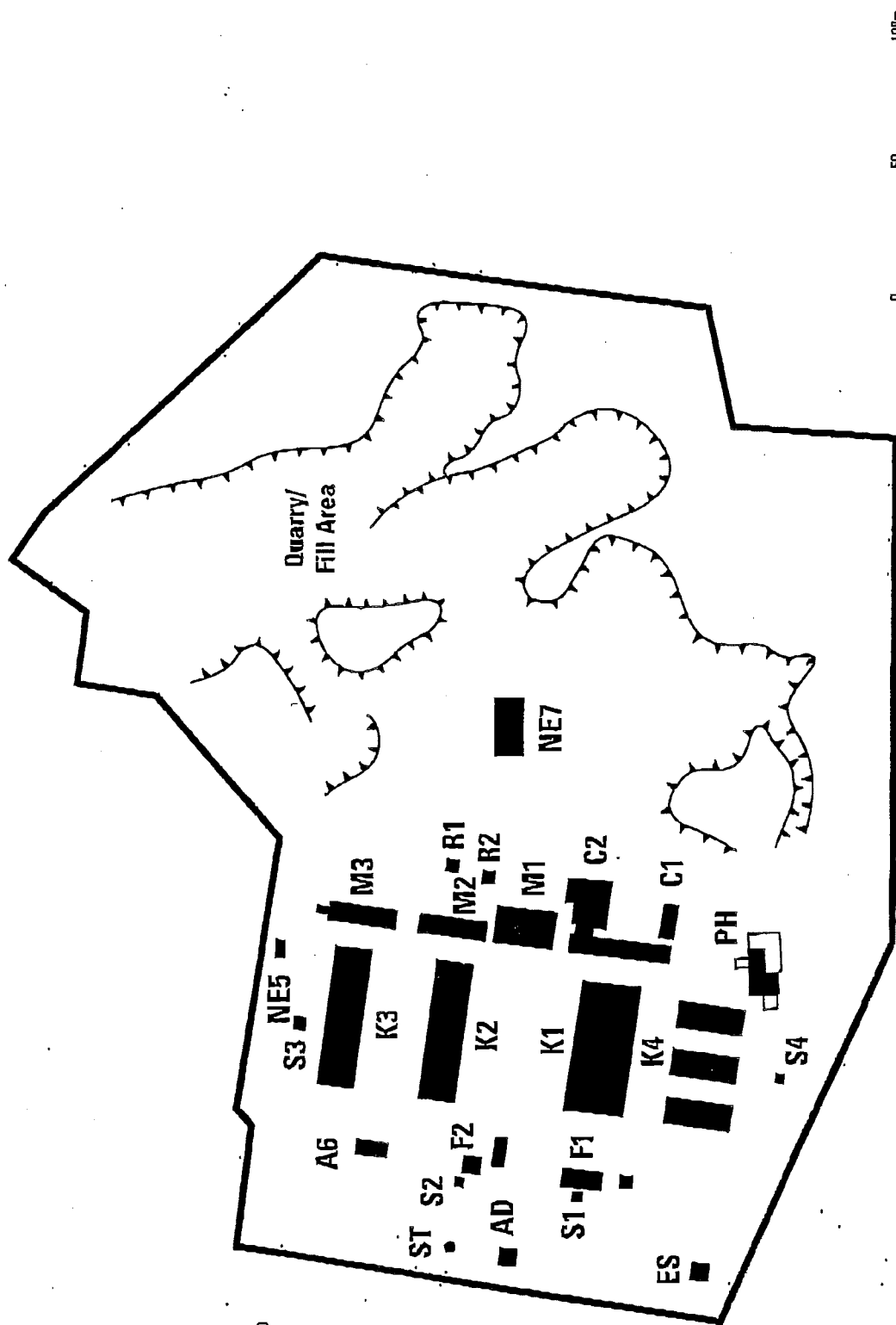
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BRICKWORKS



**FIGURE 1**  
**SITE LOCATION**

Conneil Wagner

YARRALUMILA BRICKWORKS



- LEGEND**
- A6 - Forklift Shed
  - NE5 - Coal and Oil Storage
  - K1-K4 - Kilns
  - ST-S4 - Stacks
  - FL-F2 - Fan House
  - C1-C2 - Crusher
  - R1-R2 - Model Railway Workshops
  - ST - Septic Tank
  - M1-M3 - Machine/Blacksmiths Shop
  - PH - Powerhouse and office
  - ES - Explosives Store
  - AD - Asbestos Dump

**FIGURE 2**  
**INDICATIVE SITE LAYOUT**  
 (Approximate Location of Buildings)



YARRALUMILA  
 BRICKWORKS

## Site Description

The mean annual rainfall across Canberra ranges between 600 and 800mm. There is little seasonality of rainfall and the mean number of rainy days per year is 100. Snow may fall in winter months but is rare at altitudes less than 500m. Snow falls in Canberra on average 1-3 times per year.

Mean monthly temperatures range from 12- 28 °C in Summer and 1-11 °C in Winter. Canberra has a relatively high incidence of frosts with an average of 77 frosts per year.

### 2.5 Topography and Surface Water Hydrology

The area to the east of the existing site buildings has been levelled with fill materials thought to have originated from the quarry. At various locations, mounds have been created with a mixture of quarry overburden and masonry off cuts. Several natural limestone and shale knolls / protusions also rise sharply in and around the quarry which create a natural amphitheatre. Elevations in this area generally range between 578 and 590 m.

There were no observed constructed drains in this area and the majority of surface water is contained by the mounds and geological formations. This water either infiltrates into the soil or drains to the low point in the quarry which forms an artificial lake when full.

The kiln and workshop area is generally flat and is stepped down from the crusher house and railway storage sheds by 2-4 metres. This area is drained by a series of surface drains which run parallel to the perimeter of the buildings. This runoff water gravitates to a stormwater pit located on the western side of the kilns, where it is collected and discharged to the west of the site into the local stormwater system. The elevation of the kiln area is approximately 573m.

To the west of the kilns, the site slopes down at approximately 4% to the property boundary, which has an approximate elevation of 572m. To the south west the site slopes up at a gradient of approximately 10% to an approximate elevation of 576m. There is limited potential for flooding considering site and surrounding topography.

The nearest water body to the site is Lake Burley Griffin (Warrina Inlet) which is located approximately 600m to the North West of the site.

### 2.6 Geology and Hydrogeology

The Yarralumla Brickpits form one of Canberra's most important and oldest geological 'monuments'. The brickpits derive their geological importance from being the type locality of the Yarralumla formation, a sequence of tuffaceous siltstone, sandstone and limestone deposited in the Silurian Period, 425 Million Years ago.

The Yarralumla formation is the only fossiliferous, marine unit within the extensive volcanic marker horizon in determining the stratigraphy of the volcanic rocks, and through its fossil fauna, provides evidence of the age of these volcanics.

A significant portion of the site has been excavated to provide raw materials for brickmaking. Overburden from the quarry has been combined with brick offcuts to fill site areas and to create mounds around the site. There was no specific geotechnical information for the site available for this study.

In the Canberra region, groundwater occurs in fractured rock aquifers and in unconsolidated sand in thin alluvial and colluvial aquifers. Yields of bores in fractured rock aquifers are in the range 0.1-5L/s and higher yields are obtained in closely jointed rocks along fault zones. Groundwater salinity is generally less than 2000 mg/L TDS and largely determined by complex geology and recharge conditions.

## Site Description

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Environment ACT have reported that there are no groundwater monitoring bores located within 500m of the site and the depth of the groundwater at the site is unknown. However, it is likely that the groundwater from site would flow towards Lake Burley Griffin. Information was not available regarding the location of springs in the immediate area.

The depth to groundwater in the Canberra region generally ranges from about 2 to 20m and depends on the geology. In some instances bores greater than 100m have been drilled to obtain sufficient yield.

It is understood that groundwater has historically been used for stock watering and irrigation. Shallow aquifers have been polluted from hydrocarbons, leachate and sewage rendering groundwater unfit for domestic purposes.

## 3. Site History

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A detailed history of the sites operation has been provided by Lester Firth and Associates (June 1996) and is summarised below.

### 3.1 Pre 1913

Prior to the construction and operation of the brickworks in 1913, the site formed part of the Yarralumla property which was a prominent grazing/ farming property in the Canberra region.

### 3.2 1913 – 1976 Brickworks

The Canberra Brickworks were initially established in 1913 to provide bricks, roof tiles and other building materials for the new Parliament House. A temporary experimental plant consisting of four open kilns was constructed in 1913, to provide bricks for the Kingston Power House and for the permanent brickworks.

The first stage of the permanent brickworks consisted of a single Staffordshire Kiln which commenced construction in November 1914. The Staffordshire Kiln, with crushing, grinding, processing and equipment was ready for production in early 1916. However the brickworks closed in December 1916 due to the first world war, a restricted Canberra works program and a coal strike.

The brickworks were re opened in 1921. This followed the decision by the Hughes government to proceed with the building of Canberra. Examples of construction works constructed around this time included the Provisional Parliament House, Hotel Ainslee as well as housing at Ainslee, Reid and Forrest.

A tile making plant was installed in 1922 and the brickworks railway in 1923 which linked the brickworks to the provisional Parliament House, Kingston Power House and Hotel Canberra. A brickworks tramway also extended to the Civic Centre. The tramway was removed prior to the opening of Parliament House on 9 May 1927. Prior to the construction of the railway, bricks were conveyed to building sites in wagons pulled by a steam driven tractor.

To cope with increased demand in the 1920's, two temporary downdraft kilns were constructed in October 1925 and in 1927 a Hardy patent kiln was built and in use. Following these works, the brickworks had an output capacity of over 300,000 bricks per week and in 1927-28, the brickworks produced some 8.5 million bricks.

The economic depression in the late 1920's resulted in a severe curtailment of production. The railway was fully removed and timber used instead of coal for firing kilns to minimise costs. Production subsequently ceased and the works closed down in 1931.

As the economy slowly recovered, building works in Canberra increased, resulting in renewed demand for bricks and a resumption in brick production in 1935.

The second World War forced another cessation of brick making activity which was resumed in 1944.

The brickworks underwent further expansion in the 1950's/60's with the construction of a 20 Chamber "Hoffman" brick kiln as well as three new downdraft kilns (dome kilns). In July 1960 the control of the brickworks was transferred to the Commonwealth.

During the 1960's, oil replaced coal as the fuel for firing the bricks. In 1967, the ACT Health Services Branch inspected the Brickworks site and reported that the buildings were in a state of disrepair and the area was littered with rubbish.



**SITE HISTORY**

In 1973 the brickworks were considered in extensive need of modernisation and proposals prepared for upgrading. These proposals were rejected by the National Capital Development Commission and a new site for the brickworks was released at Mitchell.

In August 1976, the brickworks ceased operation and have not operated since.

**3.3 1976 – Present**

Following closure of the brickworks, the site was subsequently leased to a private developer who undertook limited site work for the purposes of establishing a tourist centre. That lease was surrendered to the Commonwealth in 1984 and since that time a site manager has been employed to manage some minor retail, studio and storage uses.

**3.4 Proposed Use for the Land**

Options for the proposed land use are currently being developed. Likely opportunities include

- Cultural and tourist facilities
- An arts and crafts facility, including studio space for visual artists and crafts people
- Facilities for a heritage related commercial or office activities
- Hotels, restaurants and specialty retail tenancies
- Permanent facility for 'Floriade', Canberra's annual flower festival.

**3.5 The Brickmaking Process**

Raw materials for brick and tile making were excavated from the quarry and stored temporarily in a shed located at site NE7.

The material was dumped directly into crushers (C1 and C2) where coarse materials were removed. The screened material was ground and water added to create a consistency similar to cement. This slurry was then conveyed to the brick press which was located in the Machine Workshop area (M1, M2 and M3).

Bricks were fired in the kilns with coal and later oil. During times of high coal prices, timber was used as a fuel instead of coal. Once fired, the bricks were cooled and removed for dispatch. The entire process took 4-5 days.

Oil was supplied through penetrations in the ceiling of the kilns and a network of pipes which led to the oil storage tanks. Coal was loaded manually into the kilns for firing. There were no other additives used for brickmaking.

There was limited waste generated by the brickworks as the majority of fuel was combusted. Ash from wood and coal burning was taken off site for disposal. Gaseous emissions were drawn from the kilns by fanhouses F1 and F2 through a series of underground conduits. These emissions were discharged into the atmosphere through the Chimney Stacks (S1-S4).

## 4. Summary of Findings

### 4.1 Site Inspection

The findings presented in this section are based on a review of site historical documentation and a site inspection undertaken on Friday 22<sup>nd</sup> September. The site inspection included an inspection of all existing site buildings as well as major site features including the quarry, model railway track, filled areas and geological monuments.

The purpose of the site inspection was to determine the likely sources and location of contamination both above and below the surface and to assess other factors which may influence the potential for contamination and to verify the information reviewed during the desktop study.

During the site inspection, no visible signs of plant stress, odour, disturbed or discoloured soil which may have been attributed to contamination were observed. Bare patches of soil do exist, however these are likely to be attributable to other activities (eg site vehicle movements and cleared areas).

Chemical bunds and fuel storage areas were not observed, however the locations for these have been identified by the desktop study. Several empty 44 gallon drums were located in the Kiln/ Workshop areas.

There was no surface water on the site and no records were available of previous water quality sampling undertaken at the site.

Remaining site buildings were observed to be in a dilapidated condition and in some cases in need of repair. Pavement areas, particularly in the workshop and kiln areas were observed to be in generally good condition with only minor cracking present. Site roads are generally un paved tracks.

### 4.2 Sub-surface Contamination

The likely sources of underground contamination, reference building and typical contaminants is presented in Table 2.

Table 2 Locations and Details of Possible Site Contaminants

Building	Building Reference No	Description	Possible Contaminants <sup>1</sup>
Storage Bunkers	NE5	Initially used for coal then later oil storage	Hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals
Forklift Shed	A6	1000L underground storage tank used for fuel (diesel) storage	Hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals
Model Railway Workshop	R1	Initially used for coal and later oil storage (above ground)	Coal dust, hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals
Model Railway Storage Shed	R2	Initially used for coal and later oil storage (above ground)	Coal dust, hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals

## Summary Findings

Building	Building Reference No	Description	Possible Contaminants <sup>1</sup>
Septic Tank	-	Site Septic tank for domestic sewage and water from wash basins/showers.	Possible contamination due to the disposal of solvents and chemicals
Blacksmiths Shop	M1-M3	Attached to Machine Shop	Aluminium, manganese, iron, copper, nickel, chromium, zinc, cadmium and lead oxides, chlorides, fluorides and sulphates of these metals
Explosives Store	NE 3	Used for storage of explosives for excavation of the quarry (pre 1920)	Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulfuric acid, nitroglycerine, calcium cyanamide, lead, ethyle glycol, methanol, copper, aluminium, bis (2 ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver
Kilns, Workshops and oil storage areas	Miscellaneous	Miscellaneous drippings from leaking/ ruptured oil and fuel lines	Hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals

### Notes

1. Typical contaminants identified in the above table have been derived from "SEPP 55 Planning Guidelines for Remediation of Land"(DUAP 1998).

Product loss and spill history records for the site were not available, however there is a possibility that spillage of materials may have occurred on the site. This may include fuel and oil from transport and site vehicles.

Other possible sources of site contamination include imported fill and ash from the kilns which may have been buried on site and possibly beneath site buildings. It is understood that these practices did not occur however they cannot be eliminated as a source of contamination.

It is also possible that sheep dips may have been located on the site prior to the construction of the brickworks. The likely location of sheep dips would be in the vicinity of the Yarralumla Woolshed which is not located on the site. If however, sheep dips did exist on the site, the likely contaminants would include arsenic, organochlorines, organophosphates, cabramates and synthetic pyrethroids.

### 4.3 Surface Contamination

Likely above ground contaminants include Asbestos, Synthetic Mineral Fibre, Lead Based Paint and Poly Chlorinated Biphenyls. Miscellaneous fuel drums, paints etc are also located in various locations around the site. A description of the likely locations of key contaminants are described below.

#### 4.3.1 Asbestos

The likely locations and uses of asbestos on the site include but are not limited to the following:

- Asbestos roof sheeting and eaves of office and sheds

## Summary Findings

- Asbestos skin attached to kiln brick doors of firing Kilns (buildings K 1- K4)
- Possible Asbestos lagging of oil pipes located in the general vicinity of the kilns and workshops
- Asbestos backing of switchboards and electrical equipment found within switchboards located throughout the site
- Asbestos materials dumped on site near the septic tank, area now overgrown by blackberry bushes

### 4.3.2 Poly - Chlorinated Biphenyls (PCB's)

The likely locations of PCB's include electrical transformers which are located in the Power House and Workshop/ Machine Bay area as well as capacitors of light fittings located throughout the buildings.

### 4.3.3 Synthetic Mineral Fibre (SMF)

Likely locations of synthetic mineral fibre includes lagging to pipework and insulation in the ceiling and wall panels of the office building. It is unlikely that there is any other SMF present on the remainder of the site.

### 4.3.4 Lead Based Paint

Lead based paints may have been applied to interior and exterior walls throughout the site.

## 4.4 Potential for Off- Site Contamination

Possible pathways for off-site contamination include migration of contaminants through surface (site runoff) water, groundwater and fugitive air emissions.

While the exact nature of the immediate geology and groundwater is unknown, it is difficult to determine whether off site groundwater contamination has occurred. Further investigations would be necessary to determine the extent and nature of off site migration of contaminants through groundwater.

Surface water contamination may have occurred due to the discharge of contaminants into the local drainage system. It is understood that the site runoff water discharges into the urban stormwater system and ultimately into Lake Burley Griffin. Water quality records of Lake Burley Griffin were not reviewed.

Potential fugitive air emissions would have largely occurred during the operation of the facility and would have included gases, soot and dust from the firing of bricks. Since the plant has ceased to operate, site dust is the only likely source of potential air pollution.

## 5. Conclusions and Recommendations

### 5.1 Conclusions

The Canberra Brickworks property located on Denman St Yarralumla, was the subject of a preliminary site assessment to determine the potential for surface and subsurface contamination as the result of past activities at the site.

Within the limitations and constraints imposed by the study of background information, the following conclusions are provided.

- The site has been filled in places with materials likely to have been sourced from within the site.
- The site soils are likely to be clayey material. The depth of groundwater at the site is unknown
- The surrounding land uses are unlikely to have caused contamination on the site
- The main sources of contamination are likely to be the industrial brickmaking activities which occurred intermittently between 1913 and 1976, in particular the on site storage of fuels, oils and possibly explosives
- There are hazardous substances which exist above the surface which are likely to include asbestos, PCB's, SMF's and lead based paints

### 5.2 Recommendations

Within the limitations and constraints imposed by the study of background information, it is considered that the site is suitable for its intended use, subject to further investigation and possible remediation. The scope of the investigation should include but not be limited to the following;

- Preparation of a site sampling plan including:
  - Sampling and analysis data quality objectives (DQO's)
  - Sampling pattern,
  - Sampling density, location and depths
  - Details of soil and groundwater analytes
  - Detailed description of sampling procedures including sampling devices and equipment, sample handling procedures and sample preservation methods
  - Field safety, quality assurance and quality control procedures
  - Laboratory quality assurance and quality control procedures
- Soil and groundwater sampling and analysis in accordance with the requirements of the site sampling plan
- Site Characterisation of the land including
  - assessment of type and extent of environmental contamination, particularly soil and groundwater
  - assessment of possible exposure routes and exposed populations

*Min. 3  
GW Bore  
to determine  
hydraulic  
gradient.*

The data collected would require analysis and comparison with the Soil Investigation Levels identified in the EPA "Contaminated Sites Guidelines for the NSW Auditors Scheme" (refer to Appendix B). This comparison should contribute to the assessment of the sites appropriateness for its intended use or whether remedial action is required. *NEPM*

Following analysis of the data obtained in the site sampling phase, a Remedial Action Plan (RAP) should be prepared (if necessary) and include the following key elements

- remediation goal and extent of remediation required
- identification of possible remediation options and risk reduction methods
- proposed testing to validate the site after remediation
- contingency plan if the site remediation strategy fails
- site management plan including soil and stormwater management plan and occupational health and safety plan
- regulatory compliance requirements

## Conclusions and Recommendations

If site remediation is required, it would be undertaken in accordance with the RAP. Following remediation, site validation would be required to determine whether the site has been satisfactorily remediated and to identify further actions which may be required.

Site validation including validation sampling and analysis plan, statistical analysis of the validation results and assessment against the validation criteria and verification of compliance with regulatory compliance

Further details of the recommended actions is provided in the NSW EPA publication "Guidelines for Consultants Reporting on Contaminated Sites (1997)".

### 5.3 Limitations and Assumptions

The above conclusions and recommendations have been made with the following assumptions and limitations;

- Several of the buildings were unable to be entered during the site inspection including the power house, site offices and downdraft kilns \*
- Limited groundwater and geotechnical information was available for the site, in particular the groundwater depth and direction of flow. It has been assumed that groundwater flows toward Lake Burley Griffin \*
- Regulatory and Licensing history was not available for review including rezoning and rebuilding approvals, product spill loss, disposal and complaint history *ENV. ACT Was not approached.*
- The site knowledge of the Caretaker (Bruce McDonald) is limited to his involvement of the site which only covers the recent portion of the site history
- An assessment of the chemical degradation products was not undertaken as part of this study. ? This would be undertaken when further detail of the sub-surface contaminants is known. °

*— Engage an Auditor to oversee Phase II & sign off on RAP.*

## 6. References

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1. Old Canberra Brickworks, Conservation Plan, Lester Firth and Associates, June 1986
2. Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA , November 1997
3. Guidelines for the NSW Site Auditor Scheme, NSW EPA, June 1998
4. Geology of Canberra, Queanbeyan and Environs, Bureau of Mineral Resources, Geology and Geophysics, 1981
5. Geology of the Canberra 1:100,000 Sheet Area, Bureau of Mineral Resources, Geology and Geophysics, 1991
6. Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land, DUAP/EPA, August 1998

***Appendix A***  
***Site Photographs***

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Site Photographs



Photograph 1: Powerhouse and Auxiliary Building

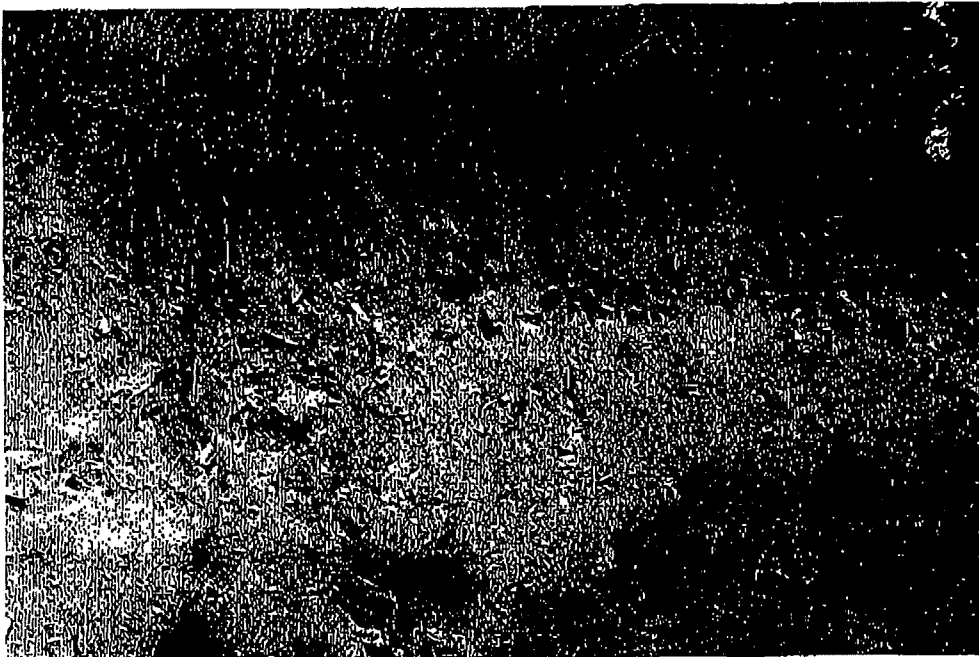


Photograph 2: Powerhouse and Auxiliary Building

**Site Photographs**



**Photograph 3: Location of Old Forklift Shed and Underground Storage Tank**



**Photograph 4: Fill area showing mixture of overburden and brick offcuts**

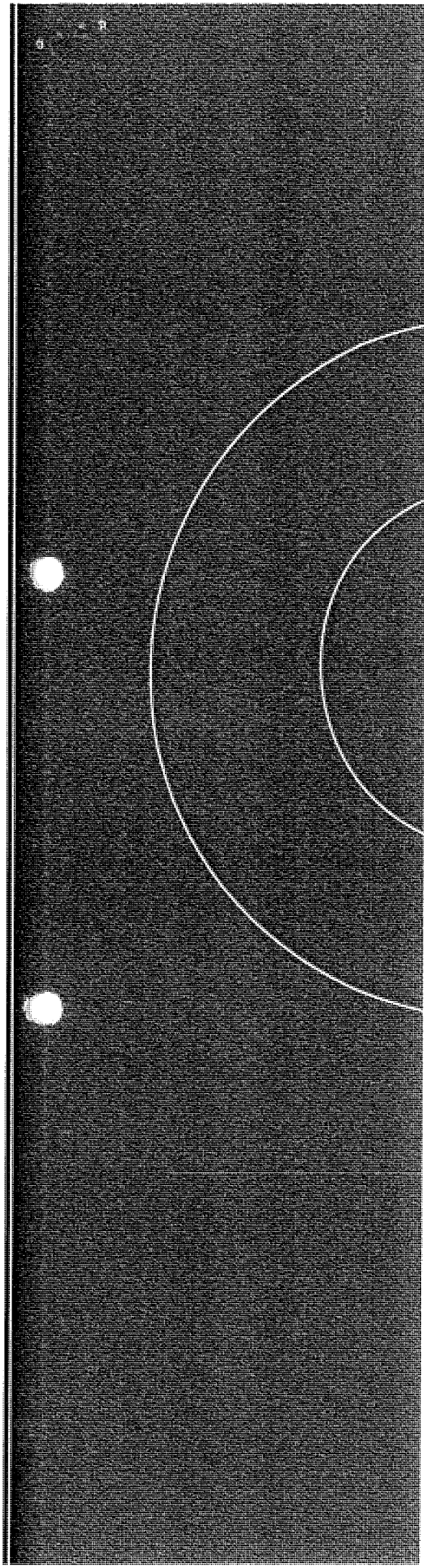
## ***Appendix B***

***EPA Health Investigation Levels***

## Soil Investigation Levels for Urban Redevelopment Sites in NSW

Substance	Health-based investigation levels <sup>1</sup> (mg / kg)				Provisional phytotoxicity-based investigation levels for sandy loams pH 6-8 (mg / kg)
	Residential with gardens and accessible soil (home-grown produce contributing less than 10% fruit and vegetable intake; no poultry), including children's day-care centres, preschools and primary schools, or town houses or villas (NEHF A)	Residential with minimal access to soil including high-rise apartments and flats (NEHF D)	Parks, recreational open space, playing fields including secondary schools (NEHF E)	Commercial or industrial (NEHF F)	
	Column 1	Column 2	Column 3	Column 4	Column 5
Aldrin + Dieldrin	10	40	20	50	-
Arsenic (total)	100	400	200	500	20
Benzo(a) pyrene	1	4	2	5	-
Beryllium	20	80	40	100	-
Cadmium	20	80	40	100	3
Chlordane	50	200	100	250	-
Chromium (III)	12%	48%	24%	60%	400
Chromium (VI)	100	400	200	500	1
Copper	1000	4000	2000	6000	100
Cyanides (complex)	500	2000	1000	2500	-
DDT	200	800	400	1000	-
Heptachlor	10	40	20	50	-
Lead	300	1200	600	1500	600
Manganese	1500	6000	3000	7500	-
Methyl mercury	10	40	20	50	-
Mercury (inorganic)	15	60	30	75	1
Nickel	600	2400	600	3000	60
PAHs (total)	20	80	40	100	-
PCBs (total)	10	40	20	50	-
Phenol	8500	34000	17000	42500	70
Zinc	7000	28000	14000	35000	200

Note: Further detail and notes to table are provided in the EPA document "Guidelines for the NSW Auditor Scheme"



A Rental Valuation Report prepared for  
**ACT DEPARTMENT OF  
TERRITORY & MUNICIPAL  
SERVICES**  
Of  
Former Yarralumla Brickworks  
Block 1 Section 102  
Yarralumla ACT 2600  
Valuation Date  
16 March 2007



**CBRE**

CB RICHARD ELLIS

CB Richard Ellis (V) Pty Ltd  
Licensed Agent  
ABN 15 083 694 357Level 1, 11 Lonsdale Street  
Braddon ACT 2612  
GPO Box 1987  
Canberra ACT 2601T 61 2 6232 2733  
F 61 2 6232 2730[www.cbre.com.au](http://www.cbre.com.au)

26 March 2007

ACT Department of Territory & Municipal Services  
GPO Box 158  
CANBERRA ACT 2601  
Attention: Mr Tony Charge  
Group Manager (Property – Multi-purpose Tenancies)

Dear Mr Charge

**Tenant: Thor's Hammer**  
**Tenancy: Part of Former Yarralumla Brickworks**

We have inspected the tenancy area occupied by Mr Thor Diesendorf, trading as Thor's Hammer, and discussed the positives and negatives of the area occupied by his tenancy.

It appears from our discussions with the tenant that the kilns do not form part of the tenancy due to possible occupational and health issues and these areas have been excluded from our assessed gross lettable area.

As part of our inspection we have measured the tenancy areas, which exclude the toilet and kilns, and have assessed the approximate gross lettable areas as follows:

Covered	3,741 square metres
Outside with concrete flooring	3,659 square metres
Gravel based area	1,322 square metres
<b>Total</b>	<b>8,722 square metres</b>

We confirmed with the tenant on site that our measurements are only approximate and if he disputes our areas he should then engage a surveyor. It appears he was happy to adopt the areas as assessed by CBRE.

Mr Diesendorf indicated that he had updated a number of the buildings with new cladding and doors and we confirm in our assessment we have excluded the tenant improvements as outlined.

Rental evidence of this type of property is limited within the ACT as Crown Leases within the ACT require the Crown Lessee to commence construction within 12 months and complete within 24 months.





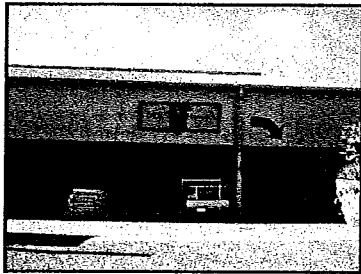
26 March 2007

Research of older industrial shed rentals are limited to Fyshwick, as Mitchell and Hume were developed during the 1970s and onwards and building generally are of a superior specification.

Therefore rentals are limited to large sites within industrial areas which have onsite storage such as Fyshwick, Queanbeyan and the semi-rural area of Pialligo.

The structures on the subject land were originally part of the Yarralumla Brickworks and were constructed during the 1920s and early 1930s and have been partly upgraded. We summarise the areas as occupied by Thor's Hammer as follows:

#### Covered Area



These buildings are high clearance in design, steel framed with metal clad roofing and perimeter wall cladding but are generally not enclosed.

Flooring is of concrete, however on different levels, impacting on the usage of the buildings.

#### Uncovered Areas



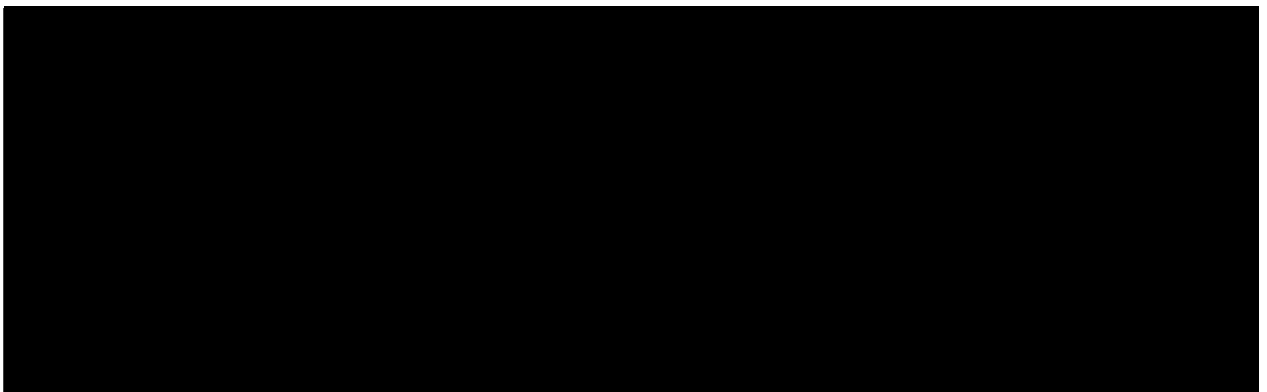
There is a mixture of areas with concrete flooring located between the kilns and sheds. Again, some of these areas are on different levels.

The gravel area situated on the south western perimeter of the building is generally level in contour.

#### Rental Evidence

As previously mentioned there is limited evidence however the following are considered to provide general evidence:

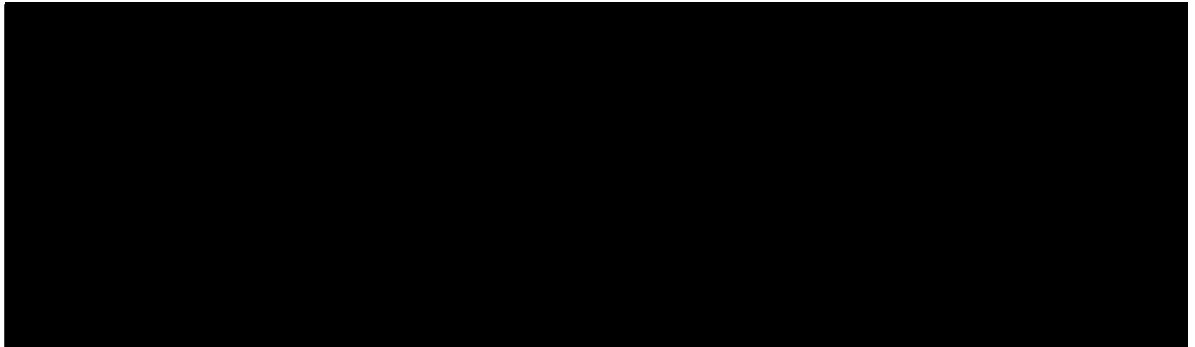
#### Vacant Land Rent





26 March 2007

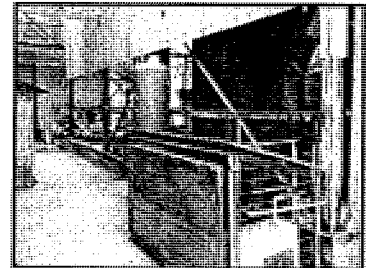
## Improved Buildings



We have concluded that the Pialligo land rents provide the best evidence in regards to the vacant land areas. These sites are free of improvements whereas the vacant land for the subject is located on the perimeter of the buildings, which restricts its uses.

In assessing the rental for the covered areas we have taken into consideration the strong growth of rentals within the industrial areas over the last two years. As previously mentioned there are no rents directly comparable and therefore we have made an adjustment on the industrial rentals outlined, taking into consideration the following:

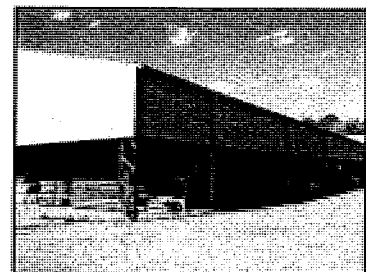
- Concrete flooring on various levels;
- Buildings not fully enclosed;
- Prime location;
- Landlord carried out repairs.



## Rental Assessment

Based on the evidence outlined and taking into consideration that the lease is to be drawn up on the following terms and conditions:

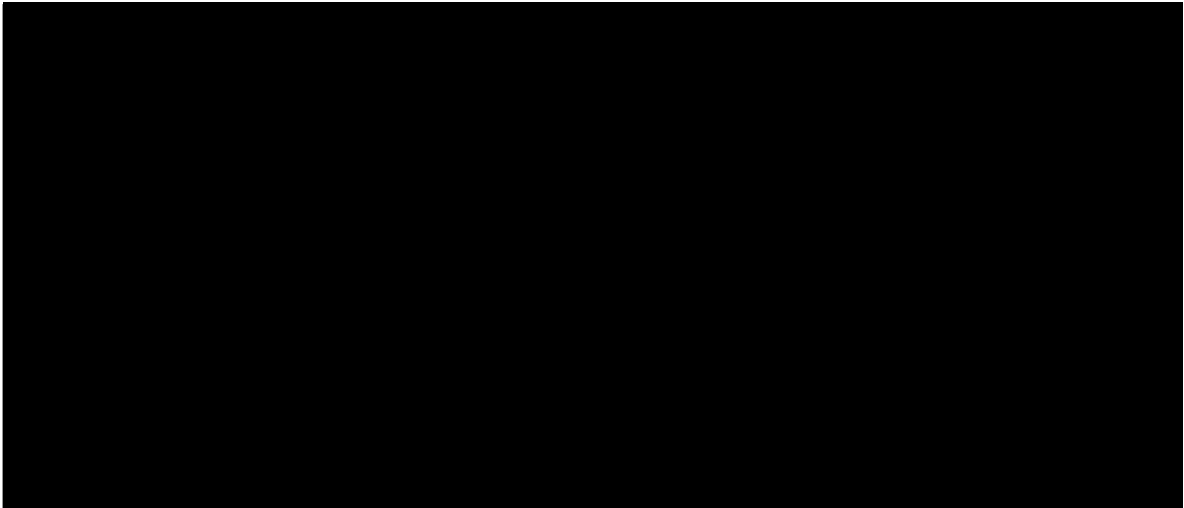
- Lease term 5 years;
- Commencement date 1 July 2007;
- Reviews CPI annually;
- No tenant contribution to statutory outgoings over lease term;
- No option;
- Landlord liable for repairs and maintenance





26 March 2007

We have assessed the rental on two bases. The first, being the covered areas, and included in the rental is the sealed uncovered areas as they are considered as curtilage to the covered areas. Secondly, we have adopted a separate rental for the gravel base storage area.




Based on our research and taking into consideration the limited market evidence and limited uses of the subject property, we have adopted a market rental on the subject premises effective from 1 July 2007 at \$80,000 pa (excluding GST).

We thank you for your instructions in this matter and if you have any queries in regards to our advice or require any assistance with possible negotiations, please do not hesitate to contact me on 6232 2799.

This advice is for the use only of the party to whom it is addressed and for no other parties. No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this advice.

Yours sincerely  
CB Richard Ellis (M) Pty Ltd

  
FRANK P BRODRICK FAPI  
NSW Reg. No.1809  
Senior Director – Valuation & Advisory Services

( )

10/10/10

# TREE ASSESSMENT

**SITE ADDRESS:**  
Old Canberra Brick Works

**PREPARED FOR:**  
Land Development Agency

**PREPARED ON:**  
27 October 2010

**PREPARED BY:**



dsb LANDSCAPE ARCHITECTS  
DEAKIN CHAMBERS  
14 HANNAH PLACE, DEAKIN, ACT 2600

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1. Tree Report Overview
2. Appendix 1 Tree Assessment Schedule
3. Appendix 2 LDATree Assessment with Photo
4. Appendix 3 Old Canberra Brick Works Tree Assessment Drawings  
2593-G1 to G14, G19 and G20





# Old Canberra Brick Works

## Tree Assessment

### Tree Report Overview

The trees at the Old Canberra Brick Works were assessed on 20 June and 12 July 2010.

The extent of the assessment area is detailed in Site Plans Drawings 2593-G1 and 2593-G11. Generally the area of assessment includes the Old Canberra Brick Works and Quarry and the areas adjacent to the southern edge of the Yarralumla suburb bounded by Dunrossil Drive, Cotter Road and Adelaide Avenue

Trees assessed have been allocated areas based on reasonable proximity. These areas are A through to G and are indicated on the site plans.

The total assessment area is divided into individual Tree Assessment drawings of a smaller scale for legibility.

Survey was provided by the Client, Land Development agency, with coverage of the assessment area. The assessment area includes areas of well spaced individual trees and areas of dense tree groups of similar characteristics. The survey identified the well spaced individual trees in detail and the dense tree groups were identified as tree groups without individual tree detail.

All of the individually identified trees are assessed and Management Status recorded in the Tree Schedule in accordance with the Tree Protection ACT (Appendix 1).

All of the tree groups are assessed as groups for arboricultural and urban amenity value utilising the LDA Tree Assessment form.

The LDA Tree Assessment form records information as for the Tree Schedule to satisfy Tree Protection ACT requirements and additional information is recorded to identify those trees that have the potential to contribute to future urban amenity. The urban amenity value and recommendation to retain or remove within the LDA Tree Assessment form is direction to the LDA consultant team regarding the assessed characteristics. Action on the recommendation is a discretion that may be exercised by LDA.

The arboricultural assessment value recorded for tree groups, utilising the LDA Tree Assessment form, is comparative with the Management Status of individual trees identified and recorded in the Tree Schedule (Appendix 1).

Individual trees that are identified Management Status E, H or M within the Tree Schedule have been additionally individually assessed for arboricultural and urban amenity value utilising the LDA Tree Assessment form. LDA Tree Assessment records of individual trees and tree groups are provided at Appendix 2.



LDA Tree Assessment form - Urban Amenity assessment value is shown by colour on the Tree Assessment Plans.

Tree species *Pinus radiata*, *Celtis australis*, *Populus alba* and *Robinia pseudoacacia* found within the assessment area are classed as pest plants under the Pest Plants and Animals Declaration 2009.

## ASSESSMENT SUMMARY

### Area A Brick Works Quarry

Refer to Drawings 2593 G2 to 2593-G5 (Appendix 3)

- This area is located within the extent of the abandoned brick quarry.
- Area A consists of approximately 402 trees of mixed species. The dominant species is *Pinus* with *P. radiata*, *P. canariensis* and *P. halepensis* all present.
- The trees are growing within the sides of the rocky quarry side slopes and on the perimeter of the Brick Works adjacent to residential boundaries.
- Tree health is generally rated poor to fair with some isolated trees rated good health=.
- The trees within the quarry are predominantly self sown and include trees that are classed as pest plant under the Pest Plants and Animals Declaration 2009
- Trees with poor health generally have poor structure and are in decline.
- Trees with Management Status rating of M, H and E have been photographed and assessed for urban amenity using LDA Tree Assessment form.
- Residential plantings occur on the perimeter of the quarry area.

### Comments:

The Brick Works trees have been assessed for their arboricultural condition and potential for urban amenity.

There are bands and blocks of trees across this altered landscape that provide interest scale and definition to the quarry voids. Planting screens the brick works, buildings and structures from surrounding residential areas and residential roads.

The trees within the confines of the quarry area are predominantly self sown trees located on the sides of the rocky slopes of the quarry excavations.

Whilst there are isolated individuals with M, H, and E Management Status the majority of the planting is in poor health with poor structure and generally in decline.



Retention for amenity value is limited to a small number of isolated individual trees and a small group of individual trees adjacent to the southern fence line.

### **Area B Brick Works**

Refer to Drawings 2593-G5, G8, G9, and G10 (Appendix 3)

- There are approximately 42 trees within the area of the Brick Works.
- The trees are located scattered within the grounds and adjacent to buildings.
- The health of these trees is generally assessed as poor to fair health.
- The trees with poor to fair health show poor structure and are in decline.
- The tree species in this area are a mixture of self sown *Ulmus* sp, *Celtis* sp and *Robinia* sp. *Celtis* sp and *Robinia* sp are pest plants.
- Trees with Management Status rating of M, H and E have been photographed and assessed for arboriculture and urban amenity using the LDA Tree Assessment form.

#### **Comments:**

The trees within the Brick Works are unmanaged and unmaintained self sown trees.

A significant species is *Ulmus procera* (English elms). Most of these trees exhibit significant multiple leaders.

The plantings screen the brick work buildings and structures from the adjacent residential areas and residential roads. This is most evident along the northern boundary with casuarinas adjacent to the fence on the outer side of the site.

The *Casuarina* trees and other Management Status M rated trees are identified for retention based on their potential to contribute to urban amenity values.

There is a significant row of pine trees along the northern boundary between the Brick Works and Lane Poole Place multi unit development. These pine trees are located outside the site except for two trees on the eastern end that have been identified for retention (trees 426 and 427).

### **Area C South of Quarry and Brick Works**

Refer to Drawing 2593- G5 to 2593-G8 (Appendix 3)

- Trees in this area are predominantly mixed deciduous and pines located in large groups.
- These trees have cultural and historic value as they are the remnants of the original Westbourne Wood plantings ( 1920)



- These trees health range from mature to senescent.
- The senescent trees exhibit classic signs of age related decline. There is evidence of fallen trees, fallen branches and severe branch failure throughout the plantation.
- Tree health is generally rated poor to fair with some identified trees rated good health.
- Trees with Management Status rating of M, H and E have been photographed and assessed for arboriculture and urban amenity using the LDA Tree Assessment form.
- The trees with poor to fair health show poor structure and are in decline.
- The Pinus radiata trees within this area are pest plant under the Pest Plants and Animals Declaration 2009.
- The pines in this area are located in irregular spacing's and set out.
- A renewal planting and management program is recommended to replace the poorly performed trees to retain the integrity of this historical/cultural landscape.

#### **Comments:**

There are two species in this area on the southern side of the Brick Works.

The dominant species in this area is Pinus radiata. These trees are original plantings of the 1920's when the area was part of the Westbourne Woods arboretum. The planting of these trees has provided protection for the Brick Works and Yarralumla from the south/ westerlies in the winter. They also provide a treed edge to the suburb and screening to the Brick Works.

Some of the trees are approaching the end of their viable life.

Whilst the trees are still standing, the trees are on the edge of senescence and fallen trees, broken branches can be seen throughout the plantation.

There is substantial risk to pedestrian movement through this area.

Retention of the landscape asset of these tree groups requires maintenance, management and renewal plantings.

Throughout the area there are groups of self sown and suckering Ulmus procera. Management and maintenance of these trees is recommended.

The trees in this area collectively contribute to a valuable landscape asset that provides landscape scale, enclosure, edge definition and amenity that is worthy of retention and ongoing management.

This landscape asset contributes to the wider landscape amenity.

These trees provide the tree canopy/skyline to Yarra Glen views by inbound traffic.

These trees contribute to the landscape delineation between South Canberra



and Woden Valley.

This landscape asset is composed of many poor, senescent or pest plant that individually have no merit for retention on both arboriculture and amenity assessment values.

These trees require renewal, maintenance and management as a collective tree landscape asset. Isolated individual Management Status M trees exhibit characteristics worthy of retention.

A management plan is required to direct works required to renew this landscape asset.

The identification of localities and species composition of landscape buffers to potential urban development is not assisted by arboricultural assessments utilising Tree Protection Act criteria.

Landscape buffer identification is better suited to landscape, visual, planning and urban amenity assessment.

### **Area D Dudley Street (West)**

Refer to Drawings 2537 G6, G7, and G12 (Appendix 3)

- This group of *Pinus radiata* and *Ulmus procera* are a strong landscape feature of the site. The group dominates the north western side of Dudley Street. Planting of Elms, Oaks and Cypress border the pine plantation and the verges of Dudley Street.
- These trees are plantings of the 1960's.
- Tree health is generally rated poor to fair with some notable trees rated good health.
- Trees with Management Status assessment of M, H and E have been photographed and assessed for arboriculture and urban amenity using the LDA Tree Assessment form.
- Trees rated poor health generally have poor structure and are in decline.
- The *Pinus radiata* which make up the majority of this area are pest plant under the Pest Plants and Animals Declaration 2009.
- These trees are approaching senescence and exhibit classic signs of age related decline. There is evidence of fallen trees, fallen branches and severe branch failure throughout the plantation.
- The fallen trees and branch failure are the result of age related dieback and exposure to the high winds. These trees present a risk to pedestrian movement through this area.
- Open space to the south east of the pine plantation is dominated by native grass land.



- Tree 460 is a mature *Pinus radiata*. This tree is in good condition and has Management Status M.
- Tree 461 is a mature *Pinus radiata* that is in good condition and has Management Status M.
- To the north of the plantation adjacent to Denman Street there is planting of *Quercus palustris*, *Prunus cerasifera* "nigra", *Ulmus. sp* and *Crataegus smithiana*. These trees, although in poor to fair condition, provide secondary screening and buffer to the residents.

### Comments:

This area is similarly dominated by *Pinus radiata*, which is an extension of the pine plantation to the North West of this group. The group is younger than the neighbouring pines to the North West having been planted in the 1960's.

The majority of the group is standing due to the close forestry style of planting.

Selective thinning of the declining pine trees is prudent practice. Selective thinning would enable the remainder of the tree group to produce a wider canopy.

Pine trees on the perimeter of the group are of a better quality showing good arboricultural structure and health. The elm trees, located on the southern side of the group, show good arboriculture structure and health (Arboriculture and Urban Amenity Assessment value M).

Trees 460 and 461 are two individual *P. radiata* which are in good health and condition. Urban amenity assessment indicates that these trees have the potential to contribute to landscape amenity.

The tree group provides protection to the residents along Denman St Yarralumla from the winter south westerlies and dampens noise levels from Adelaide Ave.

The trees also provide amenity for walkers and shelter for the local wild life.

The trees in this area collectively contribute to a valuable asset that provides landscape scale, enclosure, edge definition and amenity that is worthy of retention and ongoing management.

The landscape asset contributes to the wider landscape amenity.

These trees provide the tree canopy/skyline to Yarra Glen views by inbound traffic.

These trees contribute to the landscape delineation between South Canberra and Woden Valley.

The landscape asset is composed of many poor, senescent or pest plant that individually have no merit for retention on both arboriculture and amenity assessment values.

These trees require renewal, maintenance and management as a collective tree



landscape asset. Isolated individual Management Status M trees exhibit characteristics worthy of retention.

A management plan is required to direct works required to renew this landscape asset.

The identification of localities and species composition of landscape buffers to potential urban development is not assisted by arboricultural assessments utilising Tree Protection Act criteria.

Landscape buffer identification is better suited to landscape, visual, planning and urban amenity assessment.

### **Area E Dudley Street (East)**

Refer to Drawings 2537 G13, G14, and G20 (Appendix 3)

- This area is dominated by mature pines adjacent to the Baptist church.
- The group is of a similar age to that of Area D to the west.
- Tree health is generally rated poor to fair with some notable trees rated good health.
- Trees with Management Status rating of M, H and E have been photographed and assessed for arboriculture and urban amenity using LDA Tree Assessment form.
- Trees rated poor health generally have poor structure and are in decline.
- The *Pinus radiata* which make up the majority of this area are pest plant under the Pest Plants and Animals Declaration 2009.
- On the outer eastern edges of the pines is a row of elms in good condition.
- Tree 445 *Pinus radiata* is located on the verge of Dudley St. This tree exhibits good health and is assessed Management Status M.
- Trees to the east of the Baptist Church are mixed group dominated by Pines and Oaks. These trees are in good condition with Management Status M and H.
- Trees along the verge of Dudley St provide a landscape barrier to the adjacent residents from the Adelaide Ave road and vehicle noise.
- Trees with rating of M, H and E have been photographed and assessed for arboricultural and urban amenity using the LDA Tree Assessment form.
- Trees to the northern edge of the pine plantation consist of *Quercus robur*, *Ulmus. sp* and *Crataegus smithiana*. These trees are in a poor to fair condition. Refer to LDA Tree Assessment Appendix 2. The trees provide a secondary screening for the residents.



### Comments:

This area is similarly dominated by *Pinus radiata*, which is an extension of the pine plantation to the North West of this group. The group is younger than the neighbouring pines to the North West having been planted in the 1960's.

The majority of the group is standing due to the close forestry style of planting.

Selective thinning of the declining pine trees is prudent practice. This would enable the remainder of the group to produce a wider canopy.

Pine trees on the perimeter of the group are of a better quality showing good arboricultural structure and health. The elm trees, located on the southern side of the group, show good arboriculture structure and health (Arboriculture and Urban Amenity Assessment value M).

The tree group provides protection to the residents along Denman St Yarralumla from the winter south westerlies and dampens noise levels from Adelaide Ave.

The trees also provide amenity for walkers and shelter for the local wild life.

The trees in this area collectively contribute to a valuable asset that provides landscape scale, enclosure, edge definition and amenity that is worthy of retention and ongoing management.

The landscape asset contributes to the wider landscape amenity.

These trees provide the tree canopy/skyline to Yarra Glen views by inbound traffic.

These trees contribute to the landscape delineation between South Canberra and Woden Valley.

The landscape asset is composed of many poor, senescent or pest plant that individually have no merit for retention on both arboriculture and amenity assessment values.

These trees require renewal, maintenance and management as a collective tree landscape asset. Isolated individual Management Status M and H trees exhibit characteristics worthy of retention.

A management plan is required to direct works required to renew this landscape asset.

The identification of localities and species composition of landscape buffers to potential urban development is not assisted by arboricultural assessments utilising Tree Protection Act criteria.

Landscape buffer identification is better suited to landscape, visual, planning and urban amenity assessment.

The trees in this area include a large group of *Pinus radiata* to the west and south of the Baptist Church. The group contains a mixture of poor to fair health trees





which as a group continue to provide a landscape buffer to the church and the adjacent residents.

Tree 445 is a large *Pinus radiata* on the verge of Dudley St; this tree is in good condition, Management Status M, and is identified for retention.

To the east, the trees transition to smaller groups and individual trees. The trees in this area are dominated by *Pinus radiata*, *Pinus patula*, *Pinus canariensis*, *Ulmus procera* and *Quercus palustris*. These trees are in good condition and are Management Status M and H trees. They are identified for retention for their tree quality, health and the continued screening they provide to Yarra Glen/Adelaide Ave.

### Area F West of Brick Works

Refer to Drawings 2593- G7 to 2593-G10 (Appendix 3)

- Trees in this area are predominantly pines with deciduous species scattered throughout this large group.
- These trees have cultural and historic value as they are the remnants of the original Westbourne Wood plantings ( 1920)
- These trees health range from mature to senescent.
- The senescent trees exhibit classic signs of age related decline. There is evidence of fallen trees, fallen branches and severe branch failure throughout the plantation.
- Tree health is generally rated poor to fair with some identified trees rated good health.
- Trees in this group have been assessed as a group (Aboriginal Assessment value M and Urban Amenity Assessment value E). The group has been photographed.
- The trees with poor to fair health show poor structure and are in decline.
- The *Pinus radiata* trees within this area are pest plant under the Pest Plants and Animals Declaration 2009.
- The pines in this area are located at irregular spacing's and set out.
- A renewal planting and management program is recommended to replace the poorly performed trees to retain the integrity of this historical/cultural landscape.

### Comments:

There are two species in this area on the western side of the brick Works.

The dominant species in this area is *Pinus radiata*. These trees are original plantings of the 1920's when the area was part of the Westbourne Woods arboretum. The



planting of these trees has provided protection for the Brick Works and Yarralumla from the south/ westerlies in the winter. They also provide a treed edge to the golf course, Yarralumla and screening to the Brick works.

Most of the trees are approaching the end of their viable life.

Whilst the trees are still standing, the trees are on the edge of senescence and fallen trees, broken branches can be seen throughout the plantation.

There is substantial risk to pedestrian movement through this area.

Retention of this landscape asset of this tree group requires maintenance, management and renewal plantings.

Throughout the area there are groups of self sown and suckering *Ulmus procera*. Management and maintenance of these trees is recommended.

The trees in this area collectively contribute to a valuable landscape asset that provides landscape scale, enclosure, edge definition and amenity that is worthy of retention and ongoing management.

This landscape asset contributes to the wider landscape amenity.

These trees provide the tree canopy/skyline to Yarra Glen views by inbound traffic.

These trees contribute to the landscape delineation between South Canberra and Woden Valley.

This landscape asset is composed of many poor, senescent or pest plant that individually have no merit for retention on both arboriculture and amenity assessment values.

These trees require renewal, maintenance and management as a collective tree landscape asset.

A management plan is required to direct works required to renew this landscape asset.

The identification of localities and species composition of landscape buffers to potential urban development is not assisted by arboricultural assessments utilising Tree Protection Act criteria.

Landscape buffer identification is better suited to landscape, visual, planning and urban amenity assessment.

## **Area G Dudley St to Cotter Rd**

Refer to Drawings 2593- G12, G19, G20 and G14 (Appendix 3)

- Trees in this area are predominantly pines with additional groups of deciduous species throughout this area.



- Trees have been assessed in groups and individually.
- The *Pinus radiata* trees within this area are pest plant under the Pest Plants and Animals Declaration 2009.
- The trees with poor to fair health show poor structure and are in decline.
- The main pine tree group has been thinned out resulting in the trees producing branches on the lower parts of the canopy. Tree form is more towards a conical tree than the forestry pole found in other pine groups such as Group E across the road in Dudley Street.
- The *Populus alba* on the western side of the pines area are pest plant under the Pest Plants and Animals Declaration 2009.
- Elms to the east of the main pine group exhibit Arboricultural Assessment value poor.
- In the east and parallel to Adelaide Avenue are groups of *Casuarina cunninghamiana* and *Pinus patula*, both of these species are in good condition (Arboricultural Assessment value H and Urban Amenity Assessment value H).

#### Comments:

The trees within Area G extend from the west at the intersection of Dudley Street and Cotter Road to the east at the Kent Street Bridge. To the north is Dudley Street and in the south is Cotter Road and Adelaide Ave.

Tree species within this area are *Pinus radiata*, *Populus alba*, *Ulmus procera*, *Prunus cerasifera*, *Casuarina cunninghamiana* and *Pinus patula*.

The condition of these trees is (Arboricultural Assessment value and Urban Amenity Assessment value Poor - High).

The main group of pines in the centre of Area G are in good condition and are a significant landscape group of trees to the south. They are also the primary tree canopy/skyline to Yarra Glen views by inbound traffic.

These trees contribute to the landscape delineation between South Canberra and Woden Valley.

The deciduous trees in Area G include pest plant (*Populus alba* Arboricultural Assessment value H) and *Prunus cerasifera* (Arboricultural Assessment value H and Urban Amenity Assessment value H).

The trees within Area G have individually and collectively some merit for retention on both arboriculture and urban amenity assessment values.

These trees require renewal, maintenance and management as a collective tree landscape asset. Isolated individual Management Status M and H trees exhibit characteristics worthy of retention.

In the eastern part of Area G is a group of *Casuarina cunninghamiana* and *Pinus*



patula, these trees were planted as part of the landscape completion of Adelaide Ave. They are located on engineering formation slopes of the Adelaide Avenue roadworks.

The condition of these two tree groups is good, (Arboricultural Assessment value H and Urban Amenity Assessment value H) the Casuarina are displaying deadwood throughout their canopy. The retention of these two groups is recommended as they provide the narrow landscape buffer to Dudley St and Yarralumla residents.

There is also a landscape bed of juniper horizontalis located on the road edge batters with a small group of Thuja orientalis located adjacent to the ramparts of the Kent Street/ Novar Street over bridge.

In the area of the Casuarina cunninghamiana, Pinus patula, Juniper horizontalis and Thuja orientalis, Adelaide Avenue is below the tree assessment investigation area. This land form arrangement combined with the plant material on the batter slopes contribute to a landscape/land form screening of the tree assessment area from Adelaide Ave.

### Summary

The existing trees located on the site surrounding the Old Canberra Brick Works are generally mature to senescent pine trees.

In the quarry area east of the Brick Works buildings, the pines are wild seedlings on and around the quarry rock surfaces. These create a rather dramatic visual image, but their stability is questionable and the potential risk associated with these is high. The scattered pines to the west of the Brick Works buildings, between the buildings and the golf course edge are generally large, over mature, senescent trees with long straight trunks.

These trees are visually significant and provide a good visual screen between the brickworks and the golf course. There are numerous trees that have fallen and because of the age of the trees there will be a tendency for this to continue. The area under these pines is thick with undergrowth, the majority of which are woody weed species which warrant removal for environmental reasons.

South of the Brick works, the existing trees between Denman Street and Dudley Street consist of large groups of close planted pine trees scattered, individual pine trees and small groups of single species adjacent to the pines.

The pine plantation provides a significant landscape buffer and visual landscape edge to this component of Yarralumla.

These landscape assets provide the vegetated skyline to motorist views travelling city bound on Yarra Glen/Adelaide Avenue. These trees contribute to the landscape delineation between South Canberra and Woden Valley.



These landscape assets are composed of many poor, senescent or pest plants that individually have no merit for retention on both arboriculture and amenity assessment values.

These trees in these areas collectively contribute to a valuable landscape asset that provides landscape scale, enclosure, edge definition and amenity that is worthy of retention and ongoing management.

These trees require renewal, maintenance and management as a collective tree landscape asset. Isolated individual Management Status M and H trees exhibit characteristics worthy of retention.

A management plan is required to direct works required to renew these landscape assets.

The identification of localities and species composition of landscape buffers to potential urban development is not assisted by arboricultural assessments utilising Tree Protection Act criteria.

Landscape buffer identification is better suited to landscape, visual, planning and urban amenity assessment.

Regards

Hans Stoehr

Senior Arborist



# TREE ASSESSMENT

## APPENDIX 1 Old Canberra Brick Works

### Tree Schedule



dsb LANDSCAPE ARCHITECTS  
DEAKIN CHAMBERS  
14 HANNAH PLACE, DEAKIN, ACT 2600



## TREE ASSESSMENT

### MANAGEMENT STATUS INVENTORY

The following represents details recorded for the trees on the site. The information recorded is intended for informing the redevelopment of Old Canberra Brick Works.

1. **Number:**

Reference number. Each tree/group of trees is uniquely numbered and referenced to Drawings 2593-G1 to 2593-G14, G19 and G20 Plan and Report information.

2. **Species:** Identification on site

3. **Management Status**

E Extra High – excellent trees to be retained requiring additional protection.

H High - represents the existing trees that are to be retained and protected.

M Medium - Tree/groups of trees which would be desirable to retain, but would not warrant design expenditure to retain.

R Remove - Specimens of poor quality or of no landscape significance.

4. **Height;** Approximate in metres

5. **Trunk Circumference:** 1 metre above ground level, approximate in millimetres.

6. **Number of Trunks:**

Number of trunks larger than 150mm diameter measured at 1.0 metre above ground level.

7. **Canopy Diameter;**

Shown in metres and is the maximum crown width of the tree. The crown radius, plus two metres defines minimum distance from the face of the trunk of the tree for any ground work under the canopy of the tree that is likely to harm the tree including building, trenching, changing soil levels, compacting or contaminating the soil.

8. **Health:**

Assessment based on crown and trunk appearance.

E - Excellent  
G - Good

F - Fair  
P - Poor

9. **Expected Longevity**

S - Short (less than 10 years)

M - Medium (10 - 25 years)

L - Long (greater than 25 years)

10. **Contribution to Amenity;**

Refer to LDA Tree Assessment Appendix 2 Codes.



#### 11. Regulated Tree / Tree Damaging Activity (TDA) Approval

Under the Tree Protection Act 2005, all trees on leased Territory land are 'Protected' trees until specific Tree Management Precincts are established. Trees that meet any of the following criteria are 'Regulated' trees:

- a) a height of 12 metres or more, or
- b) a trunk circumference of 1.5 metres (approximately 0.5 metres in diameter) or more at 1 metre above ground level, or
- c) two or more trunks and the total circumference of all the trunks, 1 metre above ground level, is 1.5 metres or more, or
- d) a minimum crown width of 12 metres or more.

Trees meeting any of these criteria are indicated.

Y – Regulated tree - meets at least one of the criteria.

The approval of the Conservator is required to remove a Regulated tree.

The approval of the Conservator is required to undertake ground works within the Tree Protection Zone. Approval is sought by the submission of an Application to Undertake a Tree Damaging Activity.

Contact the Environment ACT Helpline on 6207 9777 for an application form for Approval to Undertake a Tree Damaging Activity. Forms are also available from the Environment ACT Internet site.

NB: All pruning in accordance with AS4373 – 'Pruning of Amenity Trees'

#### **NOTES / DISCLAIMER**

##### **LIMITATIONS ON THE USE OF THIS REPORT**

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, and directly attached to that submission, report or presentation.

##### **UNLESS STATED OTHERWISE:**

Information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection on **12 July 2010**.

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring.

There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

The findings of this report may not necessarily agree with reports prepared by others, including the Government Conservator of Trees.



**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
1	Pinus radiata	Monterey pine	R	14.5	1300	1	14	P	S	N	Y	Weed Plant
2	Pinus radiata	Monterey pine	R	13.1	900	1	6	P	S	N	Y	Weed Plant
3	Eucalyptus blakelyi	Blakely's red gum	R	9.2	600	1	6	P	S	N	N	
4	Pinus radiata	Monterey pine	R	15	1600	1	10	P	S	N	Y	Weed Plant
5	Pinus radiata	Monterey pine	R	13.5	1900	1	16	P	S	N	Y	Weed Plant
6	Pinus radiata	Monterey pine	R	9.2	500	1	4	F	S	N	N	Weed Plant
7	Pinus radiata	Monterey pine	R	17.8	1700	1	7	P	S	N	Y	Weed Plant
8	Pinus radiata	Monterey pine	R	16.6	1300	1	7	P	S	N	Y	Weed Plant
9	Pinus radiata	Monterey pine	R	18	1400	1	10	P	S	N	Y	Weed Plant
10	Pinus radiata	Monterey pine	R	16.1	1300	1	8	P	S	N	Y	Weed Plant
11	Pinus radiata	Monterey pine	R	12.1	600	1	4	P	S	N	Y	Weed Plant
12	Pinus radiata	Monterey pine	R	11.9	800	1	6	P	S	N	N	Weed Plant
13	Pinus radiata	Monterey pine	R	5.1	500	1	4	P	S	N	N	Weed Plant
14	Pinus radiata	Monterey pine	R	12.1	900	1	4	P	S	N	Y	Weed Plant
15	Pinus radiata	Monterey pine	R	12.8	800	1	6	P	S	N	Y	Weed Plant
16	Pinus radiata	Monterey pine	R	10.1	900	1	5	P	S	N	N	Weed Plant
17	Pinus radiata	Monterey pine	R	14	1100	1	6	P	S	N	Y	Weed Plant

**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
18	<i>Pinus radiata</i>	Monterey pine	R	14	500	1	4	P	S	N	Y	Weed Plant
19	<i>Pinus radiata</i>	Monterey pine	R	13.4	800	1	6	P	S	N	Y	Weed Plant
20	<i>Pinus radiata</i>	Monterey pine	R	14.1	900	1	6	P	S	N	Y	Weed Plant
21	<i>Pinus radiata</i>	Monterey pine	R	14.2	900	1	6	P	S	N	Y	Weed Plant
22	<i>Pinus radiata</i>	Monterey pine	R	13.6	500	1	1	P	S	N	Y	Weed Plant
23	<i>Pinus canariensis</i>	Canary Island pine	R	12.9	1400	1	7	P	S	N	Y	
24	<i>Pinus canariensis</i>	Canary Island pine	R	15.6	1400	1	8	P	S	N	Y	
25	<i>Pinus canariensis</i>	Canary Island pine	R	14.5	1100	1	6	P	S	N	Y	
26	<i>Pinus canariensis</i>	Canary Island pine	R	13.4	1100	1	8	P	S	N	Y	
27	<i>Pinus canariensis</i>	Canary Island pine	R	12.4	1400	1	7	P	S	N	Y	
28	<i>Pinus canariensis</i>	Canary Island pine	R	12.1	1100	1	7	P	S	N	Y	
29	<i>Pinus canariensis</i>	Canary Island pine	R	8	600	1	4	P	S	N	N	
30	<i>Pinus canariensis</i>	Canary Island pine	R	19.5	1900	1	10	P	S	N	Y	
31	<i>Pinus radiata</i>	Monterey pine	R	14	1400	1	8	P	S	N	Y	Weed Plant
32	<i>Pinus canariensis</i>	Canary Island pine	R	14.5	2000	1	8	P	S	N	Y	
33	<i>Pinus canariensis</i>	Canary Island pine	R	11.8	1600	1	9.5	P	S	N	Y	
34	<i>Pinus canariensis</i>	Canary Island pine	R	12.7	1300	1	5	P	S	N	Y	

**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
35	Pinus canariensis	Canary Island pine	R	16.5	2500	2	11	P	S	N	Y	
36	Pinus radiata	Monterey pine	R	10.7	1100	1	4.5	P	S	N	N	Weed Plant
37	Pinus radiata	Monterey pine	R	11.1	1400	1	9	P	S	N	N	Weed Plant
38	Pinus radiata	Monterey pine	R	14.1	900	1	3.5	P	S	N	Y	Weed Plant
39	Pinus radiata	Monterey pine	R	12.1	1100	1	4	P	S	N	Y	Weed Plant
40	Pinus canariensis	Canary Island pine	R	11.1	1400	1	4	P	S	N	N	
41	Pinus canariensis	Canary Island pine	R	15.1	2000	2	7	P	S	N	Y	
42	DEAD			16.5	1700	1	8			N		
43	DEAD			9	300	1	1			N		
44	DEAD			14	1700	1	7			N		
45	DEAD			13.4	1600	1	6			N		
46	Pinus canariensis	Canary Island pine	R	16.9	1700	1	6.5	P	S	N	Y	
47	DEAD			7.1	600	1	2			N		
48	DEAD			12.3	2000	3	4.5			N		
49	DEAD			13.9	1600	1	7			N		
50	Pinus canariensis	Canary Island pine	R	14.6	1600	1	5.5	P	S	N	Y	
51	DEAD			8.1	2000	2	7			N		

**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
52	Pinus canariensis	Canary Island pine	R	14.5	1600	1	10	P	S	N	Y	
53	Pinus canariensis	Canary Island pine	R	9.5	600	1	1.5	P	S	N	N	
54	Pinus canariensis	Canary Island pine	R	12.5	1400	1	6	P	S	N	Y	
55	Pinus canariensis	Canary Island pine	R	16.8	2200	1	11	P	S	N	Y	
56	Pinus canariensis	Canary Island pine	R	13.5	1300	1	6	P	S	N	Y	
57	Pinus canariensis	Canary Island pine	R	13.1	1700	1	8	P	S	N	Y	
58	Pinus canariensis	Canary Island pine	R	11	900	1	5	P	S	N	N	
59	Pinus canariensis	Canary Island pine	R	12.5	1700	1	6	P	S	N	Y	
60	Pinus canariensis	Canary Island pine	R	12.3	1700	1	8	P	S	N	Y	
61	Pinus canariensis	Canary Island pine	R	10.4	800	1	4	P	S	N	N	
62	Pinus canariensis	Canary Island pine	R	12.1	1300	1	6	P	S	N	Y	
63	Pinus canariensis	Canary Island pine	R	8.8	1600	2	5	P	S	N	Y	
64	Pinus canariensis	Canary Island pine	R	13.5	1100	2	4	P	S	N	Y	
65	Pinus canariensis	Canary Island pine	R	4.5	1700	1	4	P	S	N	Y	
66	Pinus canariensis	Canary Island pine	R	11.7	1700	1	5.5	P	S	N	Y	
67	Pinus canariensis	Canary Island pine	R	10.3	1700	1	6	P	S	N	Y	
68	Pinus radiata	Monterey pine	R	13.3	1600	1	7	P	S	N	Y	Weed Plant

**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M"ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
69	Pinus canariensis	Canary Island pine	R	12.4	1300	1	4	P	S	N	Y	
70	Pinus canariensis	Canary Island pine	R	12.4	900	1	3	P	S	N	Y	
71	Pinus canariensis	Canary Island pine	R	15.5	2500	1	12	P	S	N	Y	
72	Pinus canariensis	Canary Island pine	M	15.7	1900	1	12	F	M	Y	Y	
73	Pinus radiata	Monterey pine	M	14.8	1900	1	10	F	M	Y	Y	Weed Plant
74	Pinus canariensis	Canary Island pine	R	19.2	1900	1	8	P	S	N	Y	
75	Pinus radiata	Monterey pine	R	20	1900	1	12	P	S	N	Y	Weed Plant
76	Pinus radiata	Monterey pine	R	20.2	2000	1	13	P	S	N	Y	Weed Plant
77	Pinus canariensis	Canary Island pine	R	17.6	1400	1	10	F	S	N	Y	
78	Pinus canariensis	Canary Island pine	R	8.9	800	1	4	P	S	N	N	
79	Pinus canariensis	Canary Island pine	R	13.8	600	1	3	P	S	N	Y	
80	DEAD			11.4	800	1	4			N		
81	Pinus canariensis	Canary Island pine	R	16.1	1900	1	11	P	S	N	Y	
82	Pinus canariensis	Canary Island pine	R	14	1300	1	8	P	S	N	Y	
83	Pinus canariensis	Canary Island pine	R	9.5	800	1	3	P	S	N	N	
84	Pinus canariensis	Canary Island pine	R	13.1	1400	1	5	P	S	N	Y	
85	Pinus canariensis	Canary Island pine	R	13.9	1600	1	12	P	S	N	Y	

**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M <sup>nt</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
86	Pinus canariensis	Canary Island pine	R	8.4	2000	1	7	P	S	N	Y	
87	Pinus canariensis	Canary Island pine	R	12.4	2200	1	9	P	S	N	Y	
88	Pinus canariensis	Canary Island pine	R	6.6	800	1	3.5	P	S	N	N	
89	Pinus canariensis	Canary Island pine	R	5.8	600	1	3	P	S	N	N	
90	Pinus canariensis	Canary Island pine	R	12.2	900	1	4	P	S	N	Y	
91	Pinus canariensis	Canary Island pine	R	16.3	2500	1	13	P	S	N	Y	
92	Pinus canariensis	Canary Island pine	R	9.8	1100	1	4.5	P	S	N	N	
93	Pinus canariensis	Canary Island pine	R	9.6	900	1	4	P	S	N	N	
94	DEAD			5.8	1600	2	6			N		
95	DEAD			6.4	800	1	5			N		
96	DEAD			6.4	600	1	4			N		
97	DEAD			7.4	600	1	3			N		
98	Pinus halepensis	Aleppo pine	R	9.5	2800	1	18	P	S	Y	Y	
99	Pinus radiata	Monterey pine	R	11.8	1400	1	9	P	S	N	N	Weed Plant
100	Pinus radiata	Monterey pine	R	6.3	900	1	6	P	S	N	N	Weed Plant
101	DEAD			6	300	1	2			N		
102	Pinus radiata	Monterey pine	R	12.8	800	1	4	P	S	N	Y	Weed Plant

**TREE ASSESSMENT**  
**Yarralumla Blocks 1, 7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
103	Pinus radiata	Monterey pine	R	12.6	2000	1	9	P	S	N	Y	Weed Plant
104	Pinus radiata	Monterey pine	R	17.6	2200	1	14	P	S	N	Y	Weed Plant
105	Pinus halepensis	Aleppo pine	R	9.8	1100	1	8	P	S	N	N	
106	DEAD			6.3	300	1	2.5			N		
107	DEAD			6.7	500	1	2.5			N		
108	DEAD			6.4	500	1	3			N		
109	DEAD			6.3	800	1	4			N		
110	Pinus radiata	Monterey pine	R	8.6	800	1	5	P	S	N	N	Weed Plant
111	Robinia pseudoacacia	False Acacia	R	11.3	3100	1	16	P	M	N	Y	Weed Plant
112	Robinia pseudoacacia	False Acacia	R	14.4	2000	1	18	P	M	N	Y	Weed Plant
113	Robinia pseudoacacia	False Acacia	R	13.6	1600	2	14	P	M	N	Y	Weed Plant
114	Ulmus procera	English Elm	R	11.5	1200	3	3	P	M	N	N	
115	DEAD			15.5	1300	1	8			N		
116	Pinus radiata	Monterey pine	R	14.6	1900	1	16	P	S	N	Y	Weed Plant
117	Pinus radiata	Monterey pine	R	14.6	1900	1	14	P	S	N	Y	Weed Plant
118	Pinus radiata	Monterey pine	R	16.1	800	1	12	P	S	N	Y	Weed Plant
119	Pinus radiata	Monterey pine	R	16.8	1300	1	10	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
120	Pinus radiata	Monterey pine	R	16.8	1600	1	10	P	S	N	Y	Weed Plant
121	Pinus radiata	Monterey pine	R	18.6	1900	1	13	P	S	N	Y	Weed Plant
122	Pinus radiata	Monterey pine	R	15.9	1100	1	4	P	S	N	Y	Weed Plant
123	DEAD			4.4	800	1	4			N		
124	Pinus canariensis	Canary Island pine	M	18.55	1600	1	12	F	M	N	Y	
125	Sophora japonica	Pagoda tree	M	6.7	800	1	6	F	M	Y	N	Close to resident's fence
126	Robinia pseudoacacia	False Acacia	R	11	700	1	10	F	S	N	N	Close to resident's fenceWeed Plant
127	Robinia pseudoacacia	False Acacia	R	11	1000	1	10	F	S	N	N	Close to resident's fence
128	Robinia pseudoacacia	False Acacia	M	9	1400	1	14	F	M	Y	N	Close to resident's fence
129	Pinus canariensis	Canary Island pine	R	8.9	800	1	3	P	M	N	N	Weed Plant
130	Pinus canariensis	Canary Island pine	R	12.5	900	1	4	P	M	N	Y	
131	Pinus canariensis	Canary Island pine	R	13.5	2000	2	4	P	M	N	Y	
132	Pinus canariensis	Canary Island pine	R	4.4	300	1	2	P	S	N	N	
133	DEAD			3.7	300	1	1			N		
134	Pinus radiata	Monterey pine	R	16.1	1400	1	6	P	S	N	Y	Weed Plant
135	Pinus radiata	Monterey pine	R	15.1	1900	1	5	P	S	N	Y	Weed Plant
136	Pinus radiata	Monterey pine	R	13.8	1100	1	4	P	S	N	Y	Weed Plant



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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
137	Pinus radiata	Monterey pine	R	14.5	1300	1	4	P	S	N	Y	Weed Plant
138	Pinus radiata	Monterey pine	R	14.9	600	1	2	P	S	N	Y	Weed Plant
139	Pinus radiata	Monterey pine	R	14.9	900	1	3	P	S	N	Y	Weed Plant
140	Pinus radiata	Monterey pine	R	14.9	1100	1	6	P	S	N	Y	Weed Plant
141	Pinus radiata	Monterey pine	R	15.1	900	1	4	P	S	N	N	Weed Plant
142	Pinus canariensis	Canary Island pine	R	6.8	500	1	2	P	S	N	N	
143	Pinus canariensis	Canary Island pine	R	16.9	1300	1	8	P	S	N	Y	
144	Pinus canariensis	Canary Island pine	R	17.2	1200	1	6	P	S	N	Y	
145	Pinus canariensis	Canary Island pine	R	14.4	900	1	6	P	S	N	Y	
146	Pinus radiata	Radiata pine	R	12	1500	1	6	P	S	N	Y	Weed Plant
147	Pinus radiata	Radiata pine	R	11.6	900	1	4	P	S	N	N	Weed Plant
148	Pinus canariensis	Canary Island pine	R	12.1	1300	1	5	P	S	N	Y	
149	Pinus radiata	Monterey pine	R	13.2	800	1	3	P	S	N	Y	Weed Plant
150	Pinus radiata	Monterey pine	R	17.5	900	1	6	P	S	N	Y	Weed Plant
151	Pinus radiata	Monterey pine	R	17.2	900	1	4	P	S	N	Y	Weed Plant
152	Pinus radiata	Monterey pine	R	15.7	1100	1	4	P	S	N	Y	Weed Plant
153	Pinus radiata	Monterey pine	R	16.8	1500	1	8	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
154	Pinus radiata	Monterey pine	R	18.2	1000	1	6	P	S	N	Y	Weed Plant
155	Pinus radiata	Monterey pine	R	16.4	1000	1	3	P	S	N	Y	Weed Plant
156	Pinus radiata	Monterey pine	R	18.4	2500	2	9	P	S	N	Y	Weed Plant
157	Pinus radiata	Monterey pine	R	16.9	1900	2	10	P	S	N	Y	Weed Plant
158	Pinus radiata	Monterey pine	R	14.6	2200	1	5	P	S	N	Y	Weed Plant
159	Pinus radiata	Monterey pine	R	9.4	600	1	6	P	S	N	N	Weed Plant
160	DEAD			5.5	1400	1	2			N		
161	Pinus radiata	Monterey pine	R	13.5	1000	1	5	P	S	N	Y	Weed Plant
162	Pinus radiata	Monterey pine	R	13.7	1100	1	6	P	S	N	Y	Weed Plant
163	Pinus radiata	Monterey pine	R	4.5	500	1	3	P	S	N	Y	Weed Plant
164	Pinus radiata	Monterey pine	R	15	800	1	2	P	S	N	Y	Weed Plant
165	Pinus radiata	Monterey pine	R	16.5	1200	1	7	P	S	N	Y	Weed Plant
166	Pinus radiata	Monterey pine	R	10.6	400	1	1	P	S	N	Y	Weed Plant
167	Pinus radiata	Monterey pine	R	14.1	1100	1	3	P	S	N	Y	Weed Plant
168	Pinus radiata	Monterey pine	R	19.2	1400	1	4	P	S	N	Y	Weed Plant
169	Pinus radiata	Monterey pine	R	18	1300	1	3	P	S	N	Y	Weed Plant
170	Pinus radiata	Monterey pine	R	13	1200	1	4	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
171	Pinus radiata	Monterey pine	R	9.2	600	1	2	P	S	N	N	Weed Plant
172	Pinus radiata	Monterey pine	R	9.8	600	1	2	P	S	N	N	Weed Plant
173	Populus sp.	Poplar	R	5.5	500	1	1	P	S	N	N	Weed Plant
174	Pinus radiata	Radiata pine	R	9.7	500	1	1	P	S	N	N	Weed Plant
175	Pinus radiata	Radiata pine	R	13.2	500	1	1	P	S	N	Y	Weed Plant
176	Pinus radiata	Radiata pine	R	12	500	1	1	P	S	N	Y	Weed Plant
177	Pinus radiata	Radiata pine	R	8.5	500	1	1	P	S	N	N	Weed Plant
178	Pinus radiata	Radiata pine	R	13.2	900	1	4	P	S	N	Y	Weed Plant
179	Pinus radiata	Radiata pine	R	5.5	1100	1	2	P	S	N	Y	Weed Plant
180	DEAD			14.6	1300	1	6			N		
181	Pinus radiata	Radiata pine	R	10.3	900	1	3	P	S	N	N	Weed Plant
182	Pinus canariensis	Canary Island pine	R	18.8	1700	1	8	P	S	N	Y	
183	Pinus radiata	Monterey pine	R	13	800	1	4	P	S	N	Y	Weed Plant
184	Pinus radiata	Monterey pine	R	10	900	1	3	P	S	N	Y	Weed Plant
185	Pinus radiata	Monterey pine	R	15	1600	4	4	P	S	N	Y	Weed Plant
186	Pinus radiata	Monterey pine	R	14.8	1000	1	4	P	S	N	Y	Weed Plant
187	Pinus radiata	Monterey pine	R	8.2	300	1	1.5	P	S	N	N	Weed Plant

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Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
188	Pinus radiata	Monterey pine	R	14.5	1000	1	4	P	S	N	Y	Weed Plant
189	Pinus radiata	Monterey pine	R	11.7	700	1	2	P	S	N	N	Weed Plant
190	Pinus radiata	Monterey pine	R	7.6	500	1	1.6	P	S	N	N	Weed Plant
191	Pinus radiata	Monterey pine	R	15.5	800	1	1.5	P	S	N	Y	Weed Plant
192	Pinus radiata	Monterey pine	R	18	1200	1	2.5	P	S	N	Y	Weed Plant
193	Pinus radiata	Monterey pine	R	18	1700	1	7	P	S	N	Y	Weed Plant
194	Pinus radiata	Monterey pine	R	11	800	1	3	P	S	N	N	Weed Plant
195	Pinus radiata	Monterey pine	R	13.6	1000	1	2.5	P	S	N	N	Weed Plant
196	Pinus radiata	Monterey pine	R	15.8	1300	1	6	P	S	N	Y	Weed Plant
197	Pinus radiata	Monterey pine	R	18	1300	1	6	P	S	N	Y	Weed Plant
198	Pinus radiata	Monterey pine	R	16.7	1600	2	10	P	S	N	Y	Weed Plant
199	Pinus radiata	Monterey pine	R	15.7	800	1	3	P	S	N	Y	Weed Plant
200	Pinus radiata	Monterey pine	R	15.4	800	1	3.5	P	S	N	Y	Weed Plant
201	Pinus radiata	Monterey pine	R	11.5	600	1	2	P	S	N	Y	Weed Plant
202	Pinus radiata	Monterey pine	R	11.5	600	1	1	P	S	N	N	Weed Plant
203	Pinus radiata	Monterey pine	R	15.9	800	1	2.5	P	S	N	Y	Weed Plant
204	DEAD			15.5	600	1	2.5			N		

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
205	Pinus radiata	Monterey pine	R	15.8	900	1	3	P	S	N	Y	Weed Plant
206	Pinus radiata	Monterey pine	R	8.2	500	1	1.5	P	S	N	N	Weed Plant
207	Pinus radiata	Monterey pine	R	11	600	1	2	P	S	N	N	Weed Plant
208	Pinus radiata	Monterey pine	R	15.1	2000	1	5	P	S	N	Y	Weed Plant
209	Pinus radiata	Monterey pine	R	14.8	800	1	3.5	P	S	N	Y	Weed Plant
210	Pinus radiata	Monterey pine	R	14.4	1100	1	4	P	S	N	Y	Weed Plant
211	Pinus radiata	Monterey pine	R	14.3	1300	1	6.5	P	S	N	Y	Weed Plant
212	Pinus radiata	Monterey pine	R	13.4	1900	1	7	P	S	N	Y	Weed Plant
213	Pinus radiata	Monterey pine	R	13.9	600	1	1.5	P	S	N	Y	Weed Plant
214	Pinus radiata	Monterey pine	R	15	1100	1	4	P	S	N	Y	Weed Plant
215	Pinus radiata	Monterey pine	R	15.3	1300	1	4	P	S	N	Y	Weed Plant
216	Pinus radiata	Monterey pine	R	14.9	2500	1	9	P	S	N	Y	Weed Plant
217	Pinus radiata	Monterey pine	R	15.5	1300	1	5.5	P	S	N	Y	Weed Plant
218	Pinus radiata	Monterey pine	R		1100	1	6	P	S	N	Y	Weed Plant
219	Pinus radiata	Monterey pine	R	16.1	1100	1	6	P	S	N	Y	Weed Plant
220	Pinus radiata	Monterey pine	R	15.8	3100	3	15	P	S	N	Y	Weed Plant
221	Pinus radiata	Monterey pine	R	16.8	2200	1	10	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
222	<i>Pinus halepensis</i>	Aleppo pine	R	16.5	1400	1	8	F	S	N	Y	
223	<i>Pinus radiata</i>	Monterey pine	R	9.4	800	1	3	P	S	N	Y	Weed Plant
224	<i>Pinus radiata</i>	Monterey pine	R	11.1	1600	2	9	P	S	N	Y	Weed Plant
225	<i>Pinus radiata</i>	Monterey pine	R	19.7	2000	1	9	P	S	N	Y	Weed Plant
226	<i>Pinus radiata</i>	Monterey pine	R	15.4	1400	1	5	P	S	N	Y	Weed Plant
227	<i>Pinus radiata</i>	Monterey pine	R	14.2	800	1	1.5	P	S	N	Y	Weed Plant
228	<i>Pinus radiata</i>	Monterey pine	R	17.1	2200	3	12	P	S	N	Y	Weed Plant
229	<i>Pinus radiata</i>	Monterey pine	R	16.4	2200	3	8	P	S	N	Y	Weed Plant
230	<i>Pinus radiata</i>	Monterey pine	R	13.8	2200	1	9	P	S	N	Y	Weed Plant
231	<i>Pinus radiata</i>	Monterey pine	R	9.8	800	1	3	P	S	N	N	Weed Plant
232	<i>Pinus radiata</i>	Monterey pine	R	10.6	900	1	3.5	P	S	N	N	Weed Plant
233	<i>Pinus radiata</i>	Monterey pine	R	13.2	1300	1	7	P	S	N	Y	Weed Plant
234	<i>Pinus radiata</i>	Monterey pine	R	12.5	1700	1	10	P	S	N	Y	Weed Plant
235	<i>Pinus canariensis</i>	Canary Island pine	R	4.2	500	1	2	P	S	N	Y	
236	<i>Pinus radiata</i>	Monterey pine	R	11.9	900	1	4.5	P	S	N	Y	Weed Plant
237	<i>Pinus halepensis</i>	Aleppo pine	R	4.3	600	1	2.5	P	S	N	N	
238	<i>Pinus canariensis</i>	Canary Island pine	R	12.2	1900	2	5	P	S	N	Y	

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
239	DEAD			8.9	1400	1	5			N		
240	Pinus canariensis	Canary Island pine	R	14.4	2000	1	5.5	P	S	N	Y	
241	Pinus canariensis	Canary Island pine	R	8.4	2000	1	5.5	P	S	N	N	
242	Pinus canariensis	Canary Island pine	R	10.3	1100	1	4.5	P	S	N	N	
243	Pinus canariensis	Canary Island pine	R	10.5	1100	1	4	P	S	N	N	
244	Pinus canariensis	Canary Island pine	R	11.5	900	1	4.5	P	S	N	N	
245	Pinus canariensis	Canary Island pine	R	7.7	1100	1	4	P	S	N	N	
246	Pinus canariensis	Canary Island pine	R	5.5	800	1	3	P	S	N	N	
247	Pinus canariensis	Canary Island pine	R	13.1	800	1	3	P	S	N	Y	
248	Pinus radiata	Monterey pine	R	13.1	1100	1	3	P	S	N	Y	Weed Plant
249	Pinus radiata	Monterey pine	R	11.4	1300	1	4	P	S	N	Y	Weed Plant
250	Pinus canariensis	Canary Island pine	R	16.4	1600	1	8	P	S	N	Y	
251	Pinus canariensis	Canary Island pine	R	11.2	1100	1	4.5	P	S	N	N	
252	Pinus radiata	Monterey pine	R	7.7	800	1	3.5	P	S	N	Y	Weed Plant
253	Pinus radiata	Monterey pine	R	7.7	500	1	2	P	M	N	N	Weed Plant
254	Pinus radiata	Monterey pine	R	7.9	800	1	3.5	P	S	N	N	Weed Plant
255	Pinus radiata	Monterey pine	R	14.9	1600	1	7	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
256	Pinus radiata	Monterey pine	R	12	1700	1	8	P	S	N	Y	Weed Plant
257	Pinus radiata	Monterey pine	R	13.5	2200	1	10	P	S	N	Y	Weed Plant
258	Pinus halepensis	Aleppo pine	R	16.9	1700	1	10	P	S	N	Y	
259	Pinus halepensis	Aleppo pine	R	11.5	1300	1	5	P	S	N	Y	
260	Pinus canariensis	Canary Island pine	R	13.7	1400	1	7	P	S	N	Y	
261	Pinus canariensis	Canary Island pine	R	9.6	900	1	3.5	P	S	N	N	
262	Pinus halepensis	Aleppo pine	M	10.3	4100	1	16	F	M	Y	Y	
263	Pinus radiata	Monterey pine	R	13.3	1300	1	5	P	S	N	N	Weed Plant
264	Pinus halepensis	Aleppo pine	R	14.4	1700	1	7	P	S	N	N	
265	Pinus canariensis	Canary Island pine	R	14.1	1600	1	5	P	S	N	Y	
266	Pinus canariensis	Canary Island pine	R	11.2	600	1	3	P	S	N	Y	
267	Pinus canariensis	Canary Island pine	R	10.2	800	1	3.5	P	S	N	Y	
268	Pinus radiata	Monterey pine	R	10.2	900	1	3	P	S	N	N	Weed Plant
269	Pinus radiata	Monterey pine	R	7.8	600	1	3	P	S	N	N	Weed Plant
270	Pinus radiata	Monterey pine	R	11.4	1700	1	6	P	S	N	N	Weed Plant
271	Pinus canariensis	Canary Island pine	R	5.1	500	1	2	P	S	N	N	
272	Pinus canariensis	Canary Island pine	R	5.1	600	1	2.5	P	S	N	N	



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Tree No.	Species	Common Name	M <sup>o</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
273	Pinus canariensis	Canary Island pine	R	5.9	600	1	3	P	S	N	N	
274	Pinus canariensis	Canary Island pine	R	13.2	1700	1	10	P	S	N	Y	
275	Pinus radiata	Monterey pine	R	10.5	900	1	3.5	P	S	N	N	
276	Cedrus deodara	Deodar	H	11.6	1400	1	11	G	L	Y	Y	
277	Fraxinus oxycarpa "raywood"	Desert ash	H	9.4	1100	1	10	G	L	Y	N	
278	Celtis australis	Southern nettle	R	5.1	900	6	7.5	G	L	N	N	Weed Plant
279	Robinia pseudoacacia	False Acacia	M	13.4	2200	2	12	G	M	Y	Y	Weed Plant
280	Robinia pseudoacacia	False Acacia	M	12.8	1900	1	11	F	M	Y	Y	Weed Plant
281	Robinia pseudoacacia	False Acacia	M	9.5	900	1	8	F	M	Y	N	Close to resident's fence Weed Plant
282	Robinia pseudoacacia	False Acacia	M	8.5	900	1	12	F	M	Y	N	Close to resident's fence Weed Plant
283	Robinia pseudoacacia	False Acacia	M	12.3	1400	1	10	F	M	N	Y	Close to resident's fence Weed Plant
284	Robinia pseudoacacia	False Acacia	M	14.2	1700	1	12	F	M	N	Y	Close to resident's fence Weed Plant
285	Parrotia persica	Parrotia	M	5.7	600	1	4	F	M	Y	N	Close to resident's fence
286	Malus sp.	Apple	M	5.8	1100	1	8	F	M	Y	N	Resident planting
287	Brachychiton populneus	Kurrajong	M	4.5	900	4	2.5	F	M	Y	N	Resident planting
288	Pinus canariensis	Canary Island pine	M	11.8	1100	1	5	F	M	Y	N	
289	Pinus canariensis	Canary Island pine	R	5.1	900	1	5.5	P	S	N	N	

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Tree No.	Species	Common Name	M <sup>nt</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
290	Pinus canariensis	Canary Island pine	R	13.8	1900	1	8.5	P	S	N	Y	
291	Pinus canariensis	Canary Island pine	R	18.7	2800	1	12	P	S	N	Y	
292	Pinus canariensis	Canary Island pine	R	17	2200	1	15	P	S	N	Y	
293	Pinus radiata	Monterey pine	M	18.6	1900	1	12	F	M	Y	Y	Weed Plant
294	Pinus radiata	Monterey pine	M	17.5	1300	2	13	F	M	N	Y	Weed Plant
295	Pinus radiata	Monterey pine	R	14.3	1900	1	14	F	M	N	Y	Weed Plant
296	Pinus radiata	Monterey pine	M	15.5	1900	1	18	F	M	Y	Y	Weed Plant
297	Pinus radiata	Monterey pine	M	16.6	2500	1	12	F	M	Y	Y	Weed Plant
298	Pinus radiata	Monterey pine	R	16.6	2000	1	16	P	S	N	Y	Weed Plant
299	Pinus radiata	Monterey pine	R	13.4	2200	1	14	P	S	Y	Y	Weed Plant
300	Pinus radiata	Monterey pine	R	14.6	2300	3	12	P	S	N	Y	Weed Plant
301	Pinus radiata	Monterey pine	R	13.8	700	1	6	P	S	N	Y	Weed Plant
302	Pinus radiata	Monterey pine	R	6.5	600	1	4	P	S	N	N	Weed Plant
303	Pinus radiata	Monterey pine	R	15.4	2500	1	14	P	S	N	Y	Weed Plant
304	Pinus radiata	Monterey pine	R	9.6	2200	2	12	P	S	N	N	Weed Plant
305	Pinus radiata	Monterey pine	M	7.8	1300	1	10	F	M	Y	N	Weed Plant
306	Ulmus procera	English Elm	R	12	2400	1	10	P	S	N	Y	

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Tree No.	Species	Common Name	M <sup>o</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
307	Robinia pseudoacacia	False Acacia	R	11.1	2400	3	8	P	S	N	Y	Weed Plant
308	Robinia pseudoacacia	False Acacia	R	10.9	2000	1	8	P	S	N	Y	Weed Plant
309	Robinia pseudoacacia	False Acacia	R	7.1	500	1	2	P	M	N	N	Weed Plant
310	Robinia pseudoacacia	False Acacia	R	8.1	600	1	2	P	M	N	N	Weed Plant
311	Pinus radiata	Monterey pine	R	6.2	300	1	2	P	S	N	N	Weed Plant
312	Pinus radiata	Monterey pine	R	7	300	1	2	P	S	N	N	Weed Plant
313	Pinus radiata	Monterey pine	R	10.5	700	1	3	P	S	N	N	Weed Plant
314	Pinus radiata	Monterey pine	R	4.7	300	1	1	F	S	N	N	Weed Plant
315	Pinus radiata	Monterey pine	R	13.9	1600	1	12	F	S	N	Y	Weed Plant
316	Casuarina cunninghamiana	River oak	R	12	900	1	12	P	S	N	Y	
317	Eucalyptus leucoxylon	SA blue gum	M	8.5	1300	1	10	F	M	Y	Y	
318	Eucalyptus leucoxylon	SA blue gum	M	10	800	1	8	F	M	Y	N	
319	Casuarina cunninghamiana	River oak	M	10.5	600	1	8	F	M	Y	N	
320	Casuarina cunninghamiana	River oak	M	14	900	1	8	F	M	Y	Y	
321	Casuarina cunninghamiana	River oak	M	14	1300	1	10	F	M	Y	Y	
322	Casuarina cunninghamiana	River oak	M	11	800	1	6	F	M	Y	N	
323	Casuarina cunninghamiana	River oak	M	12	900	1	10	F	M	Y	Y	

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Tree No.	Species	Common Name	M"ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
324	Casuarina cunninghamiana	River oak	M	14	800	1	8	F	M	Y	Y	
325	Casuarina cunninghamiana	River oak	M	10	800	1	8	F	M	Y	N	
326	Casuarina cunninghamiana	River oak	M	5	300	1	3	F	M	Y	N	
327	Casuarina cunninghamiana	River oak	M	8	500	1	6	F	M	Y	N	
328	Casuarina cunninghamiana	River oak	M	8	500	1	4	F	M	Y	N	
329	Casuarina cunninghamiana	River oak	M	8	500	1	4	F	M	Y	N	
330	Casuarina cunninghamiana	River oak	M	9.5	600	1	4	F	M	Y	N	
331	Casuarina cunninghamiana	River oak	M	9	500	1	4	F	M	Y	N	
332	Pinus radiata	Monterey pine	M	14	2500	1	12	F	M	Y	Y	Weed Plant
333	Eucalyptus mannifera	Brittle gum	M	10	1100	1	7	F	M	Y	N	
334	Pinus radiata	Monterey pine	R	22.5	2800	1	16	F	S	N	Y	Weed Plant
335	Pinus radiata	Monterey pine	R	23.5	2800	1	20	F	S	N	N	Weed Plant
336	Pinus radiata	Monterey pine	R	16	1300	1	7	P	S	N	Y	Weed Plant
337	Eucalyptus mannifera	Monterey pine	R	23	2800	1	18	P	S	N	Y	Weed Plant
338	Pinus radiata	Monterey pine	R	23	2200	1	9	P	S	N	Y	Weed Plant
339	Pinus radiata	Monterey pine	M	23	1700	1	8	F	M	Y	Y	Weed Plant
340	Pinus radiata	Monterey pine	M	22.5	2500	1	10	F	M	Y	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
341	Pinus radiata	Monterey pine	R	17	1300	1	6	P	S	N	Y	Weed Plant
342	Pinus radiata	Monterey pine	M	20	2200	1	14	F	M	Y	Y	Weed Plant
343	Pinus radiata	Monterey pine	R	19	2200	1	14	P	S	N	Y	Weed Plant
344	Pinus radiata	Monterey pine	R	23	2800	1	14	P	S	N	Y	Weed Plant
345	Pinus radiata	Monterey pine	R	23	2000	1	10	P	S	N	Y	Weed Plant
346	Pinus radiata	Monterey pine	R	22.5	1900	1	8	P	S	N	Y	Weed Plant
347	Pinus radiata	Monterey pine	R	18	1900	1	13	P	S	N	Y	Weed Plant
348	Pinus radiata	Monterey pine	R	23	3100	1	17	P	S	N	Y	Weed Plant
349	Pinus radiata	Monterey pine	R	10	1900	1	12	P	S	N	Y	Weed Plant
350	Pinus radiata	Monterey pine	R	21	3100	1	18	P	S	N	Y	Weed Plant
351	Pinus radiata	Monterey pine	R	21	3100	1	18	P	S	N	Y	Weed Plant
352	Pinus radiata	Monterey pine	R	21	4700	1	25	P	S	N	Y	Weed Plant
353	Pinus radiata	Monterey pine	R	21	2500	1	14	P	S	N	Y	Weed Plant
354	Pinus radiata	Monterey pine	R	21	2500	1	14	P	S	N	Y	Weed Plant
355	Pinus radiata	Monterey pine	R	21	3100	1	18	P	S	N	Y	Weed Plant
356	Pinus radiata	Monterey pine	R	22	2500	1	14	P	S	N	Y	Weed Plant
357	Pinus radiata	Monterey pine	R	25.5	4700	1	28	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
358	Pinus radiata	Monterey pine	R	20	4100	1	25	P	S	N	Y	Weed Plant
359	Pinus radiata	Monterey pine	M	16	1600	1	6	F	M	N	Y	Weed Plant
360	Pinus radiata	Monterey pine	R	19	3500	1	22	P	S	N	Y	Weed Plant
361	Pinus radiata	Monterey pine	R	19	2800	1	18	P	S	N	Y	Weed Plant
362	Pinus radiata	Radiata pine	R	20	3100	1	18	P	S	N	Y	Weed Plant
363	Ulmus procera	English Elm	R	10	1600	1	10	P	S	N	Y	Weed Plant
364	Pinus radiata	Monterey pine	R	21	3100	1	18	P	S	N	Y	Weed Plant
365	Pinus radiata	Monterey pine	M	18.5	2500	1	16	F	M	Y	Y	Weed Plant
366	Pinus radiata	Monterey pine	M	17	2500	1	16	F	M	Y	Y	Weed Plant
367	Pinus radiata	Monterey pine	R	17	2500	1	16	P	S	N	Y	Weed Plant
368	Pinus radiata	Monterey pine	M	18	2500	1	14	F	M	N	Y	Weed Plant
369	Pinus radiata	Monterey pine	M	18	1600	1	10	F	M	Y	Y	Weed Plant
370	Pinus radiata	Monterey pine	R	18.5	3800	1	24	P	S	N	Y	Weed Plant
371	Pinus radiata	Monterey pine	R	17	1600	1	10	P	S	N	Y	Weed Plant
372	Ulmus procera	English Elm	R	14	1400	1	9	P	S	N	Y	
373	Pinus radiata	Radiata pine	R	17.5	2700	1	19	P	S	N	Y	Weed Plant
374	Pinus radiata	Monterey pine	R	17.5	2700	1	22	F	M	Y	Y	Weed Plant

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375	Pinus radiata	Monterey pine	R	17.5	2400	1	20	P	S	N	Y	Weed Plant
376	Ulmus procera	English Elm	R	7.5	1300	3	7	P	S	N	N	
377	Pinus radiata	Monterey pine	R	18	2500	1	14	P	S	N	Y	Weed Plant
378	Ulmus procera	English Elm	R	17.5	3000	1	16	P	M	N	Y	
379	Pinus radiata	Monterey pine	M	19.5	2200	1	8	F	M	Y	Y	Weed Plant
380	Pinus radiata	Monterey pine	R	19.5	2200	1	8	P	S	N	Y	Weed Plant
381	Pinus radiata	Monterey pine	R	25	1600	1	9	P	S	N	Y	Weed Plant
382	Pinus radiata	Monterey pine	R	23	2200	1	14	P	S	N	Y	Weed Plant
383	Pinus radiata	Monterey pine	R	22.5	2800	1	16	P	S	N	Y	Weed Plant
384	Pinus radiata	Monterey pine	R	22.5	2800	1	12	P	S	N	Y	Weed Plant
385	Pinus radiata	Monterey pine	R	19.5	1300	1	7	P	S	N	Y	Weed Plant
386	Pinus radiata	Monterey pine	R	20	2800	1	13	P	S	N	Y	Weed Plant
387	Pinus radiata	Monterey pine	R	18.5	1600	1	12	P	S	N	Y	Weed Plant
388	Pinus radiata	Monterey pine	M	23	2200	1	14	F	M	Y	Y	Weed Plant
389	Pinus radiata	Monterey pine	R	10	3100	1	10	P	S	N	Y	Weed Plant
390	Pinus radiata	Monterey pine	M	18	1400	1	16	F	M	Y	Y	Weed Plant
391	Pinus radiata	Monterey pine	R	18	1900	1	12	P	S	N	Y	Weed Plant

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Tree No.	Species	Common Name	M"ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
392	Ulmus procera	English Elm	M	11	1300	1	10	F	M	Y	N	
393	Pinus radiata	Radiata pine	R	16.5	1900	1	10	P	S	N	Y	Weed Plant
394	Celtis australis	Southern nettle	R	7.5	1600	1	7	P	S	N	N	Weed Plant
395	Prunus sp.	Fruit tree	M	6.5	1600	3	8	F	M	Y	Y	Close to residence
396	Prunus sp.	Fruit tree	M	7.5	1300	4	7	F	M	Y	Y	Close to residence
397	Prunus sp.	Fruit tree	M	8.5	600	1	7	P	M	Y	N	Close to residence
398	Robinia pseudoacacia	False Acacia	R	8.5	1900	3	8	P	S	N	Y	Close to residence Weed Plant
399	Robinia pseudoacacia	False Acacia	M	11	1900	1	8	G	M	Y	Y	Close to residence Weed Plant
400	Koelreuteria paniculata	Golden rain tree	M	6	900	1	6	G	M	Y	N	Close to residence
401	Pinus radiata	Monterey pine	M	16	1900	1	15	G	M	Y	Y	Weed Plant
402	Pinus radiata	Monterey pine	R	15	900	1	8	P	S	N	Y	Weed Plant
403	Pinus radiata	Monterey pine	R	12	1900	1	14	P	S	N	Y	Weed Plant
404	Pinus radiata	Monterey pine	R	14	3800	1	12	P	S	N	Y	Weed Plant
405	Pinus radiata	Monterey pine	M	16.5	3100	1	14	F	M	Y	Y	Weed Plant
406	Pinus radiata	Monterey pine	M	12	1300	1	12	F	M	Y	Y	Weed Plant
407	Pinus radiata	Monterey pine	M	16	1600	1	12	F	M	Y	Y	Weed Plant
408	Celtis australis	Southern nettle	R	12.1	4700	20	10	F	M	N	Y	Weed Plant



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Tree No.	Species	Common Name	M <sup>nt</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
409	Celtis australis	Southern nettle	R	8	2500	1	8	F	M	N	Y	Weed Plant
410	Ulmus procera	English Elm	R	4.8	800	1	4	F	M	N	N	Multi stemmed
411	Pinus radiata	Monterey pine	R	5	600	1	4	F	M	N	N	Weed Plant
412	Malus sp.	Apple	R	7.2	900	1	5	P	S	N	N	Resident planting
413	Robinia pseudoacacia	False Acacia	R	8.8	900	1	8	P	S	N	N	Weed Plant
414	Robinia pseudoacacia	False Acacia	R	10.8	2200	1	8	P	S	N	Y	Weed Plant
415	Robinia pseudoacacia	False Acacia	R	7.6	800	1	5	P	S	N	N	Weed Plant
416	Robinia pseudoacacia	False Acacia	R	6.1	500	1	3	P	S	N	N	Weed Plant
417	Robinia pseudoacacia	False Acacia	R	8.9	1100	1	8	P	S	N	N	Weed Plant
418	Robinia pseudoacacia	False Acacia	R	6.3	500	1	4	P	S	N	N	Weed Plant
419	Celtis australis	Southern nettle	R	8.1	1600	4	8	P	S	N	Y	Weed Plant
420	Celtis australis	Southern nettle	R	7.7	1300	5	8	P	S	N	N	Weed Plant
421	Celtis australis	Southern nettle	R	8.6	6300	29	14	P	S	N	N	Weed Plant
422	Celtis australis	Southern nettle	M	7.3	1600	5	8	P	S	Y	Y	Weed Plant
423	Pinus radiata	Monterey pine	R	9.9	1100	1	8	P	M	N	Y	Weed Plant
424	Pinus radiata	Monterey pine	R	12.9	1300	1	8	P	M	N	N	Weed Plant
425	Robinia pseudoacacia	False Acacia	R	7.5	1600	1	10	P	M	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
426	Pinus patula	Mexican yellow pine	H	13.9	1100	1	8	F	M	Y	Y	
427	Pinus patula	Mexican yellow pine	H	14.6	1400	1	12	P	M	Y	Y	
428	Ulmus procera	English Elm	R	5.9	1300	2	5	F	M	N	N	
429	Ulmus procera	English Elm	M	11	2500	5	9	P	S	Y	Y	
430	Cotoneaster sp.	Cotoneaster	R	4.8	1300	5	11	G	L	N	Y	Weed Plant
431	Ulmus procera	English Elm	R	13.2	3100	10	18	G	L	N	Y	Multi stemmed
432	Pinus radiata	Monterey pine	R	9.7	1300	1	4	P	S	N	N	Weed Plant
433	Ulmus procera	English Elm	M	11.6	1300	1	10	F	M	N	Y	
434	Ulmus procera	English Elm	M	14.3	1900	1	12	F	M	Y	Y	
435	Ulmus procera	English Elm	M	12.9	2500	5	10	F	M	N	Y	Multi stemmed
436	Acer negundo	Box elder	R	11.1	2200	4	9	P	S	N	N	Weed Plant
437	Pinus radiata	Monterey pine	R	15.3	1900	1	10	P	S	N	Y	Weed Plant
438	Pinus radiata	Monterey pine	R	14.6	1300	1	8	P	S	N	Y	Weed Plant
439	Pinus radiata	Monterey pine	R	14	1100	1	6	P	S	N	Y	Weed Plant
440	Pinus radiata	Monterey pine	R	14.6	1400	1	10	P	S	N	Y	Weed Plant
441	Pinus radiata	Monterey pine	R	13.1	1400	1	12	F	M	N	Y	Weed Plant
442	Celtis australis	Southern nettle	R	6	1600	1	4	F	M	N	Y	Weed Plant

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Tree No.	Species	Common Name	M'ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
443	Pinus radiata	Monterey pine	R	15.3	600	1	12	F	M	N	Y	Weed Plant
444	Celtis australis	Southern nettle	R	6.5	2000	1	8	F	M	N	Y	Weed Plant
445	Pinus radiata	Monterey pine	M	18	2200	1	8	F	M	Y	Y	Weed Plant
454	Pinus radiata	Monterey pine	R	11.5	500	1	10	P	S	N	N	Weed Plant
455	Quercus palustris	Pin oak	R	4	1600	1	5	P	S	N	Y	
456	Quercus palustris	Pin oak	R	7.5	900	1	4	P	S	N	N	
457	Quercus palustris	Pin oak	R	7	1300	1	5	P	S	N	N	
458	Quercus palustris	Pin oak	R	6	1300	1	3	P	S	N	N	
459	Eucalyptus blakelyi	Blakleys red gum	R	5	1300	1	3	P	M	Y	N	
460	Pinus radiata	Monterey pine	M	19	1900	1	10	F	M	Y	Y	Weed Plant
461	Pinus radiata	Monterey pine	M	18	2500	1	16	F	M	Y	Y	Weed Plant
462	Quercus palustris	Pin oak	H	8	900	1	6	G	L	Y	N	
463	Ulmus procera	English Elm	H	8.5	900	1	6	G	L	Y	N	
464	Ulmus procera	English Elm	H	4.5	300	1	3	G	L	Y	N	
465	Quercus palustris	Pin oak	H	9	900	1	6	G	L	Y	N	
466	Quercus palustris	Pin oak	H	9	900	1	6	G	L	Y	N	
467	Cupressus arizonica	Arizona cypress	H	10	1900	1	7	G	L	Y	Y	

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468	Ulmus procera	English Elm	R	3.5	600	1	5	F	M	Y	N	
469	Pinus patula	Mexican yellow pine	M	8.5	1400	1	8	F	M	Y	Y	
477	Ulmus procera	English Elm	M	8.5	600	1	8	F	M	Y	N	
478	Out side assessment area											
555	Pinus radiata	Monterey pine	H	16.5	1600	1	8	G	L	Y	Y	Missed in first survey Weed Plant
556	Pinus canariensis	Canary Island pine	R	17.5	1400	1	8	F	M	N	Y	
557	Cupressus torulosa	Bhutan cypress	M	8	500	1	6	F	L	Y	N	
558	Cupressus torulosa	Bhutan cypress	H	8	600	1	6	E	L	Y	N	
559	Quercus palustris	Pin oak	H	10	800	1	9	E	L	Y	N	
560	Quercus palustris	Pin oak	H	8	900	1	7	E	L	Y	N	
561	Quercus palustris	Pin oak	H	7.5	800	1	7	E	L	Y	N	
562	Quercus palustris	Pin oak	H	9	800	1	7	E	L	Y	N	
563	Quercus palustris	Pin oak	H	8	800	1	7	E	L	Y	N	
564	Quercus palustris	Pin oak	H	6.5	600	1	5	H	L	Y	N	
565	Quercus palustris	Pin oak	H	4	500	1	4	H	L	Y	N	
566	Quercus palustris	Pin oak	M	3.7	300	1	2	H	L	Y	N	
567	Pinus radiata	Monterey pine	H	16.5	2000	1	10	H	L	Y	Y	Weed Plant

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Tree No.	Species	Common Name	M"ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
568	Populus alba	White poplar	R	16.5	2000	1	10	P	S	N	Y	Weed Plant
569	Populus alba	White poplar	R	12.3	800	1	8	P	S	N	Y	Weed Plant
570	Populus alba	White poplar	R	13	1300	1	10	P	S	N	Y	Weed Plant
571	Populus alba	White poplar	R	14.3	800	1	4	P	S	N	Y	Weed Plant
572	Populus alba	White poplar	R	10	800	1	8	P	S	N	N	Weed Plant
573	Pinus radiata	Monterey pine	R	10	1700	1	8	P	S	N	Y	Weed Plant
574	Populus alba	White poplar	R	10	800	1	8	P	S	N	N	Weed Plant
575	Populus alba	White poplar	M	10.9	1000	1	9	F	M	Y	N	Weed Plant
576	Populus alba	White poplar	M	11	800	1	8	F	M	Y	N	Weed Plant
577	Populus alba	White poplar	M	11	1200	1	10	F	M	Y	N	Weed Plant
578	Populus alba	White poplar	M	11	1500	1	12	F	M	Y	Y	Weed Plant
579	Populus nigra "Italica"	Lombardy poplar	M	11	700	1	8	F	M	Y	N	Weed Plant
580	Populus alba	White poplar	M	11.1	800	1	12	F	M	Y	Y	Weed Plant
581	Populus alba	White poplar	M	12.6	1400	1	12.5	F	M	Y	Y	Weed Plant
582	Populus alba	White poplar	M	5	400	1	4	F	M	Y	N	Weed Plant

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Tree No.	Species	Common Name	M <sup>o</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
583	Populus alba	White poplar	M	3	400	1	3	P	S	Y	N	Weed Plant
584	Populus alba	White poplar	M	16	1200	1	8	P	S	Y	Y	Weed Plant
585	Populus alba	White poplar	M	14	1100	1	6	F	M	Y	N	Weed Plant
586	Pinus radiata	Monterey pine	M	6	600	1	4	F	M	Y	N	Weed Plant
587	Pinus radiata	Monterey pine	M	6	600	1	3	F	M	Y	N	Weed Plant
588	Pinus radiata	Monterey pine	H	18	900	1	7.5	G	L	Y	Y	Weed Plant
589	Populus alba	White poplar	R	8	900	1	7.5	P	S	Y	N	Weed Plant
590	Populus alba	White poplar	M	14	1800	2	10	G	L	N	Y	Weed Plant
591	Populus alba	White poplar	R	6	200	1	3	P	S	N	N	Weed Plant
592	Populus alba	White poplar	M	14	1500	1	7	P	S	N	Y	Weed Plant
593	Populus alba	White poplar	R	14	500	1	3	F	M	N	Y	Weed Plant
594	Ulmus procera	White poplar	M	3	600	1	4	F	M	N	N	
595	Ulmus procera	English elm	R	5	600	1	6	P	S	N	N	
596	Ulmus procera	English elm	R	5	700	1	5	P	S	N	N	
597	Ulmus procera	English elm	R	3	700	1	2.5	P	S	N	N	
598	Ulmus procera	English elm	R	3	500	1	2.5	P	S	N	N	
599	Ulmus procera	English elm	R	5	1100	1	7	P	S	N	N	

**TREE ASSESSMENT**  
**Yarralumla Blocks 1, 7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M <sup>o</sup> ment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
600	Ulmus procera	English elm	R	6	900	1	7	P	S	N	N	
601	Ulmus procera	English elm	R	5	900	1	5	P	S	N	N	
602	Ulmus procera	English elm	R	6	800	1	6	P	S	N	N	
603	Ulmus procera	English elm	R	3.5	500	1	3	P	S	N	N	
604	Ulmus procera	English elm	R	2.5	500	1	3	P	S	N	N	
605	Ulmus procera	English elm	R	7	1000	1	8	P	S	N	N	
606	Ulmus procera	English elm	R	6	500	1	2	P	S	N	N	
607	Ulmus procera	English elm	R	5	700	1	2	P	S	N	N	
608	Ulmus procera	English elm	R	6	800	1	4	P	S	N	N	
609	Ulmus procera	English elm	R	3	600	1	2.5	P	S	N	N	
610	Ulmus procera	English elm	R	5	900	1	8	P	S	N	N	
611	Ulmus procera	English elm	R	5	500	1	3.5	P	S	N	N	
612	Ulmus procera	English elm	R	5	500	1	3	P	S	N	N	
613	Ulmus procera	English elm	R	6	900	1	6	P	S	N	N	
614	Ulmus procera	English elm	R	6	1100	1	8	P	S	N	N	
615	Ulmus procera	English elm	R	5	500	1	3.5	P	S	N	N	
616	Ulmus procera	English elm	R	5	500	1	3	P	S	N	N	

**TREE ASSESSMENT**  
**Yarralumla Blocks 1,7 & 20 Section 102 Appendix 1**

Tree No.	Species	Common Name	M'tment Status	Height Average	Trunk Circ (mm)	Number of Trunks	Canopy Dia	Health	Expected Longevity	Cond to Amenity	Regulated Tree	Notes
617	Ulmus procera	English elm	R	6	900	1	6	P	S	N	N	
618	Ulmus procera	English elm	R	6	1100	1	8	P	S	N	N	





# TREE ASSESSMENT

## APPENDIX 2 Old Canberra Brick Works



LANDSCAPE  
ARCHITECTS

dsb LANDSCAPE ARCHITECTS  
DEAKIN CHAMBERS  
14 HANNAH PLACE, DEAKIN, ACT 2600



## TREE ASSESSMENT

### LDA TREE ASSESSMENT INFORMATION AND CODES

The following provides detail information on the codes used in the LDA Tree Assessment data collection form.

**Number:** Reference Number. Each tree/group of trees is numbered to link Plan and Report

#### **GENERAL TREE DATA**

**Assessment Date:** Date field assessment carried out.

**Assessor:** Name of field assessor.

**Tree Location:** Accurate location, ACT grid coordinates, Stromlo Projection, Eastings and Northings of tree position.

**Species:** Tree species identification, Botanical and Common Name

**Height:** Tree height in metres.

**Canopy Spread:** Tree canopy diameter in metres shown as the maximum crown width of the tree.

**Trunk Circumference:** Tree trunk circumference in millimetres, measured 1 metre above ground level.

**Number of Trunks:** Number of trunks at 1 metre above ground level.

#### **QUALITY CLASSIFICATION**

##### **Regulated Tree:**

Regulated tree in accordance with the ACT Tree Protection Act, 2005

**Y** – Yes

**N** – No

##### **Arboricultural Assessment:**

**E** Exceptional tree. Mature specimen. Grand appearance and stature. Well balanced. Little or no epicormic growth and/or dead wood.

**H** Mature specimen. Good appearance and structure. Little or no epicormic growth and/or dead wood.

Juvenile or adolescent specimen or group of trees or regeneration that does not meet the requirements of the Act but which is of good form and health with potential to become a Regulated tree or the potential to contribute to the landscape or urban amenity in the future.



- M** Mature specimen. Sparse or pale coloured foliage. Epicormic growth and/or dead wood throughout the crown. Evidence of some branch fall. Less than desirable form.  
Juvenile or adolescent specimen or group of trees or regeneration that does not meet the requirements of the Act which has some negative characteristics but with cost effective maintenance and/or management has the potential to become a Regulated tree or the potential to contribute to the landscape or urban amenity in the future.
- P** Mature or senescent specimen tree of poor form or with significant die back or sparse foliage. Disease, decay, hollows, large limb drop, included bark forks. Short life expectancy.

### Urban Amenity Contribution

- E** Exceptional quality. A tree that meets at least two of the following qualities –
- H Visual/Scenic Quality
  - H Unique Species
  - H Habitat Quality
  - H Cultural /Heritage Value
  - H Social Value
  - H Scientific Value
- (Note: A tree, as an example, may be considered "Exceptional" on the basis of high scientific importance but be of poor form and condition and represent a significant hazard).
- H** High quality. A tree of good form and condition without significant defects and which when managed does not represent a significant hazard or an unreasonable financial impost.
- M** Medium quality. A tree of reasonable form, structure and health and not likely to represent a significant hazard.
- P** Poor quality. A tree of poor form, structure or health or in decline or likely to represent a significant hazard.

### Recommendations

Recommendations are based on professional arborist and landscape architect's judgement following evaluation of the overall components of the full assessment.

- R&M** Retain and manage the tree  
**R** Remove the tree

## ARBORICULTURAL ASSESSMENT

**Foliage Density:** Relative density of canopy foliage:

- 3** - Full canopy (80% to 100%)
- 2** - Part canopy (20% to 80%)
- 1** - Sparse canopy (<20%)



**Canopy Dead Wood:** Amount of dead wood in the canopy as a % of the canopy:

- 3 - 0% to 20%
- 2 - 20% to 60%
- 1 - 60% to 100%

**Insect Occurrence:** Evidence of insect attack:

- 3 - None
- 2 - Moderate
- 1 - Significant

**Disease:** Evidence of disease present:

- 3 - None
- 2 - Moderate
- 1 - Significant

**Epicormic Growth:** Presence of epicormic growth:

- 3 - None
- 2 - Moderate
- 1 - Significant

**Mistletoe:** Presence of mistletoe in canopy:

- 3 - None
- 2 - Up to 5 clumps moderate
- 1 - More than 5 clumps

**Form:** Canopy balance and distribution of the relative to the normal habit of the tree species:

- 4 - Typical of species
- 3 - Stunted
- 2 - Unbalanced/lopsided canopy
- 1 - Trunk lean approx. 30° or more off vertical

**Age:** Approximate age:

- 4 - Juvenile
- 3 - Adolescent
- 2 - Mature
- 1 - Senescent

**Habitat Value:** Habitat value provided by tree considering e.g. nesting hollows, seed pods etc:

- 4 - Food source or nesting hollows for endangered species,
- 3 - Limited habitat potential,
- 2 - No identifiable habitat,
- 1 - Potential for harbouring pest species.

**Disturbance Tolerance:** Tolerance to disturbance within the tree protection zone based on species characteristics and site conditions:

- 3 - High, tree species generally tolerant of some disturbance,
- 2 - Medium, tree species that may tolerate limited disturbance,
- 1 - Low, tree species generally highly sensitive to disturbance.



**Risk Potential:** Risk potential, structural integrity, associated with trunk and major branches:

**3** - Low risk potential, good structural integrity with low risk potential and may require minimal or no horticultural maintenance,

**2** - Medium risk potential, poor branch unions, narrow angle branch forks or multiple leaders etc where risk can be mitigated by tree surgery and horticulture maintenance techniques,

**1** - Significant risk potential, decay within trunk or major branches, prevalence of hollows or decay, depressed sections of the trunk, storm damage etc where risk can be mitigated by extensive tree surgery or horticultural techniques.

**Health/Condition:** Overall health and condition of the tree based on arboricultural assessment crown and trunk of the tree:

**4:** Excellent

**3:** Good

**2:** Fair

**1:** Poor

## URBAN AMENITY ASSESSMENT

**Contribution to Existing Landscape:** What level of contribution does the tree make to the existing landscape setting?

**3** - Significant

**2** - Moderate

**1** - None

**Potential Contribution to Future Landscape:** What level of contribution does the tree potentially have for future landscape settings?

**3** - Significant

**2** - Moderate

**1** - None

**Visual / Scenic:** Visual and scenic quality of the tree when viewed from within and beyond the site based on the form, condition, species, health and size:

**3** - Significant

**2** - Moderate

**1** - Low

**Unique species:** Based on the rarity or commonness of the species in the region or growing at the extent or outside of its normal range and the abundance of the species within its geographic range:

**2** - Rare

**1** - Common

**Habitat Quality:** Based on the potential to retain or attract native fauna:

**3** - Provides significant habitat to native birds or arboreal animals,

**2** - Ability to retain or attract native birds or arboreal animals,



1 - No habitat opportunity for native fauna or known to harbour exotic pests

**Cultural Value:** Does the tree have cultural/heritage value?

2 - Yes

1 - No

**Social Value:** Does the tree provide social benefit?

2 - Yes

1 - No

**Scientific Value:** Does the tree have scientific interest?

2 - Yes

1 - No

## TREE PROTECTION / MANAGEMENT

**Tree Protection Zone and Conditions:** The tree protection zone defines the minimum distance from the outer edge of the tree canopy or the face of the trunk of the tree for any groundwork under the canopy of the tree that is likely to harm the tree including building, trenching, material storage, changing soil levels, compacting or contaminating the soil. The tree protection zones are based on the Quality Classification ratings.

**3 - For Exceptional Quality Trees** – erect 1.8m high chain link fence at least 5m from the canopy or 4m from the trunk, whichever is the greater.

**2 - For High Quality Trees** – erect 1.8m high chain link fence at least 2m from the canopy or 4m from the trunk, whichever is the greater.

**1 - For Medium Quality Trees** – erect 1.8m high chain link fence at least 2m from the canopy or 4m from the trunk, whichever is the greater.

Condition for the establishment and maintenance of the tree protection zones should include the following:

- (a) For especially tall and/or slender trees or trees noted as having exposed roots – as recorded in Arboricultural Notes
- (b) Tree protection zone fenced prior to commencement of any demolition/construction
- (c) Fencing to be maintained during construction phase
- (d) No storage of materials or machinery within the Tree Protection Zone

**Potential to Reduce Risk:** Are there arboricultural/horticultural works that can be carried out to reduce potential risks?

3 - Significant works

2 - Moderate works

1 - None

**Potential to amenity value:** Are there arboricultural/horticultural works that can be carried out to reduce potential risks?

3 - Significant works

2 - Moderate works

1 - None



### **ARBORICULTURAL NOTES**

Detailed notes on specific arboricultural issues associated with the tree if not covered in the assessment criteria.

### **AMENITY NOTES**

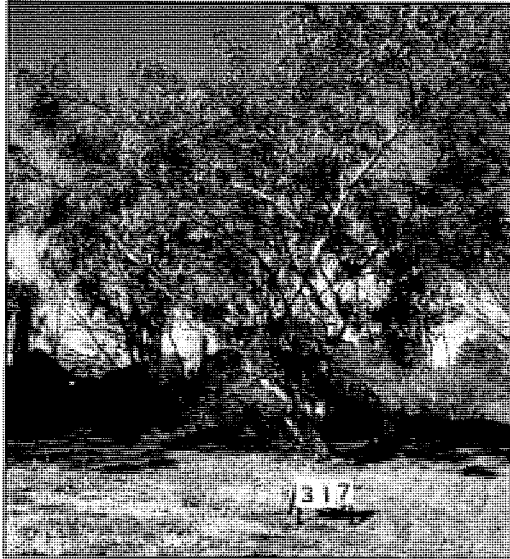
Detailed notes on specific landscape amenity values of the tree if not covered in the assessment criteria.

### **LANDSCAPE TREE GROUPS**

The assessment of landscape trees that are clearly identifiable as landscape groups to be assessed for their potential contribution to future urban amenity and given consideration on the same criteria as individual trees.

- 3** - An identifiable group of trees that when considered as a whole meet at least one of the values for Classification of Tree Quality, Exceptional Quality.
- 2** - A clearly identifiable group of landscape trees that includes trees that meet the requirements for assessment under the Tree Protection Act, 2005 and has the potential to contribute to the future urban amenity.
- 1** - A clearly identifiable group of landscape trees that may include trees that do not meet the requirements for assessment under the Tree Protection Act, 2005 and has the potential to contribute to the future urban amenity.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>317</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	x
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Eucalyptus leucoxylon	
Height:	8.5
Canopy Spread:	10
Trunk Circumference:	1300
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	3
Age	3
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	3
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	2
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Bird attracting and screen for residents



# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>318</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	x
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Eucalyptus leucoxyton	
Height:	10
Canopy Spread:	8
Trunk Circumference:	800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	3
Age	3
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	2
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Bird attracting and screen for residents

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>319</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	10.5
Canopy Spread:	8
Trunk Circumference:	600
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

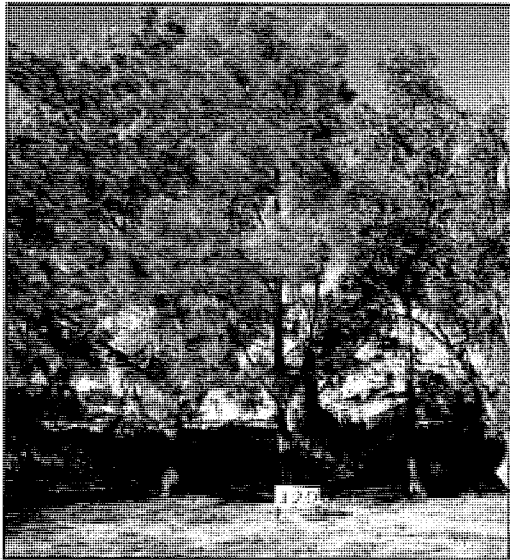
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>320</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	14
Canopy Spread:	8
Trunk Circumference:	900
Number of Trunks:	1

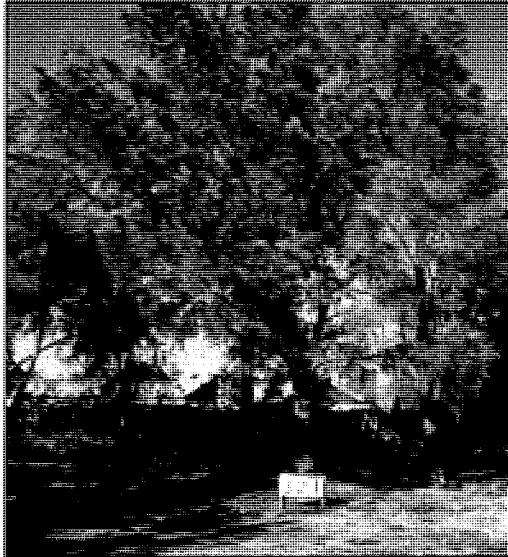
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

## Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>321</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicomic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	14
Canopy Spread:	10
Trunk Circumference:	1300
Number of Trunks:	1

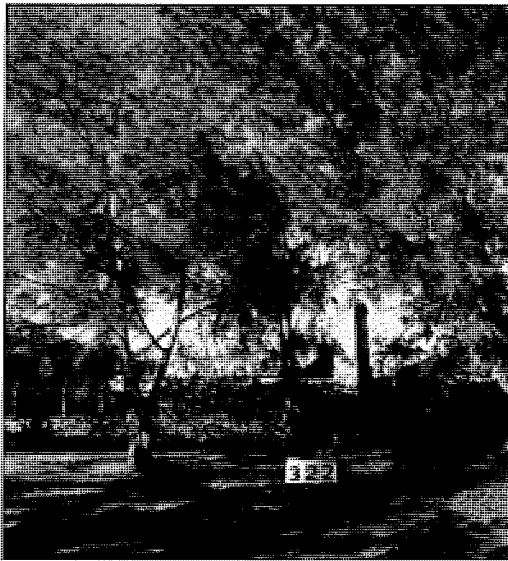
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>322</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghiana	
Height:	11
Canopy Spread:	6
Trunk Circumference:	800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

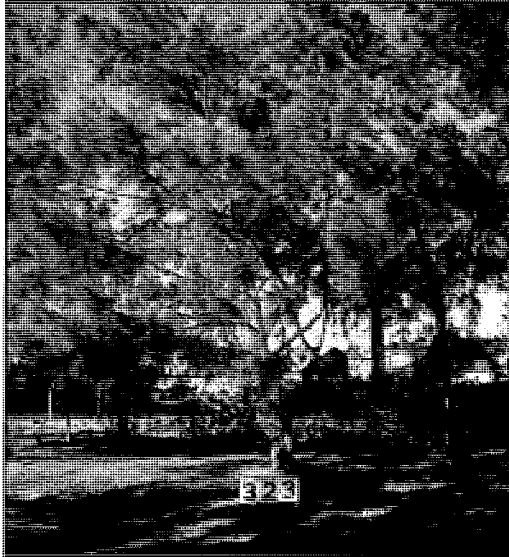
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>323</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	12
Canopy Spread:	10
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

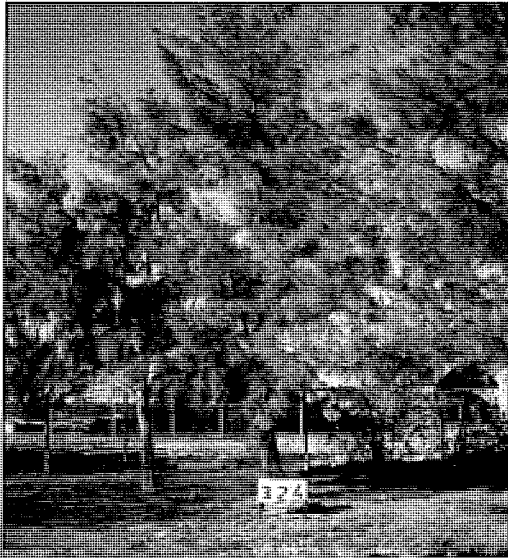
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>324</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	14
Canopy Spread:	8
Trunk Circumference:	800
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>325</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	10
Canopy Spread:	8
Trunk Circumference:	800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>



## Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghiana	
Height:	5
Canopy Spread:	3
Trunk Circumference:	300
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES

TREE NUMBER	326
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>327</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	8
Canopy Spread:	6
Trunk Circumference:	500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>328</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	8
Canopy Spread:	4
Trunk Circumference:	500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>329</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	8
Canopy Spread:	4
Trunk Circumference:	500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicomic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

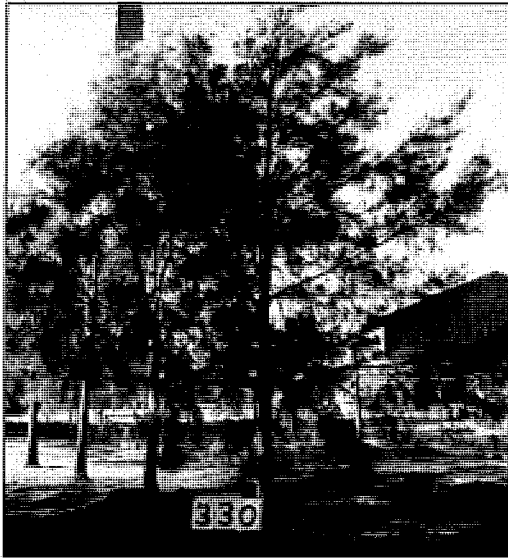
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>330</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	9.5
Canopy Spread:	4
Trunk Circumference:	600
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>331</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Casuarina Cunninghamiana	
Height:	9
Canopy Spread:	4
Trunk Circumference:	500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Old Canberra Brick Works	
E:	N
Species: Pinus radiata	
Height:	23
Canopy Spread:	14
Trunk Circumference:	2200
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
Weed Plant

TREE NUMBER	388
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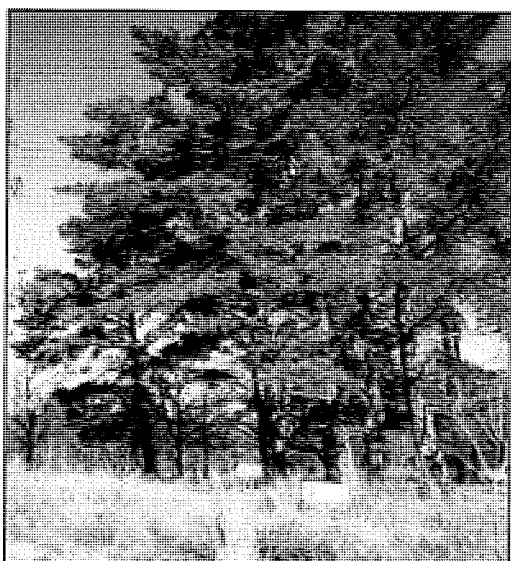
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
To be kept with adjacent trees. Potential for retention as a group with adjacent trees.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>390</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Pinus radiata	
Height:	18
Canopy Spread:	16
Trunk Circumference:	1400
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

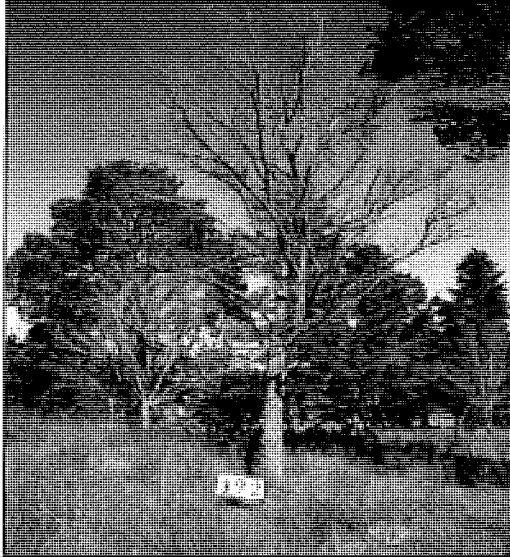
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Weed Plant

<b>AMENITY NOTES</b>
Retain and manage as part of a group.



# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>392</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Ulmus procera	
Height:	11
Canopy Spread:	10
Trunk Circumference:	1300
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

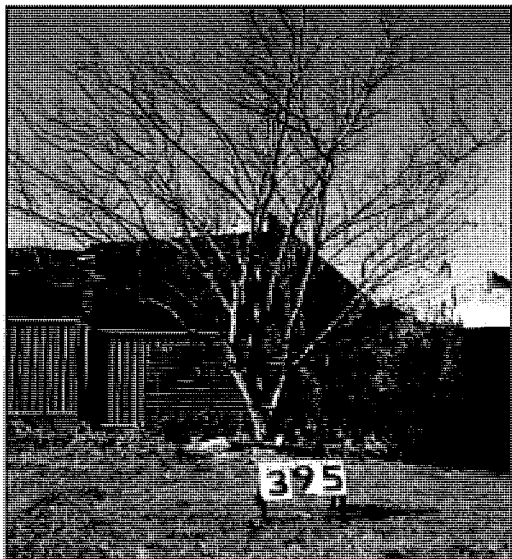
<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Isolated Elm adjacent to Radiata pines

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>395</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Prunus cerasifera "nigra"	
Height:	6.5
Canopy Spread:	8
Trunk Circumference:	1600
Number of Trunks:	3

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Ornamental fruit tree providing colour and screening in summer

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>396</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Prunus cerasifera "nigra"	
Height:	7.5
Canopy Spread:	7
Trunk Circumference:	1300
Number of Trunks:	4

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Ornamental fruit tree providing colour and screening in summer

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>397</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Prunus cerasifera "nigra"	
Height:	8.5
Canopy Spread:	7
Trunk Circumference:	600
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

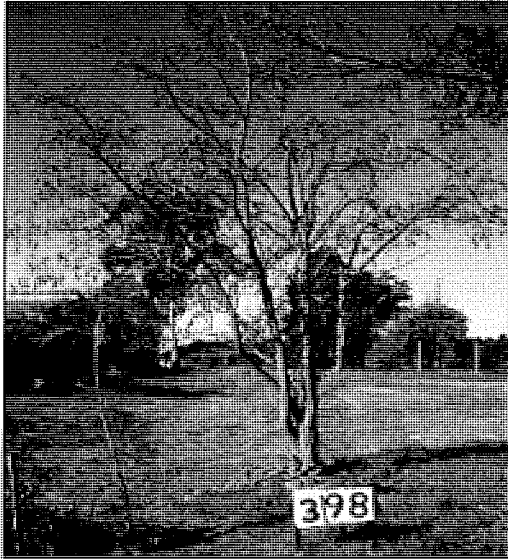
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Ornamental fruit tree providing colour and screening in summer

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>398</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Robinia pseudoacacia	
Height:	8.5
Canopy Spread:	8
Trunk Circumference:	1900
Number of Trunks:	3

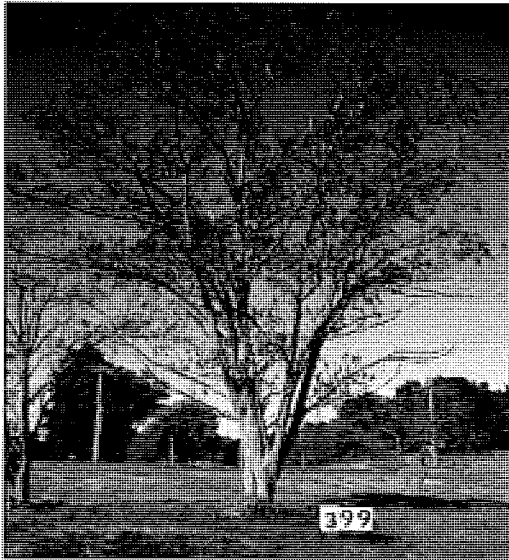
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>ARBORICULTURAL NOTES</b>
Prohibited weed plant Management Status: Remove

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>399</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Robinia pseudoacacia	
Height:	11
Canopy Spread:	8
Trunk Circumference:	1900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

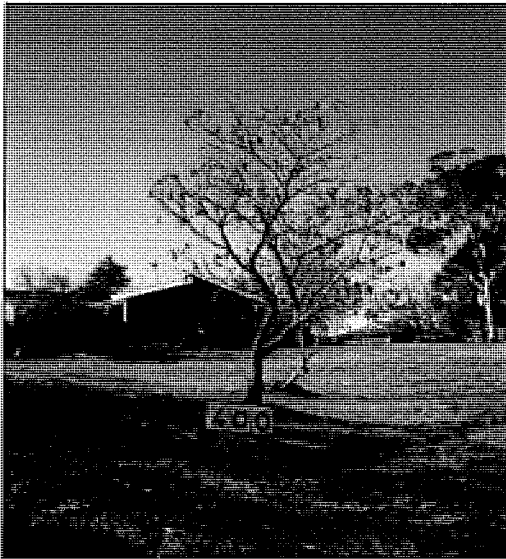
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Prohibited weed plant Management Status: Medium

<b>AMENITY NOTES</b>
Isolated poor form tree.

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Koelreuteria paniculata	
Height:	6
Canopy Spread:	6
Trunk Circumference:	900
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
With maintenance will become a good shade tree.

TREE NUMBER	400
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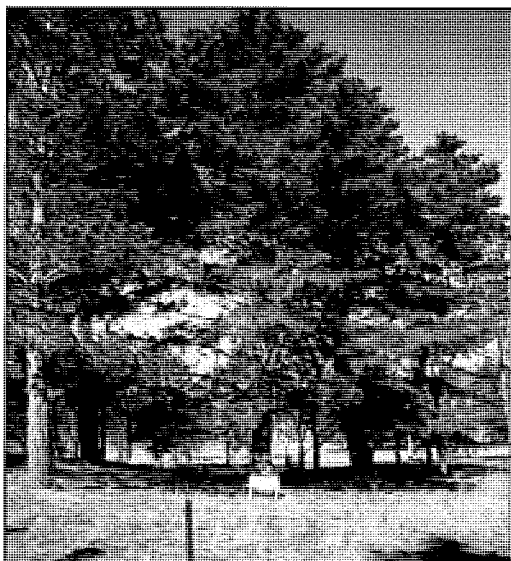
QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Isolated tree.

## Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Pinus radiata	
Height:	16
Canopy Spread:	15
Trunk Circumference:	1900
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES	
Removal of deadwood is needed Weed Plant	

TREE NUMBER	401
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
To be kept with adjacent trees. Potential for retention as a group with adjacent trees.	



# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Pinus radiata	
Height:	16.5
Canopy Spread:	14
Trunk Circumference:	3100
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
Lift lower crown to balance tree Weed Plant

TREE NUMBER	405
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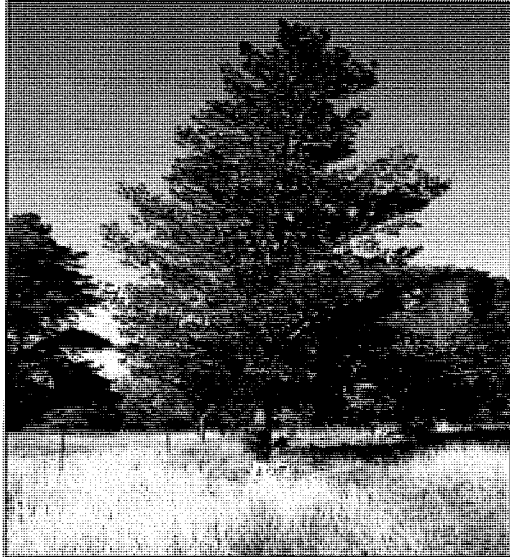
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Isolated tree

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>407</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Pinus radiata	
Height:	16
Canopy Spread:	12
Trunk Circumference:	1600
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Lift lower canopy to balance tree Weed Plant

<b>AMENITY NOTES</b>
Isolated tree on edge of group

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>431</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	M
<b>Recommendation:</b>	
<b>Retain and Manage</b>	
<b>Remove</b>	X

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: South of Brick Works	
E:	N
Species: Ulmus procera	
Height:	13.2
Canopy Spread:	18
Trunk Circumference:	3100
Number of Trunks:	10

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

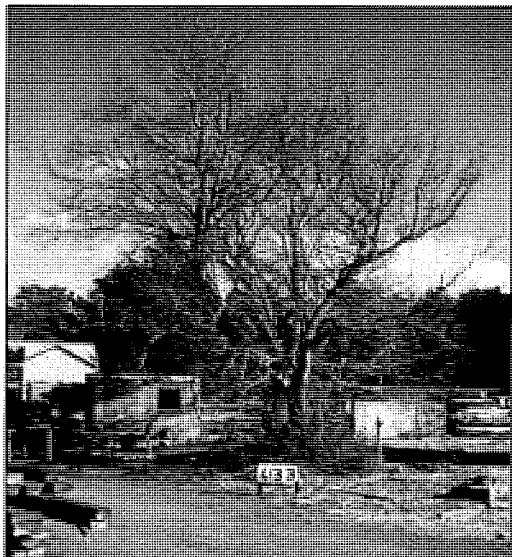
<b>ARBORICULTURAL NOTES</b>
Multiple leaders. Poor form, tree surgery needed. Removal recommended.

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	1
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Large landscape form.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>433</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works	
E:	N
Species: Ulmus procera	
Height:	11.6
Canopy Spread:	10
Trunk Circumference:	1300
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	1
Health / Condition	2

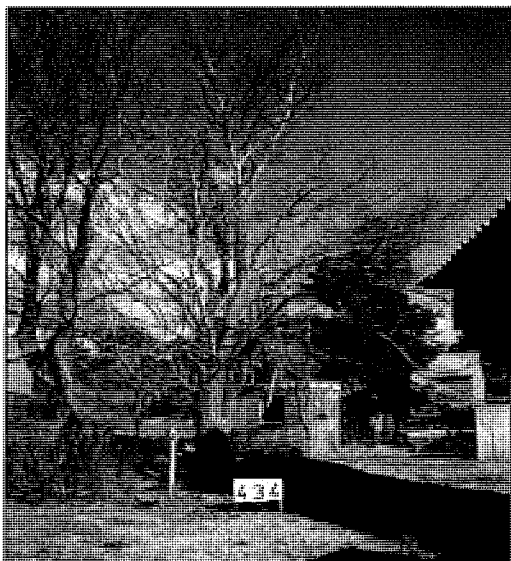
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Remove deadwood

<b>AMENITY NOTES</b>
Pair of trees with integrated canopies.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>434</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works	
E:	N
Species: Ulmus procera	
Height:	14.3
Canopy Spread:	12
Trunk Circumference:	1900
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

<b>ARBORICULTURAL NOTES</b>
Needs tree surgery to balance the tree.

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	2
Insect Occurrence	2
Disease	2
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	1
Health / Condition	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Integrated canopy with 433

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>435</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works	
E:	N
Species: Ulmus procera	
Height:	12.9
Canopy Spread:	10
Trunk Circumference:	2500
Number of Trunks:	5

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	2
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Tree Surgery needed. Remove Epicormic growth/Multi leader.

<b>AMENITY NOTES</b>
Isolated Elm

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>462</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	8
Canopy Spread:	6
Trunk Circumference:	900
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

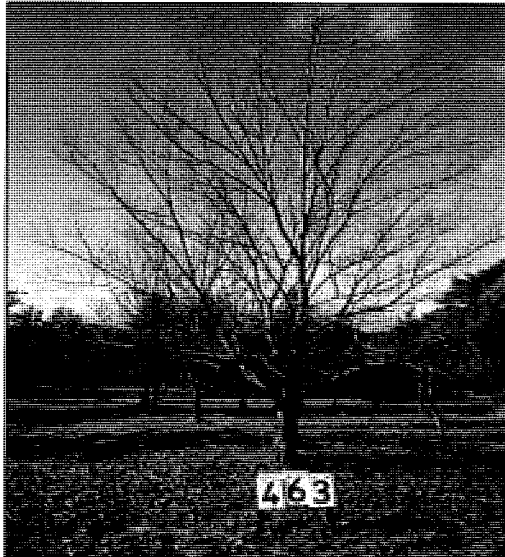
<b>ARBORICULTURAL NOTES</b>
Crown liffing may be required to provide distance beneath canopy for maintenance

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Good specimen tree part of a group

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>463</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Ulmus procera	
Height:	8.5
Canopy Spread:	6
Trunk Circumference:	900
Number of Trunks:	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>
Future maintenance will be required

<b>AMENITY NOTES</b>
Good open park land tree



## Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>464</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Ulmus procera	
Height:	4.5
Canopy Spread:	3
Trunk Circumference:	300
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

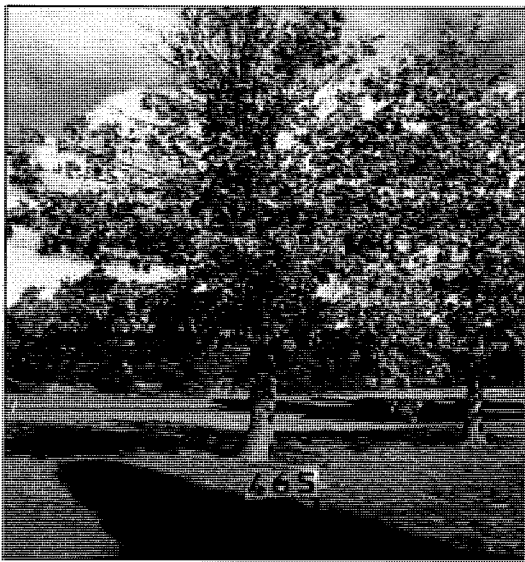
<b>ARBORICULTURAL NOTES</b>
Formative pruning required

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Good small tree ,on going maintenance required

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>465</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	9
Canopy Spread:	6
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

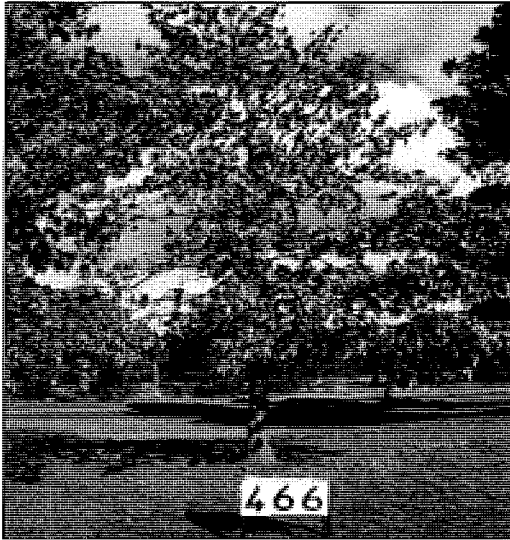
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Over time lifting of the lower crown will be required.

<b>AMENITY NOTES</b>
Good specimen tree part of a group

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>466</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	9
Canopy Spread:	6
Trunk Circumference:	900
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>
Over time lifting of the lower crown will be required.

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Good specimen tree part of a group

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>467</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Cupressus arizonica	
Height:	10
Canopy Spread:	7
Trunk Circumference:	1900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

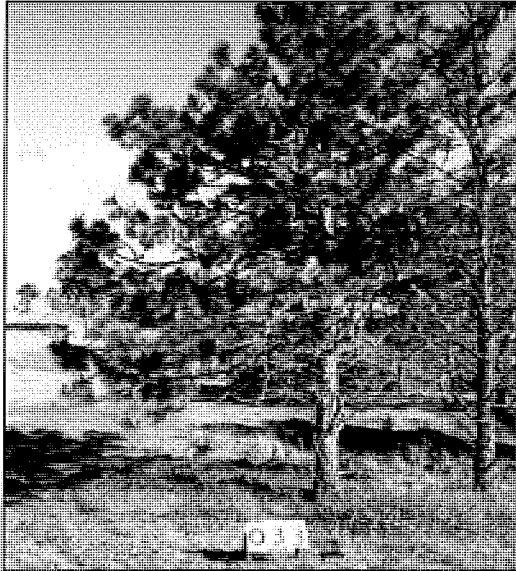
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Provides landscape screening within the open space.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>33</b>
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus canariensis	
Height:	11.8
Canopy Spread:	9.5
Trunk Circumference:	1600
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	2
Epicormic Growth	3
Mistletoe	3
Form	2
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	31

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	1
Potential Contribution to Future Landscape	1
Visual / Scenic	1
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

ARBORICULTURAL NOTES
Tree in decline

AMENITY NOTES

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>72</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus canariensis	
Height:	15.7
Canopy Spread:	12
Trunk Circumference:	1900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

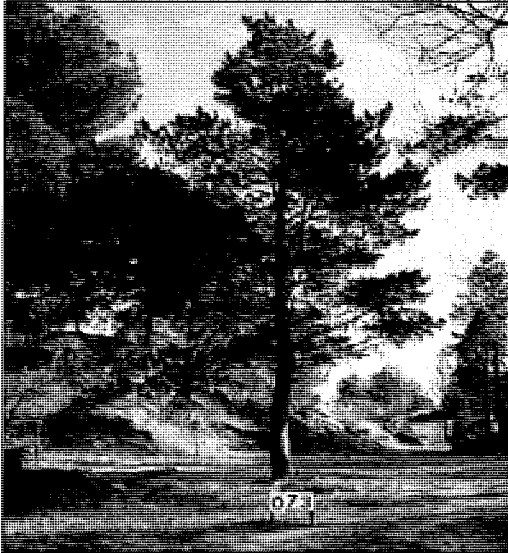
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Removal of minor deadwood

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus radiata	
Height:	14.8
Canopy Spread:	10
Trunk Circumference:	1900
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES	
Weed Plant	

TREE NUMBER	73
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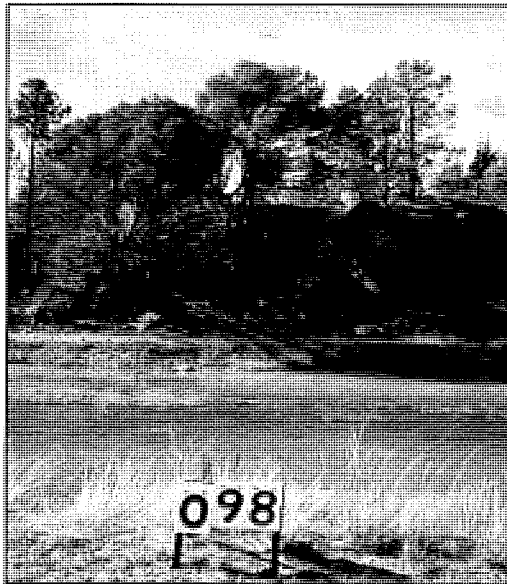
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
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# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>98</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus halepensis	
Height:	9.5
Canopy Spread:	18
Trunk Circumference:	2800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicomic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

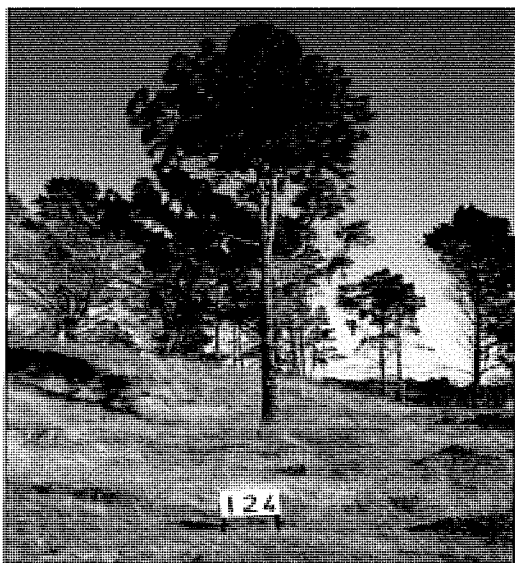
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Fire damage to one side of tree. Management status: Remove

<b>AMENITY NOTES</b>
Substantive tree on rocky outcrop



# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>124</b>
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus canariensis	
Height:	18.55
Canopy Spread:	12
Trunk Circumference:	1600
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

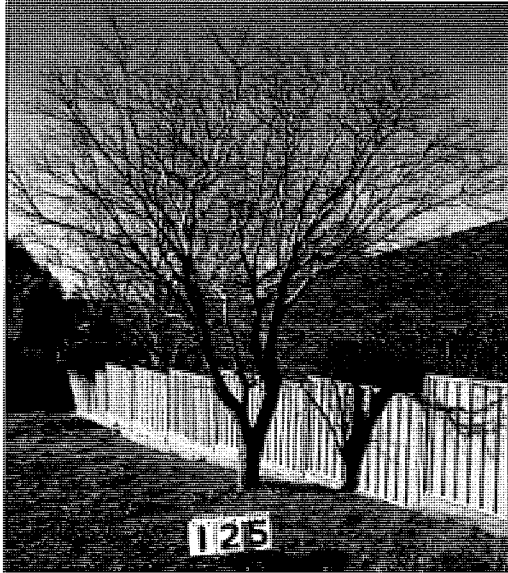
TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Twin leader 6m from ground level. Management required

AMENITY NOTES

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: <i>Sophora japonica</i>	
Height:	6.7
Canopy Spread:	6
Trunk Circumference:	800
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES

TREE NUMBER	125
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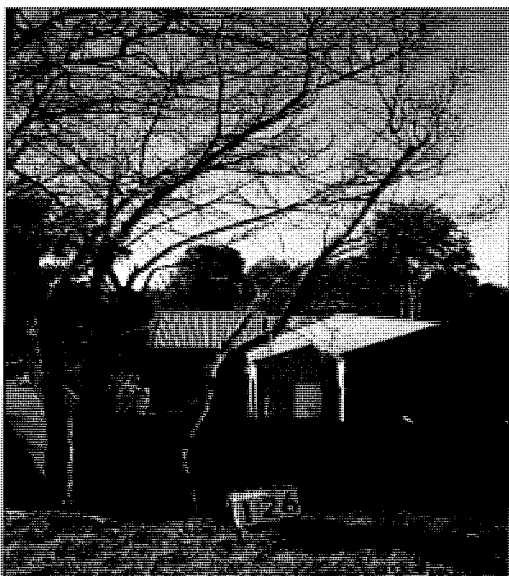
QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Resident planting

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Robinia pseudoacacia	
Height:	11
Canopy Spread:	10
Trunk Circumference:	700
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

ARBORICULTURAL NOTES
Tree lopped epicormic regrowth as canopy. Prohibited Weed plant

TREE NUMBER	126
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	2
Insect Occurrence	1
Disease	2
Epicormic Growth	1
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	1
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	1
Potential Contribution to Future Landscape	1
Visual / Scenic	1
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Poor specimen in a group of 5 (WEED SPECIES)

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>127</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
<b>Retain and Manage</b>	
<b>Remove</b>	x

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Robinia pseudoacacia	
Height:	11
Canopy Spread:	10
Trunk Circumference:	1000
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	2
Insect Occurrence	1
Disease	2
Epicormic Growth	1
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	1
Health / Condition	1

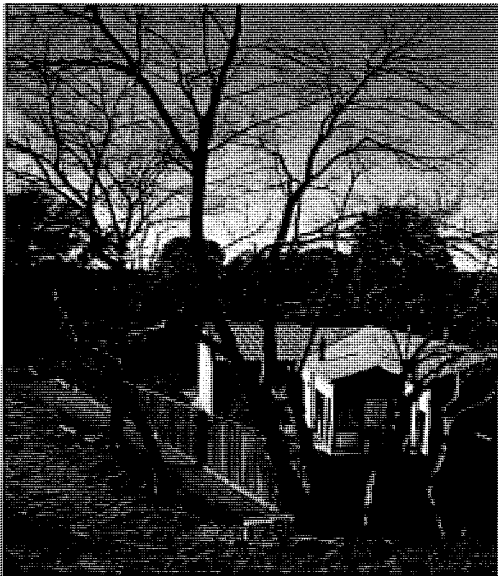
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	1
Potential Contribution to Future Landscape	1
Visual / Scenic	1
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Tree lopped epicormic regrowth as canopy Prohibited Weed plant

<b>AMENITY NOTES</b>
Poor specimen in a group of 5 (WEED SPECIES)

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>128</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Robinia pseudoacacia	
Height:	9
Canopy Spread:	14
Trunk Circumference:	1400
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

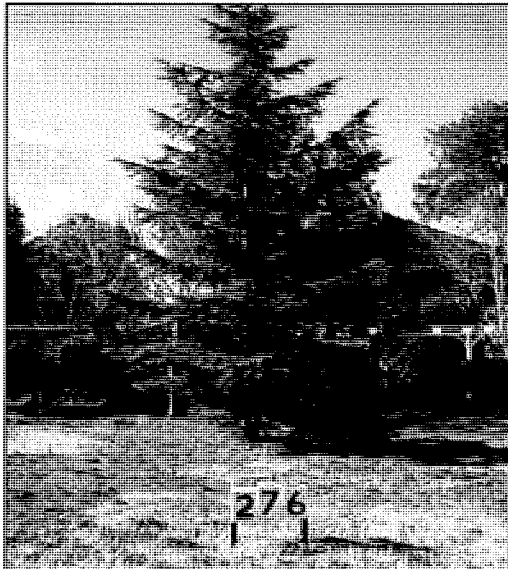
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Tree lopped epicormic regrowth as canopy Prohibited Weed plant

<b>AMENITY NOTES</b>
Poor specimen in a group of 5 (WEED SPECIES)

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>276</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Cedrus deodara	
Height:	11.6
Canopy Spread:	11
Trunk Circumference:	1400
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	4

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Good quality tree

<b>AMENITY NOTES</b>
Resident planting

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>277</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Fraxinus oxycarpa "raywoodii"	
Height:	9.4
Canopy Spread:	10
Trunk Circumference:	1100
Number of Trunks:	1

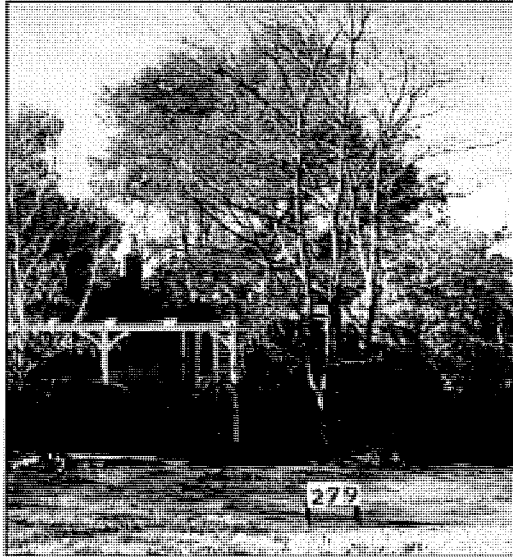
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>	
Good tree	

<b>AMENITY NOTES</b>	
Resident planting	

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>279</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: : Robinia pseudoacacia	
Height:	13.4
Canopy Spread:	12
Trunk Circumference:	2200
Number of Trunks:	2

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	2
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

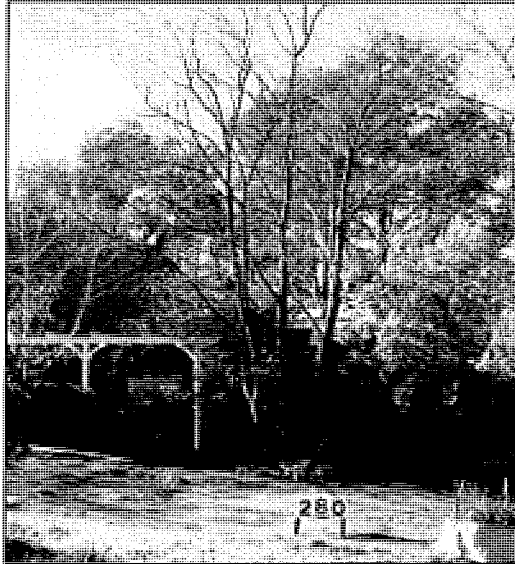
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Possible sucker growth from adjacent trees. Prohibited Weed plant

<b>AMENITY NOTES</b>
Residential planting (WEED SPECIES)



## Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: ; Robinia pseudoacacia	
Height:	12.8
Canopy Spread:	11
Trunk Circumference:	1900
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Possible sucker growth from adjacent trees. Prohibited Weed plant

TREE NUMBER	280
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Resident planting (WEED SPECIES)

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>281</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: : Robinia pseudoacacia	
Height:	9.5
Canopy Spread:	8
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	4
Age	4
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	3
Health / Condition	3

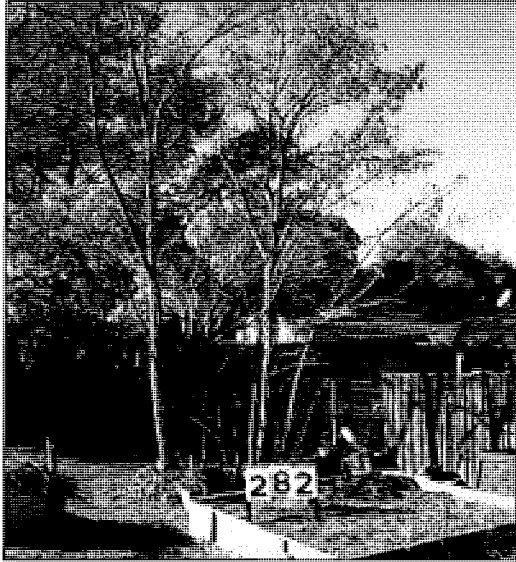
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Possible sucker growth from adjacent trees. Prohibited Weed plant

<b>AMENITY NOTES</b>
Resident planting (WEED SPECIES)

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>282</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: : Robinia pseudoacacia	
Height:	8.5
Canopy Spread:	12
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	4
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	3
Health / Condition	3

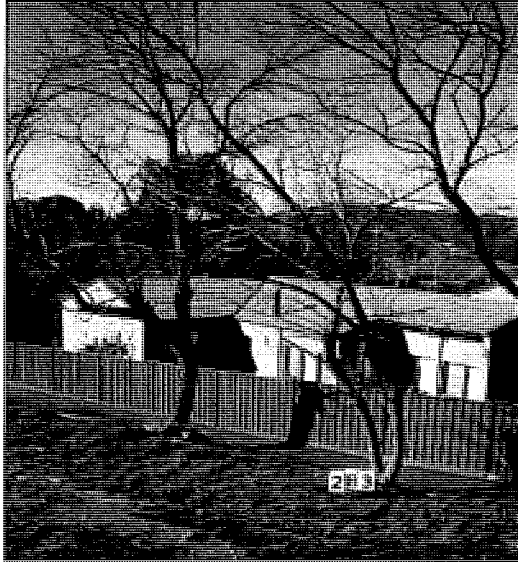
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Possible sucker growth from adjacent trees. Prohibited Weed plant

<b>AMENITY NOTES</b>
Resident planting (WEED SPECIES)

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: : Robinia pseudoacacia	
Height:	12.3
Canopy Spread:	10
Trunk Circumference:	1400
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

ARBORICULTURAL NOTES
Tree lopped epicormic regrowth as canopy Prohibited Weed plant

TREE NUMBER	283
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Poor specimen in a group of 5 (WEED SPECIES) Recommend removal

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>284</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: : Robinia pseudoacacia	
Height:	14.2
Canopy Spread:	12
Trunk Circumference:	1700
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

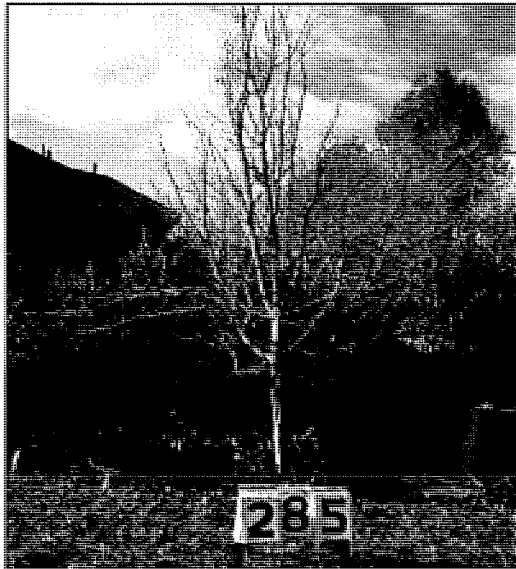
<b>ARBORICULTURAL NOTES</b>
Tree lopped epicormic regrowth as canopy Prohibited Weed plant

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>AMENITY NOTES</b>
Poor specimen in a group of 5 (WEED SPECIES) Recommend removal

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>285</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Parrotia persica	
Height:	5.7
Canopy Spread:	4
Trunk Circumference:	600
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	4
Habitat Value	2
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	3

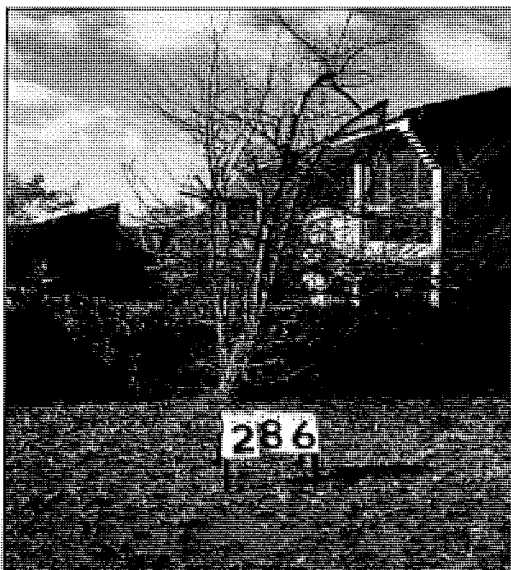
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	1
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Young fruit tree

<b>AMENITY NOTES</b>
Ornamental fruit tree (4m) Resident planting

## Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Malus (apple)	
Height:	5.8
Canopy Spread:	8
Trunk Circumference:	1100
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Fruit tree

TREE NUMBER	286
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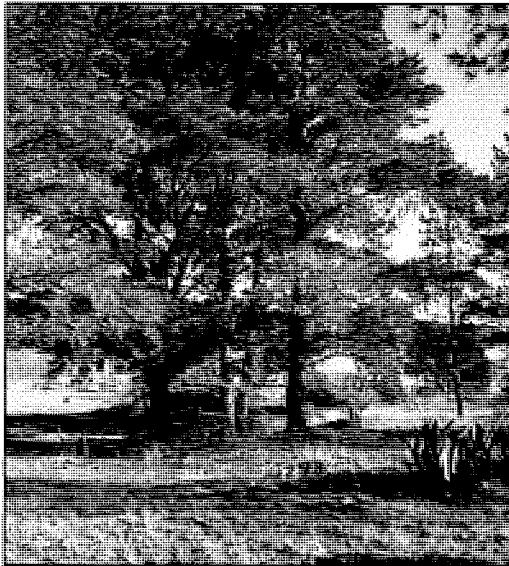
QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	1
Mistletoe	3
Form	2
Age	2
Habitat Value	2
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Resident planting

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>293</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus radiata	
Height:	18.6
Canopy Spread:	12
Trunk Circumference:	1900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Crown intrusion from tree 292 has caused the tree to have an unbalanced canopy Weed Plant

<b>AMENITY NOTES</b>
Removal of tree 292 will encourage the canopy of this tree to balance over time. Management is required.



# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus radiata	
Height:	17.5
Canopy Spread:	13
Trunk Circumference:	1300
Number of Trunks:	2

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

ARBORICULTURAL NOTES
Major inclusion at base of tree. Removal recommended. Weed Plant

TREE NUMBER	294
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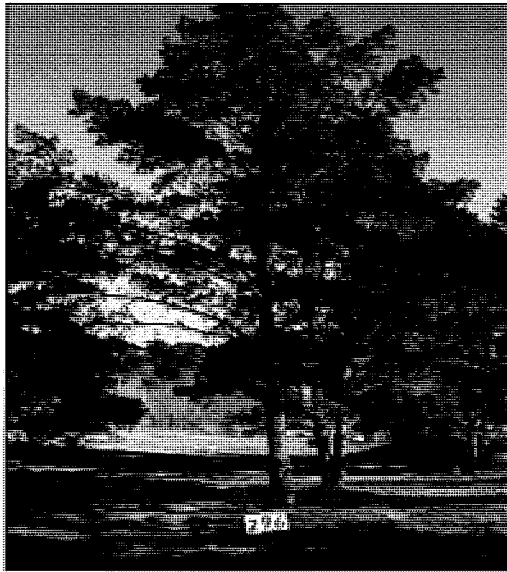
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Dual leader within a group of trees potential for failure. Recommend removal

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>296</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus radiata	
Height:	15.5
Canopy Spread:	18
Trunk Circumference:	1900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Sparse canopy Unbalanced Weed Plant

<b>AMENITY NOTES</b>
Open formed tree, with management can be retained.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>299</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus radiata	
Height:	13.4
Canopy Spread:	14
Trunk Circumference:	2200
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

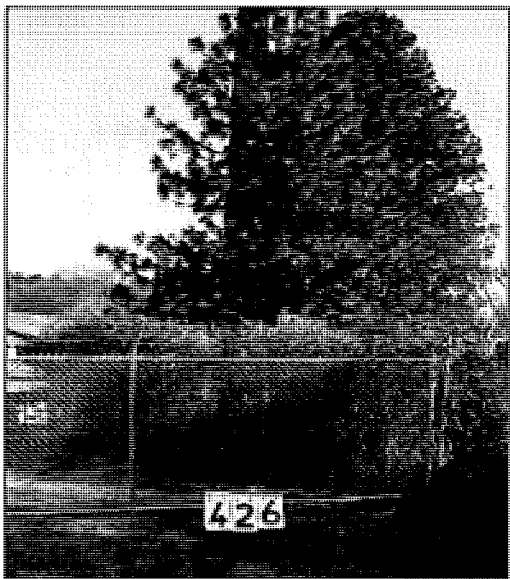
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Good tree well formed Management Status: Remove Weed Plant

<b>AMENITY NOTES</b>
Well presented tree of Landscape quality.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>426</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus patula	
Height:	13.9
Canopy Spread:	8
Trunk Circumference:	1100
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	2

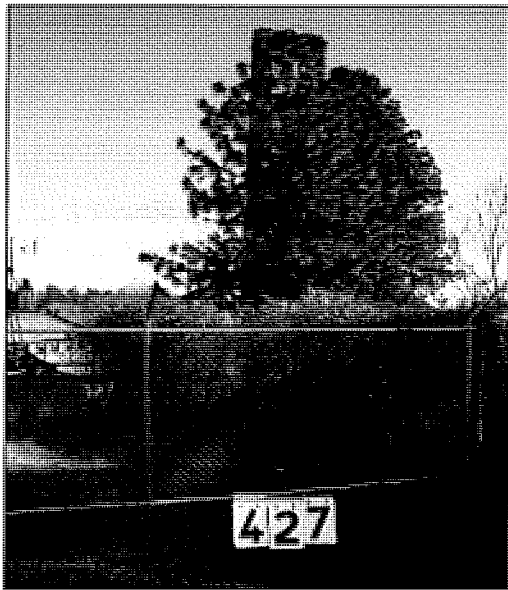
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Crown has good coverage with signs of stress.

<b>AMENITY NOTES</b>
Part of a screen adjacent residential area

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus patula	
Height:	14.6
Canopy Spread:	12
Trunk Circumference:	1400
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Crown has good coverage with signs of stress.

TREE NUMBER	427
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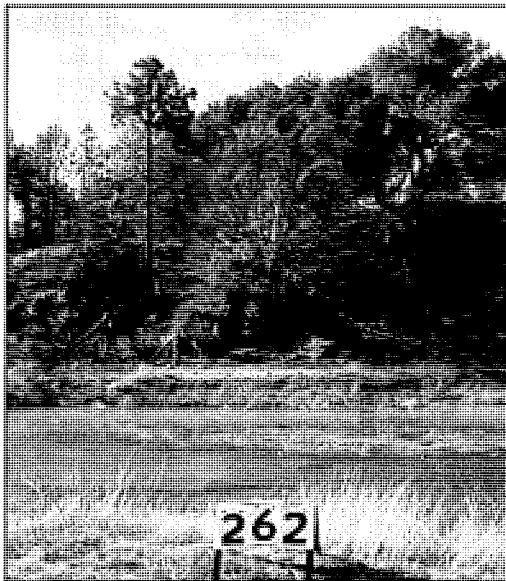
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Part of a screen adjacent residential area

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus halepensis	
Height:	10.3
Canopy Spread:	16
Trunk Circumference:	4100
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

ARBORICULTURAL NOTES	
Tree has fire damage to one side. Remove deadwood.	

TREE NUMBER	262
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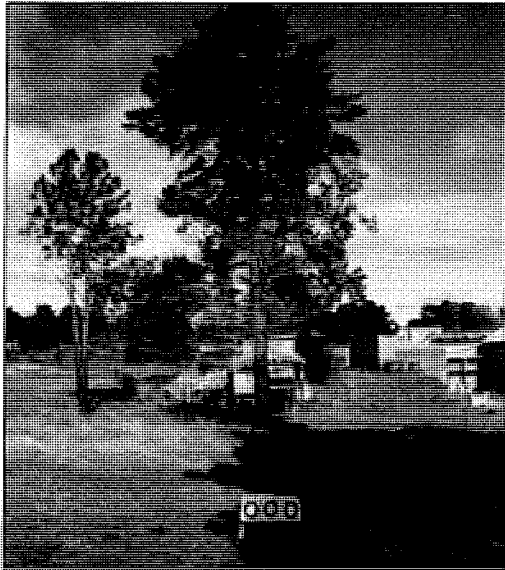
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	2
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Maintenance and management will enhance tree. One of a group of two on rocky out crop	

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus radiata	
Height:	16.5
Canopy Spread:	8
Trunk Circumference:	1600
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
<p>Minor deadwood to be removed            Tree was missing on original assessment            hence the 000 TREE 555            Weed Plant</p>

TREE NUMBER	555
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
<p>Isolated quality tree</p>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>556</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Brick Works Quarry	
E:	N
Species: Pinus canariensis	
Height:	17.5
Canopy Spread:	8
Trunk Circumference:	1400
Number of Trunks:	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	1
Visual / Scenic	1
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

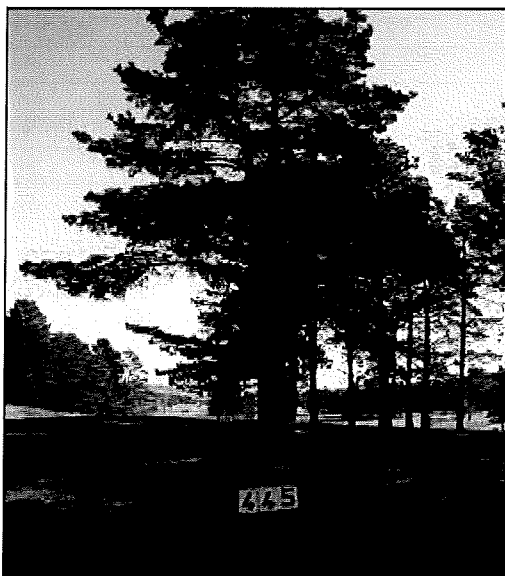
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>
Tree was missing on original assessment hence the 001 TREE 556 Badly formed tree removal recommended

<b>AMENITY NOTES</b>



## Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>445</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus radiata	
Height:	18
Canopy Spread:	8
Trunk Circumference:	2200
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

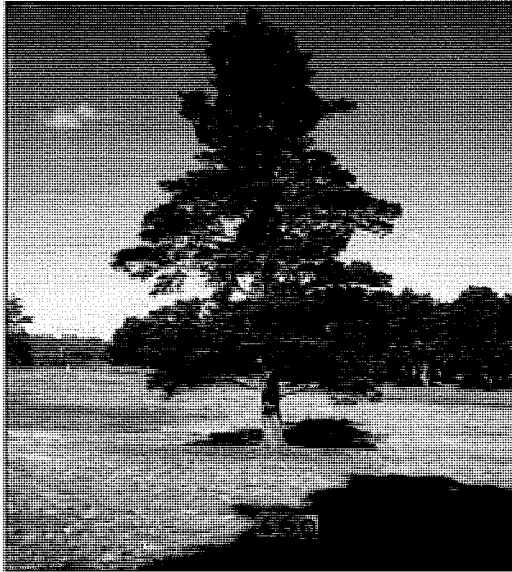
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Good tree needing little work Weed Plant

<b>AMENITY NOTES</b>
Single mature pine in good health

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>460</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Pinus radiata	
Height:	19
Canopy Spread:	10
Trunk Circumference:	1900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

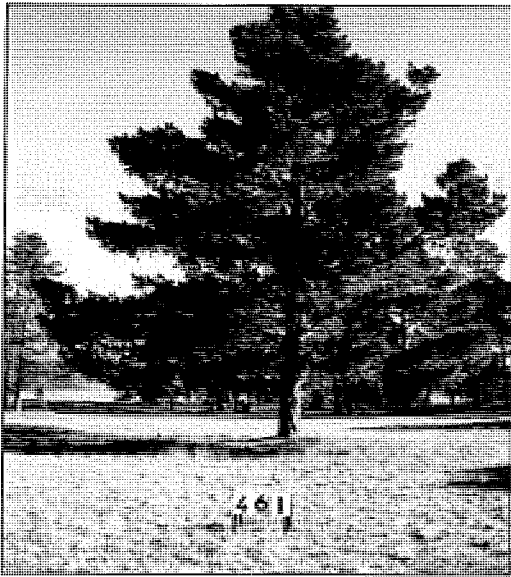
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Weed Plant

<b>AMENITY NOTES</b>
Good tree in open space

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	12/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Pinus radiata	
Height:	18
Canopy Spread:	16
Trunk Circumference:	2500
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Lifting of lower canopy may be needed Weed Plant

TREE NUMBER	461
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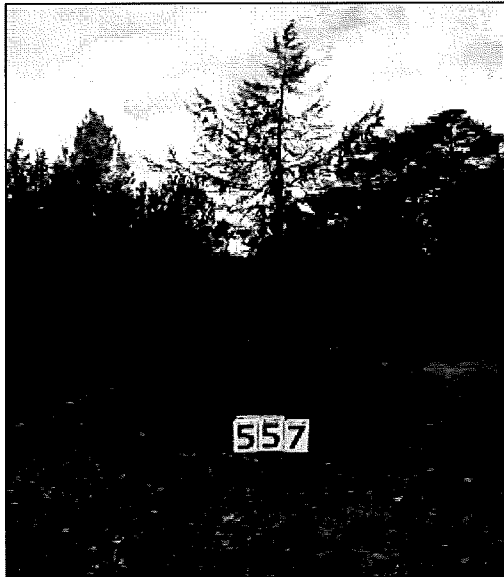
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Good tree in open space

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Cupressus torulosa	
Height:	8
Canopy Spread:	6
Trunk Circumference:	500
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
Arboricultural and horticultural management will ensure continued development.

TREE NUMBER	557
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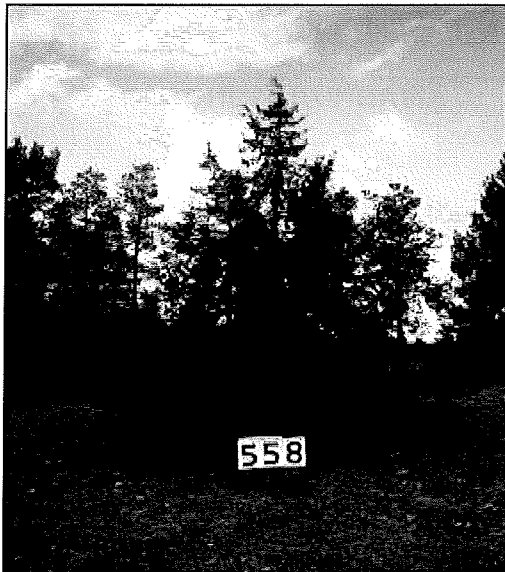
QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	2
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Alternative slow growing conifer in a wider group providing long term tree asset. Maintenance required.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>558</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	4

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Cupressus torulosa	
Height:	8
Canopy Spread:	6
Trunk Circumference:	600
Number of Trunks:	1

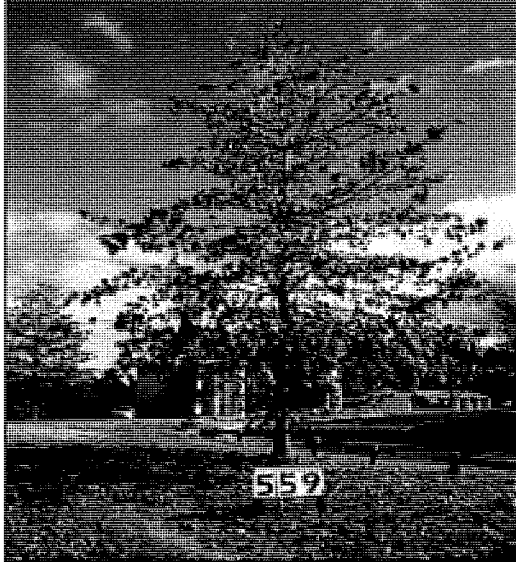
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	2
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>
Arboricultural and horticultural management will ensure continued development.

<b>AMENITY NOTES</b>
Alternative slow growing conifer in a wider group providing long term tree asset. Maintenance required.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>559</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: <i>Quercus palustris</i>	
Height:	10
Canopy Spread:	9
Trunk Circumference:	800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	4

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Part of a number of quality street trees.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>560</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	8
Canopy Spread:	7
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	4

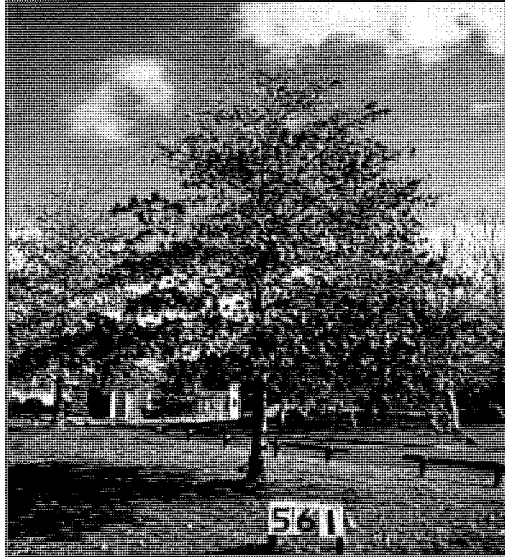
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Part of a number of quality street trees.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>561</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	7.5
Canopy Spread:	7
Trunk Circumference:	800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	4

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Part of a number of quality street trees.



# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>562</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	9
Canopy Spread:	7
Trunk Circumference:	800
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	4

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Part of a number of quality street trees.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>563</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	4

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: <i>Quercus palustris</i>	
Height:	8
Canopy Spread:	7
Trunk Circumference:	800
Number of Trunks:	1

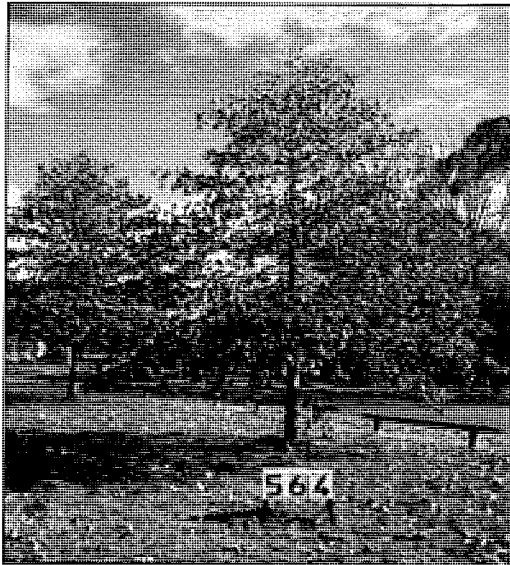
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Part of a number of quality street trees.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>564</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	6.5
Canopy Spread:	5
Trunk Circumference:	600
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	4

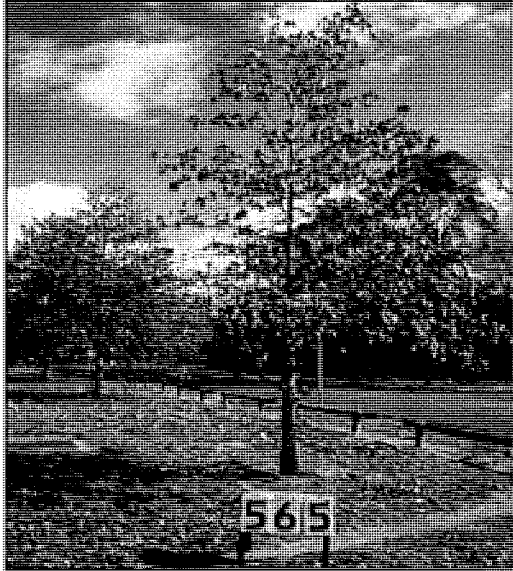
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	3
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>
Part of a number of quality street trees.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>565</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Quercus palustris	
Height:	4
Canopy Spread:	4
Trunk Circumference:	500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	3
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>566</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Quercus palustris	
Height:	3.7
Canopy Spread:	2
Trunk Circumference:	300
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	3
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

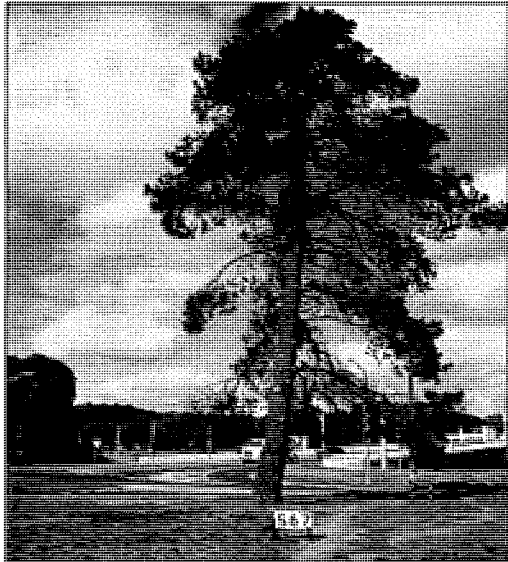
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	3
Habitat Quality	3
Cultural Value	3
Social Value	3
Scientific Value	2

<b>ARBORICULTURAL NOTES</b>

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>567</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus radiata	
Height:	16.5
Canopy Spread:	10
Trunk Circumference:	2000
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	1
Health / Condition	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	2

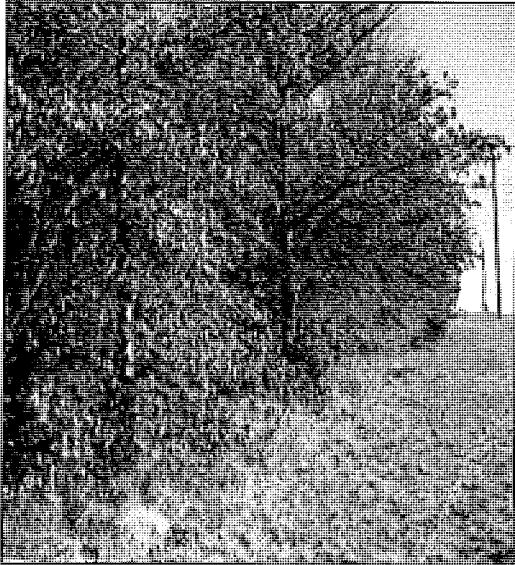
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Canopy trimmed to power lines Weed Plant

<b>AMENITY NOTES</b>
Significant accent tree into suburb

# Old Canberra Brick Works - TREE ASSESSMENT

Opposite 24 Denman St Yarralumla



TREE NUMBER	Group
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicomic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: <i>Quercus palustris</i>	
Height:	12-14
Canopy Spread:	6-8
Trunk Circumference:	400-1000
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

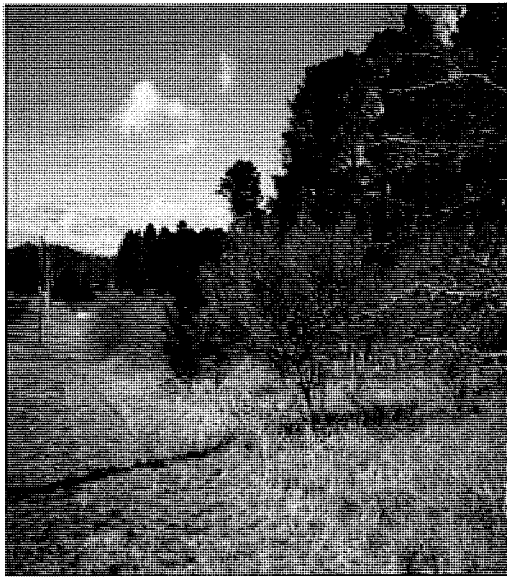
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Lower canopy requires lifting

AMENITY NOTES
A clearly identifiable stand of landscape trees that has the potential to contribute to future urban amenity.

# Old Canberra Brick Works - TREE ASSESSMENT

Opposite 22 Denman St Yarralumla



<b>TREE NUMBER</b>	<b>Group</b>
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Crataegus smithiana	
Height:	5-6
Canopy Spread:	4-6
Trunk Circumference:	200-600
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Formative pruning required.

AMENITY NOTES
Block screening to 4m above ground level that fills vegetation screen of adjacent pine plantation where canopy is thin



# Old Canberra Brick Works - TREE ASSESSMENT

Opposite 18-20 Denman St  
Yarralumla



**DATA**

Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Prunus cerasifera "nigra"	
Height:	5-8
Canopy Spread:	3-6
Trunk Circumference:	400-1000
Number of Trunks:	Multiple

**TREE PROTECTION / MANAGEMENT**

Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

**ARBORICULTURAL NOTES**

Maintenance and management required.

TREE NUMBER	Group
-------------	-------

**QUALITY CLASSIFICATION**

Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H

**Recommendation:**

Retain and Manage	X
Remove	

**ARBORICULTURAL CHARACTERISTICS**

Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	3

**URBAN AMENITY CHARACTERISTICS**

Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

**AMENITY NOTES**

Significant block of trees on the edge of pine plantation.  
Significant contribution to suburb vegetation edge and screening to adjacent roads. Canopy merged.

# Old Canberra Brick Works - TREE ASSESSMENT

Opposite 12 Denman St Yarralumla



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Crataegus smithiana	
Height:	1.5-2
Canopy Spread:	1-3
Trunk Circumference:	200-600
Number of Trunks:	Multiple

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	
Potential to Reduce Risk	
Potential to Improve Amenity Value	

ARBORICULTURAL NOTES
Poor quality tree requiring formative pruning.

TREE NUMBER	Group
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
Recommendation:	
Retain and Manage	
Remove	X

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	3
Age	2
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Small group of trees within a gap between two pine plantations. Only regeneration on edge of suburb. Trees are poorly preformed and require replanting.

# Old Canberra Brick Works - TREE ASSESSMENT

Opposite 14-16 Denman St



<b>TREE NUMBER</b>	<b>Group</b>
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Ulmus. sp	
Height:	4-5
Canopy Spread:	1-4
Trunk Circumference:	200-600
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	1
Canopy Dead Wood	2
Insect Occurrence	2
Disease	2
Epicormic Growth	3
Mistletoe	3
Form	3
Age	1
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Poor health, replacement trees recommended.

AMENITY NOTES
Vegetation screening on edge of suburb and adjacent pine plantation. Poorly performed closely spaced trees with deformed canopies. Renewal required.

# Old Canberra Brick Works - TREE ASSESSMENT

Adjacent to Abbott St Yarralumla



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St	
E:	N
Species: Quercus robur	
Height:	8-12
Canopy Spread:	6-10
Trunk Circumference:	600-1000
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Tree surgery and formative pruning required.	
Treatment for sooty mould required.	

TREE NUMBER	Group
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	2
Epicomic Growth	3
Mistletoe	3
Form	3
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Triangular block of trees adjacent to Church and Pine plantation.	
Contributes to plantation landscape screen amenity and enclosure to church buildings.	

# Old Canberra Brick Works - TREE ASSESSMENT

Dudley St adjacent to pine plantation



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Ulmus procera	
Height:	5-14
Canopy Spread:	5-12
Trunk Circumference:	500-1200
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Tree surgery to improve form and shape.	

TREE NUMBER	Group
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QUALITY CLASSIFICATION	
Regulated Tree	N/Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

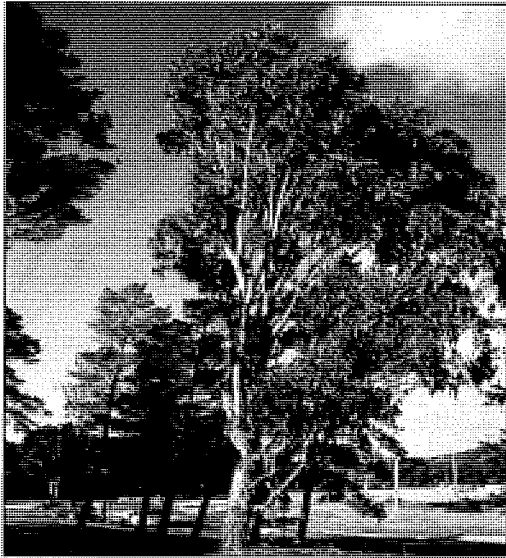
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Landscape species diversity and screen improvement by location on visual leading edge of Pine plantation.	

# Old Canberra Brick Works - TREE ASSESSMENT

## Near Dudley St Roundabout



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Eucalyptus bicostata	
Height:	20
Canopy Spread:	12
Trunk Circumference:	2600
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Continuous pruning to keep clear of power lines. This has produced branch and foliage growth to one side.	

TREE NUMBER	

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
Recommendation:	
Retain and Manage	X
Remove	

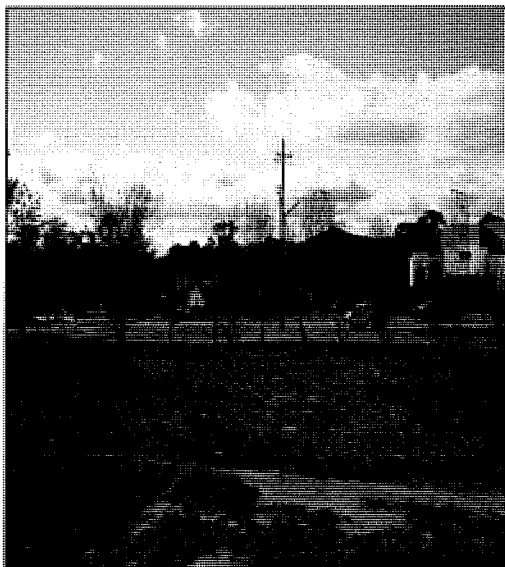
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	4
Disturbance Tolerance	1
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Significant landscape element with suburb landscape edge.	

# Old Canberra Brick Works - TREE ASSESSMENT

Novar St Corner Yarralumla



TREE NUMBER	Group
-------------	-------

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: 7 Ulmus procera, 7 Prunus cerasifera "nigra"	
Height:	2-6
Canopy Spread:	1-8
Trunk Circumference:	100-1100
Number of Trunks:	1-Multiple

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
Formative pruning required.

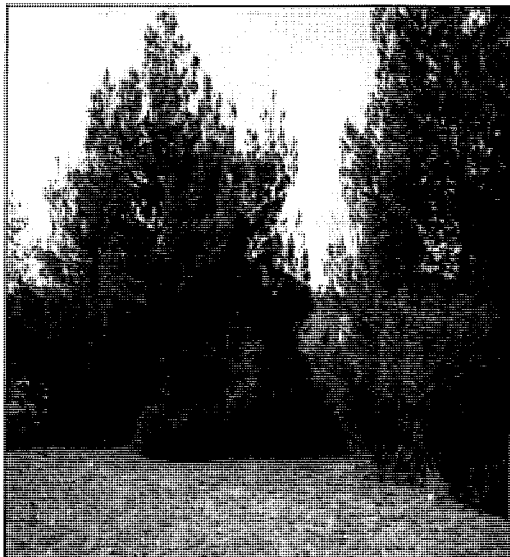
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	
Age	42
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Colourful accent planting at entrance to suburb.

# Old Canberra Brick Works - TREE ASSESSMENT

## Kintore Street Pinus Patula



<b>TREE NUMBER</b>	<b>Group1</b>
--------------------	---------------

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus patula	
Height:	8-12
Canopy Spread:	8-10
Trunk Circumference:	500-1000
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	1
Epicormic Growth	2
Mistletoe	1
Form	2
Age	1
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	3
Health / Condition	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Maintenance program to be implemented.

AMENITY NOTES
Good screening trees for long term.



# Old Canberra Brick Works - TREE ASSESSMENT

## Kintore Street Quercus Palustris



TREE NUMBER	Group
-------------	-------

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Kintore St East	
E:	N
Species: Quercus palustris	
Height:	6-10
Canopy Spread:	6-9
Trunk Circumference:	400-1000
Number of Trunks:	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Maintenance program to be implemented

AMENITY NOTES
Trees provide screening from Adelaide Ave

# Old Canberra Brick Works - TREE ASSESSMENT

## Kintore Street Ulmus procera



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Kintore St East	
E:	N
Species: Ulmus procera	
Height:	5-8
Canopy Spread:	3-4
Trunk Circumference:	300-600
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES	
Formative pruning to be continued.	

TREE NUMBER	Group
	2

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

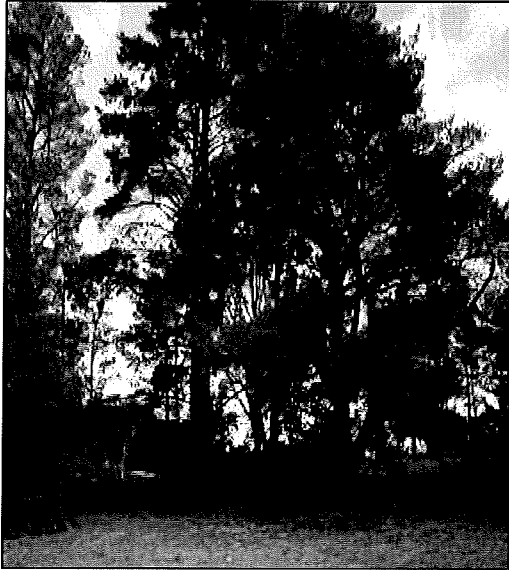
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Trees contribute to the surrounding landscape.	

# Old Canberra Brick Works - TREE ASSESSMENT

## Pinus radiata Group 1



<b>TREE NUMBER</b>	<b>Group 1</b>
--------------------	--------------------

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus radiata	
Height:	20-25
Canopy Spread:	10-15
Trunk Circumference:	1100-3000
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	1
Epicormic Growth	2
Mistletoe	1
Form	2
Age	1
Habitat Value	3
Disturbance Tolerance	3
Risk Potential	3
Health / Condition	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

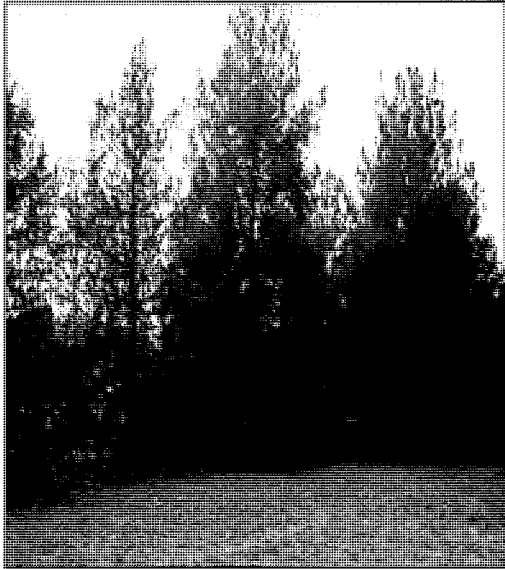
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES	
Deadwood removal required	
Weed Plant	

AMENITY NOTES	
Mature trees at suburb entrance	

# Old Canberra Brick Works - TREE ASSESSMENT

## Pinus patula Group 2



<b>TREE NUMBER</b>	<b>Group 2</b>
--------------------	----------------

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus patula	
Height:	8-11
Canopy Spread:	6-9
Trunk Circumference:	400-900
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	4
Disturbance Tolerance	1
Risk Potential	2
Health / Condition	3

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

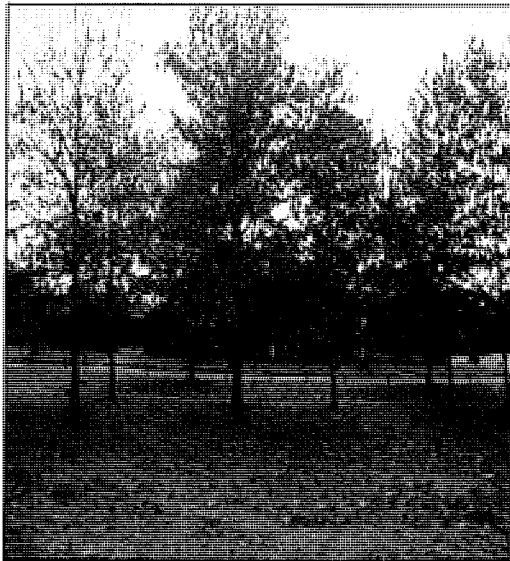
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Maintenance program to be introduced.

AMENITY NOTES
Trees provide good screening when planted as a close group.

# Old Canberra Brick Works - TREE ASSESSMENT

## Quercus palustris Group 2



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Quercus palustris	
Height:	8-11
Canopy Spread:	8-10
Trunk Circumference:	600-1000
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Maintenance program to be implemented

TREE NUMBER	Group 2
-------------	------------

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Group of trees that are not protected under the Tree Protection Act 2005 but provide future urban amenity.

# Old Canberra Brick Works - TREE ASSESSMENT

## Pinus patula Group 2



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus patula	
Height:	6-12
Canopy Spread:	600-900
Trunk Circumference:	5-8
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES	

TREE NUMBER	Group
	2

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	4
Disturbance Tolerance	1
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Trees provide screening for residents from Dudley St and Adelaide Ave	

# Old Canberra Brick Works - TREE ASSESSMENT

## Ulmus procera Group 2



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Ulmus procera	
Height:	4-6
Canopy Spread:	2-5
Trunk Circumference:	300-600
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES	
Formative pruning to be continued	

TREE NUMBER	Group
	2

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Trees contribute to landscape character.	

# Old Canberra Brick Works - TREE ASSESSMENT

## Pinus patula Group 3



<b>TREE NUMBER</b>	<b>Group 3</b>
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus patula	
Height:	5-8
Canopy Spread:	5-8
Trunk Circumference:	600-900
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	4
Disturbance Tolerance	1
Risk Potential	2
Health / Condition	3

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

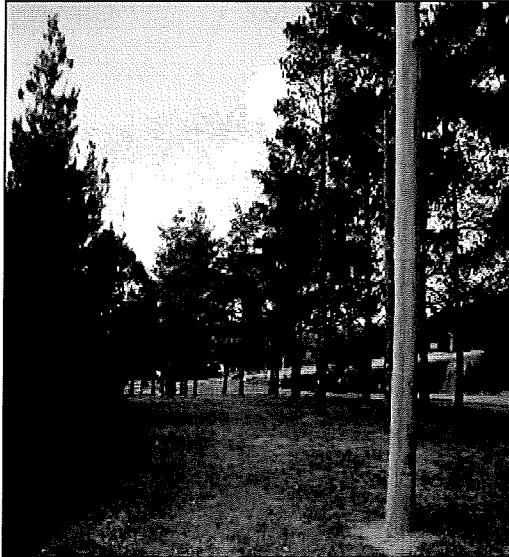
ARBORICULTURAL NOTES

AMENITY NOTES
Trees provide screening for residents from Dudley St and Adelaide Ave



# Old Canberra Brick Works - TREE ASSESSMENT

## Dudley St road verge Yarralumla



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus radiata	
Height:	10-14
Canopy Spread:	6-10
Trunk Circumference:	600-1200
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
Frequent pruning to continue when required Weed Plant

TREE NUMBER	Group
-------------	-------

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	2
Mistletoe	3
Form	2
Age	2
Habitat Value	4
Disturbance Tolerance	1
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Trees provide landscape screen and edge to suburb.

# Old Canberra Brick Works - TREE ASSESSMENT

## Dudley Street East Area E



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St East	
E:	N
Species: Pinus radiata	
Height:	16-25
Canopy Spread:	4-15
Trunk Circumference:	60-2400
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Removal of dead and non performing trees over time. Replanting will be required.	
Weed Plant	

TREE NUMBER	Group
-------------	-------

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
Recommendation:	
Retain and Manage	X
Remove	

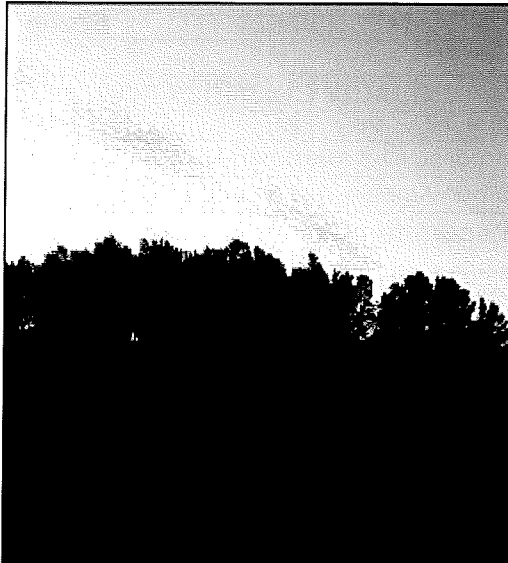
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Group of Pines in forestry style planting providing screening and a buffer to the Yarralumla residents.	

# Old Canberra Brick Works - TREE ASSESSMENT

## Dudley Street West Area D



<b>TREE NUMBER</b>	<b>Group</b>
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Pinus radiata	
Height:	16-25
Canopy Spread:	4-15
Trunk Circumference:	60-2400
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	
Potential to Reduce Risk	
Potential to Improve Amenity Value	

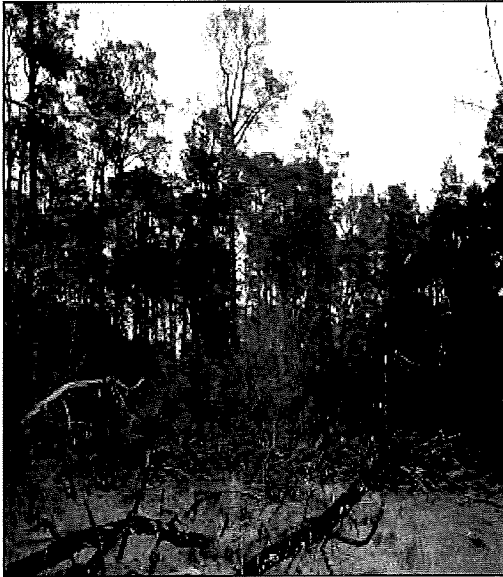
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

ARBORICULTURAL NOTES
Removal of dead and non performing trees over time. Replanting will be required. Weed Plant

AMENITY NOTES
Group of Pines in forestry style planting providing screening and a buffer to the Yarralumla residents.

# Old Canberra Brick Works - TREE ASSESSMENT

## Area F



DATA	
Assessment Date:	23/07/10
Assessor:	HS
Tree Location: Brickworks West	
E:	N
Species: Pinus radiata	
Height:	16-25
Canopy Spread:	4-15
Trunk Circumference:	60-2400
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Removal of dead and non performing trees over time. Replanting will be required.	
Weed Plant	

TREE NUMBER	Group
-------------	-------

QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	E
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

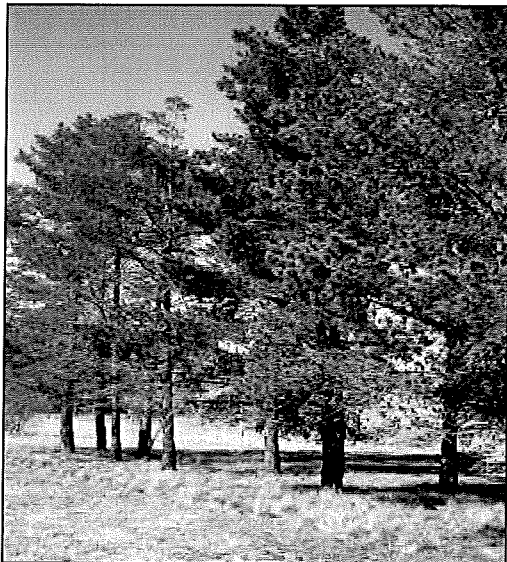
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES	
Group of Pines in forestry style planting providing screening and a buffer to the Brick Works and a tree lined edge to the golf course.	

# Old Canberra Brick Works - TREE ASSESSMENT

Corner Cotter Road and Dudley Street (Intersection)



<b>TREE NUMBER</b>	<b>Group 1</b>
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Rd/Dudley St intersection	
E:	N
Species: Pinus radiata	
Height:	12 +
Canopy Spread:	6-8
Trunk Circumference:	1200+
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	
Potential to Reduce Risk	
Potential to Improve Amenity Value	

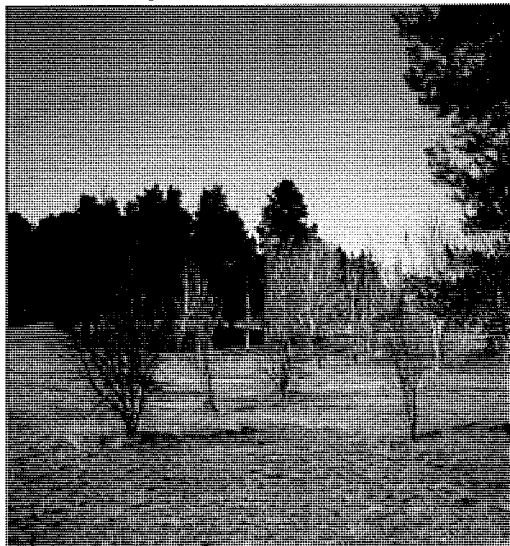
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

ARBORICULTURAL NOTES
Minor deadwood needs removal. Weed Plant

AMENITY NOTES
Significant accent group of pines on edge of suburb

# Old Canberra Brick Works - TREE ASSESSMENT

Dudley Street south – adjacent to  
Pine Group 1



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Dudley St South	
E:	N
Species: Prunus cerasifera	
Height:	2-5
Canopy Spread:	2-4
Trunk Circumference:	200-400
Number of Trunks:	1-4

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES

TREE NUMBER	Group

QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

AMENITY NOTES
Adjacent to Pinus radiata Group 1

# Old Canberra Brick Works - TREE ASSESSMENT

Cotter Road verge (north side)



TREE NUMBER	Group
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road verge North	
E:	N
Species: Populus alba	
Height:	12-14
Canopy Spread:	5-10
Trunk Circumference:	600-1000
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	2
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	2

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

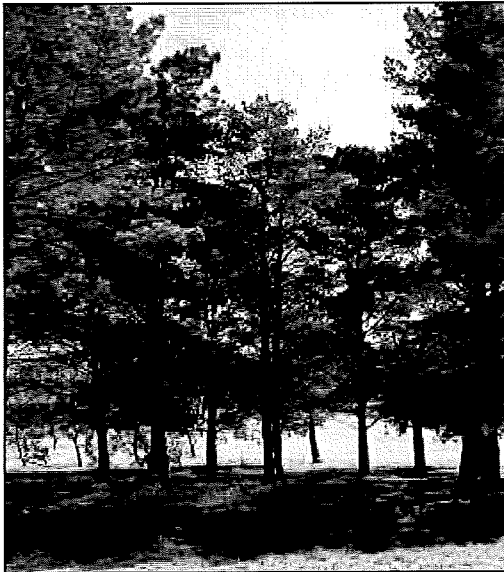
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

ARBORICULTURAL NOTES
Trees are in decline Prohibited weed plant

AMENITY NOTES
Trees provide screening to Cotter Road. Drawing G19. Grouping of Populus alba

# Old Canberra Brick Works - TREE ASSESSMENT

Cotter Road North side



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road North Side	
E:	N
Species: Pinus radiata	
Height:	12-16
Canopy Spread:	12-18
Trunk Circumference:	900-1500
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Trees show good form and vigour. Weed Plant	

TREE NUMBER	Group 2
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QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
Recommendation:	
Retain and Manage	X
Remove	

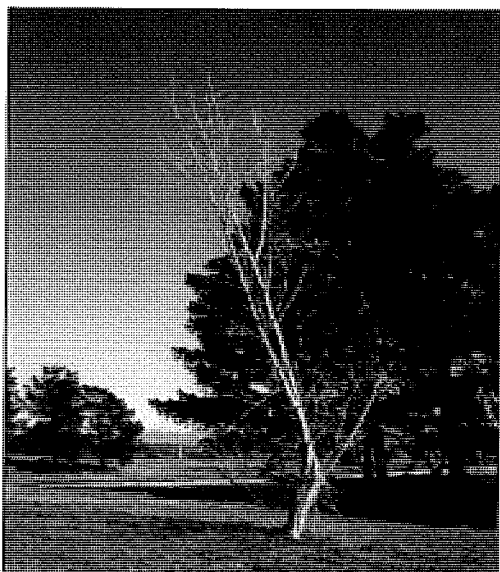
ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

AMENITY NOTES	
Group of pines providing edge definition to suburb and Cotter Road	



# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>593</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Dudley St West	
E:	N
Species: Populus alba	
Height:	14
Canopy Spread:	3
Trunk Circumference:	500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicomic Growth	3
Mistletoe	3
Form	2
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Poorly shaped and formed tree Weed Plant

<b>AMENITY NOTES</b>
Isolated tree between two large tree groups

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>592</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road	
E:	N
Species: Populus alba	
Height:	14
Canopy Spread:	7
Trunk Circumference:	1500
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

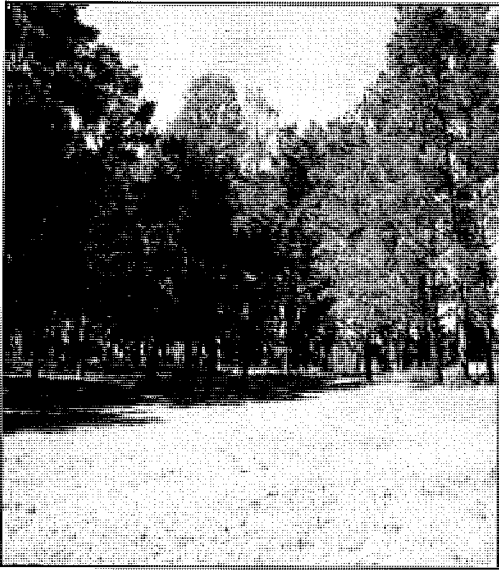
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Weed Plant

<b>AMENITY NOTES</b>
Isolated tree on the verge of Cotter Road

# Old Canberra Brick Works - TREE ASSESSMENT

Dudley Street to Cotter Road



<b>TREE NUMBER</b>	<b>Group 3</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Dudley Street to Cotter Road	
E:	N
Species: Pinus radiata	
Height:	14-20
Canopy Spread:	14-22
Trunk Circumference:	900-2200
Number of Trunks:	1-2

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>ARBORICULTURAL NOTES</b>
Trees in this group are self supporting forestry plot Weed Plant

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>AMENITY NOTES</b>
Main group of pines separating Dudley Street and Cotter Road.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>591</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	2

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road North side	
E:	N
Species: Populus alba	
Height:	6
Canopy Spread:	3
Trunk Circumference:	200
Number of Trunks:	1

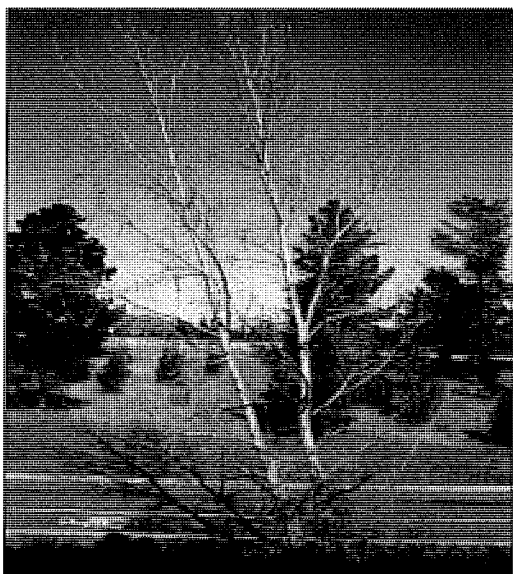
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

<b>ARBORICULTURAL NOTES</b>
Tree is self sown and shows poor shape and form. Weed Plant

<b>AMENITY NOTES</b>
Self sown tree on verge of link road.

# Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road North side	
E:	N
Species: Populus alba	
Height:	14
Canopy Spread:	10
Trunk Circumference:	1800
Number of Trunks:	2

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Tree requires lower branches to be lifted from road side.	
Weed Plant	

TREE NUMBER	590
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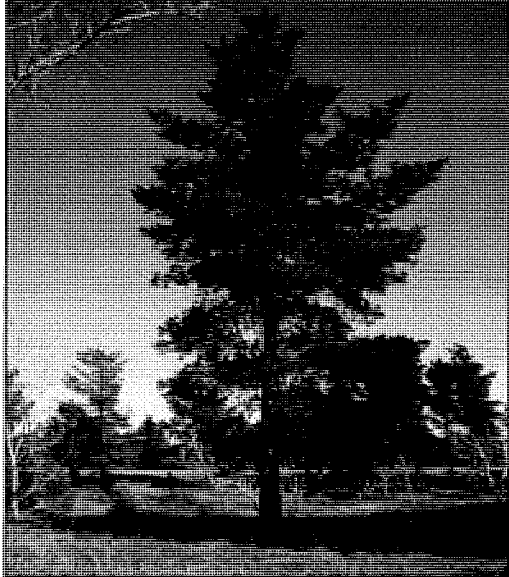
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	
Remove	x

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	1
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

AMENITY NOTES	
Isolated tree on road verge.	
Recommend removal.	
Tree too close to traffic	

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>588</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter road north side.	
E:	N
Species: Pinus radiata	
Height:	18
Canopy Spread:	7.5
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

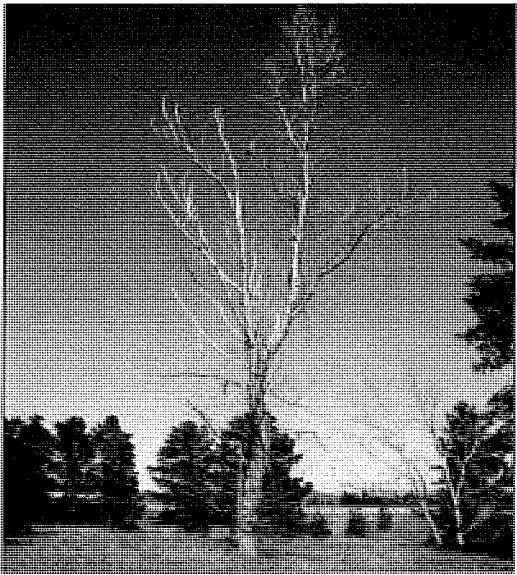
<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Weed Plant

<b>AMENITY NOTES</b>
Isolated tree between Group 2 and Group 3.

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>589</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
<b>Retain and Manage</b>	
<b>Remove</b>	X

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	
Tree Location: Cotter Road North side	
E:	N
Species: Populus alba	
Height:	8
Canopy Spread:	7.5
Trunk Circumference:	900
Number of Trunks:	1

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	2
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	2
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	1
Health / Condition	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	1
Potential to Reduce Risk	3
Potential to Improve Amenity Value	3

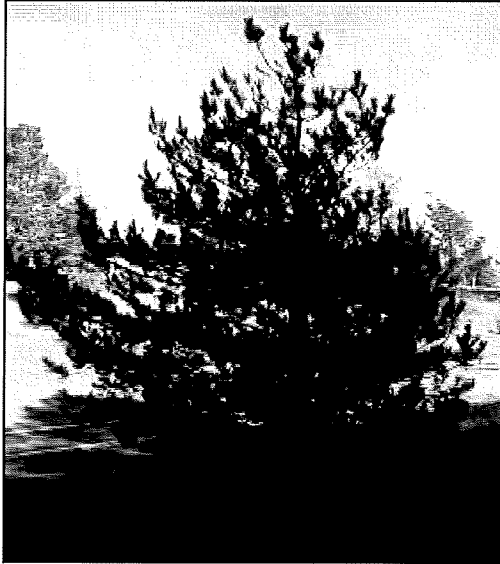
<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>ARBORICULTURAL NOTES</b>
Tree in decline Weed Plant

<b>AMENITY NOTES</b>

# Old Canberra Brick Works - TREE ASSESSMENT

## Cotter Road North side



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road North side	
E:	N
Species: Pinus radiata	
Height:	6
Canopy Spread:	4
Trunk Circumference:	600
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES
Young self seeded tree in good condition. Weed Plant

TREE NUMBER	587
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

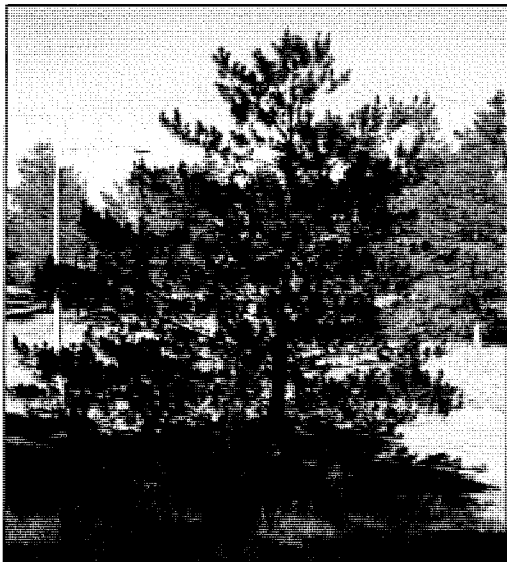
URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

AMENITY NOTES
Self sown tree on verge of road batter



# Old Canberra Brick Works - TREE ASSESSMENT

## Cotter road North side



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Cotter Road North side	
E:	N
Species: Pinus radiata	
Height:	4-6
Canopy Spread:	2-4
Trunk Circumference:	300-500
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Young self seeded tree in good condition Weed Plant	

TREE NUMBER	586
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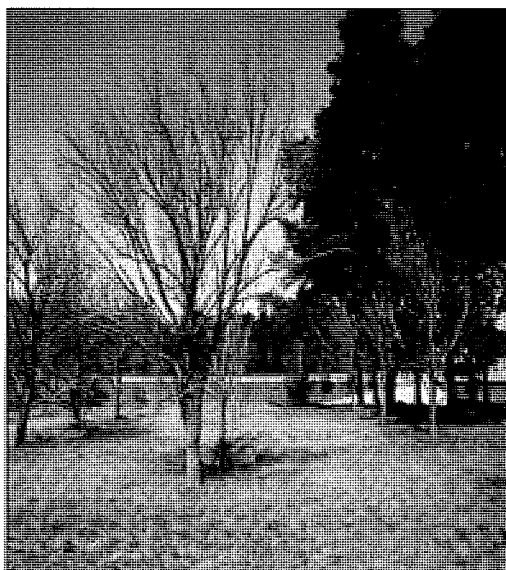
QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
Recommendation:	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	3
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	3
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

AMENITY NOTES	
Self sown tree on verge of road batter.	

## Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Dudley Street South	
E:	N
Species: Ulmus procera	
Height:	2-6
Canopy Spread:	2-4
Trunk Circumference:	300-500
Number of Trunks:	1

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	1
Potential to Improve Amenity Value	1

ARBORICULTURAL NOTES
Poor health, removal and replacement of trees recommended. Poorly performed trees with irregular, incomplete canopy.

TREE NUMBER	Group 4
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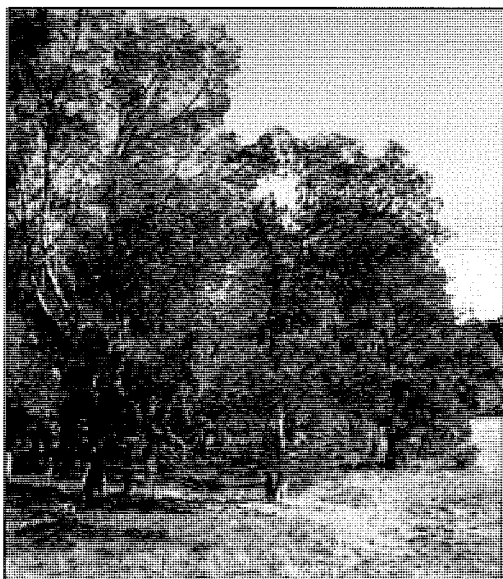
QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	P
Urban Amenity Assessment	P
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	1
Canopy Dead Wood	2
Insect Occurrence	2
Disease	2
Epicormic Growth	3
Mistletoe	3
Form	3
Age	1
Habitat Value	3
Disturbance Tolerance	1
Risk Potential	3
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	2
Scientific Value	1

AMENITY NOTES
Vegetation screening adjacent to pine plantation. Removal of these trees will result in significant gap within the screen planting.

## Old Canberra Brick Works - TREE ASSESSMENT



DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Adelaide Ave North Side	
E:	N
Species: Casuarina cunninghamiana	
Height:	4-12
Canopy Spread:	4-8
Trunk Circumference:	400-900
Number of Trunks:	1-2

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	1
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

ARBORICULTURAL NOTES	
Dead wood is significant within these trees	

TREE NUMBER	Group
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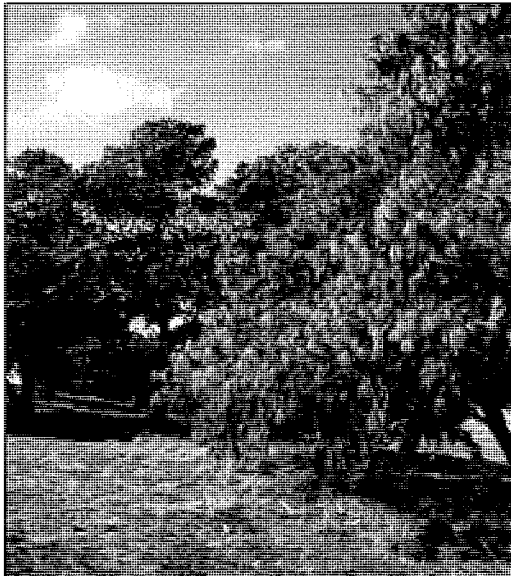
QUALITY CLASSIFICATION	
Regulated Tree	Y
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	2
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	3
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	2
Cultural Value	1
Social Value	1
Scientific Value	1

AMENITY NOTES	
Vegetation screening between Adelaide Ave and Dudley Street.	

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>Group</b>
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QUALITY CLASSIFICATION	
Regulated Tree	N
Arboricultural Assessment	H
Urban Amenity Assessment	H
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

DATA	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Adelaide Ave	
E:	N
Species: Pinus patula and canariensis	
Height:	6-8
Canopy Spread:	4-6
Trunk Circumference:	600-800
Number of Trunks:	1

ARBORICULTURAL CHARACTERISTICS	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

TREE PROTECTION / MANAGEMENT	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

URBAN AMENITY CHARACTERISTICS	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

ARBORICULTURAL NOTES

AMENITY NOTES
Screening between Adelaide Ave and Dudley Street. Planting as part of Adelaide Ave road corridor.

## Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>469</b>
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<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	X
Remove	

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Adelaide Ave	
E:	N
Species: Pinus patula	
Height:	8.5
Canopy Spread:	8
Trunk Circumference:	1400
Number of Trunks:	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

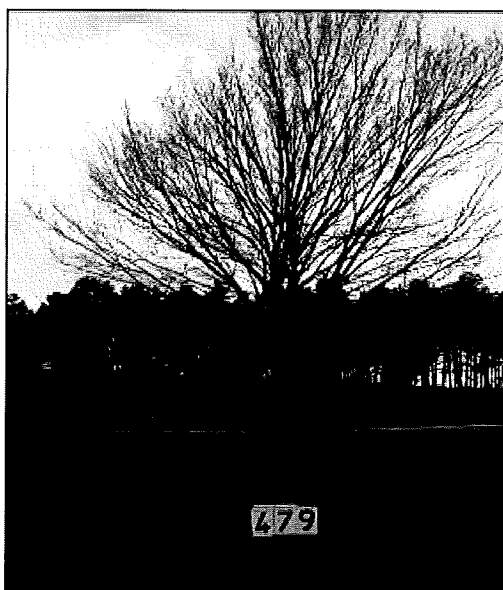
<b>ARBORICULTURAL NOTES</b>

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	3
Potential Contribution to Future Landscape	3
Visual / Scenic	3
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>AMENITY NOTES</b>
Screening between Adelaide Ave and Dudley Street. Planting as part of Adelaide Ave road corridor

# Old Canberra Brick Works - TREE ASSESSMENT



<b>TREE NUMBER</b>	<b>477</b>
--------------------	------------

<b>QUALITY CLASSIFICATION</b>	
Regulated Tree	N
Arboricultural Assessment	M
Urban Amenity Assessment	M
<b>Recommendation:</b>	
Retain and Manage	
Remove	X

<b>ARBORICULTURAL CHARACTERISTICS</b>	
Canopy Density	3
Canopy Dead Wood	3
Insect Occurrence	3
Disease	3
Epicormic Growth	3
Mistletoe	3
Form	4
Age	2
Habitat Value	2
Disturbance Tolerance	2
Risk Potential	2
Health / Condition	3

<b>DATA</b>	
Assessment Date:	09/08/10
Assessor:	HS
Tree Location: Adelaide Ave	
E:	N
Species: Ulmus procera	
Height:	8.5
Canopy Spread:	8
Trunk Circumference:	600
Number of Trunks:	1

<b>URBAN AMENITY CHARACTERISTICS</b>	
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual / Scenic	2
Unique Species	1
Habitat Quality	1
Cultural Value	1
Social Value	1
Scientific Value	1

<b>TREE PROTECTION / MANAGEMENT</b>	
Tree Protection Zone	2
Potential to Reduce Risk	2
Potential to Improve Amenity Value	2

<b>ARBORICULTURAL NOTES</b>
Incorrect number used in photograph. Tree is 477 in survey and vegetation assessment plans

<b>AMENITY NOTES</b>
Isolated self sown tree on edge of Dudley street. Recommend for removal: Too close to traffic



# TREE ASSESSMENT

## APPENDIX 3 Old Canberra Brick Works

### Tree Assessment Drawings 2537-G1 to G14, G19 and G20



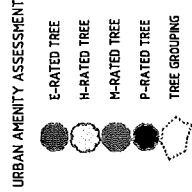
dsb LANDSCAPE ARCHITECTS  
DEAKIN CHAMBERS  
14 HANNAH PLACE, DEAKIN, ACT 2600



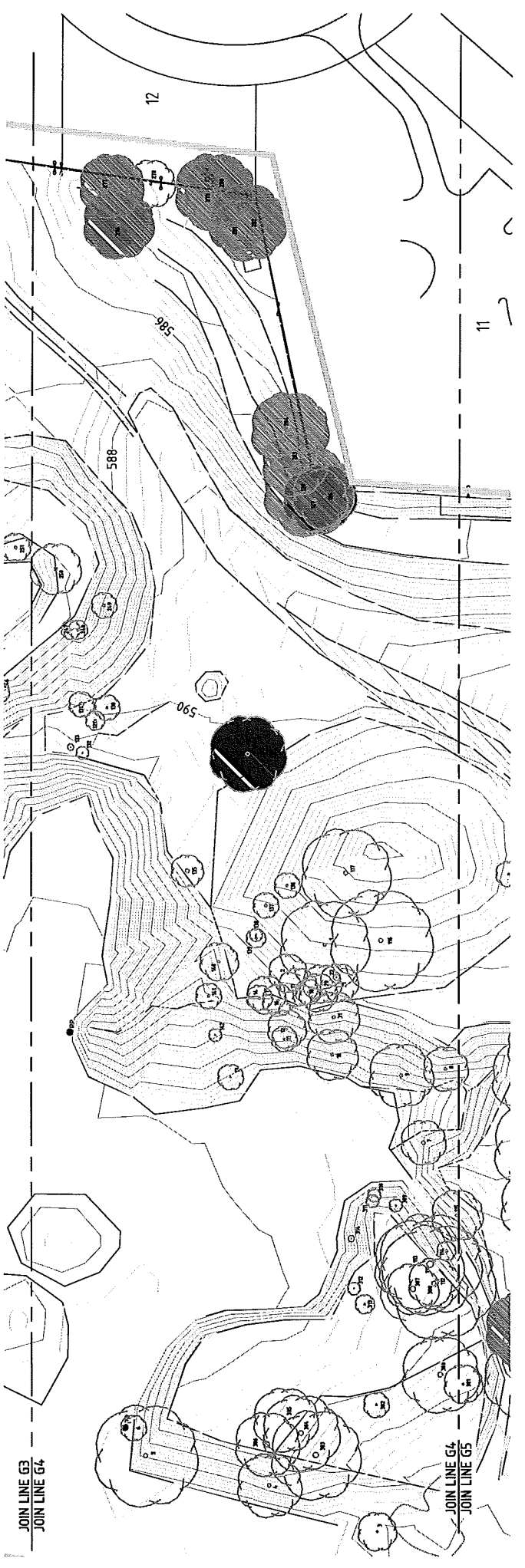








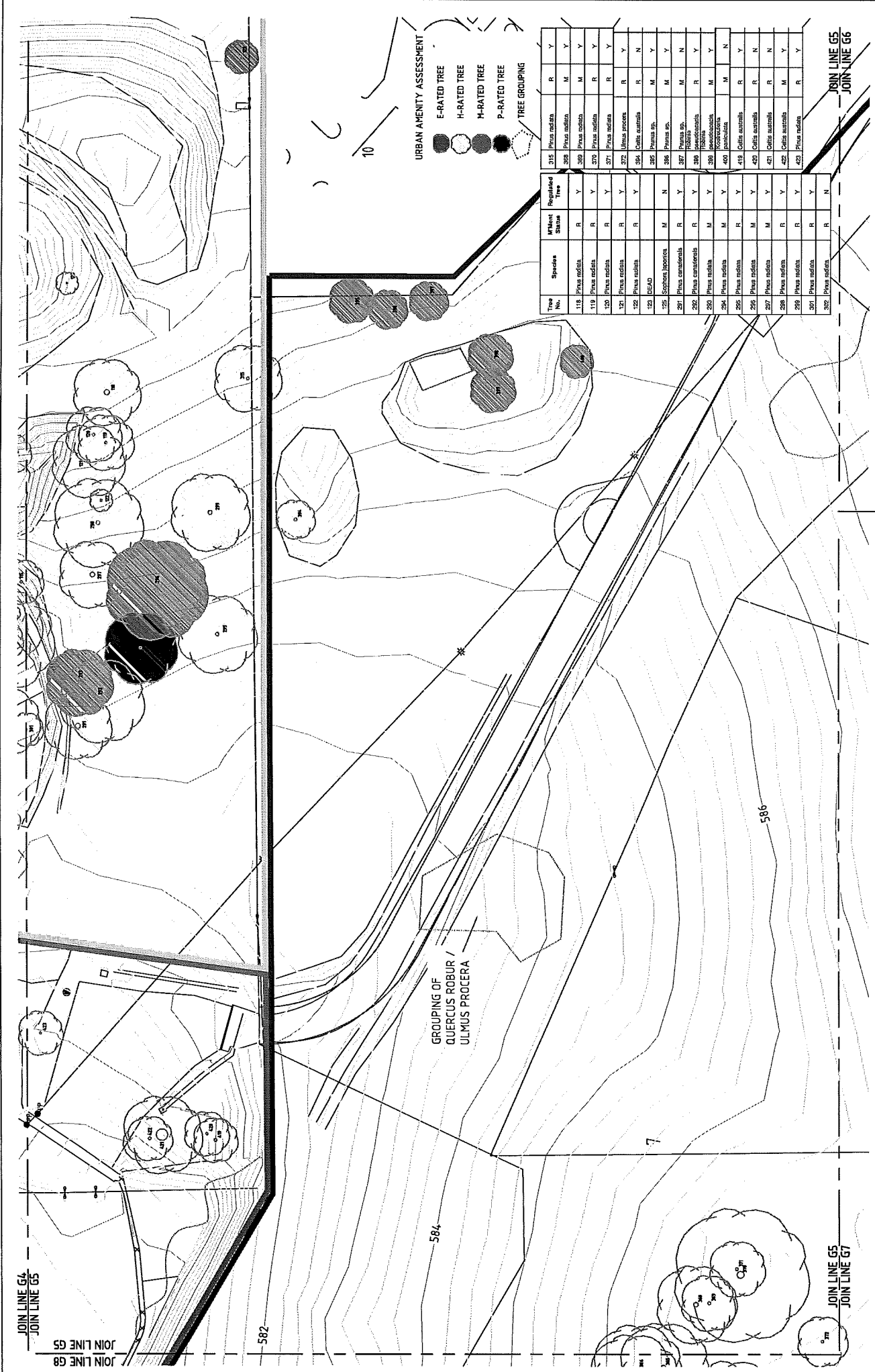
Tree No.	Species	Management Status	Regulated Tree	31	Pinus radiata	R	Y	R	Y
1	Pinus radiata	R	Y	111	Robinia pseudoacacia	R	Y	R	Y
2	Pinus radiata	R	Y	112	Pinus radiata	R	Y	R	Y
3	Eucalyptus salubris	R	N	113	Pinus radiata	R	Y	R	Y
4	Pinus radiata	R	Y	114	Pinus radiata	R	Y	R	Y
5	Pinus radiata	R	Y	115	DEAD				
6	Pinus radiata	R	Y	116	Pinus radiata	R	Y	R	Y
7	Pinus radiata	R	Y	117	Pinus radiata	R	Y	R	Y
8	Pinus radiata	R	Y	118	Pinus radiata	R	Y	R	Y
9	Pinus radiata	R	Y	119	Pinus radiata	R	Y	R	Y
10	Pinus radiata	R	Y	120	Pinus radiata	R	Y	R	Y
11	Pinus radiata	R	Y	121	Pinus radiata	R	Y	R	Y
12	Pinus radiata	R	Y	122	Pinus radiata	R	Y	R	Y
13	Pinus radiata	R	Y	123	Pinus radiata	R	Y	R	Y
14	Pinus radiata	R	Y	124	Pinus radiata	R	Y	R	Y
15	Pinus radiata	R	Y	125	Pinus radiata	R	Y	R	Y
16	Pinus radiata	R	Y	126	Pinus radiata	R	Y	R	Y
17	Pinus radiata	R	Y	127	Pinus radiata	R	Y	R	Y
18	Pinus radiata	R	Y	128	Pinus radiata	R	Y	R	Y
19	Pinus radiata	R	Y	129	Pinus radiata	R	Y	R	Y
20	Pinus radiata	R	Y	130	Pinus radiata	R	Y	R	Y
21	Pinus radiata	R	Y	131	Pinus radiata	R	Y	R	Y
22	Pinus radiata	R	Y	132	Pinus radiata	R	Y	R	Y
				133	Pinus radiata	R	Y	R	Y
				134	Pinus radiata	R	Y	R	Y
				135	Pinus radiata	R	Y	R	Y
				136	Pinus radiata	R	Y	R	Y
				137	Pinus radiata	R	Y	R	Y
				138	Pinus radiata	R	Y	R	Y
				139	Pinus radiata	R	Y	R	Y
				140	Pinus radiata	R	Y	R	Y
				141	Pinus radiata	R	Y	R	Y
				142	Pinus radiata	R	Y	R	Y
				143	Pinus radiata	R	Y	R	Y
				144	Pinus radiata	R	Y	R	Y
				145	Pinus radiata	R	Y	R	Y
				146	Pinus radiata	R	Y	R	Y
				147	Pinus radiata	R	Y	R	Y
				148	Pinus radiata	R	Y	R	Y
				149	Pinus radiata	R	Y	R	Y
				150	Pinus radiata	R	Y	R	Y
				151	Pinus radiata	R	Y	R	Y
				152	Pinus radiata	R	Y	R	Y
				153	Pinus radiata	R	Y	R	Y
				154	Pinus radiata	R	Y	R	Y
				155	Pinus radiata	R	Y	R	Y
				156	Pinus radiata	R	Y	R	Y
				157	Pinus radiata	R	Y	R	Y
				158	Pinus radiata	R	Y	R	Y
				159	Pinus radiata	R	Y	R	Y
				160	Pinus radiata	R	Y	R	Y
				161	Pinus radiata	R	Y	R	Y
				162	Pinus radiata	R	Y	R	Y
				163	Pinus radiata	R	Y	R	Y
				164	Pinus radiata	R	Y	R	Y
				165	Pinus radiata	R	Y	R	Y
				166	Pinus radiata	R	Y	R	Y
				167	Pinus radiata	R	Y	R	Y
				168	Pinus radiata	R	Y	R	Y
				169	Pinus radiata	R	Y	R	Y
				170	Pinus radiata	R	Y	R	Y
				171	Pinus radiata	R	Y	R	Y
				172	Pinus radiata	R	Y	R	Y
				173	Pinus radiata	R	Y	R	Y
				174	Pinus radiata	R	Y	R	Y
				175	Pinus radiata	R	Y	R	Y
				176	Pinus radiata	R	Y	R	Y
				177	Pinus radiata	R	Y	R	Y
				178	Pinus radiata	R	Y	R	Y
				179	Pinus radiata	R	Y	R	Y
				180	Pinus radiata	R	Y	R	Y
				181	Pinus radiata	R	Y	R	Y
				182	Pinus radiata	R	Y	R	Y
				183	Pinus radiata	R	Y	R	Y
				184	Pinus radiata	R	Y	R	Y
				185	Pinus radiata	R	Y	R	Y
				186	Pinus radiata	R	Y	R	Y
				187	Pinus radiata	R	Y	R	Y
				188	Pinus radiata	R	Y	R	Y
				189	Pinus radiata	R	Y	R	Y
				190	Pinus radiata	R	Y	R	Y
				191	Pinus radiata	R	Y	R	Y
				192	Pinus radiata	R	Y	R	Y
				193	Pinus radiata	R	Y	R	Y
				194	Pinus radiata	R	Y	R	Y
				195	Pinus radiata	R	Y	R	Y
				196	Pinus radiata	R	Y	R	Y
				197	Pinus radiata	R	Y	R	Y
				198	Pinus radiata	R	Y	R	Y
				199	Pinus radiata	R	Y	R	Y
				200	Pinus radiata	R	Y	R	Y
				201	Pinus radiata	R	Y	R	Y
				202	Pinus radiata	R	Y	R	Y
				203	Pinus radiata	R	Y	R	Y
				204	Pinus radiata	R	Y	R	Y
				205	Pinus radiata	R	Y	R	Y
				206	Pinus radiata	R	Y	R	Y
				207	Pinus radiata	R	Y	R	Y
				208	Pinus radiata	R	Y	R	Y
				209	Pinus radiata	R	Y	R	Y
				210	Pinus radiata	R	Y	R	Y
				211	Pinus radiata	R	Y	R	Y
				212	Pinus radiata	R	Y	R	Y
				213	Pinus radiata	R	Y	R	Y
				214	Pinus radiata	R	Y	R	Y



	Project OLD CANBERRA BRICKWORKS	Drawing Title TREE ASSESSMENT PLAN	Sheet No. 2393-G4-C
	Client LAND DEVELOPMENT AGENCY		
	dslb LANDSCAPE ARCHITECTS	Drawing No. 2393-G4-C	Date 23/02/2016
	Land Development Agency	Drawing No. 2393-G4-C	Date 23/02/2016

NOTES:  
 1. ALL TREES TO BE MAINTAINED UNLESS OTHERWISE NOTED.  
 2. ALL TREES TO BE MAINTAINED UNLESS OTHERWISE NOTED.  
 3. ALL TREES TO BE MAINTAINED UNLESS OTHERWISE NOTED.  
 4. ALL TREES TO BE MAINTAINED UNLESS OTHERWISE NOTED.  
 5. ALL TREES TO BE MAINTAINED UNLESS OTHERWISE NOTED.

NO.	DESIGN (DRAWN)	DATE	AMENDMENT / ISSUE
1	MS	27-04-10	OTTER ROAD / DOOLEY STREET ADDD
2	MS	28-02-10	TREE ASSESSMENT DRAFT
3	MS	28-02-10	AMENDMENT / ISSUE



Tree No.	Species	M/Mont Status	Regulated Tree
118	Pinus radiata	R	Y
119	Pinus radiata	R	Y
120	Pinus radiata	R	Y
121	Pinus radiata	H	Y
122	Pinus radiata	R	Y
123	BEAD		
125	Sophora japonica	M	N
126	Pinus radiata	R	Y
127	Pinus radiata	R	Y
128	Pinus radiata	R	Y
129	Pinus radiata	R	Y
130	Pinus radiata	R	Y
131	Pinus radiata	R	Y
132	Pinus radiata	R	Y
133	Pinus radiata	R	Y
134	Pinus radiata	R	Y
135	Pinus radiata	R	Y
136	Pinus radiata	R	Y
137	Pinus radiata	R	Y
138	Pinus radiata	R	Y
139	Pinus radiata	R	Y
140	Pinus radiata	R	Y
141	Pinus radiata	R	Y
142	Pinus radiata	R	Y
143	Pinus radiata	R	Y
144	Pinus radiata	R	Y
145	Pinus radiata	R	Y
146	Pinus radiata	R	Y
147	Pinus radiata	R	Y
148	Pinus radiata	R	Y
149	Pinus radiata	R	Y
150	Pinus radiata	R	Y
151	Pinus radiata	R	Y
152	Pinus radiata	R	Y
153	Pinus radiata	R	Y
154	Pinus radiata	R	Y
155	Pinus radiata	R	Y
156	Pinus radiata	R	Y
157	Pinus radiata	R	Y
158	Pinus radiata	R	Y
159	Pinus radiata	R	Y
160	Pinus radiata	R	Y
161	Pinus radiata	R	Y
162	Pinus radiata	R	Y
163	Pinus radiata	R	Y
164	Pinus radiata	R	Y
165	Pinus radiata	R	Y
166	Pinus radiata	R	Y
167	Pinus radiata	R	Y
168	Pinus radiata	R	Y
169	Pinus radiata	R	Y
170	Pinus radiata	R	Y
171	Pinus radiata	R	Y
172	Pinus radiata	R	Y
173	Pinus radiata	R	Y
174	Pinus radiata	R	Y
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237	Pinus radiata	R	Y
238	Pinus radiata	R	Y
239	Pinus radiata	R	Y
240	Pinus radiata	R	Y
241	Pinus radiata	R	Y
242	Pinus radiata	R	Y
243	Pinus radiata	R	Y

JOIN LINE G5  
JOIN LINE G6

**NOTES**  
 1. THIS PLAN IS A PRELIMINARY DESIGN AND SHOULD NOT BE USED FOR CONSTRUCTION WITHOUT THE APPROVAL OF THE ENGINEER.  
 2. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE STRUCTURES SHOWN ON THIS PLAN.  
 3. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES.  
 4. THIS PLAN IS THE PROPERTY OF THE ENGINEER AND SHOULD NOT BE REPRODUCED OR COPIED WITHOUT HIS WRITTEN CONSENT.  
 5. ANY CHANGES TO THIS PLAN MUST BE APPROVED BY THE ENGINEER IN WRITING.

**AREAS AVOID**  
 CENTER ROAD / DUDLEY STREET AVOID  
 TREE ASSESSMENT ZONE  
 AMENDMENT / ISSUE

DATE: 15-09-19  
 21-08-19  
 28-07-19

POD HS ✓  
 POD HS ✓  
 POD HS ✓  
 (ISSUED/DRAWN/CHECKED) (VERD) DATE

**Project** OLD CAMBERRA BRICKWORKS  
**Client** LAND DEVELOPMENT AGENCY

**Drawing Title** TREE ASSESSMENT PLAN  
**Scale** 1:500 @ A1  
**Sheet No.** 2593-05 C

**Logos:** ddb, LANIT, ACCL, Land Development Agency

JOIN LINE G8  
JOIN LINE G5  
JOIN LINE G6  
JOIN LINE G5

JOIN LINE G5  
JOIN LINE G7

GROUPING OF  
QUERCUS ROBUR /ULMUS PROCERA







Drawing Title: **TREE ASSESSMENT PLAN**  
 Scale: 1:500 @ A1  
 Project: **OLD CANNERRA BRICKWORKS**  
 Client: **LAND DEVELOPMENT AGENCY**  
 Drawing No: 2668-G7 D  
 Street No: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Scale: 0 5 10 15 20 25m  
 Date: 21/08/19

NOTES:  
 1. THIS DRAWING IS A PRELIMINARY DESIGN AND SHOULD NOT BE USED FOR CONSTRUCTION WITHOUT THE ARCHITECT'S APPROVAL.  
 2. THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.  
 3. THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.  
 4. THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.  
 5. THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.

APPROVED: LEROLO  
 ANJALA ADDO  
 CUTLER ROAD / DUDLEY STREET ADDO  
 TREE ASSESSMENT DRAFT  
 DATE: 21-08-19  
 DATE: 21-08-19  
 DATE: 21-08-19  
 DATE: 21-08-19

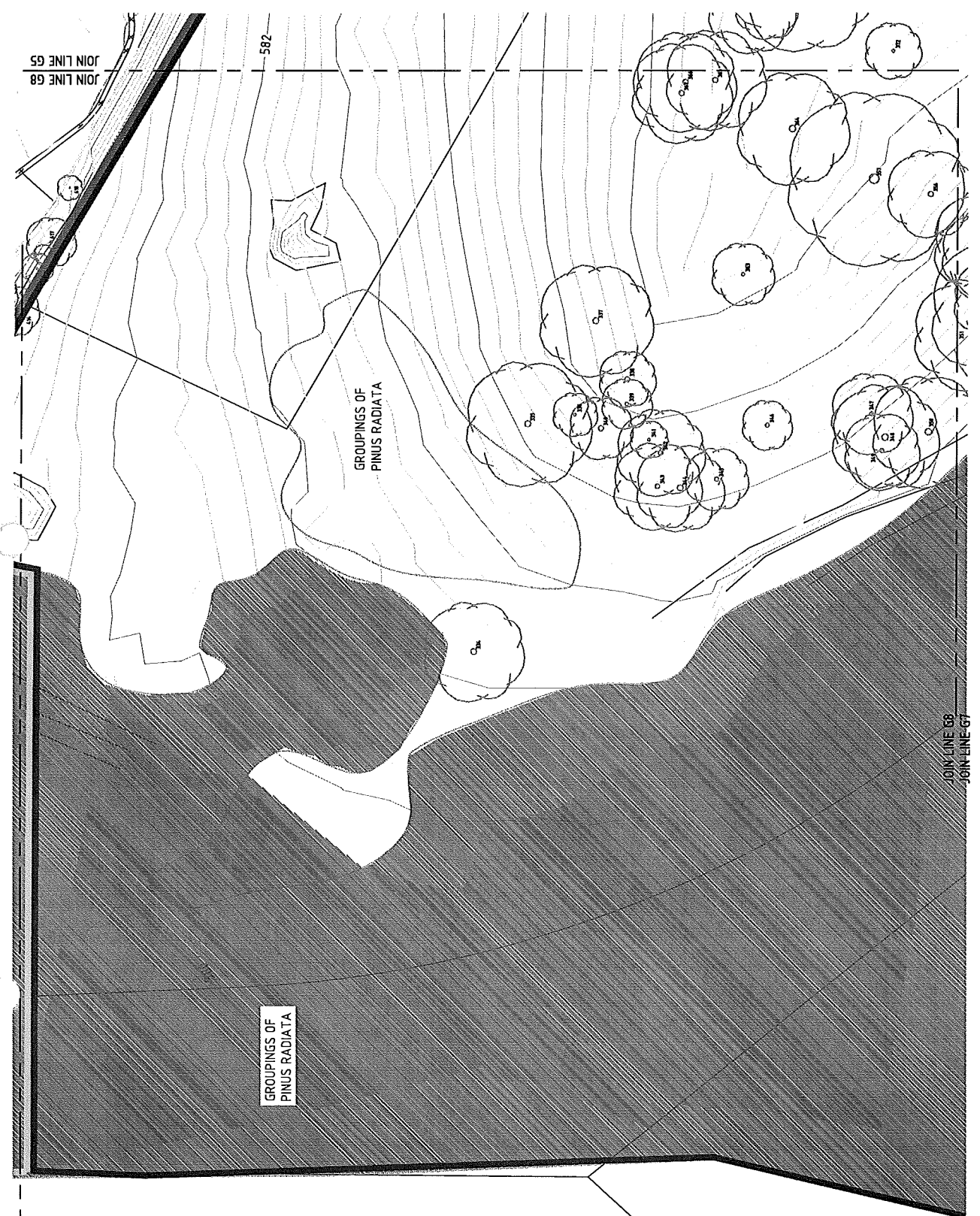
DESIGNED: [ ] DRAWN: [ ] CHECKED: [ ] VERIFIED: [ ]  
 ARCHITECT: [ ]

JOIN LINE G9  
JOIN LINE G8

**URBAN AMENITY ASSESSMENT**

- E-RATED TREE
- H-RATED TREE
- M-RATED TREE
- P-RATED TREE
- TREE GROUPING

Tree No.	Species	Health Status	Regulated Tree
334	Pinus radiata	R	Y
335	Pinus radiata	R	N
336	Pinus radiata	R	N
337	Pinus radiata	R	Y
338	Pinus radiata	R	Y
339	Pinus radiata	R	Y
340	Pinus radiata	M	Y
341	Pinus radiata	M	Y
342	Pinus radiata	M	Y
343	Pinus radiata	R	Y
344	Pinus radiata	R	Y
345	Pinus radiata	R	Y
346	Pinus radiata	R	Y
347	Pinus radiata	R	Y
348	Pinus radiata	R	Y
349	Pinus radiata	R	Y
350	Pinus radiata	R	Y
351	Pinus radiata	R	Y
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475	Pinus radiata	R	Y
476	Pinus radiata	R	Y
477	Pinus radiata	R	Y
478	Pinus radiata	R	Y
479	Pinus radiata	R	Y
480	Pinus radiata	R	Y
481	Pinus radiata	R	Y
482	Pinus radiata	R	Y
483	Pinus radiata	R	Y
484	Pinus radiata	R	Y
485	Pinus radiata	R	Y
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492	Pinus radiata	R	Y
493	Pinus radiata	R	Y
494	Pinus radiata	R	Y
495	Pinus radiata	R	Y
496	Pinus radiata	R	Y
497	Pinus radiata	R	Y
498	Pinus radiata	R	Y
499	Pinus radiata	R	Y
500	Pinus radiata	R	Y



**Project:** OLD CANNON BRICKWORKS  
**Client:** LAND DEVELOPMENT AGENCY

**Drawing Title:** TREE ASSESSMENT PLAN  
**Scale:** 1:500 @ A1  
**Drawn By:** 2593-G8 C

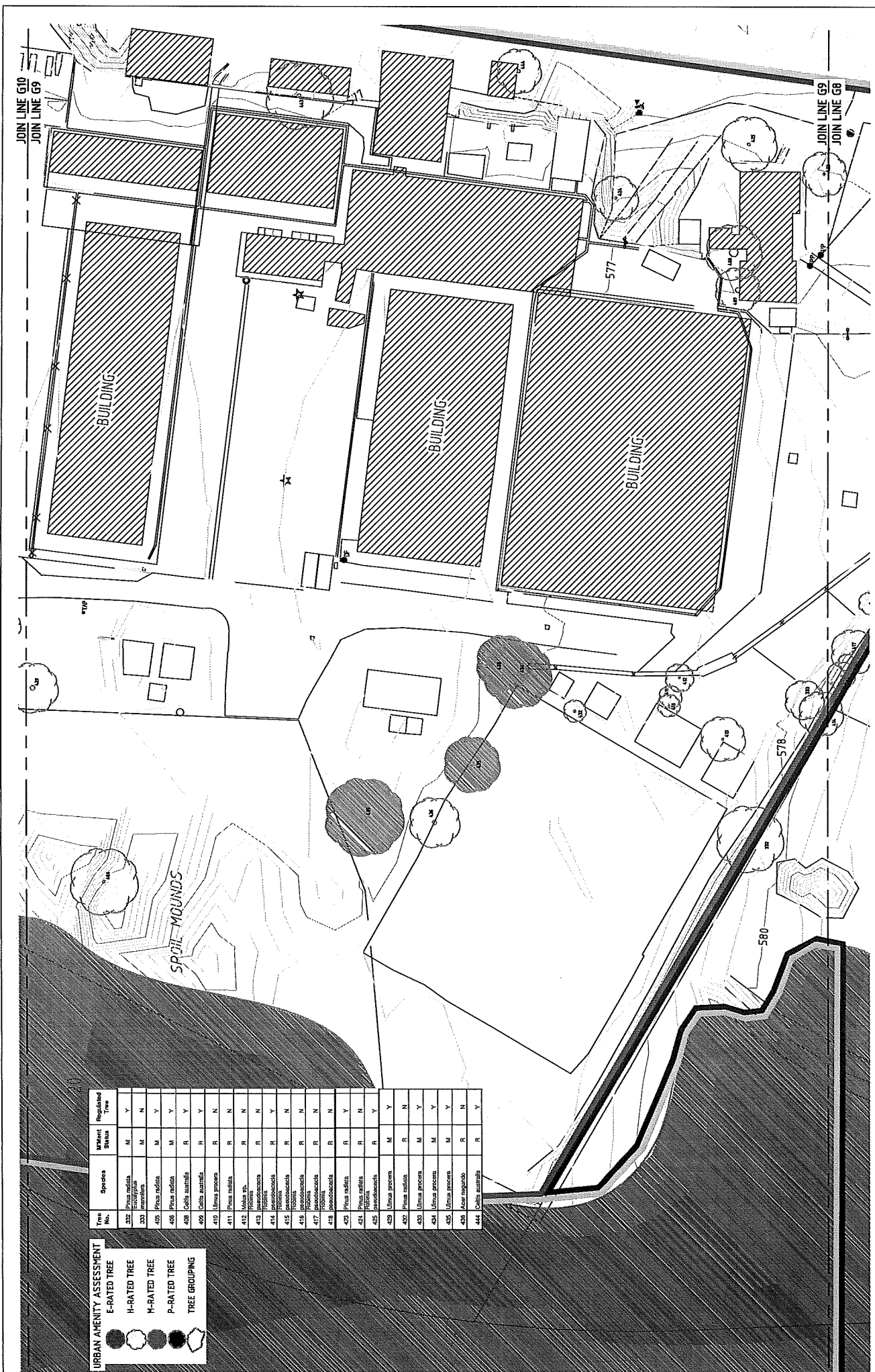
**Notes:**  
 1. This drawing is a site plan for the proposed development.  
 2. The tree assessment is based on the information provided by the client.  
 3. The tree assessment is based on the information provided by the client.  
 4. The tree assessment is based on the information provided by the client.  
 5. The tree assessment is based on the information provided by the client.

**Legend:**  
 C - PD  
 B - PD  
 A - PD

**Scale:** 1:500 @ A1  
 0 5 10 15 20 25m  
 1:500 @ A1 1500 @ A3

**Logos:**  
 dsb LANDSCAPE ARCHITECTS  
 Land Development Agency

**Sheet No.:** 2593-G8 C



Tree No.	Species	Registered Tree Status
332	Pinus radiata	N
333	Acacia saligna	N
334	Pinus radiata	M
335	Pinus radiata	M
336	Pinus radiata	M
337	Pinus radiata	M
338	Pinus radiata	M
339	Pinus radiata	M
340	Pinus radiata	M
341	Pinus radiata	M
342	Pinus radiata	M
343	Pinus radiata	M
344	Pinus radiata	M
345	Pinus radiata	M
346	Pinus radiata	M
347	Pinus radiata	M
348	Pinus radiata	M
349	Pinus radiata	M
350	Pinus radiata	M
351	Pinus radiata	M
352	Pinus radiata	M
353	Pinus radiata	M
354	Pinus radiata	M
355	Pinus radiata	M
356	Pinus radiata	M
357	Pinus radiata	M
358	Pinus radiata	M
359	Pinus radiata	M
360	Pinus radiata	M
361	Pinus radiata	M
362	Pinus radiata	M
363	Pinus radiata	M
364	Pinus radiata	M
365	Pinus radiata	M
366	Pinus radiata	M
367	Pinus radiata	M
368	Pinus radiata	M
369	Pinus radiata	M
370	Pinus radiata	M
371	Pinus radiata	M
372	Pinus radiata	M
373	Pinus radiata	M
374	Pinus radiata	M
375	Pinus radiata	M
376	Pinus radiata	M
377	Pinus radiata	M
378	Pinus radiata	M
379	Pinus radiata	M
380	Pinus radiata	M
381	Pinus radiata	M
382	Pinus radiata	M
383	Pinus radiata	M
384	Pinus radiata	M
385	Pinus radiata	M
386	Pinus radiata	M
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388	Pinus radiata	M
389	Pinus radiata	M
390	Pinus radiata	M
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392	Pinus radiata	M
393	Pinus radiata	M
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396	Pinus radiata	M
397	Pinus radiata	M
398	Pinus radiata	M
399	Pinus radiata	M
400	Pinus radiata	M
401	Pinus radiata	M
402	Pinus radiata	M
403	Pinus radiata	M
404	Pinus radiata	M
405	Pinus radiata	M
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408	Pinus radiata	M
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425	Pinus radiata	M
426	Pinus radiata	M
427	Pinus radiata	M
428	Pinus radiata	M
429	Pinus radiata	M
430	Pinus radiata	M
431	Pinus radiata	M
432	Pinus radiata	M
433	Pinus radiata	M
434	Pinus radiata	M
435	Pinus radiata	M
436	Pinus radiata	M
437	Pinus radiata	M
438	Pinus radiata	M
439	Pinus radiata	M
440	Pinus radiata	M
441	Pinus radiata	M
442	Pinus radiata	M
443	Pinus radiata	M
444	Pinus radiata	M

**URBAN AMENITY ASSESSMENT**

**E-RATED TREE**

**H-RATED TREE**

**M-RATED TREE**

**P-RATED TREE**

**TREE GROUPING**

**Project** OLD CAMBERRA BRICKWORKS

**Client** LAND DEVELOPMENT AGENCY

**Drawing Title** TREE ASSESSMENT PLAN

**Scale** A800 @ A1

**Drawn** JAC

**Per Date**

**Sheet No.** 2668-G8-D

**Notes:**

1. This drawing is a site plan showing the location of trees on the site. It is not a photograph and should not be used for any other purpose.

2. The trees shown on this drawing are those that were identified during the field assessment. They are not necessarily the same trees as those shown on the aerial photograph.

3. The tree ratings are based on the criteria set out in the assessment methodology. They are not a guarantee of the tree's health or survival.

4. The tree groupings are based on the tree species and their relative abundance on the site.

5. The tree assessment was conducted on 27-08-19.

6. The tree assessment was conducted by [Name].

7. The tree assessment was conducted at [Address].

8. The tree assessment was conducted at [Time].

9. The tree assessment was conducted at [Weather].

10. The tree assessment was conducted at [Location].

11. The tree assessment was conducted at [Elevation].

12. The tree assessment was conducted at [Aspect].

13. The tree assessment was conducted at [Soil].

14. The tree assessment was conducted at [Light].

15. The tree assessment was conducted at [Water].

16. The tree assessment was conducted at [Air].

17. The tree assessment was conducted at [Temperature].

18. The tree assessment was conducted at [Humidity].

19. The tree assessment was conducted at [Wind].

20. The tree assessment was conducted at [Rainfall].

21. The tree assessment was conducted at [Snowfall].

22. The tree assessment was conducted at [Icefall].

23. The tree assessment was conducted at [Hailfall].

24. The tree assessment was conducted at [Thunderfall].

25. The tree assessment was conducted at [Lightningfall].

26. The tree assessment was conducted at [Tornadoefall].

27. The tree assessment was conducted at [Hurricanefall].

28. The tree assessment was conducted at [Typhoonfall].

29. The tree assessment was conducted at [Cyclonefall].

30. The tree assessment was conducted at [Stormfall].

31. The tree assessment was conducted at [Weatherfall].

32. The tree assessment was conducted at [Climatefall].

33. The tree assessment was conducted at [Environmentfall].

34. The tree assessment was conducted at [Ecosystemfall].

35. The tree assessment was conducted at [Biomefall].

36. The tree assessment was conducted at [Biogeographyfall].

37. The tree assessment was conducted at [Ecologyfall].

38. The tree assessment was conducted at [Evolutionfall].

39. The tree assessment was conducted at [Systemfall].

40. The tree assessment was conducted at [Sciencefall].

41. The tree assessment was conducted at [Technologyfall].

42. The tree assessment was conducted at [Innovationfall].

43. The tree assessment was conducted at [Researchfall].

44. The tree assessment was conducted at [Developmentfall].

45. The tree assessment was conducted at [Growthfall].

46. The tree assessment was conducted at [Progressfall].

47. The tree assessment was conducted at [Successfall].

48. The tree assessment was conducted at [Achievementfall].

49. The tree assessment was conducted at [Accomplishmentfall].

50. The tree assessment was conducted at [Realizationfall].

51. The tree assessment was conducted at [Fulfillmentfall].

52. The tree assessment was conducted at [Completionfall].

53. The tree assessment was conducted at [Conclusionfall].

54. The tree assessment was conducted at [Endfall].

55. The tree assessment was conducted at [Closefall].

56. The tree assessment was conducted at [Finishfall].

57. The tree assessment was conducted at [Donefall].

58. The tree assessment was conducted at [Overfall].

59. The tree assessment was conducted at [Underfall].

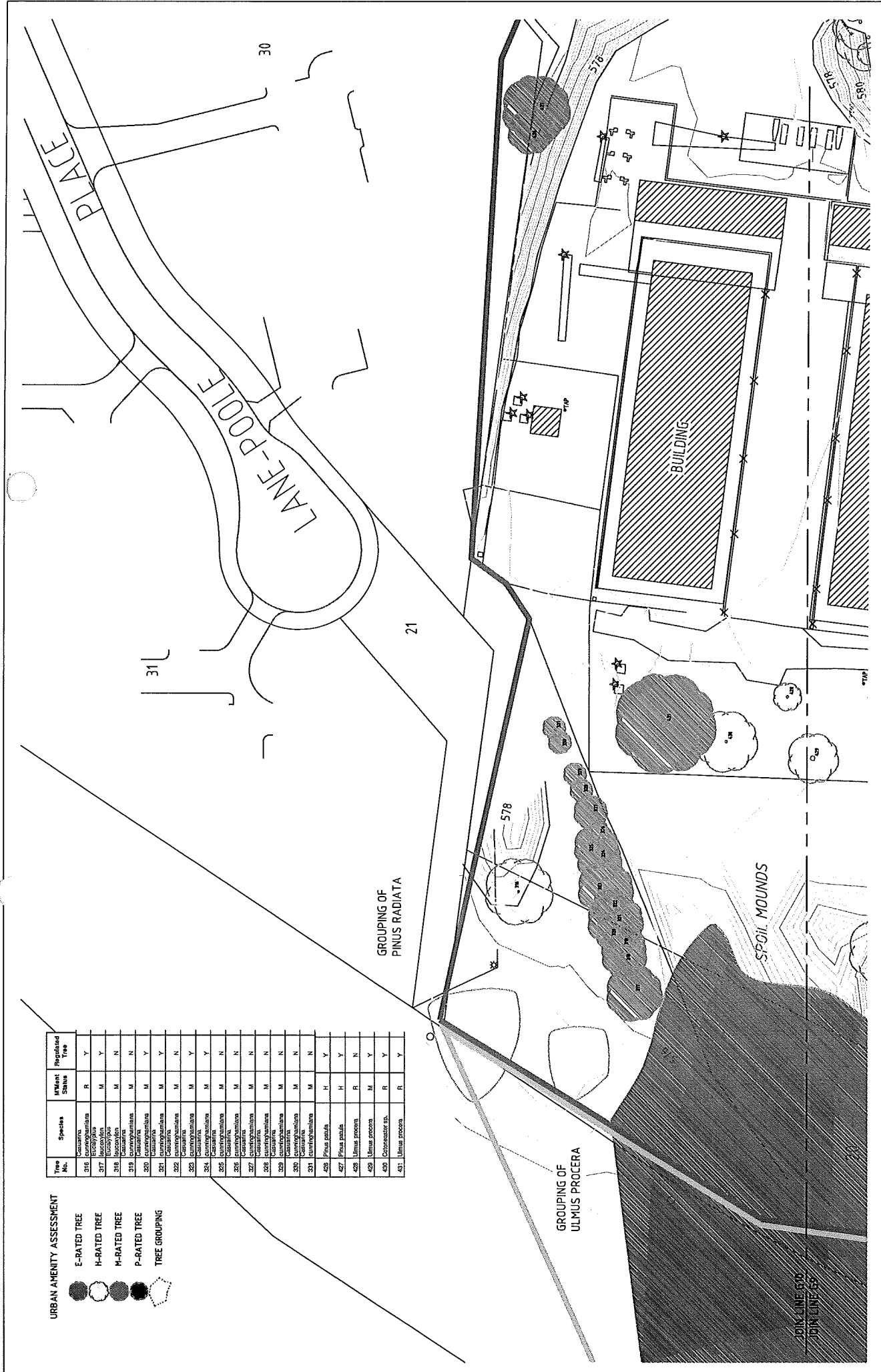
60. The tree assessment was conducted at [Throughfall].

61. The tree assessment was conducted at [Byfall].

62. The tree assessment was conducted at [Forfall].

63. The tree assessment was conducted at [Tofall].p>



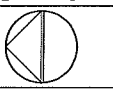




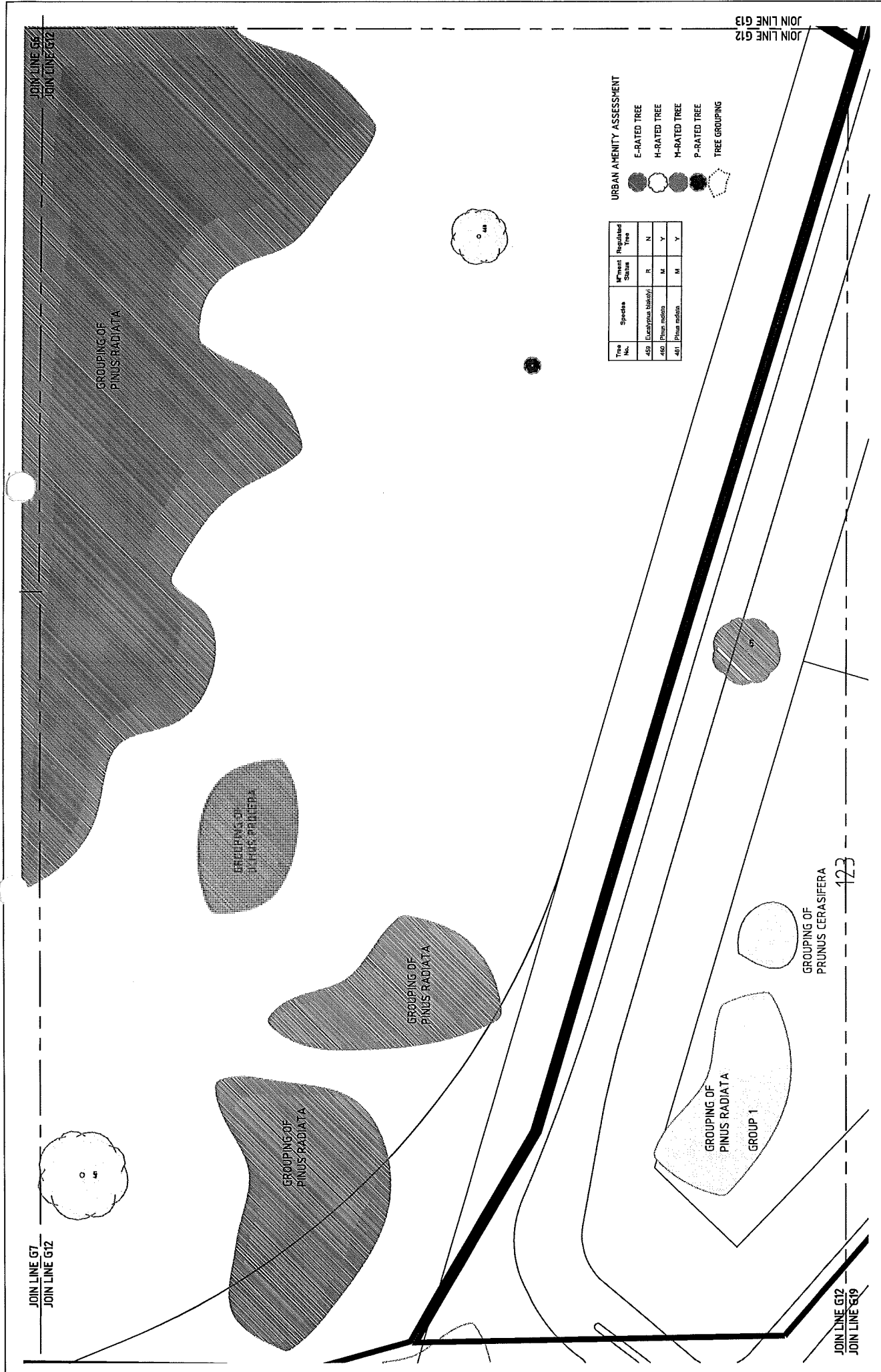
Tree No.	Species	MMent Status	Regulated Tree
318	Casuarina	R	Y
317	Leucadendron	M	Y
318	Leucadendron	M	N
319	Casuarina	M	N
320	Casuarina	M	Y
321	Casuarina	M	Y
322	Casuarina	M	N
323	Casuarina	M	Y
324	Casuarina	M	Y
325	Casuarina	M	N
326	Casuarina	M	N
327	Casuarina	M	N
328	Casuarina	M	N
329	Casuarina	M	N
330	Casuarina	M	N
331	Casuarina	M	N
426	Pinus radiata	H	Y
427	Pinus radiata	H	Y
428	Ulmus procera	R	N
429	Ulmus procera	M	Y
430	Coccoloba	R	Y
431	Ulmus procera	R	Y

**URBAN AMENITY ASSESSMENT**

E-RATED TREE  
 H-RATED TREE  
 M-RATED TREE  
 P-RATED TREE  
 TREE GROUPING

 Land Development Agency	 dsb LANDSCAPE ARCHITECTS 11, Humea Place Lower Hutt 5060 Tel: 04 535 5565 Fax: 04 535 5566 info@dsb.co.nz	 Project OLD CANBERRA BRICKWORKS Client LAND DEVELOPMENT AGENCY	Drawing Title TREE ASSESSMENT PLAN Scale 1:1000 @ A1 Date: 15/03/2010 2353-G10 C Sheet No.	NOTES: 1. THIS PLAN IS A PRELIMINARY DESIGN AND IS SUBJECT TO CHANGE WITHOUT NOTICE. 2. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 3. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 4. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 5. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 6. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 7. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 8. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 9. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES. 10. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES.
C - PD B - PD A - PD No. / DISCH (RANK)	15-06-10 27-06-10 28-07-10	AREAS ADDED CUTTER ROAD / DUNEY BY STREET ADDED TREE ASSESSMENT DRAFT	DATE 15/03/2010	



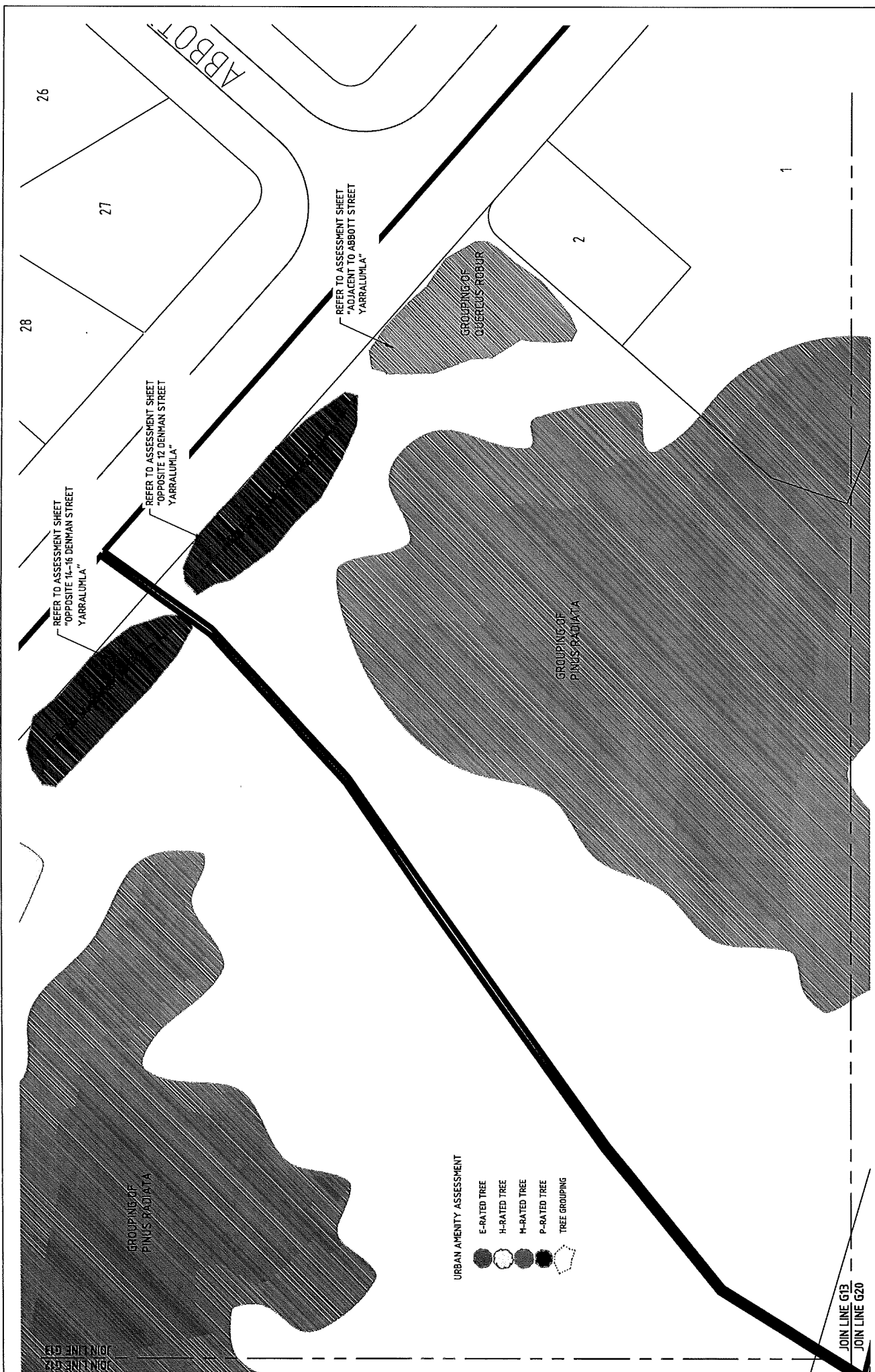


URBAN AMENITY ASSESSMENT

Tree No.	Species	Management Status	Regulated Tree
459	Eucalyptus bihobbyi	R	N
460	Pinus radiata	M	Y
461	Pinus radiata	M	Y

E-RATED TREE (Solid circle)  
 H-RATED TREE (Dotted circle)  
 M-RATED TREE (Hatched circle)  
 P-RATED TREE (Cross-hatched circle)  
 TREE GROUPING (Dashed outline)

No. DESIGN (DRAWN) CHECKED / VERD C - PD B - PD A - PD	IS IS IS	15-04-19 27-04-19 28-07-19	AREAS AUDIT DUTY ROAD / FORBURY STREET ADDED TREE ASSESSMENT DRAFT	DATE AMENDMENT / ISSUE	NOTES THIS PLAN IS TO BE USED FOR INFORMATION ONLY. THE INFORMATION CONTAINED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE A CONTRACT. THE CLIENT ACCEPTS THE INFORMATION CONTAINED HEREIN AS IS AND WITHOUT WARRANTY. THE CLIENT RELEASES AND AGREES TO HOLD THE DESIGNER HARMLESS FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM THE USE OF THIS PLAN.				DESIGNER dsb LANDSCAPE ARCHITECTS 14 MURPHY ROAD DEWING HILL NSW 2890 Ph: 02 63563005 Fax: 02 63563008 dsb@dsb.com.au		PROJECT OLD CANBERRA BRICKWORKS CLIENT LAND DEVELOPMENT AGENCY	DRAWING TITLE TREE ASSESSMENT PLAN	SHEET NO. 2593-612 C
												SCALE 1:500 @ A1	PROJECT NO. 2593-612 C



REFER TO ASSESSMENT SHEET  
"OPPOSITE 14-16 DENMAN STREET  
YARRALUMLA"

REFER TO ASSESSMENT SHEET  
"OPPOSITE 12 DENMAN STREET  
YARRALUMLA"

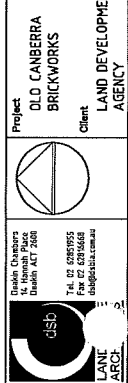
REFER TO ASSESSMENT SHEET  
"ADJACENT TO ABBOTT STREET  
YARRALUMLA"

URBAN AMENITY ASSESSMENT

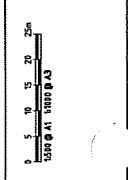
- E-RATED TREE
- H-RATED TREE
- M-RATED TREE
- P-RATED TREE
- TREE GROUPING

JOIN LINE G13  
JOIN LINE G20

<p>Drawn Title <b>TREE ASSESSMENT PLAN</b></p>		<p>Project <b>OLD CANBERRA BRICKWORKS</b></p>		<p>Client <b>LAND DEVELOPMENT AGENCY</b></p>	
<p>Scale: 1:500 @ A1</p>		<p>Drawn No: <b>2393-G13 C</b></p>		<p>Sheet No.</p>	
<p>DATE: 15-09-19</p>		<p>AREA: ADDD</p>		<p>DATE: 27-08-19</p>	
<p>BY: PPD HS</p>		<p>DATE: 23-07-19</p>		<p>BY: PPD HS</p>	
<p>NO. DESIGN DRAWN CHECKED</p>		<p>DATE</p>		<p>AMENDMENT / ISSUE</p>	
<p>NOTES</p> <p>1. THIS PLAN IS TO BE USED IN CONJUNCTION WITH THE TREE ASSESSMENT REPORT AND THE TREE ASSESSMENT REPORT PREPARED BY THE CLIENT.</p> <p>2. THE TREE ASSESSMENT REPORT IS THE PROPERTY OF THE CLIENT AND IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE CLIENT.</p> <p>3. THE TREE ASSESSMENT REPORT IS THE PROPERTY OF THE CLIENT AND IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE CLIENT.</p>					



Land Development Agency



15-09-19  
27-08-19  
23-07-19

PPD HS  
PPD HS

NO. DESIGN DRAWN CHECKED











### Quality assurance

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### Quality assurance information

Report title: Old Canberra Brick Works Tree Assessment

Job number: 2593

Date: 27 October 2010

Prepared by: Hans Stoehr

Reviewed by: Michael Reeves

### Issue history

Issue Number	Issue Date	Details	Authorised by
B	20/10/10	Old Canberra Brick Works Tree Assessment	Mr
C	27/10/10	Old Canberra Brick Works Tree Assessment	Mr



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[www.conwag.com](http://www.conwag.com)

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**The Old Canberra Brickworks  
and Environs  
Development Control Plan**

27 February 2001  
Reference C015 01 PM  
Revision 4



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**Appendix A**

Concept Options Explored

**Appendix B**

Community Consultation – The Phillips Group

**Appendix C**

Financial Business Case – Wilde and Woollard

**Appendix D**

Heritage Investigation – Eric Martin & Associates

**Appendix E**

Brickworks Buildings Structural Report

**Appendix F**

Brickworks Contamination Report

**Appendix G**

Environmental Issues

**Appendix H**

Traffic Investigation

**Appendix I**

Permanent Floriade

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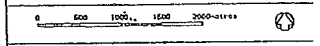
# TERRITORY PLAN MAP Yarralumla Brickworks

## LAND USE POLICIES (See Part B of Written Statement)

- Designated Areas**  
(See National Capital Plan)
- 1. Residential ✓
  - 2. Commercial
  - A. Civic Centre
  - B. Town Centre
  - C. Group Centre
  - D. Local Centre
  - E. Corridors & Office Sites
  - 3. Industrial
  - 4. Community Facility ✓
  - 5. Restricted Access Recreation ✓
  - 6. Water Feature
  - 7. Medical Services
  - 8. Entertainment, Accommodation and Leisure
  - 9. Urban Open Space (Public Land except urban residentially zoned see Overlays below) ✓
  - 10. Broadacre
  - 11. Rural
  - 12. IGA, Ridges & Buffer Areas
  - 13. River Corridor
  - 14. Mountains & Bushlands
  - 15. Plantation Forestry
  - 16. Major Roads

## OVERLAYS (See Section C1 of Written Statement)

- Area Specific Policies**
- Special Provisions apply under National Capital Plan (NCP)
  - Policies listed on Heritage Place Register (See also Part B of the Land Act)
  - Subject to Review
  - Defused Land (See also Part B of the Land Act)
  - Difficult Vegetation to be Preserved (See also Part B of the Land Act)
  - Urban Open Space - Not Public Land
  - Type of Public Land Reserve (See also Schedule 1 of the Land Act)
  - Public Land, crown right interests (See also Part B of the Land Act)
  - Special Provisions apply Flooding Main Arteries & Approach Routes (See HZSP)
  - Electrical Transmission Lines
  - Water Mains
  - Sewer Mains
  - Inter-town Public Transport Routes



ACT Government  
Planning and Land Management  
November 1999

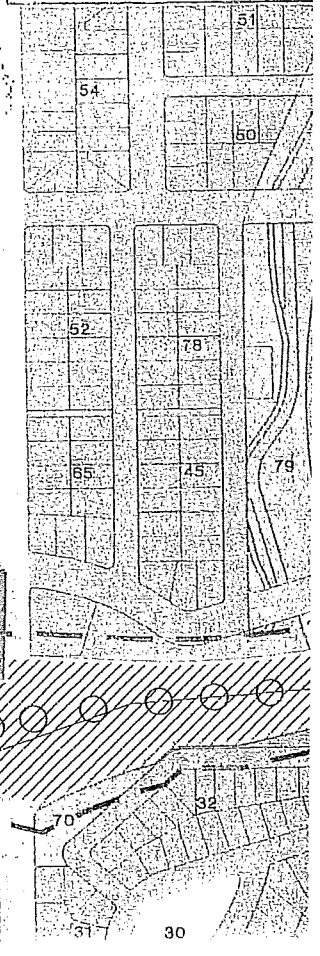
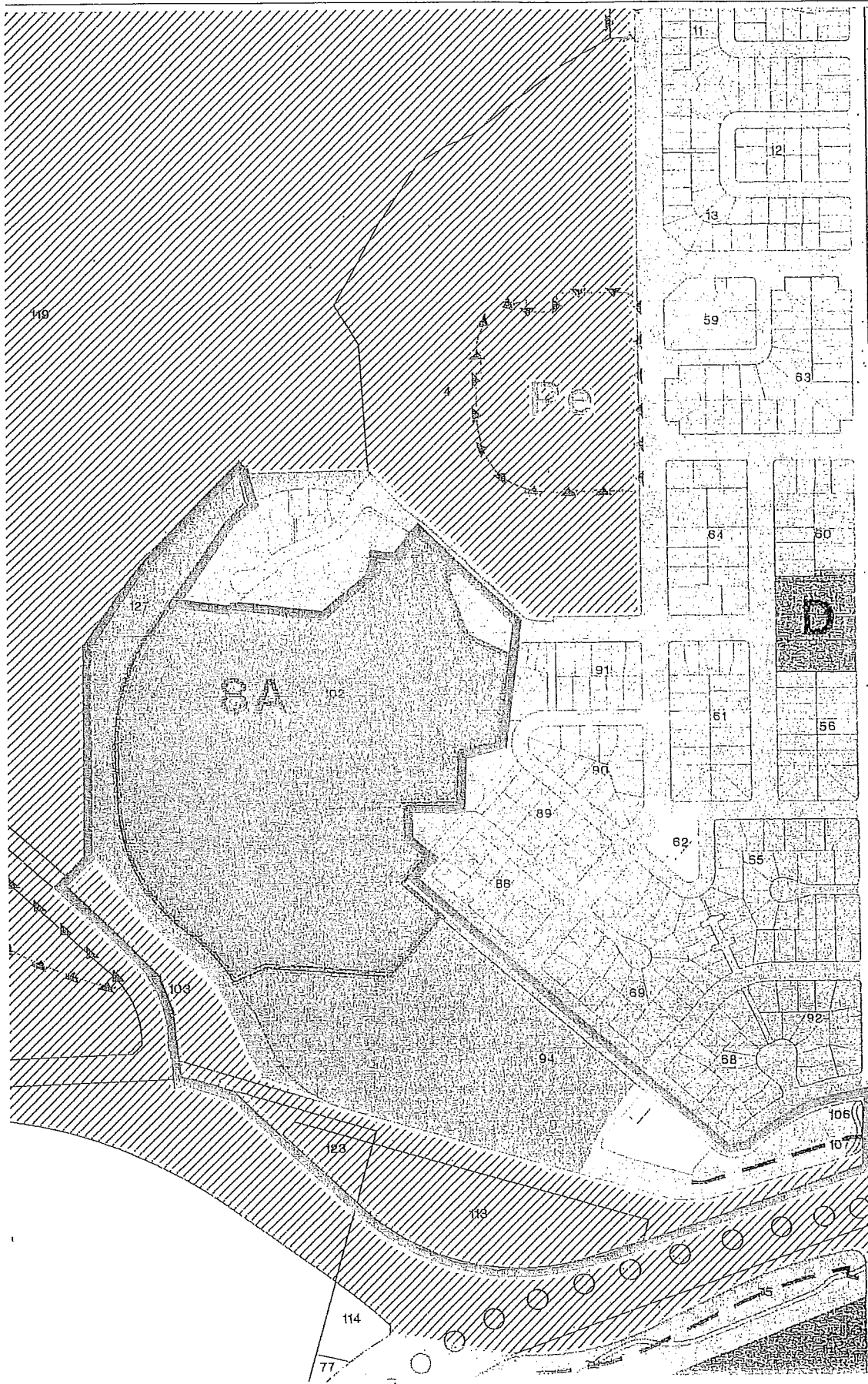


FIGURE 1









# 1. Introduction

---

## 1.1 The Brief

The office of Infrastructure and Asset Management engaged Connell Wagner to produce a Development Control Plan (DCP) for the 'Old Canberra Brickworks' and surrounding unleased environs in Yarralumla (hereafter referred to as the Brickworks). The site provides significant opportunities for recreation, residential, tourism and leisure. A component of the Brief was to assess the feasibility of part of this site as a possible permanent site for Floriade.

The team was directed by a steering committee which included members from Infrastructure and Asset Management (IAM), Chief Minister's Office, Canberra Tourism and Events Corporation (CTEC), Planning And Land Management (PALM), and two representatives from the community, one from the Local Area Planning Advisory Council (LAPAC) and one from the Yarralumla Residents Association (YRA).

The ACT Government listed some objectives for the site investigation work, and the ensuing Development Control Plan. These included:

- ensuring the heritage values of the area are retained;
- protecting the amenity of surrounding residential and other areas;
- integrating adaptive reuse options for development on Block 1 Section 102 where the heritage Brickworks site exists;
- stabilising, preserving and protecting the Brickworks buildings and surrounds for future generations;
- providing a basis for heritage and environmental management and sustainable development practices promoting best practice planning and design;
- investigating the economic and other benefits to the Canberra community, of establishing a permanent Floriade site in this locality;
- developing realistic commercial and residential opportunities;
- encouraging the interaction of residents and visitors with this significant heritage asset;
- consistent with the objectives above, maximising return to the Territory; and
- efficiently utilising existing and future infrastructure investment.

In addition to the ACT Government objectives the brief included a number of planning objectives to which the Development Control Plan should respond. These included:

- providing strategies/action plan for ongoing conservation, maintenance and development of the heritage aspects of the site to ensure that they are properly preserved;
- identify, protect and enhance the more general historic context of the site and environs including Griffin's original planning scheme, Weston's plantings, specifically the arboretum, and the broader pattern of topography and vegetation;
- responding to the opportunities provided by the natural environment and the effect this will have on development;
- considering how development on the site can be integrated with Lake Burley Griffin, Weston Park, CSIRO Forestry schools, the Royal Canberra Golf Course, the Yarralumla local centre and any other nationally and locally significant sites in the area;
- determining the land, infrastructure and other requirements for a permanent Floriade site at the Brickworks;
- determining the land and soil capability and capacity for a permanent garden site;
- providing options for how specific events including, but not limited to, Floriade could be catered for in terms of traffic and parking management;
- considering multi-uses in the development of the site;
- recognising and protecting the amenity of the surrounding area and minimising adverse impacts such as traffic and parking; and
- identifying opportunities for further viable residential and commercial development.



## 1.2 The Site

The site area for this project extends from Bentham Street, excludes the residential area clustered around Lane Poole Place, to Royal Canberra Golf Course and Dunrossil Drive in the north and west, to the Cotter Road and Adelaide Avenue in the south. Denman Street and Kintore Crescent form the eastern edge in the south east. Refer to Figure 1 overleaf.

The Old Yarralumla Brickworks comprises the buildings and the original quarry or 'brick pits', and is located at the western edge of the residential suburb of Yarralumla. After the close of commercial operations in the mid 1970's, the site has had a series of redevelopment proposals however none have come to fruition and the buildings have become increasingly derelict, with some the subject of recent stabilisation work. At the present time the Brickworks is used for some small business ventures but is otherwise fenced off from public access.

## 1.3 The Methodology

The Connell Wagner team commenced the process of preparing the DCP with a workshop. The workshop, facilitated by Connell Wagner, was held in the local Uniting Church Hall and brought together relevant stakeholders and included representatives from:

- the Burley Griffin Local Area Planning and Advisory Committee
- Infrastructure and Asset Management
- Chief Minister's Department
- Planning and Land Management
- Heritage Unit Environment ACT
- Canberra Tourism and Events Corporation

This workshop provided an opportunity for a detailed site examination led by the current part-time caretaker of the Brickworks site Mr Bruce Macdonald. This guided tour gave an insight into the brick making process and a concise historical recollection of events by Bruce, who has been involved with the site since the 1970's.

The next step was to conduct a series of studies investigating the Brickworks site and environs. These studies were conducted by members of the team who are all experts in their relative fields. Additional information was sought from a variety of sources including the Commonwealth Archives, and various previous studies and reports including the Burley Griffin Local Area Planning Advisory Committee. Acknowledgment is made in the detailed reports Appended as part of this report.

Our investigations led to proposing three planning options (version 1) for the site, which were then taken to the community for comment. We undertook public consultation in a variety of forms as instructed by the Steering Committee, to elicit the community views and values pertaining to the place. This work is detailed in Appendix B Community Consultation.

The responses led to a revised set of planning options (version 2) which were also presented for comment to the community. This process was completed in December 2000.



**History of Site**





## 2. History of Site

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### 2.1 Brick Making in Canberra

Brick making commenced on this site in 1926 and produced bricks for Canberra's early commercial and public buildings, residential dwellings and the Old Parliament House. The Brickworks made a range of distinctive red coloured products including bricks, roof tiles and wall vents. These red bricks are in evidence in many early Canberra houses and contribute to the distinctive character of its suburban architecture and streetscapes.

When the Brickworks was first planned, with the involvement of Walter Burley Griffin, the location was at the edge of the south of the city, however at its closure in 1976 it was close to its centre. This now unsuitable location was one of the reasons for the relocation of this industrial enterprise, and another was the exhaustion of suitable material in the surrounding brick pits for the making of its products. The Canberra Brickworks were relocated to Mitchell in 1976.

The original Brickworks location was selected to be close to the supply of (shale) material for excavation for brick making. The brick pits or quarry area was excavated for this soft rock as were a number of locations along the ridge top adjacent to the site. The quantity and purity of the shale became a problem with limestone intrusions in the shale being unsuitable for brick making. The quarrying of in situ material ceased well in advance of the cessation of brick making on this site.

Initially only one kiln was constructed, the one now central to the complex. Increased demand and changing views on the most efficient kiln type resulted in construction of another kiln, with its different technical design and large chimney. The change from coal to oil fired heating processes necessitated modifications to the kilns and surrounding buildings, and this was only one of the modifications undertaken to the complex of buildings over the time of its operation.

The third stage of development of the site was the construction of the set of three kilns under the large roof. These represent yet another type of brick making technology on this site. Linking the kilns is the long, three storey, corrugated iron clad building that housed the conveyors, hoppers and presses to fabricate the raw material. This building is visually prominent and distinctive.

A 1960's building located down slope of the three kilns was removed except for the footings in the 1980's. Also removed after World War II was the workmen's camp buildings to the west of the set of three kilns. The remains of footings and exotic trees and garden plants identify the site today.

There are a number of other buildings on the site, such as fan houses, chimneys and power supply building, that contribute to the complex and are integral to its former function. The existence of these buildings and the changing technologies they represent are an intrinsic part of the industrial heritage nature of the site.

### 2.2 Proposals for the Site

Since the closure of the Brickworks for brick making in 1976, there have been a series of development proposals for the site, that for a range of reasons have never been fully realised.

The first proposal for redevelopment of the site was from the local developer and businessman Mr Alan Marr. In 1979 Mr Marr was successful in achieving a lease of the site with approval for his development proposal, and changes to the planning zoning to accommodate a range of activities on the site including tourism, recreation and residential accommodation. Work commenced on this development with major earthworks being undertaken, a model railway operational and the excavation of the 'lakes' for the planned quarry garden.

The current zoning for the site dates from this time. Due to an accident Mr Marr was unable to complete his vision and the lease reverted to the Territory. The existing medium density residential



development surrounding the Brickworks site was constructed in the early 1980's as a consequence of the closure of this venture.

Between 1983 and 1999 there have been a number of proponents come forward to the Territory's government of the day with development proposals for the site. However none have resulted in a lease over the site or any further development.

These development proposals utilised the range of uses permissible under the zoning of *Entertainment, Accommodation And Leisure*, to provide residential dwellings, hotels and tourism / events related activities.

It was the existence of these proposals that inspired a group of local residents under the auspices of a Joint Working Group of the Local Area Planning Committee (LAPAC) and Yarralumla Residents Association (YRA) to present to the then ACT Chief Minister (Kate Carnell) another proposal for the site. A Community Value Statement was prepared which outlined the views of the participating local people.

It was in response to this proposal that the ACT's Planning body (PALM) engaged with the community about possible development of the site, and the subsequent involvement of Infrastructure and Asset Management (IAM) to undertake this Development Control Plan process.

### 2.3 Industrial Heritage

In recent times there has been increased recognition of industrial buildings and activities as a valid part of our heritage. The Brickworks has heritage importance for a range of factors including geological, social, historic, built and cultural landscape.

The Draft Variation to the Territory Plan No.118 currently before the Assembly details the heritage significance of the place. The team undertook investigation and independent verification of the heritage components of significance for this site and this report is included in Appendix D.

The components of the place with heritage significance are in urgent need of conservation, commencing with stabilisation.

### 2.4 Recent History and Current Status

Between the mid 1980's and 1990's the Government permitted informal use of the place for small craft related businesses. This activity generated visitation of the site and thereby raised the level of awareness in the general community of the place. The use of the site for this purpose was discontinued on safety grounds, and the place is fenced off from public access for safety reasons. However a few of these businesses remain without general public access in spaces outside the kilns. A part time caretaker, with a detailed knowledge of the place, has been retained by the Government to undertake basic tasks.

The city now has an area of unleased land that is rapidly becoming an industrial ruin, with the potential and the zoning to permit a range of uses compatible with the urban setting.

The Territory Government has a responsibility to the citizens of the ACT and the nation to administer its land responsibly, which entails taking action regarding known problems and issues such as weeds, contamination, safety and heritage conservation. This Development Control Plan is to investigate the feasibility of what could and should be done, within the context of the Brief, to enable development of the place in a manner consistent with the Government's objectives of sustainable quality development.



**Site Description**



## 3. Site Description

### 3.1 Nature of the Site

The land contained within the site's boundaries falls primarily within three visual catchment areas. These areas each have different spatial qualities, which do in part, determine the informal uses made of them by the local population. Figure 2 below indicates this division of space.

- **Zone I** is a strip of land bounded by Kintore Crescent and Dudley Street, it is visually separated from zone II by topography and the Uniting Church complex of buildings.
- **Zone II** this gently undulating land is the majority of the site, bounded by Cotter Road, Denman Street and Dunrossil Drive. Dudley Street traverses this area. It is visually contiguous with Zone III the Brickworks, but separated by the fence.
- **Zone III** is the fenced Brickworks and quarry area, bounded by medium density residential areas, Bentham Street and the Royal Canberra Golf Club boundary. The separation and enclosure provided by the topographic form and vegetation of the quarry are distinctive qualities of the place.

A fourth area, a linear strip along the golf course boundary is contiguous with the golf course landscape of dryland grass and remnant native and exotic trees. This area is linked to Zone II and separates the residential housing of Lane Poole Close from the Brickworks Zone III.

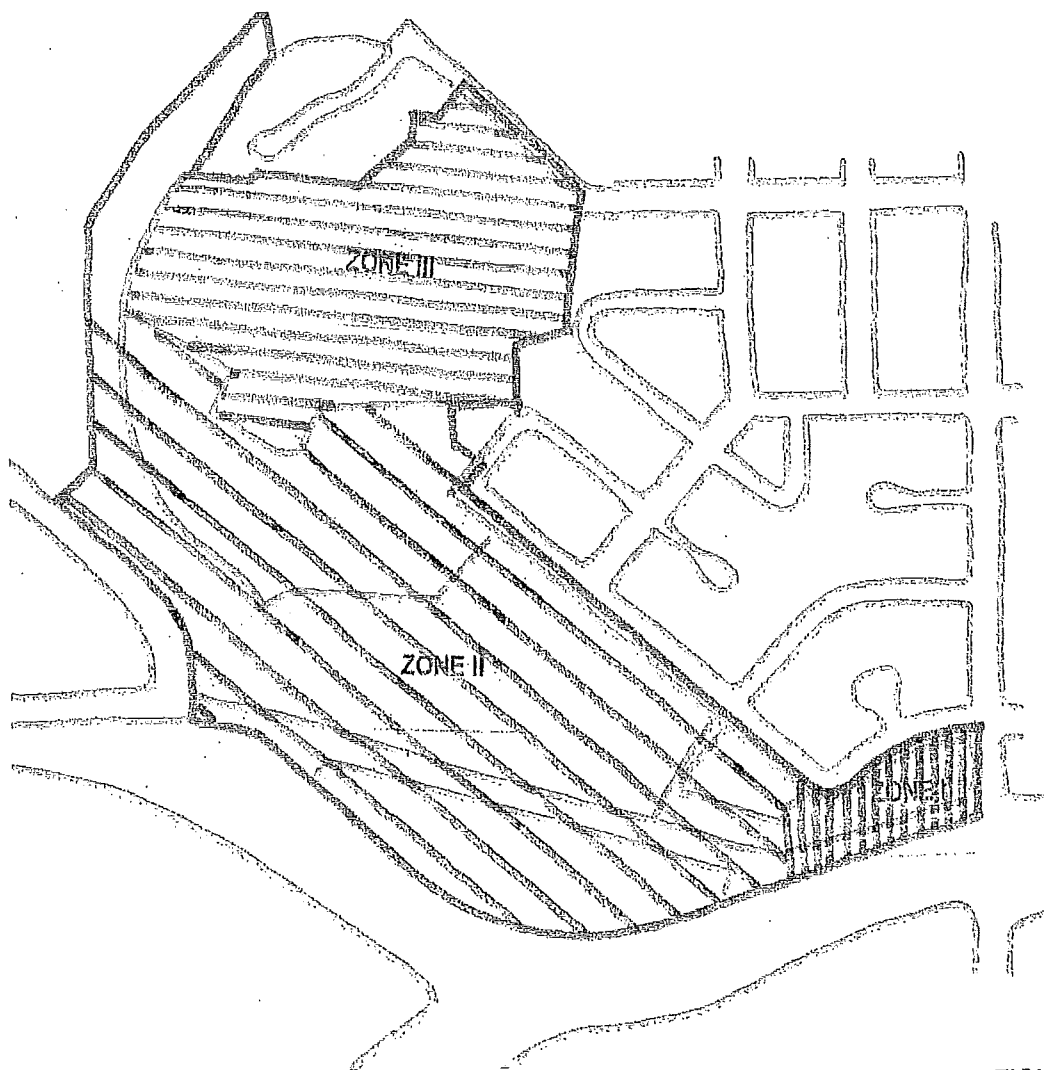


FIGURE 2





### 3.2 Site Qualities

Currently the land is used, managed and maintained differently for the zones and their distinct landscape characteristics.

Zone I has the appearance of a wide nature strip. The land is gently sloping and the entire space is visible from one end to the other. The planted deciduous and evergreen trees contribute to the suburban streetscape of Kintore crescent and screen the views to Dudley Street and Adelaide Avenue. The dryland grass is regularly mown short and the space is used primarily for passive recreation eg. 'walking the dog'. This area is not used by many people at any given time.



**Photo 1**  
Kintore Crescent and  
linear space with semi  
mature plantings.

Zone II is majority of the site, a gently undulating space with vegetation varying from open grassland to dense planted stands of deciduous and coniferous trees. It is visually dominated by the stands of conifers (Pines) and the views west to the Brindabella Ranges. It is not highly maintained and this 'wild' quality is highly valued by the community. A range of age groups and a greater number of people than in Zone I, use it primarily for passive recreation. A number of local people use the place on a regular basis and value the sense of isolation obtained through the size of the place though it is not heavily used.



**Photo 2**  
Break in plantings west of  
Denman Street provide  
glimpses of Cotter Road,  
Dudley Street and  
Brindabellas. Note  
remnant Danthonia  
grassland with deciduous  
trees doing poorly due to  
sketal soils.



Adjacent to the Brickworks and the west of the access track entry, is the fenced off former roadworks materials depot. This area was used by the road builders as a site to store bulk materials such as gravel. This use occurred from the 1950's through to 1980's. It has remained unrestored as can be seen in the photo below.

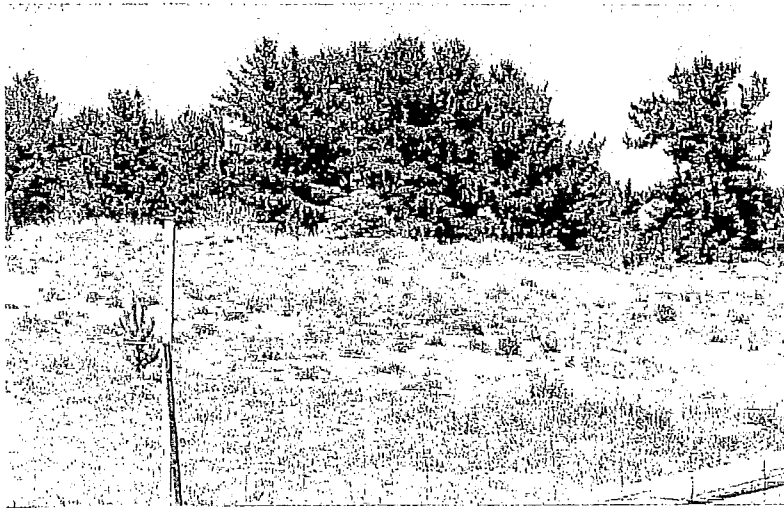


Photo 3  
Former road works depot site with pines at rear screening views from/to Curtin and Cotter Road.

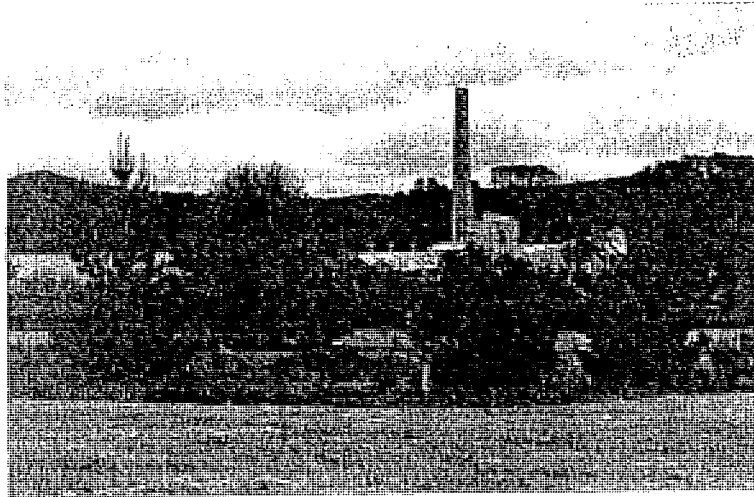
Zone III is fenced off from public access due to the number of potential hazards and safety risks associated with the Brickworks buildings and quarry. The quarry area topography is a mix of cuttings into the rock and fill dumps of unused soil and reject brick products. Most of the area has steep and unstable slopes that have been partially colonised by a range of exotic plants. The growth of pines in and around the quarry form a backdrop to the enclosed spaces and conceals the area from the surrounding land uses.



Photo 4  
Brickworks quarry showing scree slope and pine colonisation.



The Brickworks buildings are located off the ridge and much of the built form is concealed from most of Zone II and all of Zone I. However, the large chimney is a visual feature of Canberra's skyline from many places.



**Photo 5**  
Brickworks site from  
ridgeline to south west.  
Chimney breaks the  
skyline against backdrop  
of conifers

### 3.3 Views and Vistas

The views and vistas into and out of the site vary significantly. Zone I and III are contained spaces with limited vistas out, while Zone II has significant views to the mountainous skyline in the west as well as internal vistas among the mature vegetation.

#### Zone I

The views onto this space for the residents of Kintore Crescent is valued as parkland setting for their residences and serves as green space on this entry into the suburb of Yarralumla. This vegetation contributes to the landscape corridor of the Yarra Glen – Adelaide Avenue roadway.

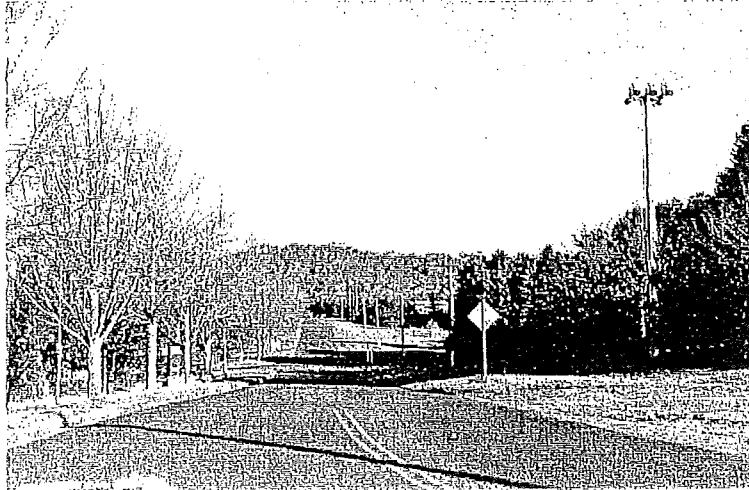


**Photo 6**  
Linear parkland  
separating Kintore  
Crescent from Dudley  
Street.



## Zone II

The ridge that runs north west – south east provides some separation of vistas, however the vegetation is the dominating creator of the views. The internal vistas and streetscape for the residents of Denman Street are bounded by the vegetation west of Denman Street.



**Photo 7**  
View south east down  
Denman Street with  
Uniting Church on right.

These plantings contribute significantly to the character of the street and serve as a windbreak. They also block views west to the Brindabella Ranges.

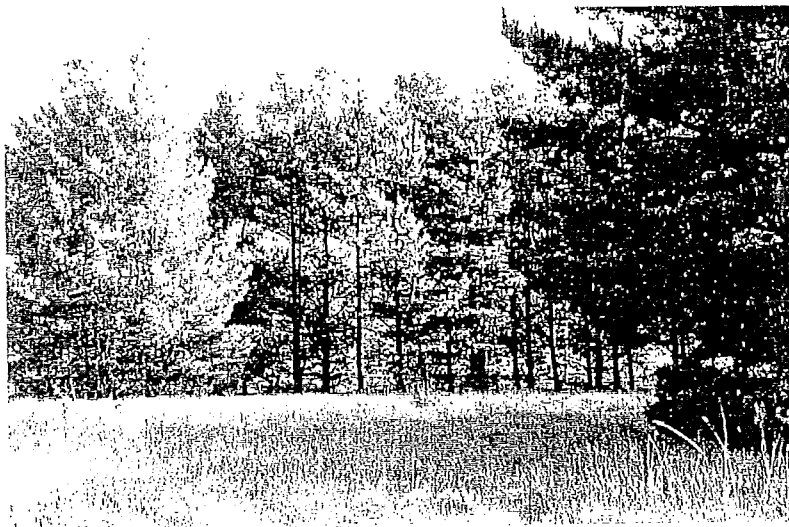
The internal views from the tracks through the area vary from, enclosed vistas along the track by the exotic trees, to the skyline mountains in the west over the grassland.



**Photo 8**  
View south over access  
track through mixed  
species mass planted  
areas

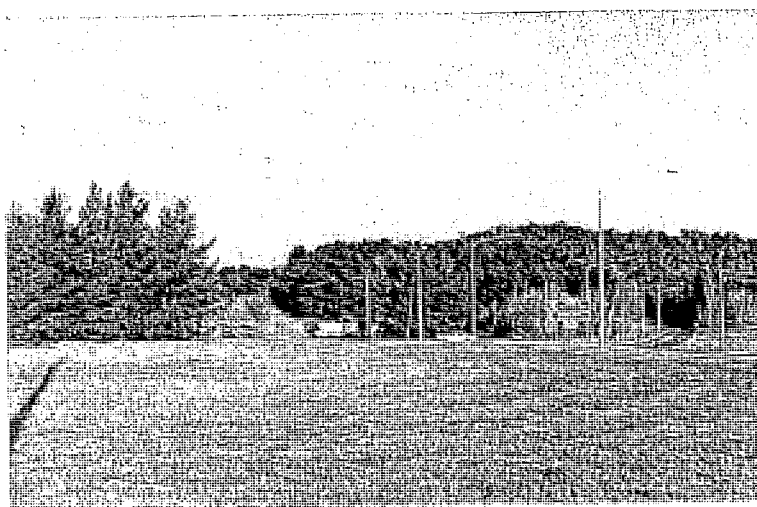






**Photo 9**  
Cotter Road verge pine plantings provide visual screen from traffic and create distinctive landscape.

External views into the site from the south (Yarra Glen roadway and Curtin suburb) are blocked by the stands of Pines between Cotter Road and Dudley Street. These plantations of trees and the ridgeline also limit views of the area for travellers on the Cotter Road. Consequently neither the residential area of Yarralumla nor the Brickworks are seen from outside the site.



**Photo 10**  
Intersection area of Dudley Street and Cotter Road taken from Dunrossil Drive.

The area between Cotter Road and Dudley Street has mature pine trees and is visually significant when viewed from the Woden Valley, as is the vegetation on the ridge near Dunrossil Drive. The brickwork's large chimney is a landmark on the skyline from Woden and is viewed against the backdrop of the Westbourne Woods conifers.



### Zone III

The Brickworks cannot be seen from most of the site due to the topography. Vistas from within are dominated by the Brickworks buildings or the quarry formation with its conifers.

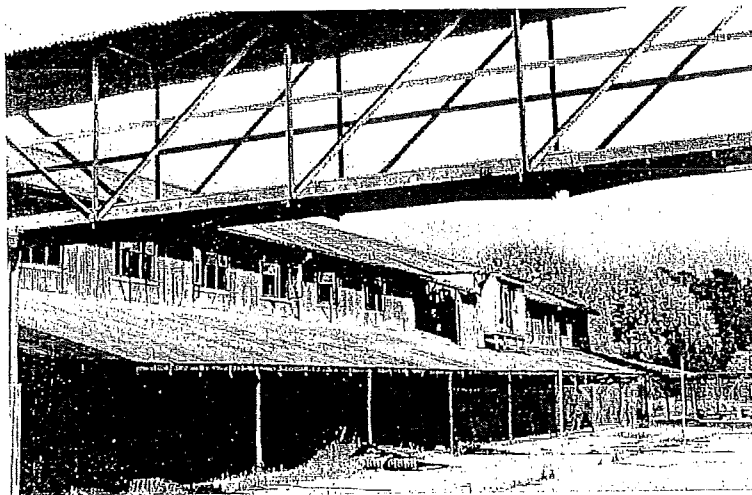


Photo 11  
Central kiln building  
looking north towards  
Westbourne Woods.

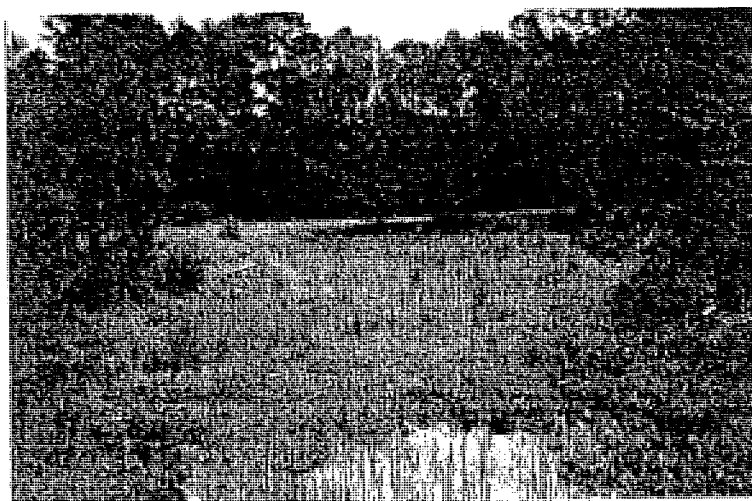


Photo 12  
Brickworks quarry with  
spaces created by  
topography and  
vegetation.

The vistas out from the medium density housing areas surrounding the Brickworks benefit from the vegetation in the quarry area.

## 3.4 Context

### 3.4.1 History

The plan for the city of Canberra by Walter Burley Griffin finished at Yarralumla with a large circular roadway, Clianthus Circle, being the end to Adelaide Avenue. It was intended to have residential areas to the outside and the island parkland in the middle, the entire Circle was marked out and some coniferous trees planted in the 1920's, but the road was never fully constructed. The location of Yarra Glen and Woden Valley has prohibited this plan from ever being realised. However the existing Denman and Dudley Streets were constructed as part of the intended radial network of residential streets, and Kintore Crescent is an arc of Clianthus Circle.

Anecdotal evidence suggests that the limits to the extent of existing older residential development in Yarralumla, that is ceasing on the east side of Denman Street, was due to the traffic associated with the then still functioning Brickworks along Denman Street.



The more recent plantings of coniferous trees between Denman Street and the Cotter Road are likely to be associated with the landscape development of Woden as well as the associated arterial roadways open space.

### **3.4.2 Local Amenity and Transport**

Yarralumla local shopping centre is located on Bentham Street some 200m from the north east corner of the site. It consists of a range of convenience stores, a newsagent, bakery, restaurants and professional offices that have developed over a number of years to provide a good range of services and facilities to the local and surrounding community.

Regular public bus services allow ready access from the shops and Novar Street to the larger centres of Civic or Woden as well as catering for school travel to the two Primary Schools (one Catholic and one public). A public Pre School is also located within the suburb.

### **3.4.3 Pedestrian Linkages and Open Space Provision**

The distinctive landscape character of early Canberra streetscapes with wide verges, footpaths, hedges and street trees, is typical of the streets adjacent to the site.



Photo 13  
Streetscape  
character of  
adjacent  
Yarralumla.

Similarly, open space linkages between streets to permit pedestrian and cycle access to the local shops and schools is an important part of the urban fabric of Canberra and is 'built in' to the existing subdivisional layout.

The unleased land west of Denman Street to the Cotter Road, has an informal network of tracks used for passive recreation that link back into the suburban pathway system and the formal recreational trail network around the Lake parklands.

The provision of land allocated for unrestricted public access and recreation that is accessible by residents of Yarralumla far exceeds most suburbs, due to the open space associated with Lake Burley Griffin foreshore parklands. Figure 3 overleaf, graphically shows that the relatively small urban area is served by a large quantity of open space.

The area of land categorised as restricted access recreation (coloured dark green on the Territory Plan) west of Denman Street is not part of the planned open space system of the suburb or the Lake parklands. However the area has been assumed to be urban open space by some local residents.









### 3.5 Planning Control

The Territory Plan sets the objectives and land use controls. However, the National Capital Plan also has a role in approving works over a portion of the site. This is due to the prominent visual impact of the ridge that runs parallel to Denman Street and forms the edge of the inner south of the city and the end of the Walter Burley Griffin designed areas.

#### 3.5.1 Current Territory Planning Categories

Under the ACT Territory Plan the land use for the site is covered by four planning categories as outlined below and as graphically shown on Figure 1.

Surrounding the church and extending to Novar Street, Zone I, is an area of *Urban Open Space*, which means urban parkland for passive recreation and visual buffer for the residential area. A small strip of *Urban Open Space* surrounds the Uniting Church.

The Yarralumla Uniting Church is located on *Community Use* land.

The land between Denman and Dudley Streets, Zone II, is identified as *Restricted Access Recreation*. This is currently unleased Territory land, and this category allows a range of uses and for the area to be leased for a particular recreational purpose.

The Brickworks, the quarry to the east and the area immediately to the south is *Entertainment, Accommodation and Leisure*, with an area specific policy that permits residential use and acknowledged heritage significance. This area is currently unleased and can be utilised for the purposes permitted in this category, thus providing for an extremely diverse range of activities to take place.

Along the western edge of the site the narrow strip of land extending from Dunrossil Drive to Bentham Street has a land use of *Restricted Access Recreation*.

The site is bounded on the south and west by arterial roads and their associated wide verge areas, this has the land use category of *Roadway*.

The land immediately to the west of Cotter Road is zoned *Broadacre* and is currently used for horse paddocks. This is not part of the site or the subject of this DCP. This expanse of 'rural' land provides the physical and visual separation between the Burley Griffin's designed south Canberra and the newer Woden Valley.

#### 3.5.2 The National Capital Plan

The National Capital Plan also applies to part of the site, and is shown in Figures 1 and 3 as striped areas. The categories within the striped land parcels included in this site area accord with the Territory Plan categories. The reservations for Dunrossil Drive and Cotter Road are *Road* and the remaining area identified as *Parkland*, the definition of which aligns with the Territory's *Restricted Access Recreation*.

The rationale for this involvement of the National Capital Plan is the need for conservation in the national interest of the open space character separating Woden Valley and old South Canberra, as well as linking into the National Capital Open Space System associated with Lake Burley Griffin.



### 3.6 Potential

#### 3.6.1 Planning

The land east of Dudley Street to Denman Street has remained undeveloped by circumstance rather than a deliberate planning intent for it to be left vacant. The Brickworks site has the statutory planning capability to be sold as a lease at any time.

#### 3.6.2 Existing Residential Trends

The existing residential areas immediately around the site include standard low density detached housing constructed in the 1950's on single blocks of approximately 800m<sup>2</sup> to 1000m<sup>2</sup>. This housing cannot be seen from the Brickworks or quarry.

In recent times there has been extensive redevelopment occurring in Yarralumla with some block amalgamations, dual occupancies and residential dwelling renewal which is changing the physical appearance and density of the suburb, as well as the demographic composition of the once more homogenous suburb. The rate of change has accelerated in the 1990's in response to the spread of suburban Canberra and the increasing recognition of the desirability of the 'inner suburbs'.

Immediately adjacent to the Brickworks and quarry are medium density townhouse clusters constructed in the early 1980's. These housing inserts were resultant from the failure of Mr Marr's company to fulfil lease obligations. They are close to the Brickworks and quarry and any development of the Brickworks area would affect these residential areas the most.

#### 3.6.3 Sought After Setting

To the north and west of the site are the historic remnants of Westbourne Woods where Royal Canberra Golf Club was developed in 1960. The broad scale landscape conservation afforded by this land use (and the zoning Restricted Access Recreation) forms the backdrop to the site. To the north east of the site the institutional use of the CSIRO Forestry School also has this parkland setting. These well-treed sites adjacent to the suburb contribute to the amenity and visual backdrop of the city generally and Yarralumla specifically.







## 4. Constraints

### 4.1 Access and Circulation

The areas of the site available to the public are easily accessible by road or pathway from Yarralumla's residential areas. They are also accessible by non-locals via Dudley Street. However the Brickworks part of the site is less accessible by vehicle, with only a track leading from the end of Denman Street. The site is linked through the public path network to the community service facilities such as shops, pre-school and church.

It is important that linkages through suburban areas for pedestrian and cyclists are retained. This desirable intent is reflected in the different block boundaries existing across the site. In particular the linking space from Bentham Street beside the golf course to Dunrossil Drive, and the linking space west of the Uniting Church.

### 4.2 Community Use

The use of the site accessible to the public is not heavy in terms of volume of people at any given time, nor is it used by any particular focus or interest group. This level of use was verified through random visitation by team members over the duration of the study at various times of the day. However, the Community Value Statement indicates that the space is highly valued by the local community as open space that permits informal passive recreation in a setting that is not typically found in an urban area.

This 'wild' quality and the non Australian character provided by the exotic vegetation is not typical of urban open space in Canberra. It can be found in parts of the Lake Burley Griffin foreshore parklands, particularly around the western shores of the lake, close to and accessible from Yarralumla.

### 4.3 Flora and Fauna

#### 4.3.1 Remnant Native Flora and Fauna

Environment ACT has identified two sites adjacent to Dudley Street as containing a 'wet Themeda' grassland community and one adjacent to Denman Street as remnant *Danthonia* grassland.

These sites are important as remnants of previously more widely occurring communities. These flora communities provide habitat for rare and endangered fauna, particularly the Golden Sun Moth. Refer to Appendix G for additional information on the Native Flora and Fauna. Further investigation will determine habitat utilisation in these grasslands by invertebrates.



Photo-14  
Control burning of  
wet Themeda  
grassland beside  
Dudley Street.





These combinations of flora and fauna are known to exist elsewhere in the ACT and region, however their presence in the city is unusual, as they do not persist with usual urban parkland development and maintenance. This site provides the opportunity for these grassland communities to be more easily managed and studied, however the sustainability of the communities with such limited area is questionable, as they are not pristine.

#### 4.3.2 Weed Concerns

The whole site has had various uses since development of the city commenced, many of which have disturbed the ground. These have included activities such as excavation of material for brick making (across a more extensive area than the fenced off quarry), and its transportation via rail and unsealed road, a roadworks depot and residential housing construction site.

Being at the urban edge, the site has had varying standards of management and maintenance over time, which has in part contributed to the continued existence of the remnant native grassland communities. However, it has also permitted the invasion of most of the weed species common in the peri-urban areas.

Similarly, the quarrying activities for brick making ceased in the mid 1970's and plant colonisation of the disturbed ground has taken place without much interference. The current caretaker is required to spray invasive weeds (blackberry bushes) from time to time, however there is not a regular and serious attempt to eradicate the weeds from the site. There are no Schedule 1 weeds on the site. Refer to Appendix G for the lists of the scheduled weeds.



Photo 15  
Site of former  
shed with  
underground oil  
tank. Note  
'hedge' of  
blackberry and  
seedling 'weed'  
trees.

One of the weed issues to be addressed is invasion by suckers and seedlings. Where parent trees are to be retained, for example the Pines of Westbourne Woods and Elms beside Dunrossil Drive, the quantity of seedlings and suckers is endangering the intended landscape and the health of the parent trees. The suckers and seedlings are controlled on all adjacent lands other than this site.



### **4.3.3 Significant Trees**

Dr Robert Boden as part of the Connell Wagner team undertook both field and data investigation to determine the nature of the trees on the site, their species, health and provenance. His report is attached in Appendix G.

European and North American evergreen coniferous and deciduous hardwood trees dominate the landscape of the whole study area. Native plants such as eucalypts, wattles and casuarinas are missing. There are a number of tree groupings important to the site for historic and landscape reasons and these are described below.

The western boundary of the site contains remnants of the plantings of Pinus species associated with Charles Weston's early forestry scale mass plantings in the area, known as Westbourne Woods. This planting predates the creation of the Brickworks and these parent trees have colonised the old quarry area of the Brickworks, with trees of varying ages now present.

However less well known is the extension of Westbourne Woods to visually screen the Brickworks operation. In 1922 the Commonwealth Surveyor General, Colonel J T H Goodwin instructed Charles Weston, Officer-in-Charge, Afforestation Branch, '...to extend Westbourne Woods to the existing Yarralumla (Dunrossil) Drive, planting the groups sufficiently thick on the rise extending southerly from the hill above the Brickworks to shield the Brickworks.

Conservation measures for these historic plantings are not in place for the vegetation within the study area.

Also of historic interest, and currently invading surrounding land, are the elm (*Ulmus*) and black locust (*Robinia*) thickets with blackberries and African boxthorn shrub layer immediately adjacent to the brickyard fence on the southern and western sides. These are on the site of the former workers' accommodation and are likely to be associated with this camp.

### **4.3.4 Management and Maintenance**

More recent plantings of Monterey pine to the south of Denman Street have an understorey of self-sown cotoneaster and firethorn. These shrubs are not in themselves unattractive but are a reservoir for seed dispersal by birds such as Currawongs which develop as woody environmental weeds into other parts of Canberra.

The other management issue, currently not addressed on the site, is the potential fire hazard of these plantations. Their unmaintained state, with dead branches and some dead standing trees in long grass, increases the high risk associated with flammable trees such as pines.

The other recent plantings on the site contribute substantially to the landscape of the edge of suburban Yarralumla. Variable conditions, maintenance and tree species selection have resulted in a mixed standard of tree health condition and likely longevity.

## **4.4 Brickworks Site**

The site of the Brickworks has a number of constraints and these are outlined below. Further information from detailed investigation undertaken by the team is contained in the Appendices.

### **4.4.1 Heritage Investigation**

The Brickworks are listed on the Register of the National Estate and also on the ACT Interim Heritage Register. The site has been nominated for gazettal in the ACT Heritage Places



Register through a Draft Variation to the Territory Plan. Both registers refer to the site as the Yarralumla Brickworks, Yarralumla.

The heritage investigation report by Eric Martin and Associates reviewed the recommendations included in the Draft Variation to the Territory Plan, the history of the site and the current physical state of the buildings. Appendix D contains the full report.

These findings of this report together with the buildings structural investigation, provide for the possibility of adaptive reuse of some areas of the buildings.

However the heritage of the site is not limited to the built form. Included in the Draft Variation is recognition of the importance of the quarry as an historic component of the brick making process and the geological formations that are now exposed. These formations have been found to contain fossil beds and are of geological heritage significance.

Of lesser significance, but an important part of the history of the site and the social heritage of the burgeoning city of Canberra, is the workmen's camp to the west of the kiln complex outside the fenced area. The camp area can be identified by the ruins of the building foundations and from the trees and domestic garden plants introduced that still persist (see photo below).



Photo 16  
Remains of  
workmen's camp  
exposed among  
tree thicket.

The backdrop of pines and industrial buildings dominates the landscape. This place and its landscape character is unique within this city where industrial complexes do not exist within residential areas. The landscape components of significance are the tall red brick chimney, a landmark for south Canberra and one of the few tall elements that break the skyline, and the dominance of pines as the canopy tree within the site itself.

#### **4.4.2 Brickworks Buildings Structural Investigation**

Appendix E contains the report on the structural condition of the buildings other than the large chimney, which has been the subject of other detailed reports and remedial works in recent times.

This investigation found that there is one kiln that is not safe or able to be considered suitable for reuse due to structural instability.



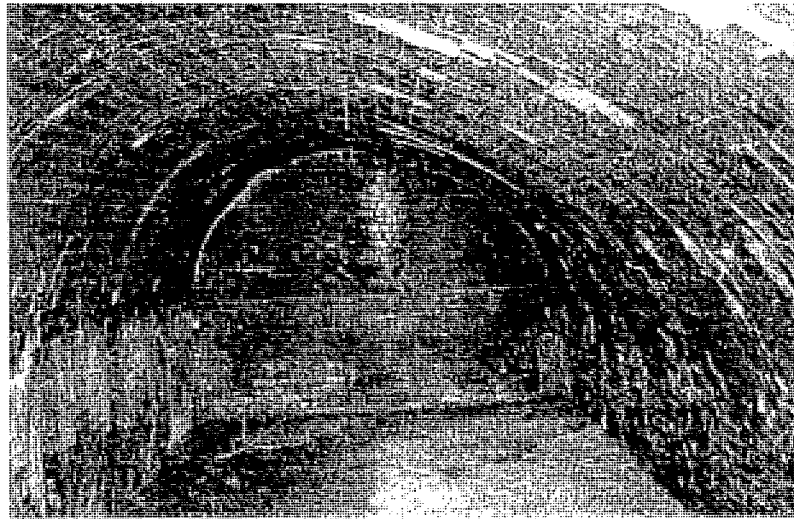


Photo 17  
View of kiln showing  
sagging of arch.

However with stabilisation works undertaken for conservation of the structures, the other buildings could be safely entered and adaptively reused as buildings for a range of possible functions.

#### 4.4.3 Brickworks Site Contamination

The contamination study investigated the historical data available and the likely contamination resulting from the brick making processes (desktop audit). The objective of the audit was to determine contaminants resulting from activities that have historically occurred. The location, type and extent of contamination and recommended actions for further studies and assessment were identified. The investigation report is attached in Appendix F.

Brick and masonry manufacturing activities occurred at the site between 1913 and 1976. Interruptions to manufacturing occurred due to a depressed economy and World Wars, however the Brickworks were in operation for the majority of this time.

The study concluded that there are a number of locations on the site which are likely sources of contamination. These include:

- Coal and Oil Storage Bunkers - location originally used for coal storage then later used for oil
- Forklift Shed the location of a 1000L Underground (Oil) Storage Tank (UST). No records were available for review to suggest that the UST had been removed.
- Model Railway Workshops - locations were originally used for the above ground storage of coal and later oil
- Septic tank - still in operation
- Blacksmiths shop - located adjacent to the Machine Shop
- Explosives Storage Area

Above ground contaminants and substances are also likely to exist including:

- Asbestos building materials (eg roof sheeting, electrical switchboards and insulation material)
- Synthetic Mineral Fibre (SMF) used as insulation material to pipework
- Poly Chlorinated Biphenyls (PCB's) located in electrical transformers and capacitors of light fittings
- Lead based paints applied to walls and ceilings of buildings





Based on the findings of this desktop audit, it is recommended that further detailed site contamination investigations be undertaken for both sub surface and above ground contaminants.

#### 4.4.4 Grounds

The Brickworks buildings are set on an excavated flat 'bench' into the formerly sloping site. This gently sloping flat area extends in front of the buildings, between the buildings and the golf course, towards Westbourne Woods.

The land behind the Brickworks has been highly modified. This area is referred to as the quarry or brick pits, however the creation of its landforms owes to more than just excavation. The landform today is the result of excavation for brick making material creating escarpments, mounds through the dumping of waste kiln products, and the more recent earthworks associated with the Marr development's mini railway route and "lakes". This area is where the geological formations and fossil beds are exposed. The quarry area is very unstable, with erosion of the cut and fill slopes continuing. The unstable scree associated with these escarpments is a hazard to those who would climb them, and restrictions on public access are necessary.



Photo 18  
Weed species  
invading rubble  
piles.

#### 4.5 Infrastructure

Infrastructure investigations undertaken for the site included the existing site services and the capacity of these services to cope with potential additional loads in the event of development of the site or parts of it.

The following outlines the current status of the roads within the site, water supply, stormwater, sewerage, gas and telecommunications. The roads external to the site were also considered in general terms. In addition to the original scope of the Brief, the flow and volume of traffic at the Novar / Kent Street roundabout was investigated.



#### 4.5.1 Vehicular Access – Local Traffic

As outlined in section 3, there are three distinct zones of the site. These areas also have different existing vehicular access that service the local and wider community.

- Zone I has frontage onto both Kintore Crescent and Dudley Street
- Zone II has frontage onto Denman and Dudley Streets, the Cotter Road and Dunrossil Drive.
- Zone III has access only by an informal sealed access track leading from the end of Denman Street, there is no gazetted public road servicing this area.

With the exception of the Cotter Road, the design of the above public roads are as residential streets, wide enough to permit one lane of traffic in each direction plus casual kerbside parking.

#### Dudley Street

Dudley Street, however, is now used as a sub-arterial road linking Cotter Road to Kent Street and Adelaide Avenue. A range of destinations are accessed via Dudley Street, varying from numerous work places, tourist destinations and recreational locations in the suburbs of Yarralumla and Deakin. This road is also the main link to these destinations for motorists from Belconnen, and increasingly Gungahlin, as the only other route crosses through Civic.

#### Novar/Kent Street Roundabout

The Novar/Kent Street overpass of Adelaide Avenue is one of the two main entries into the suburb of Yarralumla and is therefore an important local road. However with the development of the commercial offices and medical precinct in Deakin West, the primarily residential suburban and recreational (to Lake Burley Griffin) traffic once carried by this roadway is now substantially increased.

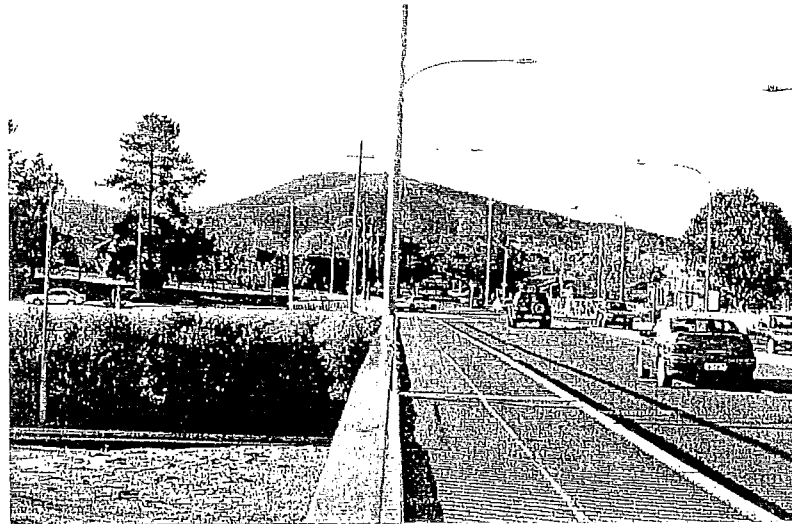


Photo 19  
Novar/Kent Street  
roundabout looking  
towards Yarralumla.

As a result of the public consultation undertaken as part of this DCP the community requested that additional information be provided to substantiate anecdotal evidence that traffic was already too heavy at the Kent Street roundabout.

Additional work to investigate traffic volumes in this location to add current information available. The traffic count information is provided in Appendix H. The report done in 1993 by Ove Arup and Partners covered traffic flows in this vicinity, and general traffic counts are done by Dept. of Urban Services at regular intervals on the major roads.



The findings of this additional work indicate that the intersection is operating at greater than desirable numbers for a residential street. Further, the residential traffic exiting from Yarralumla is delayed at the roundabout by the volume of commuter traffic, some of which use the residential road network of Yarralumla in preference to Adelaide Avenue (the arterial road) in peak traffic times.

There was concern expressed by the community that development of the site would exacerbate existing traffic conditions that are unfavourable for the amenity of local residents. This existing situation would be intensified by growth in traffic volumes. Further growth can be anticipated with changing population densities and vehicle ownership trends. The prime contributory sources for traffic at this intersection are the residential suburbs of Deakin and Yarralumla, the commercial sector in west Deakin, and commuter traffic from Belconnen and Gungahlin, which are current population growth centres.

#### **4.5.2 Vehicular Access – City Wide Infrastructure**

The Cotter Road is an important arterial road and one of the key cross town links between the residential district of Weston Creek and the rural areas beyond, the Woden Valley and Tuggeranong. The Cotter Road bounding the site takes traffic to the main arterial road of Adelaide Avenue northbound to the city and traffic from the north, off Adelaide Avenue to the south (Curtin) and west (Tuggeranong Parkway).

In assessing the city wide infrastructure of roadways and the opportunities and constraints the following options were investigated.

##### **Northbound slip lane off Adelaide Avenue**

Currently there is no exit off Adelaide Avenue at the Novar/ Kent Street roundabout. Construction of a northbound slip road off Adelaide Avenue to Novar Street would cater for traffic from Cotter Road and Adelaide Avenue wishing to access the Kent Street overpass and would limit traffic on Dudley Street. However this infrastructure work is also likely to add to the already congested morning peak on Novar/ Kent Street roundabout.

##### **Southbound link road into Adelaide Avenue and Cotter Road**

Currently there is no entry off Kent Street onto Adelaide Avenue. Construction of a roundabout and link road from Denison Street at Geils Court would provide a means of direct access to the southbound carriageway of Adelaide Avenue and would direct traffic to the Cotter Road via the existing fly-over. This infrastructure work is likely to assist in alleviating the evening peak on the Novar/Kent Street roundabout.

##### **Yarra Glen to Cotter Road slip lane**

A slip lane was intended to link Yarra Glen to the Cotter Road but was not constructed. This additional infrastructure work would provide access from Yarra-Glen northbound carriageway onto Cotter Road west bound and provide this important cross town arterial link roadway. A corner of the existing horse paddock would be impacted.

##### **Access to the Brickworks**

Any permanent development of the Brickworks would generate traffic and necessitate a designed roadway into the site to cater for the expected volumes. At this time the intersections of Dudley Street and Dunrossil Drive with the Cotter Road could be rationalised into one roundabout. A roadway into the Brickworks could come from this roundabout and therefore negate additional traffic into the residential streets of Yarralumla.



#### **4.5.3 Stormwater Drainage**

Stormwater management on the site is of concern to the Uniting Church as they experience minor flooding into their lands from the roadway as there is no kerb and guttering on the western side of Denman Street. The eastern side of the street is connected to the urban stormwater system.

Development of the site area, Zone II, would need to provide a new stormwater management system.

The building's stormwater systems (guttering and downpipes with spreaders) within the Brickworks buildings are basic and in disrepair and require works to ensure effective conservation of the buildings. Any development of the site would require capital works to develop an adequate system.

#### **4.5.4 Water Supply**

ACTEW's water supply network currently extends through and around the site. Any development of the site would have the water demand determined to establish any upgrading requirements. Upgrading of the trunk infrastructure would be necessary in the event of any significant redevelopment of any of the areas of the site, however it would be undertaken by ACTEW at their cost.

#### **4.5.5 Sewer**

It is anticipated that adequate capacity would be available via existing trunk sewers for any development of the site in Zones II and III, however the area bounded by Kintore Crescent and Dudley Street would require a new connection to the Curtin trunk main and therefore expensive capital cost outlay.

#### **4.5.6 Electricity**

Electricity is available to the site, however the external supply system is likely to require some augmentation in the event of significant redevelopment. Such work would be carried out by ACTEW at their cost.

The overhead 11kV power lines traversing and bordering the site would be relocated underground if the area was developed.

#### **4.5.7 Gas**

Reticulated natural gas is available around the site perimeter, and this infrastructure would be adequate for potential development of the site.

#### **4.5.8 Telecommunications**

Telecommunications are available to the site however it is likely that the external supply system would need augmentation if development was undertaken. Telstra would carry out this work at no cost.









## 5. Opportunities

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### 5.1 Understanding Change

The Brickworks operations have ceased and Mr Burley Griffin's plans for Yarralumla are much altered with the development of the city towards the south. The possibilities for Canberra's urban sprawl are limited by topography and political boundaries, as well as a change in societal desires and expectations of sustainable cities.

The need for responsible use and management of Territory lands has occasioned this study and the government initiative to promote sustainable and quality development provides a basis for reconsideration of possible uses beyond the existing planning categories.

The process of change and urban renewal has begun in the ACT. The Canberra suburbs that were first constructed are also the first to experience this rebirth of form and function within the context of a city much changed from the days when these suburbs were constructed in the bare Limestone Plains.

The opportunities for the site are explored under headings of the existing land use categories, taking account of the land units identified as Zones I, II and III, and/or the possible functions.

### 5.2 Brickworks Buildings

The Brickworks is a discrete entity within the site, Zone III, but part of a larger area under the planning category of *Entertainment, Accommodation and Leisure*. There are existing buildings within the Brickworks area of the site that could be re-used and adapted for alternative uses. The kiln buildings and linking fabrication building, fan houses, chimneys and powerhouse have been identified as being worthy of retention on heritage grounds. Adaptive reuse would have to be of a built form and of a use that did not destroy the qualities and components of heritage significance.

The opportunity for adaptive re use is a major asset to the site, however the use of the buildings is one to be resolved. The extent of heritage interpretation and visitation is also to be considered.

In assessing the capability of the buildings and possible uses, the following key factors have been considered:

- existing and feasible infrastructure supply,
- existing and feasible vehicular access,
- structural limitations.

The physical capability for the Brickworks buildings have been largely addressed in the investigation reports contained in the Appendices and referred to in the text of Section 3 Site Description and Section 4 Constraints. The opportunities for most of the buildings are not limited by the physical capability to take modifications and additions to the structures.

### 5.3 Conservation and Heritage Interpretation

The conservation of the most significant buildings and their retention with interpretation, for visitation by the public to display the history of brick making in the Territory, has been determined as an opportunity for the site. However it limits the available space on the ground floor for other uses, as well as restricting the other potential uses on the upper floors and grounds.

Heritage visitation can be viewed as educational or focussed tourism. The accepted desirable form for any tourism visitation is to have more than one reason to visit the place. Having at least three compatible and/or like uses around a common theme has been proven to be the minimum number of combination of activities to ensure economic viability and therefore a feasible use. Hence the common combination of food and beverage retailing beside tourism venues, combined with retailing of topic specific gifts and souvenirs. The existing planning controls permit this combination of activities.



#### 5.4 Residential Use

The adaptive reuse of the Brickworks site for residential accommodation over the kilns and in the quarry, though possible under current planning controls, is regarded as conflicting with the heritage conservation objectives for the immediate vicinity of the kilns. Also, the standard of amenity for residential accommodation in today's Canberra context would not be compatible immediately juxtaposed with such cultural tourism due to noise and lack of privacy for residents. Such intense development may be acceptable elsewhere in Australia or in Canberra in future times.

The local context, the surrounding part of Yarralumla, is medium density residential dwellings on individual blocks. This form of residential housing is possible for the non Brickworks part of the site.

#### 5.5 Brickworks Quarry

The excavations from quarrying for material to make bricks, combined with the dumping of fired waste products in mounds in the excavated areas, has resulted in a landform that is both unusual and unstable in the area to the north and east of the Brickworks buildings. This area was further modified under the direction of Mr Marr in the late 1970's, with filling in to make level areas and excavation for 'lakes' in others.

The subsequent and continuing colonisation of these disturbed grounds by pines from the nearby Westbourne Woods has created an enclosed landscape with a distinctive exotic (non native) landscape character.

A number of other plants have also colonised these disturbed grounds, particularly known pest plants such as blackberries.

The quarrying operations uncovered both limestone outcrops in the shale and fossil remains in the clay beds between the shale. The exposure of these formations is of geological heritage interest and there are a number of locations within the quarry nominated for conservation due to heritage significance.

In conserving the setting of the Brickworks and providing for interpretation to visitors, as well as the conservation of the geological formations, requires limitations to public access of the site. The quarry slopes are unstable but tempting to climb for children and fossil seekers.

The opportunities presented by the quarry are restricted given the above factors. The creation of a secured (fenced) public 'garden' was proposed as a means of satisfactory conservation and maintenance as well as contributing positively to the amenity of the local area. This concept was received favourably within the local community.

The concept of a 'garden' for Yarralumla sits well in the broader historical context of Yarralumla as one of the early planned suburbs of the Garden City and the area developed by Mr Charles Weston for his Nursery and Arboretum. There are potential synergies for recreation and tourism linking Weston Park, Royal Canberra Golf Course and the Yarralumla Nursery precinct.

#### 5.6 Unleased Land

The largest part of the study area is unleased Territory land with a current planning category of *Restricted Access Recreation*. A range of land uses would be permitted however it is likely that with a lease would come fencing and exclusion of free and unrestricted public access.

This area could be considered by the golf club for extension, however this is not likely to be a priority with their recent expansion and development fronting Lady Denman Drive.



Key factors for consideration with this parcel of land are not restricted to local issues and include:

- Recognition of community values for the site
- Relationship of this component of the site with the Brickworks and surrounding area land uses
- Conservation of flora and fauna of significance
- Conservation of landscape setting for Yarralumla
- Conservation of open space separation between inner south Canberra and Woden
- Equitable and responsible planning category(s) within the city as a whole
- Recognition of the changing nature of society and provision of opportunities to accommodate different lifestyle options within the city
- Financial viability for the whole Territory community.

The development opportunities for this area are driven by:

- its proximity to existing urban communities and their facilities
- possibility of easy access to arterial roads and the existing infrastructure
- central city location

Industrial or strictly commercial uses are not desirable in the residential urban context and these land uses have therefore not been explored. Feasible land use possibilities for the site that respond to the key factors are:

- Expansion of *Community Use* area to encompass aged persons units associated with the Uniting Church
- Expansion of *Residential* housing area across Denman Street to Dudley Street
- Retention of *Restricted Access Recreation*, and seek a suitable lessee for the place
- Conversion to *Urban Open Space* to prohibit development
- Combinations of the above.

Redevelopment for housing in this location could be low density, however this denies the changing trends in residential development in the inner city areas. A medium density development that is in keeping with the urban form of Yarralumla is a more sustainable concept and could provide a mix of housing sizes and built form types.

The concept options developed for the site, and presented for public consultation, provided these options with varying public response.

The extension of the *Community Use* area to encompass aged persons units associated with the Uniting Church received much support from the local community and the Church community.

## 5.7 Social Impact

The social impact on the local district depends on the uses for which the buildings and general area are developed. The social impacts considered with redevelopment of the site include:

- community values and views on acceptable uses
- likely impact on the amenity of existing residents and neighbouring leases
- safety and security
- feasibility/viability of proposed uses.

The local community views on uses for the redevelopment of the site are diverse. However there is a general acceptance of the existing planning control category of *Entertainment, Accommodation and Leisure* with a *residential* area specific policy, as providing the breadth of opportunity for retaining the qualities that the local community value statement outlines.

The possible range of activities permitted could adversely impact on the quiet enjoyment of the area of existing residents. This issue of possible desirable and feasible uses for the site was therefore





canvassed with the local community. The identified the issues of major concern were the creation of traffic congestion on existing local streets, incidence of high numbers of visitor parking in local streets at times of events and the possible loss of the existing unleased land for passive recreation. Residents also expressed the wish that the existing urban form and particular characteristics of their suburb be retained. These design and master planning issues were considered important for the conservation of both neighbourhood amenity and local real estate values. The detail master planning of any possible new development falls outside the scope of this study.

The neighbouring golf club's annual tournament event does provide a model for the possible inconvenience associated with large scale events. The community was tolerant of the substantial traffic volume and parking numbers generated by this particular event, as it is for a known, fixed and limited time. However the prospect of similar disruption over longer periods would be less acceptable. Therefore the development possibilities for the site should avoid long running events of a type which would generate adverse impacts for adjoining areas.

The need for a use other than as a heritage / tourism site relates to the financial viability as well as the safety and security of the place. Occasional use, that is a development without regular, long term use and occupation of the Brickworks area, would provide a venue for unsafe and anti social behaviours. Currently the fenced Brickworks site is a venue for illegal drug use, as evidenced by the resultant hazardous rubbish to be found beside the kilns.

Given the tourism visitation statistics to heritage locations in the ACT region, it can be anticipated that this use alone would not provide the day to day security afforded by reliable numbers of people. This is a real concern for the conservation of the heritage as well as the local area community. To some extent fencing with restricted access and security systems in place around the site would address this issue, however a more certain usage with higher numbers of people would provide better financial viability and alleviate this concern.

## 5.8 Floriade

The scope of work in the Brief required that the feasibility of and issues surrounding the permanent location on the site of the spring floral festival Floriade be assessed. The brickworks site was proposed as a possible permanent location for Floriade as there are examples of successful public gardens in quarries. A famous and successful example is Canada's Butchart Gardens in Vancouver. It is understood that the city of Toronto is in the process of creating a garden and multi-use facility in their former brickworks.

This annual Canberra and national event is held for one month in Spring and has been located every year since inception, in Commonwealth Park. However the Park has to be 'restored' back to its former landscape on completion every year. As this 'doing and undoing' adds considerable financial costs to the staging of this event it has long been understood that to reduce the burden on the local taxpayer, a permanent home for this local and national tourist event should be found.

A plan of how Floriade might be designed to fit within the Brickworks site was provided to the team. This schematic plan was used as the basis for assumptions regarding the extent of beds, paths, water features etc for costing purposes (refer to Appendix I). The opportunity to locate the permanent spring floral festival in and around the Brickworks and quarry was explored. It is possible to fit the floral display and the visitation numbers of people and vehicles within the site, with additional overflow parking on adjacent arterial road verges as necessary.

This activity would provide a strong horticultural theme for the place and provide opportunities to build on this theme for adaptive re use of the rest of the site. However this large scale event spread over an indefinite period of time would have amenity impacts on some of the local community. This topic resulted in divergent views within the local community with some strong negative response.



### **5.8.1 Review of Other Possible Floriade Sites**

As a variation to the Brief, Connell Wagner was requested to undertake an investigation of a range of places for a possible permanent Floriade site. These were to include those sites reviewed by Mr CRV Slotemaker de Bruine in the early 1990's.

A total of fifteen sites were investigated, however a number of the sites from the previous de Bruine work were not suitable for inclusion in this study as they were no longer available/feasible. A set of criteria was determined with weighting to ensure that the most important factors were given prominence.

A site investigation was undertaken for each site to fully understand the opportunities and constraints posed by each location. This work was completed. Photographs were taken, area plans obtained and the results tabulated; being the best means of displaying the comparative information for each site. These tables are included in Appendix I and were distributed to the community in the Info Pack available at the Yarralumla Shops and at the public meetings.

### **5.8.2 Review Findings**

The sites fell into four groups that indicated that size and location relative to the central national area, and therefore the tourism potential, were critical factors. The locations were found to be:

- those that were not sufficiently large (and were therefore eliminated)
- those that ranked most highly (which were closest to the central national area)
- middle ranking locations (those within a ten kilometre radius of central national area)
- lower ranking locations (more remote from the central national area).

The most highly ranking sites included Commonwealth Park, the existing location for the annual Floriade. The Brickworks site was in the middle ranking locations.

In response to this information being made public the National Capital Authority's Executive Director Ms Annabelle Pegrum has indicated that Commonwealth Park was the National Capital Authority's preferred location for a permanent home for Floriade.

## **5.9 Adaptive Re-Use and Events**

The range of uses and events desirable for the Brickworks buildings were explored by the team however the need for economically responsible concepts for the place was given equal weighting, thus providing a limit to the otherwise endless possibilities.

The majority of events held in the ACT receive government subsidisation of some sort to remain possible. The population base of approximately 400,000 people in the local region is not sufficient to provide financial sustainability for internal (local) tourism. Consequently, the adaptive reuse for the place cannot rely solely on one activity or event, the collocation of a number of uses and or events that have a common theme or purpose is a more successful means of achieving economic independence. Examples of this economic model are the school fete, the Kingston Bus Depot Markets and the provision of food, beverage and souvenir retailing at National Park Information Centres.

The themes of relevance to the place that continue to be appropriate in the urban context were considered to be heritage and horticulture. The locating of a permanent Floriade in the brickworks fits this category however this activity by itself is unlikely to provide the financial independence desired.



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The other issue for resolution was effective utilisation of the space available. The ground floor internal spaces of the kilns were accepted as having a primary role for heritage interpretation. The first floor space required a use, or uses, that were:

- not unduly noisy (for the local residents)
- compatible with the heritage and horticulture themes
- day and/or night time users.

The concept proposed by the team was for an institutional user such as CIT's School of Horticulture to be relocated to the site, with opportunity for smaller events and community use activities related to horticulture, a function currently performed by the Albert Hall. A café would be viable to serve both tourists and CIT needs. Integration of the quarry garden as part of the venue could serve as the teaching facility for the CIT practical experience.









## 6. Concepts

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### 6.1 Approach

The following underlying aims and objectives were adopted by the team in the investigation of possibilities for use of the entire site:

- Respect for the needs of the site as a landscape buffer at the edge of old South Canberra
- Conservation of existing flora and fauna of visual importance and heritage significance
- Conservation of items of heritage significance
- Acknowledgment of the values of the place as ascribed by the local community
- Responsible use of Territory lands

The possible development options for the site were to be investigated for feasibility with regard to infrastructure, decontamination, traffic and parking, urban form and statutory implications.

The feasibility of the inclusion of a permanent location for the spring floral event Floriade was to be investigated.

### 6.2 Process

Three concept options were required to be investigated, one of which was the proposal advanced through the Joint LAPAC Committee.

The other two options were developed by the team in accordance with the Brief and information provided about the nature of a permanent Floriade. The Options (version 1) were given names descriptive of the content and were presented to the community for comment.

In response to this feedback the Options were revised and a fourth one added that represented minimal change from the existing situation, that is there was no additional residential development and no inclusion of Floriade. These options (version 2) were given letters A – D to distinguish them from the earlier named options.

In distilling the community comments received and providing professional analysis of the concept options, two concepts are recommended for further consideration.

Option A follows the existing zoning for the site and confines development to the brickworks area of the site, and Option C which extends suburban Yarralumla beside the Uniting Church as was originally planned for the suburb.

### 6.3 Brickworks Buildings

In both options heritage conservation with public access and interpretation would become the major focus for the ground floor of these buildings. The Brickworks buildings with heritage significance would be retained while others are removed. The site is proposed to be decontaminated and the retained buildings stabilised prior to construction to enable adaptive reuse of the upper floors.

The potential uses and users were the same in both options. Surrounding and over the three smaller kilns on the western side with the built form retaining the roof line and glazing infill to provide open 'gallery' style space for events and community groups.

The central and oldest kiln is unsuitable for re use. The three storey linking building and the end kiln nearest the large chimney would be modified to conform to modern commercial grade building standards within the existing building envelope. There would be provision of one semi commercial kitchen / cafeteria and toilets on the ground floor with open plan floors above. The three-storey building would be re-clad with the ground floor extensively glazed to allow for a visual link through from the courtyard to the quarry area.



The use proposed was for a regular daytime user such as the CIT School of Horticulture. Their particular needs relate to relocation of glasshouses from the existing Weston Site, and these have been itemised separately in the costing.

The advantage of this user is that the student's practical studies can be utilised to create and maintain the quarry gardens called Westridge Gardens in recognition of Burley Griffin's name for Yarralumla.

#### 6.4 Quarry

A fenced public garden in the quarry was proposed in both options as functionally compatible use to conserve the form of the brick pits and the exposed geological formations, as well as providing a safe and accessible means for the public to view the place and allow for heritage interpretation. The early name for the suburb of Yarralumla was Westridge, hence the name of Westridge Gardens is proposed for the quarry gardens.

The garden would be entirely fenced for safety of visitors and to discourage vandalism of the crumbling rock faces.

On the rocky soils of the site the existing Pines that have adventitiously grown provide a 'ready made' tree canopy and setting for the garden that are desirable to retain. In retaining these trees, and in recognition of the need for sustainability as a guiding principle, the concept for the entire garden would be for low water use plants.

The existing Xeriscape Garden at Weston, sponsored by ACTEW, is a public garden that demonstrates garden plants in different style settings and with varying water use dependencies. This public education function could be relocated to the quarry garden.

The exception for use of low water use plants is possible for the existing shallow water bodies created by the excavation done during the time of Mr Marr. These excavations intended as lakes have become for shallow marshes as the underlying rock is fissured and does not retain a constant water level. The public garden concept could have marsh gardens, rather than expansive lakes, to display a range of water loving plants.

The concept of a public garden for the quarry area is one that that is less intensively developed than a Floriade style development and would have fewer restrictions for access. The place as an event venue would still be possible.

#### 6.5 Remainder of Site

The options explored for the area of land outside the immediate Brickworks and quarry covered the feasible range of land uses for the place within its context in the city. The assessment of these concepts by the team and taking account of community feedback, has resulted in the following two options being brought forward as feasible, viable and responsible land use options. Refer to Appendix A for plans.

##### Option A

The area not part of Brickworks but within the planning category 8A (blue coloured on Figure 1) is to be developed for medium density residential dwellings. This does not need a variation to the Territory Plan. Access for the residential area will be via existing local roads, but a separate access road off Cotter Road and linking with Dunrossil Drive will provide access to the Brickworks.

The unleased territory land in the category *Restricted Access Recreation* is to remain with this land use category thus providing opportunity in the future for additional recreational facilities to be developed.



The area surrounding the Uniting Church is to be rezoned to *Community Use* to permit aged persons units to be constructed by the Church.

The existing urban open space alongside Kintore Crescent remains unchanged, as does the open space associated with the Cotter Road.

Dudley Street remains as a link road from the arterial Cotter Road into the local road network with an improved intersection with the Cotter Road. The additional roadworks indicated on the options plans to improve general traffic flow, have been costed and included as part of the proposed works, but will require more detailed design in subsequent stages.

### Option C

The area not used for Brickworks and adaptive reuse but within the planning category 8A (blue coloured on Figure 1) is to be rezoned to link with the open space associated with the roadways and become *Urban Open Space*.

The unleased territory land in the currently *Restricted Access Recreation* beside the Church is to be rezoned to *Residential* for medium density housing development linked to Denman Street. However there is a ridge top linear parkland that extends into the *Urban Open Space* surrounding the Brickworks. A separate access road off Cotter Road and linking with Dunrossil Drive will provide access to the Brickworks.

The area surrounding the Uniting Church is to be rezoned to *Community Use* to permit aged persons units to be constructed by the Church.

The existing urban open space alongside Kintore Crescent remains unchanged, and Dudley Street is realigned and closed off from Cotter Road. The additional roadworks indicated on the options plans to improve general traffic flow, have been costed and included as part of the proposed works, but will require more detailed design in subsequent stages.

### 6.6 Floriade

This activity would provide a strong horticultural theme for the place and provide opportunities to build on this theme for adaptive re use of the rest of the site. However this large scale event spread over an indefinite period of time would have amenity impacts on some of the local community. This topic resulted in divergent views within the local community with some strong negative response.

The placement of a Floriade type garden into this place was compatible with the conservation of the cultural and natural heritage values, however, the creation of a permanent Floriade garden with its attendant events throughout the year would require significant modification to the quarry and Brickworks surrounds, particularly to augment the existing number and type of plant species and the extent of facilities throughout.

The placement of this event into a public garden would require a limiting of access by the public at certain times to enable horticultural preparation activities.

The vehicular access to the site for a large event is not desirable on local suburban roads and a new access link from Cotter Road is proposed. This road would terminate in a sealed carpark, for approximately 120 cars. During events this carpark would accommodate buses, set-down and drop off points as well as car parking for disabled or elderly. At times outside of major events this carpark would service other building users and small events.



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Event overflow car parking for approximately 800 cars could be provided in the dryland grass areas under the Pines adjacent to the boundary of the site with the golf club. Additional cars could be parked along the wide verges of the Cotter Road in a similar fashion to use of dryland grass areas adjacent to Exhibition Park in large events.





**Conclusions**



# 7. Conclusions

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## 7.1 Premises

This study was to investigate the possibilities for changes to the existing land use of this parcel of land in inner Canberra City. It is important to note that this was to be done within the context of sustainable development and quality urban outcomes.

With any change, the process is difficult for some individuals who seek to resist the form that the changes may take. However our city is evolving and the nature of cities is to have a dense core to optimise resources. Consequently, it is an accepted trend for the inner city areas that have low density residential housing to change over time to become higher density. Similarly, areas of open space within the inner city need to be assessed for the validity of land use.

A basic premise that underlies this study is that wherever possible the existing services should utilise the existing infrastructure systems.

It is also understood that our society is changing rapidly, particularly in relation to household size and work practices, with electronic communications radically altering the nature of the home and the workplace. Responsible planning permits developments that provide for a diverse range of residential housing types and lifestyle options.

The heritage components of the Brickworks, quarry and surrounding lands are a potential asset to the city that are currently a liability.

## 7.2 Findings on Key Issues

The following summarises the findings relating to the key issues that were found to be the most significant for this site.

### 7.2.1 Open Space

There is an abundance of publicly accessible open space with a diverse range of landscape types, vegetative experience and use possibilities available to the residents of Yarralumla. This provision is in large part due to the areas that form part of National Capital Open Space System that wrap around Yarralumla. This provision is greater than most Canberra urban and suburban areas enjoy. The need for the study area to be largely open space accessible for locals as a place for passive recreation was not validated. However there was found to be an existing network of pathways and tracks that link with the formal trail and path system that is desirable to retain.

### 7.2.2 Visual Importance of Large Trees

Some of the open space areas are important due to the visually prominent tree plantings which provide the visual backdrop to this part of the city and create the views and vistas from the arterial roadways, Cotter Road and Adelaide Avenue/Yarra Glen. These plantings also serve to provide the visual screen between Yarralumla and neighbouring residential areas as well as the surrounding roads. The conservation of a substantial portion of these coniferous tree plantings is strategically important for the city.

### 7.2.3 Flora

The historic importance and the nature conservation values of the existing vegetation were ascribed to limited portions of the study area. The significant landscape values relate to the enclosure and creation of streetscapes for the residential area, and enclosure and creation of vistas and views from the arterial roadways. The study area includes a significant bank of weed species and parts of the site are being invaded and rendered inaccessible.



#### **7.2.4 Local Traffic**

Local traffic issues such as the volume on Novar Street associated with the Kent Street roundabout and Weston Street being used as a 'shortcut', have become apparent in the process of undertaking this study. The traffic generated beyond Yarralumla that affects local streets requires further investigation but detailed resolution is beyond the scope of this study.

The development of additional housing adjacent to the existing suburb and linked into the local street system will generate a minor increase in traffic on the local network, but would not in itself overload the existing street network or local amenity. Any adaptive reuse of the Brickworks site for events or another regular user group would generate traffic that is would affect the amenity of the residents if it utilised the local road network. Therefore a separate entrance to the Brickworks site is required.

#### **7.2.5 Urban Form**

The local community who engaged in the consultation process value the urban form of the older suburban Yarralumla. It is acknowledged that residential development adjacent to, and visually linked into the existing suburb, needs to respect the existing streetscape and built form characteristics of the place. The defining characteristics are:

- wide verges (+ 6m),
- formal placement of medium to large street trees,
- clipped hedges and footpaths beside,
- roads wide enough for two cars to pass with one parked beside the kerb, and
- residences no higher than two storeys that retain open space with substantial plantings surrounding them.

These characteristics were adopted by the team in preparing Option C.

The location of Option A is remote from the existing streetscapes and located on lower ground not visible from most of the suburb. It is therefore not as constrained in urban or built form for any potential development. In this option the parameters are:

- building height no greater than the existing dwellings in Denman and Wools Streets (thus lower than the trees)

It is a given that any development would adopt a position of maximum sustainability and quality of buildings.

#### **7.2.6 Permanent Floriade**

Floriade is an event and the Territory Plan zoning permits events in the Brickworks area. The investigation into the feasibility of this event to be held permanently in this location found that the site had the capability to contain the floral component and the visitation by maximum crowds. Infrastructure needs could be met and are dependent upon the detail of the planning concept for the rest of the site. There were a range of possible overflow parking locations to accommodate peak visitation.

The major concern of the Yarralumla residents who engaged in the community consultation to placement of a permanent Floriade in the quarry was the potential loss of amenity through traffic congestion in the local streets. This was a valid concern though one that could certainly be ameliorated through management. It was in response to this concern that additional traffic volume investigation was undertaken at the roundabout intersection of Novar/Kent and Dudley Streets refer to Appendix H.



The response by the community to a permanent home for Floriade in the quarry of the Brickworks was mixed, with some enthusiastically in favour, others vehemently against and many not certain as to the desirability of this location.

The National Capital Authority's Executive Director Ms Annabelle Pegrum has indicated that Commonwealth Park was the National Capital Authority's preferred location for a permanent home for Floriade.

### **7.2.7 Adaptive Re-Use and Events**

The range and scale of events that could be undertaken in the vicinity of the Brickworks once decontamination has been undertaken, are potentially limited by two key factors:

- the size and extent of provision of facilities provided in and around the adaptively modified buildings and
- the adverse impacts on the amenity of the surrounding residents, primarily from noise, parking and traffic volumes.

The 'themeing' of events and activities contributes greatly to the combined success of all, with a minimum of three activities generally required to engender enough business activity eg. the selling of food and beverages and topic related souvenirs in National Parks entry stations. The proposed theme of 'horticulture' for the site allows a diversity of activity types. This proposed theme received favourable community response.

## **7.3 Guidelines and Recommendations**

The text below outlines the team's recommendations regarding the study area, based on the investigations undertaken and the community values and opinions expressed. The following Figures outline these guiding principles and recommendations in graphic form.

### **7.3.1 Brickworks Site**

The part of the study area zoned 8A that contains the Brickworks and associated quarry to have:

- the decontamination further determined and works undertaken as necessary
- the heritage components to be conserved and
- buildings adaptively reused
- re use to allow heritage interpretation and displays (ground floor), as well as
- sympathetically themed events such as heritage and horticulture
- built structures removed that have no heritage significance
- the quarry converted into a public garden
- the site secured, including fences
- a separate entry from Cotter Road.

### **7.3.2 Community Facilities**

The enlargement of the Community use zone boundary to allow aged persons units associated with the Uniting Church.

### **7.3.3 Undeveloped Land**

It is recommended that the majority of the site remain undeveloped at this time. The two options recommend uses of the space that retain the function currently performed, as a visual buffer with stands of coniferous trees, as an important and valid use for the place in addition to any other complementary function.

- The other parts of the site, in Zones II and/or III, be retained for the possibility of recreation facilities under lease in Option A, or urban open space in Option C.





- Conserve the existing vegetation as much as feasible and practical.
- Conserve the stands of conifers that provide the visual backdrop and screening of Yarralumla on the ridgeline and beside Cotter Road.
- Pathways and linkages through and around the study area retained and upgraded, particularly to link Lane Poole Close to Bentham Street.
- Retain the urban open space, Zone I.

#### **7.3.4 Residential Housing Possibilities**

The two options A and C provide possibilities for development of additional residential housing areas that retain the qualities and urban form of the existing suburb. Both options are to link with existing local road networks.

##### **Option A**

Option A has scope for innovative mixed medium density residential housing types (higher density than Option C). The following urban form guidelines are recommended.

##### **Height**

Mixed - single storey to multi storey. Maximum complete height of any building no greater than a height equal to the 596m contour level. This means that no building should be higher than the existing townhouses adjacent to the site on Woolls Street.

##### **Colour / Materials Palette**

Mixed colours and materials possible with preference for a palette in sympathy with retained Brickworks buildings and surrounding dwellings, eg. red-brown brick and corrugated colorbond.

##### **Form**

Built form does not have to address street frontages (as in low density Yarralumla). Orientation to address passive solar efficiency for heat and light. Parking and open space requirements as per Territory Plan B11 and 12 areas.

##### **Use**

Residential housing with mixed dwelling sizes and arrangements to foster a range of household types including capability for home based offices.

##### **Option C**

Option C provides a minimum area for medium density residential housing within the envelope provided by the existing infrastructure

##### **Height**

Mixed – two to three storey. Maximum complete height of any building no greater than a height equal to the 596 m contour level.

##### **Colour / Materials Palette**

Mixed colours and materials possible with preference for a palette in sympathy with surrounding dwellings. Base and accent colours to reflect the palette of this region.

##### **Form**

Buildings are to address street frontages as in local streets. Orientation of built form to address passive solar efficiency for heat and light wherever possible. Street form and design to be modelled on Abbott and Maxwell Streets.

##### **Use**

Residential housing with mixed dwelling sizes and arrangements to foster a range of household types.



## 7.4 Actions

The two preferred concepts, Options A and C have actions both common and divergent, required to realise the possibilities within the framework of the Territory Plan, Land Release Programme and the Capital Works Programme. These actions are outlined below.

The National Capital Authority requires Works Approval to be obtained for actions proposed within the designated areas. The roadworks indicated within their jurisdiction will require this additional process.

### 7.4.1 Common Actions to be Taken

#### *Territory Plan*

- Amend to remove residential housing from Brickworks quarry
- Amend and extend Community Use to allow for aged persons units
- Amend to permit construction of Cotter Road arterial links from Yarra Glen and from West Deakin.

#### *Capital Works*

- Brickworks decontamination investigations and subsequent actions
- Conservation and Management Plan for landscapes associated with Cotter Road, Dunrossil Drive and Westbourne Woods fringe.
- Weed strategy devised and implemented for Brickworks
- Design and construction of quarry garden
- Design and construction of perimeter fence to heritage areas
- Design and construction of link paths between Lane Poole Close and Bentham Street
- Design and construction of stormwater diversion from frontage of Uniting Church
- Design and construction of Denman Street linear parkland pathway and lighting
- Design and construction of Cotter Road arterial links from Yarra Glen and from West Deakin.

### 7.4.2 Actions to be Taken for Option A

#### *Territory Plan*

- Amend to reflect change of purpose for residential only sector of 8A zone

#### *Land Release Programme*

- Prepare lease and development conditions for residential area
- Prepare lease and development conditions for Community Use aged persons units

#### *Capital Works*

- Design and construct the roundabout and access road to the Brickworks

### 7.4.3 Actions to be Taken for Option C

#### *Territory Plan*

- Amend to reflect change of purpose for urban open space sector of 8A zone
- Amend to reflect change form Restricted Access Recreation to Urban Open Space

#### *Land Release Programme*

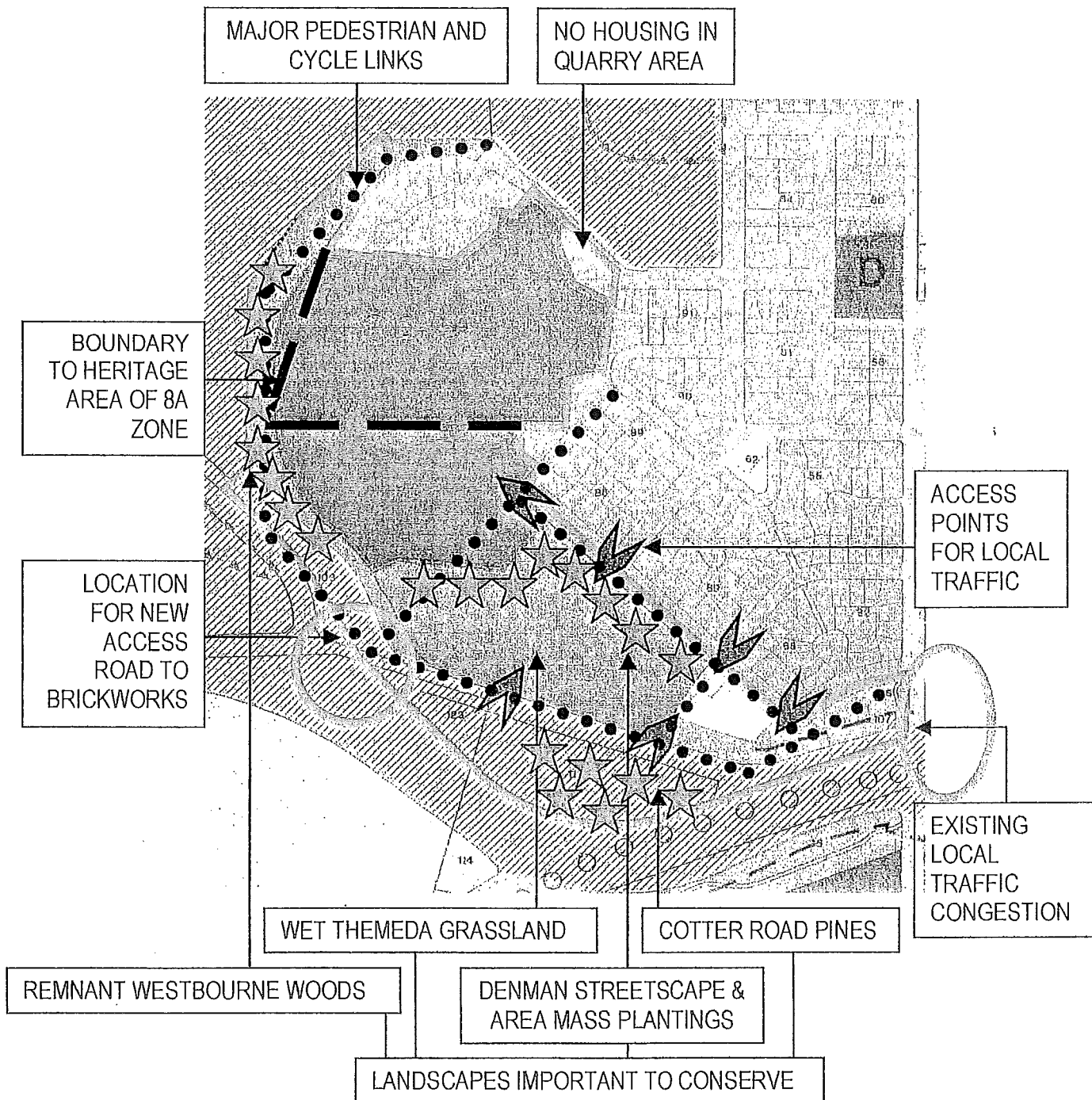
- Prepare lease and development conditions for residential area
- Prepare lease and development conditions for Community Use aged persons units

#### *Capital Works*

- Design and construct the roundabouts and access road to the Brickworks
- Design and construct the off ramp to Novar Street roundabout

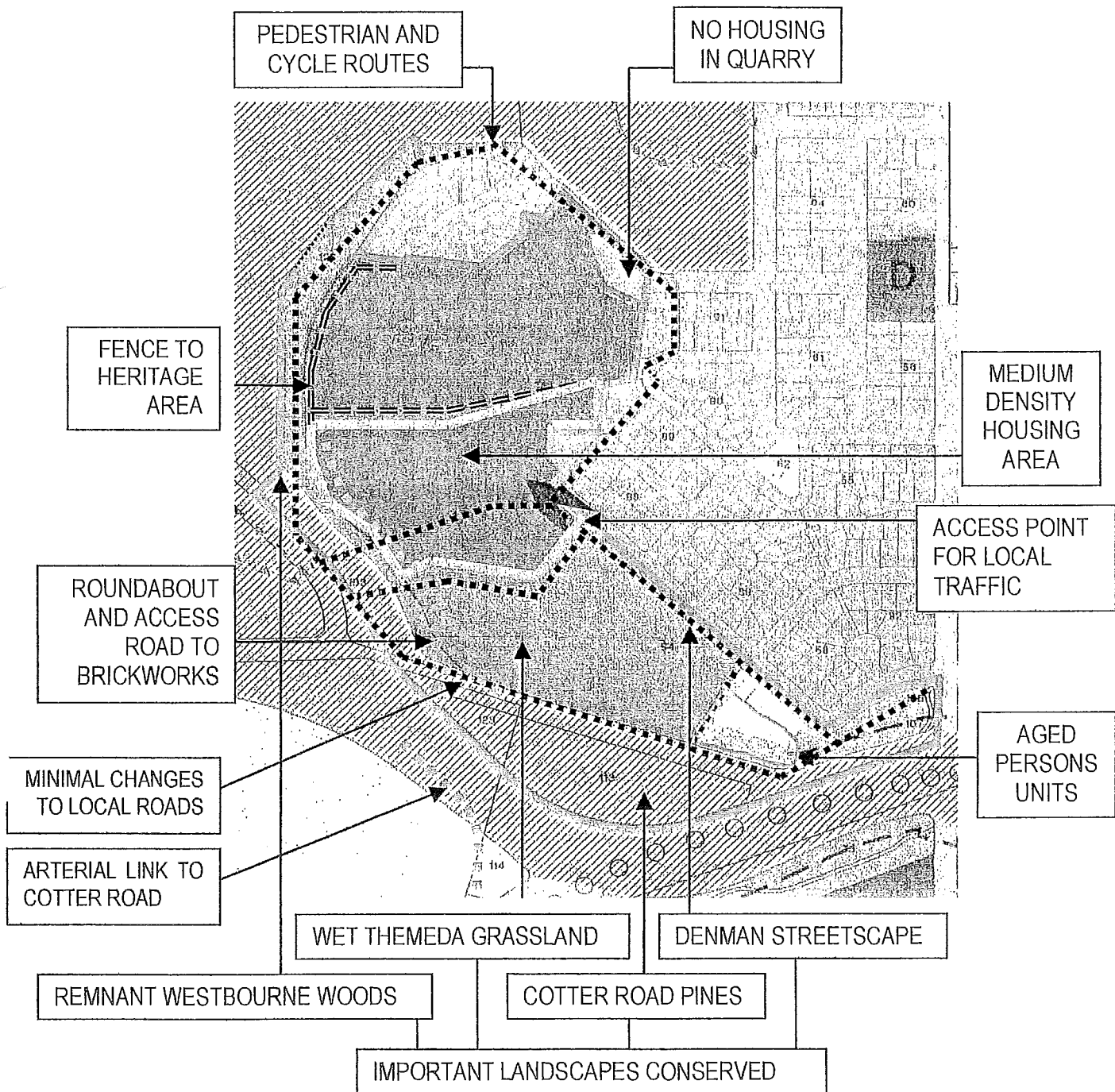


RECOMMENDATIONS AND GUIDELINES  
Figure 4 - CONTROLS





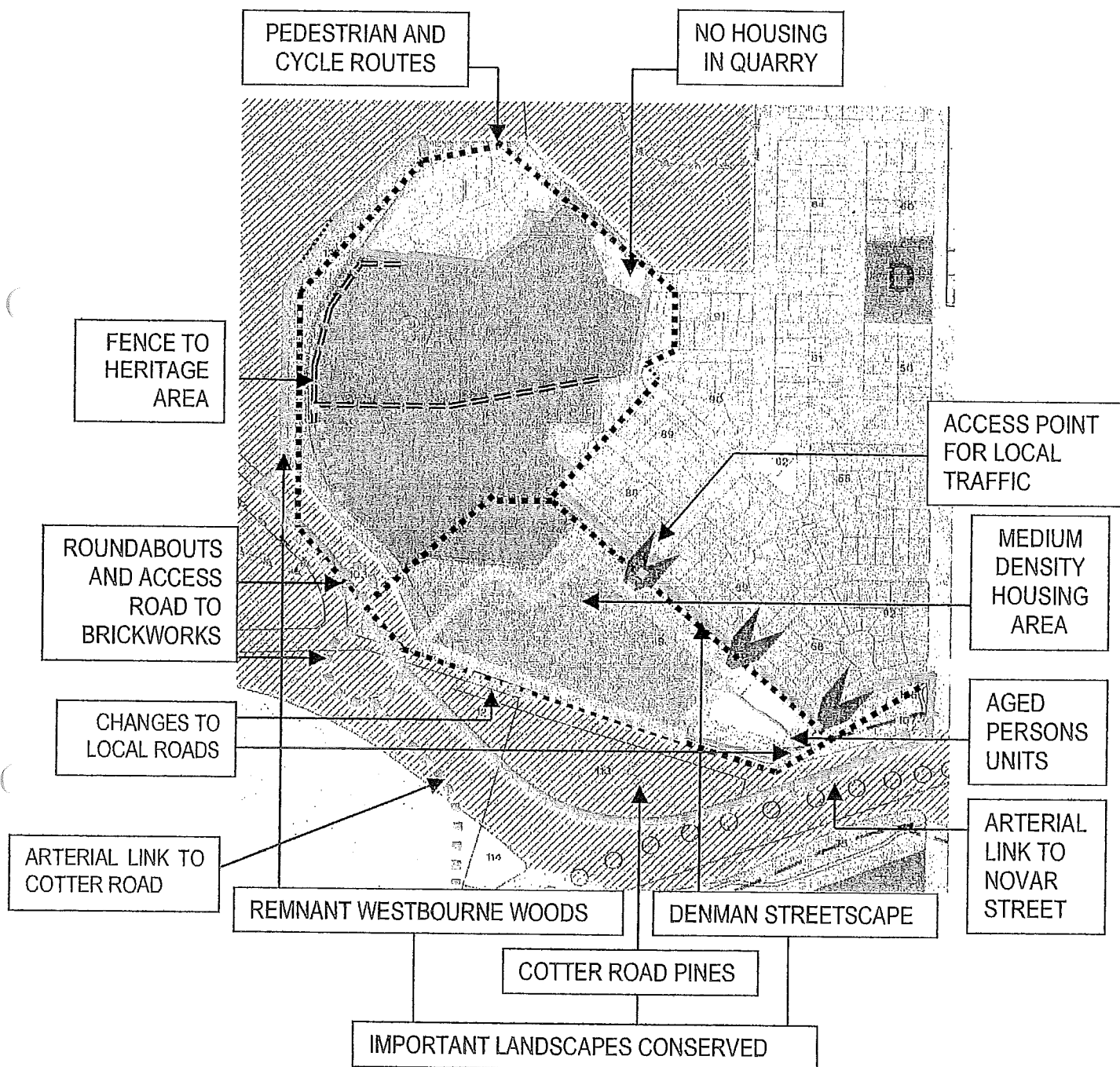
RECOMMENDATIONS AND GUIDELINES  
Figure 5 – DEVELOPMENT OPPORTUNITIES (OPTION A)







RECOMMENDATIONS AND GUIDELINES  
Figure 6 – DEVELOPMENT OPPORTUNITIES (OPTION C)





## 7.5 Financial

### 7.5.1 Introduction

In order to compare the various options beyond the capital works shown on the plans, a set of assumptions were utilised, these and the full financial analysis is in Appendix C. The findings regarding financial feasibility for the options reviewed are that Option B was the most financially attractive, Option A is more financially favourable than Option C and Option D was the least financially responsible option.

The nature and extent of adaptive re use of the buildings and the extent of de contamination works required, are the two significant unknowns that could dramatically modify the economic returns predicted for the place. Of these unknowns, the adaptive reuse has the greatest potential for breadth of variation. The team's suggested conversion of the place as a location for CIT's School of Horticulture was a use that was compatible and allowed substantial opportunities to remain for the use of possible future space over the kilns for events and other public uses.

The two options A and C both provide a responsible and financially feasible set of use options for the place and take account of many factors not just financial returns.

### 7.5.2 Financial Analysis

The financial framework used for this analysis has been based upon the "Business Case Requirements and Guidelines 2001-2002" as issued by the Department of Treasury and Infrastructure.

The model is essentially a series of interlinked spreadsheets allowing for the build-up of various cost components.

The analysis has been prepared on a "differential" basis and is not a full cost model. All costs centres are the net position (ie. the net difference between the "status quo" and the proposed option". Therefore items decreed to be cost neutral ie. the current expenditure/income which would not change for any proposed options are not included within the model.

By use of a discount rate (ie. Net Present Value – NPV) the model allows to account for the "whole of life" cost of various options over a time period to enable comparison on a like for like basis.

The Net Present Value is calculated by subtracting the discounted total costs from the discounted total benefits.

The base discount rate used in the model is 8% as per the recommendations within "Business Case Requirements and Guidelines". We have also undertaken a sensitivity analysis at both 6 and 10%.

It should be noted no allowance has been included within the model for residual value of the asset, although its life expectancy is well beyond the study period, within the model all capital costs are assumed to be expended before year 1 (ie. year 0) nor have we included any allowances for the "opportunity cost" for the existing land and structure.

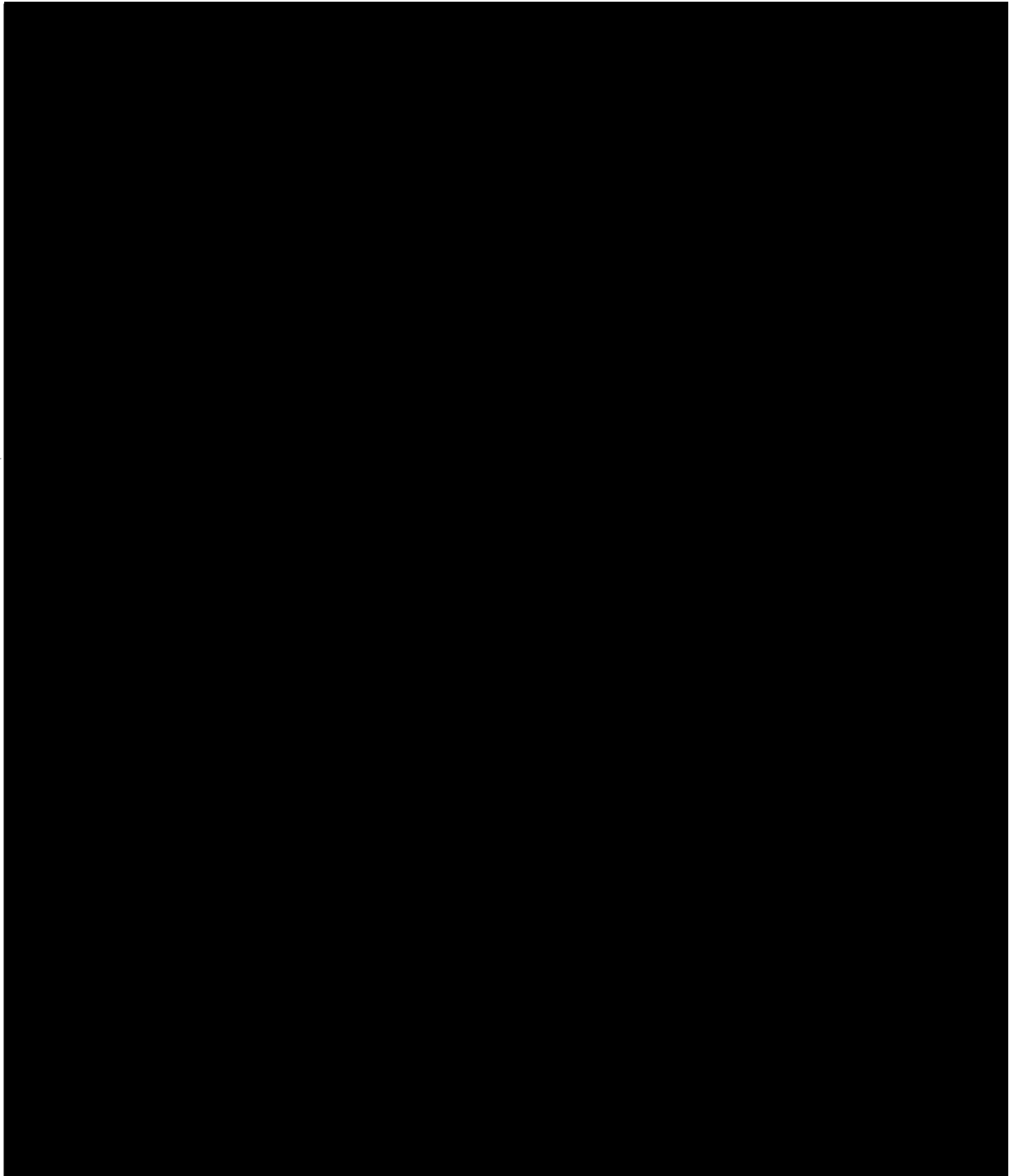
All costs included within the analysis are at January 2001 prices and escalation and GST has been specifically excluded from the study.



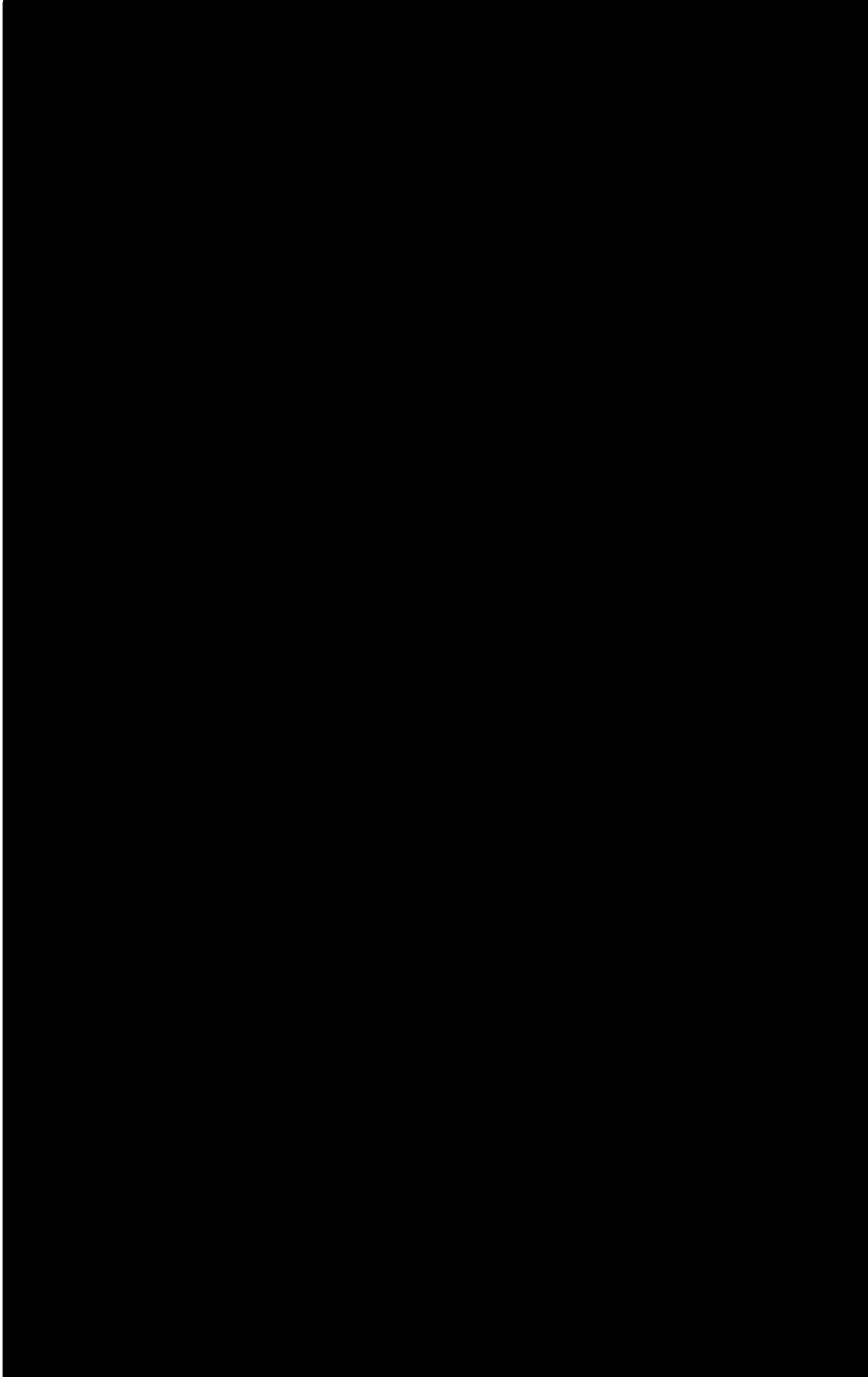
Although the "Business Case Requirements and Guidelines 2001-2002" nominates a 10 year study period, we understand the Department of Treasury and Infrastructure requires 15 year analysis, therefore our study is based upon that time period.

**7.5.3 Summary**

The initial capital costs for each option analysed are as follows:

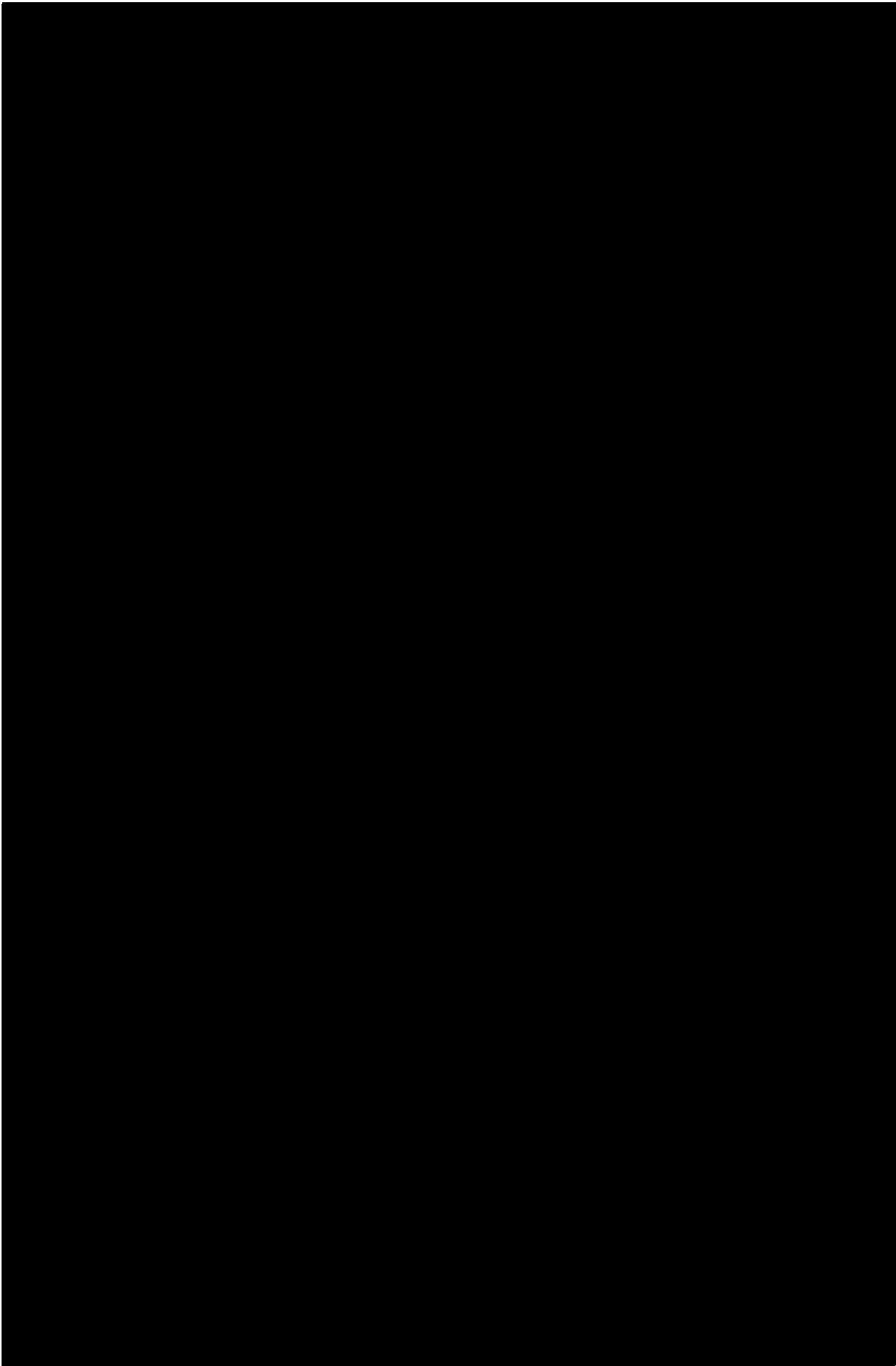






















# ***Appendix D***

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*Heritage Investigation – Eric Martin & Associates*





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# 1. Background

## 1.1 Heritage Status

The Canberra Brickworks are listed on the Register of the National Estate (28/09/1982). They are also listed on the ACT Interim Heritage Register. Currently, the site has been nominated for gazettal in the ACT Heritage Places Register. Both register entries refer to the site as the Yarralumla Brickworks, Yarralumla.

As the land is currently owned by the ACT Government, the ACT legislation will apply, and the ACT Heritage Office will be the Heritage body most directly involved with consideration of any future development proposals for the site. The Australian Heritage Commission will not have any statutory control on the site but should be consulted by proponents in the development of any proposals for change of use of the site.

Other Community heritage organisations with an interest in the future of the site include, National Trust of Australia, (ACT), and Canberra and District Historical Society.

## 1.2 History

The history of the site is covered in detail in a number of sources. A full statement

of the history is not intended in this report, simply a summary of key stages which lead to the development of the site as it exists today. A detailed history is contained in the; "Old Canberra Brickworks Conservation Plan", Lester Firth and Associates, June 1986. Brief histories also accompany the Heritage Register entries listed above.

A brief Chronology of the development of the site is presented below.

- 1910 Federal Government announces plans for the erection of brickworks for the production of bricks for the construction of the National Capital.
- 1913 Land acquired (39 Acres) from the "Yarralumla" property of R Campbell as it was found to contain suitable shale deposits.
- 1913 Temporary plant (possibly 4 small kilns) operational (Demolished)
- 1914 Temporary brickworks camp established (Demolished)
- 1916 20 Chamber Staffordshire kiln (K1) commences production
- 1916 World War 1 commitments, force closure of the brickworks
- 1916 Survey shows the following buildings on site; Cottage, Kiln 1, Fan Room 1 and stack, 4 old kilns, Power House, Machine Shop, GI Office, GI
- 1921 Brickworks reopened as a result of resumption of government push to build Canberra
- 1922 Tile making (roof tiles) plant installed south of Machine Shed (Demolished)
- 1923 Brickworks railway constructed to link the works to the construction sites of Parliament House, Kingston Power House, Hotel Canberra, and Civic Centre. (Railway Demolished 1929)
- 1925 Two temporary down draught kilns erected on site of present K4. (Demolished)  
Machine Shed expanded 2 bays and new equipment installed
- 1927 Hardy Patent Kiln (K2) commences production
- 1931 Brickworks closed due to economic depression.
- 1935 Limited production resumes. By this time most of the shale was imported from other sites, due to poor quality of the material being encountered at Yarralumla.
- 1942 Second World War restrictions, cause closure of the Brickworks
- 1944 Limited production resumes
- 1945 A new brickworks workers camp was erected to replace the camp removed by the army during the war. Located south of the kilns
- 1950 Construction of a tunnel kiln commenced. Project was not completed. The large shed erected over the kiln was relocated to Duntroon as a stores building.



- 1954 20 Chamber Hardy Patent kiln (K3) with loft and awning was erected on the site of the former Tunnel Kiln. Chimney S3 erected as a flue to K3
- 1956 Kiln K2 extended by 2 bays and upgraded
- 1958 Temporary downdraught kilns demolished and 3 new downdraught kilns erected and in service by 1960 -63
- 1960's Coal replaced oil as fuel source. Modifications to kiln entrances to suit forklift trucks
- 1970 Brickworks camp demolished
- 1971 Extrusion shed and drying slab erected in south west corner of site (partially demolished)
- 1976 Brickworks closed for the last time and the operation relocated to a new site in Mitchell
- 1976 Extrusion Shed relocated to Canberra Showground
- 1976 A.R Marr commences work on proposed redevelopment of the site as a Tourist complex.
- 1986 Hooker's consider development proposal for site  
Brian MacMullen with Baulderstone Hornibrook

### 1.3 Physical Condition

#### 1.3.1 Building Fabric

A non-invasive visual inspection of the condition of all buildings was undertaken in September 2000. This included an assessment of the structural condition of the kilns. A detailed condition report was produced, including a scope of works to stabilise the buildings. The suggested work only made the buildings weather proof or where already considered a ruin, slowed the process of deterioration. The Condition Report is included as an Appendix to this Development Control Plan.

Considering that no major maintenance has been undertaken on site for 16 years, the buildings are in suprisingly good condition. . The principal stabilisation works required were:

- Brickwork stabilisation
- Glass replacement
- Resecuring or replacing corrugated iron roof and wall cladding
- Renewing exposed timber elements that are in poor condition
- Roof drainage repairs.

The steel framed and corrugated iron clad buildings, (machine sheds, workshops, crusher 1 and 2 and the roofs over K1, K2 and K4) were found to be structurally and physically sound. The roof and wall cladding on these buildings was found to be secure and with the exception of a few small areas, all in place.

The brickwork of the kilns presents the greatest challenge in stabilisation. The kilns nearly without exception have either minor or major deformation and cracking of walls or arches. Most of this has occurred as a result of brick growth when the kilns were initially fired. Consequently much of the distortion occurs over arched entrances.

A number of structural reports have been prepared about the kilns, the principal ones being in the mid 1980's. These reports were reviewed as part of the current assessment works. The opinions expressed in the reports are divergent and vary from imminent collapse to very stable. The reports include recommendations for stabilisation works.

As part of the 2000 assessment, the structural engineer spoke to Mr Barry McDonald, who was responsible for the construction of all remaining kilns with the exception of the Staffordshire Kiln. Mr McDonald inspected all of the kilns in August 2000 and believes them to be in very good condition. He considers that the brickwork is generally sound and given the form of the kilns should not suffer any collapse.



The following assessment takes into consideration earlier reports and the opinions of Mr McDonald. It is largely based on inspections of the kilns by the structural engineer who developed a strategy for stabilisation of the kilns so that they may be made safe for public access.

In K1, K2 and K3 the arches of the kiln entrances and adjacent brickwork have distorted notably. These arched entries were reconstructed and enlarged in the 1960s to provide fork lift access. This work is believed to have changed the structural characteristics of the kiln and resulted in significant deformation when the kilns were refired. If the kilns are to be re-used in a manner requiring public access then stabilisation of some of the arches is recommended. Depending on the nature of use this will vary from steel bracing to reconstruction of some of the entrances to their original, smaller size.

Another notable area of distortion is the southern chambers of K1. The vaults of these kilns have distorted to a point where the east side of the arch near its apex is nearly flat. This distortion is believed to have occurred when quantities of sand were removed (from one side of the kilns only) from the firing floor above during maintenance work. As a result the uneven pressure on the brickwork has caused a collapse. Stabilisation of the brickwork vaults is recommended if the kiln is to be used for public access. This will require closing up the entrance to some of the chambers.

The final area of brickwork instability is over the entrances to the 3 downdraught kilns. The cracking and movement here largely results from the poor design of the steel kiln doors. The weight of the doors has imposed stresses on the brickwork beyond its design capacity. Some stabilisation work was undertaken in the mid 1990s to the middle kiln. Further works to the doors and brickwork will be required if the kilns are to be occupied.

The other brick buildings on site are all structurally sound. Stabilisation work on these buildings will require replacement of glass or minor roof repairs as applicable. Refer to the condition report for details.

### **1.3.2 Geology**

As part of the A.R. Marr Master Plan in 1977, a report on the geology of the site was prepared by C. Jacobsen, (Senior Engineering Geologist). We are not aware of later studies of the Geology so have incorporated Jacobsens assessment into this report.

The area is underlain by Silurian rocks, mainly calcereous mudstone of the Yarralumla formation. In the undisturbed areas of the site, the Formation has a soil cover averaging about 1 metre thick, with scattered rock outcrops. The rocks have been quarried for brick shale.

Volcanic rocks (Painter Porphyry) are faulted against the mudstone in the west of the quarry area and also crop out in the south east. The volcanic rocks have a soil cover of 1 to 2 metres thick, and are irregularly weathered.

### **1.3.3 Geological Constraints**

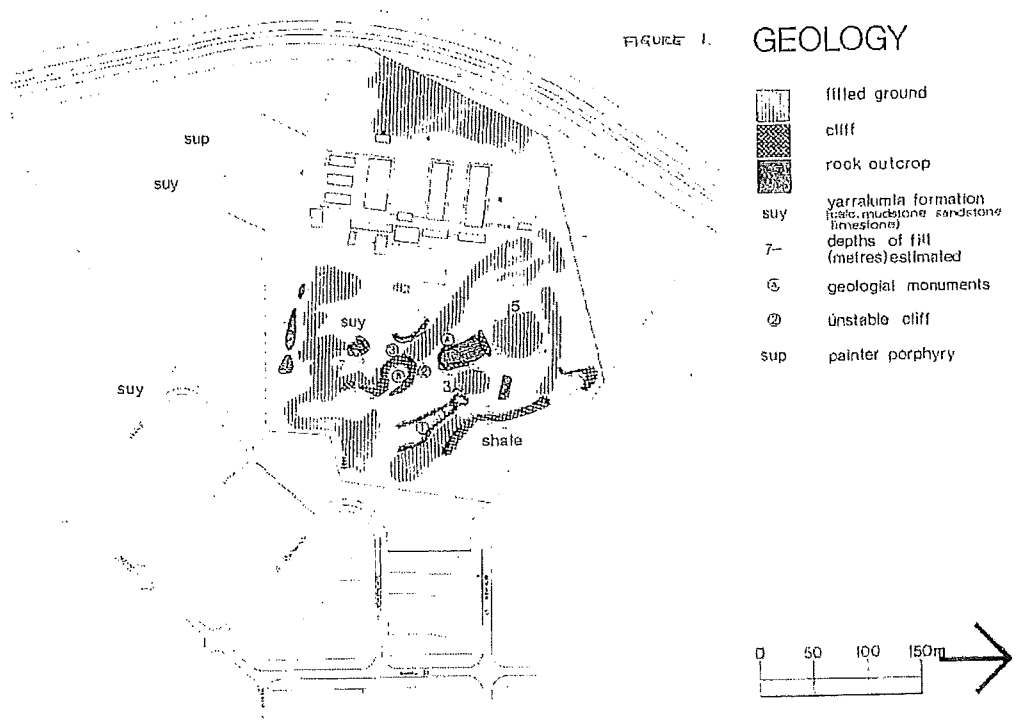
Foundation conditions for low rise buildings are expected to be satisfactory in the areas of undisturbed ground, in rock areas in the quarry and in the more compact filled ground. Poor conditions are likely in the less compact filled ground.

Parts of the quarry area have been filled with bricks and other debris. The depths of fill and degree of compaction are not known and will require investigation if buildings are to be located in these areas.





Most of the cliffs in the quarry area are considered stable and can be left in their present state. At locality 1 figure 1, the rockface is undercut by moderately dipping joints and blocks could topple. Remedial works are recommended.



At locality 2 in figure 1, an overhanging cliff should be trimmed back. At locality 3, figure 1, weathering of the cliff has resulted in loose blocks, and this section should be trimmed back.

Exposed Geological formations of interest in the quarry should be preserved including an anticline (locality A, figure 1), an exposure of characteristic rocks of the Yarralumla formation (locality B, figure 1), and the fossil locality on site.



## 2. Old Canberra Brickworks Conversation Plan

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The following comments and observation arise from a preliminary review of the 1986 Conservation Management Plan for the Brickworks prepared by Lester Firth and Associates, with respect to its suitability for use in providing a framework for future development of the site whilst maintaining its significance.

The document is well out of date with respect to:

- It does not follow the currently accepted standards for the assessment of sites of significance or the development and presentation of Conservation Policy and guidelines.
- There is no analysis of the historical and physical data on which the significance of elements is developed.
- The condition report is so old as to be irrelevant (Refer EMA 2000 Condition Report)
- The document has been prepared around a brief to develop an appropriate adaptive re-use option for the site and therefore has preconceived conclusions.
- A number of the re-use options proposed are no longer viable or have been resolved on other sites.
- The Conservation Plan does not address:
  - The railway cutting or its remains
  - The landscape of the site
  - The relationship of the site to its context
  - Original access to the site,
  - The history of buildings now demolished

The document however does provide some interesting background information on what ideas have in the past been considered for the complex.

We therefore consider that the existing document is unsuitable for guiding future development and recommend that it should be a condition of any new lease being granted or development proceeding on the brickworks site that the Conservation Plan be updated. This should involve as a minimum:

- Preparation of a revised detailed condition assessment
- Analysis of significance using current AHC and ACT assessment criteria
- Preparation of a new statement of Significance
- Preparation of conservation policy and guidelines in line with the recommendations of J.S Kerr "The Conservation Plan"



## 3. Heritage Legislation

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As the land is owned by the ACT Government and will be subject to ACT planning legislation even if sold to private interests, the applicable laws controlling the site will be A.C.T legislature. Therefore under the Land (Planning and Environment) Act 1991, the ACT Heritage Office will be responsible for assessment of the Heritage impact of any proposals for use of the Brickworks site. As the site has presently been nominated for inclusion in the ACT Heritage Places Register, the relevant instrument for assessing proposals will be Variation to the Territory Plan No 118.

Following is a brief assessment of Variation No. 118 and the constraints and opportunities it presents for the site.

### 3.1 Features Intrinsic to Heritage Significance

The statement presents the buildings of the Brickworks in 2 schedules. Schedule 1 are those buildings considered to be of Exceptional Significance and Schedule 2, those of Moderate Significance.

We support the inclusion of all of the items listed in Schedule 1. We consider that most of the items in Schedule 2 should be in Schedule 1 as they are integral elements of the operation of the brickworks. Their removal would diminish the integrity of the site and reduce the potential to interpret the function of the site and the process of brickmaking. We recommend that the following buildings should be included on Schedule 1

- Office 1916 elements
- Power House 1915
- Machine Bays M1, M2, M3
- Workshop Building
- Large Crusher House C2
- Small Crusher House C1

The Primary Crusher house should functionally be on Schedule 1, however it has been compromised so much by demolition of adjacent structures and ramps that its relationship to the main complex is hard to interpret. It is also in a poor condition.

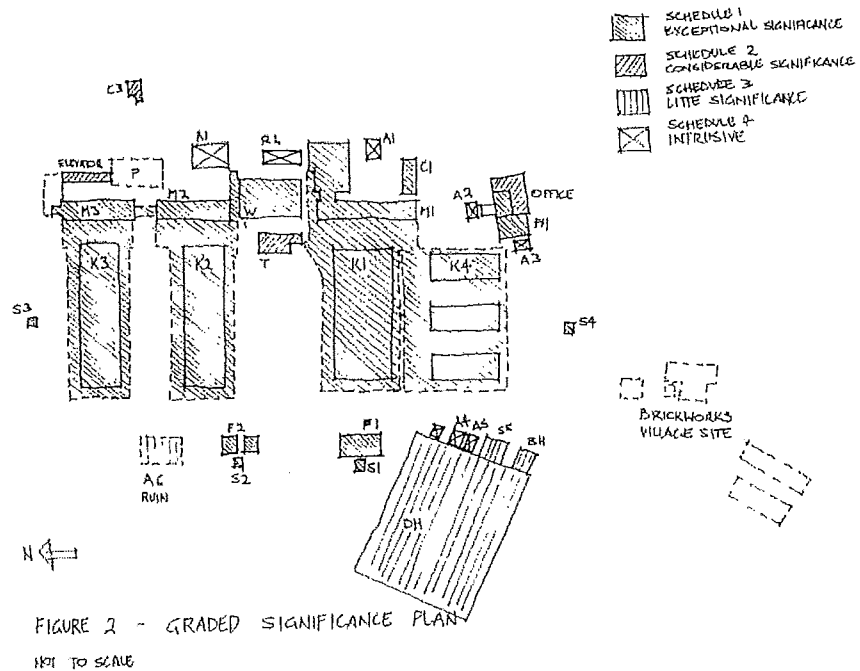
The Schedules do not deal with all of the buildings on site, thereby one can assume these have no significance and can be altered as desired. We consider two additional Schedules are required as follows:

Schedule 3 Items of Little Significance  
 Forklift Shed A6 (ruin)  
 Pan Building site (ruin)  
 Extrusion drying house and shed  
 Sub Station  
 Boiler House

Schedule 4 Intrusive Items  
 Railway workshop R1  
 Railway Store Shed R2  
 Model Railway cutting  
 Ancillary sheds A1 to A5



This arrangement is illustrated in Figure 2 Graded Significance Plan



### 3.2 Specific Requirements

The Territory Plan Variation sets down a number of specific requirements for the conservation of the heritage significance of the Brickworks and to implement the following Conservation Policy for the site;

" The identified heritage values and intrinsic features of the place shall be conserved whilst allowing for the integrated and sympathetic redevelopment of the place as a single entry, consistent with contemporary practices for the adaptive re-use of industrial and commercial heritage places. In conserving and developing the place, its significant historical use as an industrial site for the production of bricks and clay products shall continue to be evident and accessible to the public."

Redevelopment of all or part of the place shall be in accordance with a Conservation Plan endorsed by the ACT Heritage Council

#### (i) Landscape Setting

We support the requirements under Landscape Setting, (a) (b) (c) and (d), with the exception that we consider it inappropriate to allow construction of buildings on land overlooking the northern and eastern sections of the quarry (a). Part of the character of these areas is the visual separation from urban development.

We endorse the requirement for developing links between the quarry and building areas in any new development. This provides functional advantages for any development and enhances opportunities for interpretation of the site.

#### (ii) Built Structures

We endorse the requirements under (a), (b), (c), and (d), without further comment.





Item (e) we support the recommendation of the first paragraph but disagree with the statement that insufficient evidence of the operation exists to warrant retention of the Mixing Sheds and Workshops. These buildings contain conveyors, chutes, gantries, platforms and walkways which clearly show the process of clay handling.

We believe these buildings could be adaptively re-used whilst retaining the majority of this equipment, and therefore strongly recommend they be retained and included on schedule 1.

We strongly disagree with Item (f) part a. We believe that the relocation of these buildings would seriously compromise the heritage significance and interpretation quality of the site. These buildings were constructed where they are because of their relationship to the brick making process. We believe that the additions to the Office building, including adjacent sheds could be demolished to return it to its 1916 configuration.

We recommend that item (f) be modified to remove reference to buildings being relocated. Buildings relating to the Marr development however could be relocated or removed as they have no relationship to the process of brickmaking.

We support the recommendation in later part of item (f) that allows development on the former village site after appropriate recording and interpretation. Significant trees which survive in the area and relate directly to the village should be retained, to maintain reference points for the interpretation of the site.

We support item (g) and believe there is opportunity for construction of new buildings on the site provided that they are sympathetic in form and material to those existing on site or known to have been on site. Key elemental controls should be established in the Development Control Plan.

(iii) Industrial Equipment

We support the recommendations of (a) and (b) however we consider that the retention of the Elevator, whilst desirable may prove difficult in practical terms due to its physical condition. The retention of the elevator should be considered as part of re-use of the site, but may need to be discussed further with ACT Heritage if retention does not seem possible.

(iv) Demolition

We endorse the recommendations (a) – (d) of this part. To maximise the opportunity of retaining significance and interpretation of the site, strict controls must be placed on demolition. Watering down these controls would enable development proposals to avoid taking the creative energy necessary to look closely at the real opportunity the buildings present for re-use. We agree that demolition of elements on schedule 1 and 2 (in our modified list) should only be permitted after it is demonstrated there is no prudent alternative, and that items should be Archival recorded before demolition or alteration.



## 4. Adaptive Re-Use

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### 4.1 DCP Concept Plans

1) We support the recommendation that all pre 1964 buildings and structures be conserved or restored, and that the site be adaptively re-used in a manner which will enable the process of brickmaking and the growth of the site to be clearly interpreted.

The construction of the buildings and their large open spaces provide great opportunity for the insertion of temporary or permanent new uses without destroying significant fabric or diminishing the significance of the site.

Installation of new uses including some enclosed spaces would increase the opportunity for a revenue return. This could be staged in a manner that the revenue raised is put back into restoring other spaces for re-use rather than trying to open the whole site at once.

The retention of the buildings without permanent infill would allow temporary displays and facilities to be installed in conjunction with a major event in the quarry gardens thus broadening the market appeal and possibilities for income generation associated with an event. The topography of the site is such that access could be controlled in a manner that paying visitors to the gardens only accessed parts of the upper levels of the buildings whilst concurrently access to the ground level remained available to other users.

2) Buildings associated with the last stage of brickworks growth (1970's) have been compromised through demolition of the extrusion shed and the modification of the remaining buildings of that period. The structures only relate to a small part of the history of the site. These buildings could be recorded and demolished.

3) Buildings erected in the Marr period could be demolished without recording. The lake created by Marr could be backfilled as it has no heritage significance nor do any of the landscape works undertaken by Marr.

4) Fencing around the site is not significant.

### 4.2 Response to Adaptive Re-Use Proposals

The adaptive re-use proposal for the Brickworks which has been developed with this Development Control Plan proposes the installation of the ACT Horticulture School into the buildings. The proposal will require minimal new structures and should not require significant alteration to the significant building fabric. Following is an assessment of the proposal in terms of how the buildings may be adapted for the new use.

Kiln 4 - This building would be developed as a separate tourist oriented operation not related to the school. The kilns once stabilised could be used for permanent or temporary commercial or retail purpose. New floors and walls should not be affixed to the kiln so that they may be removed without damaging it. Services must not be embedded into existing fabric.

The Covered areas around the kiln could have new structures erected, provided the individual kilns and their form can still be seen as key features of the building. The volume of the building would allow development on two levels. Upper level development is not permitted above the kilns. Planning at the upper level could be arranged in such a manner that the kiln areas are voids which act as light wells to the ground floor.

Additional natural light could be introduced to the building by replacing metal sheeting with clearsheeting or glazing. Enclosure of the walls of the shed could be considered but should be substantially glazing below the line of the original wall cladding.



Kiln 1 - Staffordshire Kiln - The southern chambers of the kiln will be stabilised with internal bracing and the entrances partially or fully enclosed. The chambers on the north side will be stabilised to an extent that limited public access will be possible. A number of the chambers will be set up for interpretative/museum function, others may be used for equipment storage for the Horticulture school.

The proposal will either reconstruct the original ground floor verandah roof or the later upper level enclosed verandah. Either option would be acceptable as it reconstructs the building into a known earlier form. Original details should be used in the reconstruction. Some modification to original door and window locations on the upper level verandah could be considered to suit the new use. Walls should be principally solid elements (corrugated iron) with individual rather than ribbon windows.

The upper level of K1 is a large open space, well suited to display purposes. Due to the condition of the kiln it is not recommended that permanent building fitout be installed into this space. Therefore the space is intended to be used as a Brickworks museum, with elevated walkways over the sand floor leading to interactive and static displays. A small theatre may be constructed in one area.

K2 and K3 Hardy Patent Kilns - The Kiln chambers will be stabilised to a level where most areas will be accessible to the public. The chambers would then be converted to commercial or retail tourism based operations. Controls on this adaptation would be the same as stated previously for K4. As one of the principal features of K2 and K3 is the length of the firing chambers, at least one side of one of the kilns should remain unpartitioned in any new work so that this volume can be appreciated.

The upper levels of K2 and K3 will be converted to teaching and office spaces for the Horticulture school. This is seen as an acceptable use for the space, but will require some change to the fabric to be functional.

A floor will have to be constructed over the top of the kiln. This should be done in a way that would enable later removal without destroying the kiln

The clear height between the top of the kilns and the underside of trusses is not sufficient for public access. To achieve the required height would require raising the roof level approximately 500mm. This work will mean changing the wall cladding and structure and increase the overall height of the building slightly. If both kilns are raised to the same level this change will not be notable. The wall cladding should be extended with second hand sheets over the top section of wall.

New internal walls of the upper level should be drywall partitions, free standing of the original structure. The new fitout should allow the height and structure of the upper level to be read in places.

Existing walkways at the upper level which link to the machine sheds, should be restored and actively used.

M1, M2, M3 - Machine Sheds - These three storey high buildings can be adapted for teaching or administrative spaces associated with the Horticulture school or management of the overall site. There is more existing space in these buildings than can be occupied by the Horticulture school. It is recommended that the school be installed into the ground and upper levels of M2 and M3. Installation of additional mezzanine floors and extension of existing upper level floor levels would be acceptable in these buildings provided that there are shafts retained which enable the original volume and function of the building to be appreciated. Existing brickworks equipment should be retained and interpreted in the new use of the buildings.

Those areas of M2 and M1 not occupied by the school could be developed as cafes, concessions or offices relating to the gardens development. There are existing walkways between the buildings and the garden area at level 1 and additional walkways of similar design could be added. A Café at an upper level would also have the advantage of clear views over the site and to the Brindabellas to the



southwest. An increase in the size of windows in the Machine sheds could be considered provided that windows always small elements within large areas of corrugated iron.

Construction of internal or external steel fire escape stairs would be acceptable in M1, M2 and M3. The Machine Sheds and Workshop buildings due to their alignment across the east end of the kilns, provide the ideal facility for creating a pedestrian network at level 1 which can connect all of the elements of the site. Such a pedestrian spine would also overlay the original functional relationships of the buildings and enhance the interpretation of the site within the new use.

Workshop - This building is probably not required by the Horticulture School. Its three storey high internal space provides great opportunity for re-use for theatre or auditorium functions. It is desirable that new uses for the space retain the present open volume. Therefore no new floors should be introduced. A raking floor would be acceptable as would the introduction of access points from the first floor walkways.

Fan Rooms F1 and F2 - These buildings are to be restored. To make the buildings functionally usable will require removal of some of the ductwork and covering the fan pits (fans to be retained) with a timber floor. One of the halves of F2 should be conserved intact as a part of the interpretation of the site.

F1 could be converted to a craft building or an information centre for the Horticulture school. The interior of the building should not be compartmented, and its existing volume should be retained in new work.

Office - The building could be re-used in its configuration for admin, display or tourist facility. Modification of the interior layout is acceptable with the exception of the 1916 part of the building. In this area, the original layout should be retained.

Demolition of post 1916 additions would be acceptable.

Power House - This building could be decommissioned and converted to a new use which respects the original design and function of the buildings.

Principal Toilet Building - This building should be retained and converted to modern public toilet facility. New elevated walkways will need to be constructed at level 1 to provide access from the pedestrian spine. The external form and fenestration should be retained. The building could be extended if desired provided it remains as a free standing building within the courtyard.

Crusher Houses C1, C2, C3

These buildings were fundamental to the process of brickmaking and should be conserved. The plan layout and function of the buildings does not present easy opportunity for re-use without compromising the interpretation of the buildings. It is recommended that these buildings be conserved in their present configuration. Fencing should be erected to prevent public access into the spaces but enable inspection of the interiors.

Elevator - This building is presently an isolated ruin with links to adjacent buildings removed. The structure should be conserved as it symbolises the movement of raw materials. Reconstruction of the link to Machine shed 3 is desirable as it will enhance the interpretation of the site. The possibility of converting the elevator and link to an escape or access stair should be explored

Those buildings not address above are considered of little significance or intrusive elements, and no controls are placed on their re-use. Demolition of some of these buildings has also been addressed above.





**Appendix E**



## ***Appendix E***

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*Brickworks Buildings Structural Report*



# Structural Report

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1.4 Suitability for Re-Use of Kilns	3

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# 1. Structural Assessment

This assessment is based upon observations of the condition of the brick kilns and review of previous structural assessments carried out. We have not carried out any calculations on the structural adequacy of the kilns, however, we do make recommendations as to further structural analysis that should be carried out.

## 1.1 Previous Reports

The three previous reports we have reviewed are:

- "Old Canberra Brickworks conservation plan" Produced by Lester Firth and Associates in June 1986. Hughes Trueman and Ludlow wrote the structural section of the report. (LFA Report)
- "Old Canberra Brickworks Yarralumla, Structural Assessment of the existing buildings and kilns for public use", Produced by the Department of Housing and Construction, December 1984. (DHC Report)
- "Structural report on downdraft Kilns K1/1, K1/2 and K1/3, in relation to public safety" Produced by Northrop Engineers, June 1993. (NC Report)

There is a vast difference of opinion between the LFA report and the DHC report:

The LFA report states:

*"The brickworks are in good structural condition with some local areas requiring repairs/rebuilding. Compared with other brickworks, these structures show a high standard of maintenance and little decay."*

*"The main structural elements of the major buildings and kilns are structurally adequate to resist the loads that are likely to occur (ie wind loads, floor live loadings due to retail/office usage)."*

The DHC report states:

*"The magnitude of the severity of the building defects varies widely between being essentially superficial and minor, to a degree of structural severity warranting concern."*

Particular comments on individual kilns are:

*Downdraft Kilns: "Kiln 1: Arch haunch is in immediate danger of collapse"*

*Staffordshire Kilns 6-10: "Vaults have sagged and deformed and are no longer semi circular in shape." The vaults are dangerous and collapse is imminent which will cause progressive collapse of the adjoining kilns."*

*Hoffman Kiln (Building C): "The kilns are structurally sound and do not have significant defects"*

*Hoffman Kiln (Building D): "Arch of draft tunnel connecting kilns 1 and 2 at the entrance is deforming. Bricks are loose in the arch haunch. Abutments have moved and the roof of the vault has sagged due to the movement of the arch abutments. The vault at this location is dangerous and collapse is imminent unless its structural integrity is restored."*

This report is our opinion based upon observations of the condition of the structure. We believe the actual condition of the kilns is somewhere in-between the findings of the above two reports, and don't fully agree with either report.





Basing a structural assessment upon observations alone requires considerable engineering judgement. We believe this is the reason for such widely varying opinions. The variation in opinions that result from engineering judgement can be reduced considerably by carrying out detailed analysis of the adequacy of the structure. We make recommendations on our report for the extent of analysis required to more thoroughly assess the actual condition of the kilns and suitability for re-use.

## 1.2 Condition of the Kilns

The structural conditions of each of the kilns are quite different. We will start by looking at the types of defects that are occurring. We will then discuss the cause of these defects and finally discuss the state of each of the kilns in relation to these defects.

1. Localised dislodgment of individual bricks
2. Failure of panels of brickwork typically up to a few square metres in area.
3. Arch collapse as a result of severe distortion of arch geometry

1. Localised dislodgment of individual bricks: We understand that the arches for all kilns have been constructed using wedge shaped bricks. In theory, individual bricks should not become dislodged, as the pre-compression in the arches should lock the bricks in position. In practice however bricks can become dislodged by movement of the structure causing gaps to open up in the arches that enable individual bricks to become dislodged. Individual bricks can also become dislodged as a result of poor construction resulting in poor interlocking of bricks. The risk to the public is that a falling brick or part of a brick could hit someone. This defect is the easiest to rectify as identifying loose bricks can be done using a wooden mallet, and is a matter of carefully going over all kilns and stabilising individual loose bricks.

All kilns have evidence of individual loose bricks.

2. Failure of panels of brickwork: The firing of the kilns would have resulted in substantial thermal expansion of the bricks. This coupled with foundation movement and movement that has resulted in inadequate construction/ modifications to the kilns has resulted in numerous large cracks opening up in the brickwork. Some of the crack are so large that you can put your fingers into the crack and there are a few that you can put you whole hand into the crack. The majority of cracks are a result of shifting of the arching action that results in panels of brickwork becoming dislodged as a group. The risk is that a panel of brickwork could collapse causing injury. In addition, there is the potential for a flow on effect causing further localised failure adjacent to the panel that fails. We note that as the kilns are not subject to thermal effects that the risk of failure is low. The repairs to this type of defect can be either partial reconstruction or stabilisation using steel or masonry buttressing.

All kilns have evidence of failure of panels of brickwork, however to varying degrees.

The works affected is the Hardy Patent kiln K2, which has numerous dislodge panels of brickwork.

The Hardy Patent kiln K3 is the least affected, however does have a few locations that should be addressed.

The Staffordshire kilns also have a number of locations of dislodged panels of brickwork.

The Downdraft kilns also have some panels that are dislodge. The panels in the arches for these kilns are generally at the base and are not of structural concern. The end walls however have large panels of brickwork that have shifting and are partially unstable.

3. Arch collapse as a result of severe distortion of arch geometry: The arches for the kilns are relatively thin shell masonry arches stabilised by a mass of soil placed over the arches. The mass of the soil pre-compresses the arches that hold the arches in shape. In the case of the most recent kilns, the arch



shape is also stabilised by the use of steel framing around the perimeter of the kiln that clamp the brickwork together. The arches can distort as a result of construction flaws or work having been carried out that resulted in an imbalance of the mass of soil that is used to stabilise the arches. It is also possible that the thermal and other movement that has caused shifting of the arch action has contributed to this destabilising of the arch geometry. This repairs to this type of defect can be either full reconstruction of the arches or stabilisation using masonry or steel buttressing.

The Staffordshire kilns have significant arch distortion. It appears that some work was done on the kilns in the past that has caused localised distortion of the geometry of the kilns. In some cases the arches are so deformed that it is unlikely that arching action is effective. Although the arches are currently stable, it is unlikely that they could resist any loading from above.

The Hardy Patent kilns are also showing signs of distortion, with the older of the two kilns – K2, suffering more movement. It is unlikely that the amount of movement in these kilns has significantly reduced the strength of the arches. A detailed analysis would be required to confirm this.

The Downdraft kiln arches do not appear to have distorted, and the steel framing that holds the arches in shape appear to be performing satisfactorily with little signs of deterioration.

### 1.3 Prediction of Future Deterioration

To gain an appreciation of the likely future behaviour of the kilns, we offer the following opinion based on our engineering judgement:

If the kilns were left for the next 100 years untouched we anticipate that if the kilns were viewed again at the end of this period, we anticipate that a number of individual bricks would have become dislodged and would be sitting on the ground in the kilns. We also anticipate that a few panels of brickwork would have failed resulting in a few isolated piles of brick rubble and soil in patches of up to a few square metres in area. We believe that the kilns as a whole would still be standing.

We note that for this prediction we have assumed that the roof over kilns are kept intact and maintained during this period. If the roofs fail and water enters the space over the kilns, moisture in the ground over kilns could cause more extensive failure.

As to when the individual bricks and panels of brickwork fail during this time is unpredictable.

### 1.4 Suitability for Re-Use of Kilns

We understand that the proposal is to reuse the space over the kilns for either commercial or institutional use.

For people to occupy the space over the kilns will require the structural adequacy of the kilns to be determined with a high degree of confidence. We would need to carry out detailed analysis of the kilns for this assessment.

We can offer a preliminary opinion based on our engineering judgement.

We believe that it is likely that the two Hardy Patent kilns could be re-used with occupancy over kilns provided remedial works are carried out to the kilns. The first floor structure may need to be reinforced concrete framing that would be designed to spread any live loads uniformly over the kilns, to avoid the possibility of localised live loads causing arch instability.

Many of the arches in the Staffordshire kilns are so badly deformed that we would consider that substantial strengthening/buttressing would be to withstand the loads imposed from occupancy over kilns.



**Appendix F**



## ***Appendix F***

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*Brickworks Contamination Report*





# Contamination Report

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# Executive Summary

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The ACT government has recently commissioned Connell Wagner to prepare a Development Control Plan for the Old Canberra Brickworks site located at Yarralumla. The objectives of the plan will be to rehabilitate the site to create cultural and recreational facilities, which will provide commercial, and tourism opportunities.

As the current land use of the site is planned to change from industrial to commercial and recreational activities, it is necessary to undertake a site contamination assessment to determine the level of contamination and determine whether the site will require remediation.

The objectives of this study are to determine the likely contaminating activities, which have historically occurred, the location, type and extent of contamination and to recommend actions for additional studies to further assess the site contamination.

The scope of work for this report is to provide a preliminary (Phase 1) assessment of site contamination. The study is based on a site inspection, undertaken on 22 September 2000 and interviews with persons involved with the operations of the brickworks. A desktop study of the site has also been undertaken which draws on documented historic information.

The findings of the study have concluded that there are a number of locations on the site which are likely sources of contamination. These include;

- Coal and Oil Storage Bunkers (NE5). This location was initially used for the storage of coal then later oil
- Forklift Shed (A6) which is the location of a 1000L Underground Storage Tank (UST). No records were available to suggest that the UST had been removed.
- Model Railway Workshops (R1 and R2). These locations were initially used for the above ground storage of coal and later oil
- Septic tank, which is still in operation
- Blacksmiths shop, located adjacent to the Machine Shop
- Explosives Storage Area

Other possible sources of site contamination include imported fill and ash from the kilns, which may have been buried on site and possibly beneath site buildings.

Further details of the contaminants likely to be found at these locations are presented in Section 4 of this report.

Above ground contaminants and substances are also likely to exist. These include;

- Asbestos building materials (eg roof sheeting, electrical switchboards and insulation material)
- Synthetic Mineral Fibre (SMF) used as insulation material to pipework
- Poly-Chlorinated Biphenyls (PCB's) located in electrical transformers and capacitors of light fittings
- Lead based paints applied to walls and ceilings of buildings
- Potentially contaminated site runoff water

Within the limitations and constraints imposed by the study of background information, it is considered that the site is suitable for its intended use, subject to further investigation and possible remediation.



# 1. Scope of Work

The scope of work for this report is to provide a preliminary (Phase 1) assessment of site contamination at the Old Canberra Brickworks, which are located in Yarralumla, Canberra. The study is based on a site inspection, undertaken on 22 September 2000 and interviews with persons involved with the operation of the brickworks. A desktop study of the site has also been undertaken which draws on documented historic information.

This report has been prepared in accordance with the requirements of the National Environmental Protection (Assessment of Site Contamination) Measure (1999) for site contamination and the NSW EPA publication "Guidelines for Consultants Reporting on Contaminated Sites" (1997). The study does not include sampling or analysis of soil, surface or ground water contaminants.

Table 1 presents the key requirements of the NSW EPA for Phase 1 site contamination investigations. This table references the section of the report where specific issues have been addressed and, where appropriate, notes information gaps and comments regarding the EPA requirement.

**Table 1: Key EPA Requirements for Phase 1 Site Assessment**

EPA Requirement	Reference	Comment
<b>Executive Summary</b>		
Background.	Executive Summary	
Objectives of the investigation.	Executive Summary	
Scope of work.	Executive Summary	
Summary of conclusions and recommendations.	Executive Summary	
<b>Scope of work</b>		
A clear statement of the scope of work.	Section 1	
<b>Site identification</b>		
Lot number and Deposited Plan number.	Section 2.1	
Geographic coordinates related to a nearby cadastral corner of a State Survey Control Mark.	Section 2.1	
Locality map.	Figure 1	
Current site plan with scale bar, showing north, local water drainage and other local environmental significant features.	Figures 1 and 2	
<b>Site History</b>		
Zoning-previous, present and proposed.	Section 2.1	
Land use previous, present and proposed.	Section 3	
Summary of council rezoning, relevant development and building approvals records.		Records not available
Chronological list of site uses indicating information gaps and unoccupied periods.	Section 3	
Review of aerial photographs.	Section 2.3	
Site photographs (with date and location indicated on site maps).	Appendix A	
Inventory of chemicals and wastes associated with site use and their on-site storage location.	Section 4	
Possible contaminant sources and potential off-site effects.	Section 4	
Site layout plans showing present and past industrial processes.	Figure 2	
Sewer and service plans.		Records not available
Description of manufacturing processes.	Section 3.5	
Details and locations of current and former underground and aboveground storage tanks.	Section 4.2	



EPA Requirement	Reference	Comment
Product spill and loss history.		Records not available
Discharges to land, water and air.		Records not available
Disposal locations.		Records not available
Relevant complaint history.		Records not available
Local site knowledge of residents and staff-both present and former.		Interview with Bruce McDonald (Caretaker)
Summary of local literature about the site, including newspaper articles.	Section 3	
Details of building and related permits, licences, approvals and trade waste agreements.		Records not available
Historical use of adjacent land.	Section 2.3	
Local usage of ground/surface waters, and locations of bores/pumps.	Section 2.5 and 2.6	
Integrity assessment (assessment of the accuracy of information).	Section 5.3	
<b>Site condition and surrounding environment</b>		
Topography.	Section 2.5	
Conditions at site boundary such as type and condition of fencing, soil stability and erosion.	Section 2.2	
Visible signs of contamination such as discolouration or staining of soil, bare soil patches-both on-site, and off-site adjacent to site boundary.	Section 4.1	
Visible signs of plant stress.	Section 4.1	
Presence of drums, wastes and fill materials.	Section 4.1	
Odours.	Section 4.1	
Condition of buildings and roads.	Section 4.1	
Quality of surface water.	Section 4.1	
Flood potential.	Section 2.5	
Details of any relevant local sensitive environment-eg. rivers, lakes, creeks, wetlands, local habitat areas, endangered flora and fauna.	Sections 2.3 and 2.5	
<b>Geology and hydrogeology</b>		
Soil stratigraphy using recognised classification methods, e.g. Australian Standard 1726, Unified Soil Classification Table.		Records not available
Location and extent of imported and locally derived fill.	Section 2.5	
Site borehole logs or test pit logs showing stratigraphy.		Records not available
Detailed description of the location, design and construction of on-site wells.	Section 2.6	
Description and location of springs and wells in the vicinity.	Section 2.6	
Depth to groundwater table.	Section 2.6	
Direction and rate of groundwater flow.	Section 2.6	
Direction of surface water run-off.	Section 2.5	
Background water quality.		Records not available
Preferential water courses.	Section 2.5	
Summary of local meteorology.	Section 2.4	
<b>Site characterisation</b>		
Assessment of type of all environmental contamination, particularly soil and groundwater.	Section 4	
Assessment of extent of soil and groundwater contamination, including off-site effects.	Section 4.4	
Assessment of the chemical degradation products.		These would be assessed following further site contamination





## Scope of Work

EPA Requirement	Reference	Comment
		Investigation
Assessment of possible exposure routes and exposed populations (human, ecological).	Section 4.4	
<b>Conclusions and Recommendations</b>		
Brief summary of all findings.	Section 4	
Assumptions used in reaching the conclusions.	Section 5.3	
Extent of uncertainties in the results.	Section 5.3	
Where remedial action has been taken, a list summarising the activities and physical changes to the site.		Remedial action has not been taken at the site
A clear statement that the consultant considers the subject site to be suitable for the proposed use (where applicable).		Not applicable until detailed investigations are undertaken
A statement detailing all limitations and constraints on the use of the site (where applicable).		Not applicable until detailed investigations are undertaken
Recommendations for further work, if appropriate.	Section 5.3	



## 2. Site Description

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### 2.1 Site Location and Legal Description

The site is located on approximately 9.6 Ha of land, and comprises blocks 1321 and 764 (amended) of Deposited Plan 5452. The approximate geographical coordinates for the site are 149° 89'E and 35°17'S. The majority of the site has been cleared and filled with overburden from quarrying operations. The site contains some 48 identified buildings, structures and sites. The site is located approximately 3km to the west of Capital Hill and is bordered by Royal Canberra Golf Course to the West, Bentham St and Lane Pool Pl to the North and Schomburgk st and Woolls streets to the East and South. Access to the site is via Denman St.

Figure 1 shows the location of the site.

### 2.2 Site Features

The main site features include the old brickwork buildings, which are in dilapidated condition. These include brick firing kilns, chimney stacks, power house, sheds, fanhouses and workshops.

Other prominent site features include the disused quarry, artificial lake and several geological formations which contain fossilised materials. The site is surrounded by a mesh fence approximately 2m high. The perimeter of the site is generally well vegetated which provides protection against soil erosion.

The location of these features is shown on Figure 2.

### 2.3 Surrounding Land Uses

Based on the observations by Connell Wagner and a review of site plans and aerial photographs, the adjoining land uses comprise;

- North East – Bentham St which provides access to Royal Canberra Golf Course. North of Bentham St is the CSIRO Forest Research Centre
- North – Directly to the North of the site is a residential area which is defined by Lane Poole Pl and Bentham St. These residences back directly onto the brickworks site
- West and North West – Royal Canberra Golf Course
- South – Denman St, which is the site access road. The area to the south of Denman St is currently unused and is planned for residential development.
- East and South East – The Area to the East and South East of the site is dominated by residential buildings. Dwellings which are adjacent to the brickworks are located on Woolls, Schomburgk and Banks Streets.

Prior to their current land use, it is understood that these properties were used for sheep grazing.

### 2.4 Climate and Meteorology

A warm temperate continental climate over the Canberra region is typified by hot summers and cold winters. The proximity of Canberra to the coast (120km) means that southeasterly humid onshore sea breezes may reach inland to bring temporarily cooler or more humid conditions during summer months.

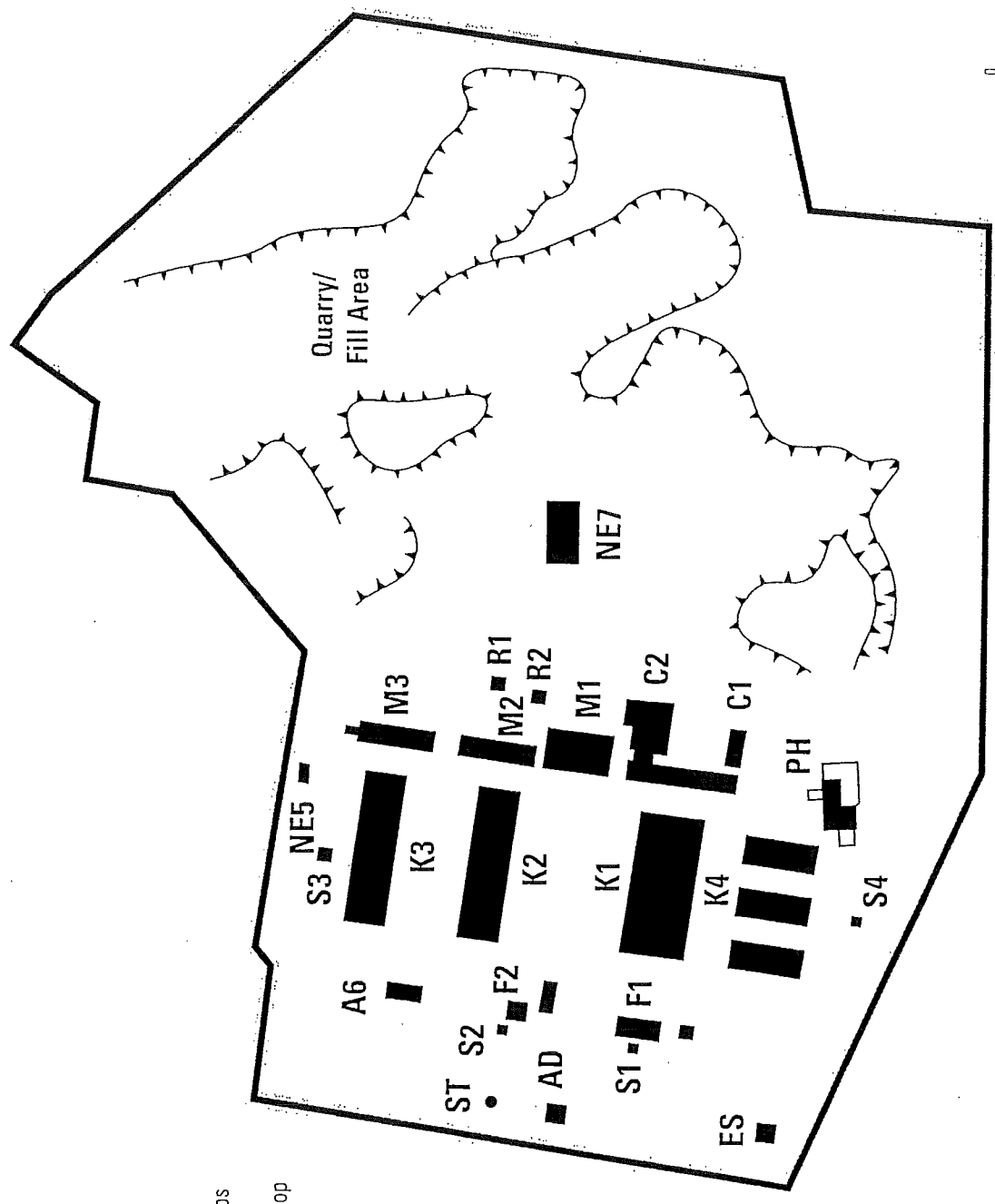




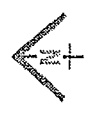


**LEGEND**

- A6 - Forklift Shed
- NE5 - Coal and Oil Storage
- K1-K4 - Kilns
- S1-S4 - Stacks
- F1-F2 - Fan House
- C1-C2 - Crusher
- R1-R2 - Model Railway Workshops
- ST - Septic Tank
- M1-M3 - Machine/Blacksmiths Shop
- PH - Powerhouse and office
- ES - Explosives Store
- AD - Asbestos Dump



YARRALUMLA  
BRICKWORKS



**FIGURE 2**  
**INDICATIVE SITE LAYOUT**  
(Approximate Location of Buildings)





## Site Description

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The mean annual rainfall across Canberra ranges between 600 and 800mm. There is little seasonality of rainfall and the mean number of rainy days per year is 100. Snow may fall in winter months but is rare at altitudes less than 500m. Snow falls in Canberra on average 1-3 times per year.

Mean monthly temperatures range from 12- 28 °C in Summer and 1-11 °C in Winter. Canberra has a relatively high incidence of frosts with an average of 77 frosts per year.

### 2.5 Topography and Surface Water Hydrology

The area to the east of the existing site buildings has been levelled with fill materials thought to have originated from the quarry. At various locations, mounds have been created with a mixture of quarry overburden and masonry off cuts. Several natural limestone and shale knolls / protusions also rise sharply in and around the quarry which create a natural amphitheatre. Elevations in this area generally range between 578 and 590 m.

There were no observed constructed drains in this area and the majority of surface water is contained by the mounds and geological formations. This water either infiltrates into the soil or drains to the low point in the quarry which forms an artificial lake when full.

The kiln and workshop area is generally flat and is stepped down from the crusher house and railway storage sheds by 2-4 metres. This area is drained by a series of surface drains which run parallel to the perimeter of the buildings. This runoff water gravitates to a stormwater pit located on the western side of the kilns, where it is collected and discharged to the west of the site into the local stormwater system. The elevation of the kiln area is approximately 573m.

To the west of the kilns, the site slopes down at approximately 4% to the property boundary, which has an approximate elevation of 572m. To the south west the site slopes up at a gradient of approximately 10% to an approximate elevation of 576m. There is limited potential for flooding considering site and surrounding topography.

The nearest water body to the site is Lake Burley Griffin (Warrina Inlet) which is located approximately 600m to the North West of the site.

### 2.6 Geology and Hydrogeology

The Yarralumla Brickpits form one of Canberra's most important and oldest geological 'monuments'. The brickpits derive their geological importance from being the type locality of the Yarralumla formation, a sequence of tuffaceous siltstone, sandstone and limestone deposited in the Silurian Period, 425 Million Years ago.

The Yarralumla formation is the only fossiliferous, marine unit within the extensive volcanic marker horizon in determining the stratigraphy of the volcanic rocks, and through its fossil fauna, provides evidence of the age of these volcanics.

A significant portion of the site has been excavated to provide raw materials for brickmaking. Overburden from the quarry has been combined with brick offcuts to fill site areas and to create mounds around the site. There was no specific geotechnical information for the site available for this study.

In the Canberra region, groundwater occurs in fractured rock aquifers and in unconsolidated sand in thin alluvial and colluvial aquifers. Yields of bores in fractured rock aquifers are in the range 0.1-5L/s and higher yields are obtained in closely jointed rocks along fault zones. Groundwater salinity is generally less than 2000 mg/L TDS and largely determined by complex geology and recharge conditions.



Environment ACT have reported that there are no groundwater monitoring bores located within 500m of the site and the depth of the groundwater at the site is unknown. However, it is likely that the groundwater from site would flow towards Lake Burley Griffin. Information was not available regarding the location of springs in the immediate area.

The depth to groundwater in the Canberra region generally ranges from about 2 to 20m and depends on the geology. In some instances bores greater than 100m have been drilled to obtain sufficient yield.

It is understood that groundwater has historically been used for stock watering and irrigation. Shallow aquifers have been polluted from hydrocarbons, leachate and sewage rendering groundwater unfit for domestic purposes.



## 3. Site History

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A detailed history of the sites operation has been provided by Lester Firth and Associates (June 1996) and is summarised below.

### 3.1 Pre 1913

Prior to the construction and operation of the brickworks in 1913, the site formed part of the Yarralumla property which was a prominent grazing/ farming property in the Canberra region.

### 3.2 1913 – 1976 Brickworks

The Canberra Brickworks were initially established in 1913 to provide bricks, roof tiles and other building materials for the new Parliament House. A temporary experimental plant consisting of four open kilns was constructed in 1913, to provide bricks for the Kingston Power House and for the permanent brickworks.

The first stage of the permanent brickworks consisted of a single Staffordshire Kiln which commenced construction in November 1914. The Staffordshire Kiln, with crushing, grinding, processing and equipment was ready for production in early 1916. However the brickworks closed in December 1916 due to the first world war, a restricted Canberra works program and a coal strike.

The brickworks were re opened in 1921. This followed the decision by the Hughes government to proceed with the building of Canberra. Examples of construction works constructed around this time included the Provisional Parliament House, Hotel Ainslee as well as housing at Ainslee, Reid and Forrest.

A tile making plant was installed in 1922 and the brickworks railway in 1923 which linked the brickworks to the provisional Parliament House, Kingston Power House and Hotel Canberra. A brickworks tramway also extended to the Civic Centre. The tramway was removed prior to the opening of Parliament House on 9 May 1927. Prior to the construction of the railway, bricks were conveyed to building sites in wagons pulled by a steam driven tractor.

To cope with increased demand in the 1920's, two temporary downdraft kilns were constructed in October 1925 and in 1927 a Hardy patent kiln was built and in use. Following these works, the brickworks had an output capacity of over 300,000 bricks per week and in 1927-28, the brickworks produced some 8.5 million bricks.

The economic depression in the late 1920's resulted in a severe curtailment of production. The railway was fully removed and timber used instead of coal for firing kilns to minimise costs. Production subsequently ceased and the works closed down in 1931.

As the economy slowly recovered, building works in Canberra increased, resulting in renewed demand for bricks and a resumption in brick production in 1935.

The second World War forced another cessation of brick making activity which was resumed in 1944.

The brickworks underwent further expansion in the 1950's/60's with the construction of a 20 Chamber "Hoffman" brick kiln as well as three new downdraft kilns (dome kilns). In July 1960 the control of the brickworks was transferred to the Commonwealth.

During the 1960's, oil replaced coal as the fuel for firing the bricks. In 1967, the ACT Health Services Branch inspected the Brickworks site and reported that the buildings were in a state of disrepair and the area was littered with rubbish.



## Site History

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In 1973 the brickworks were considered in extensive need of modernisation and proposals prepared for upgrading. These proposals were rejected by the National Capital Development Commission and a new site for the brickworks was released at Mitchell.

In August 1976, the brickworks ceased operation and have not operated since.

### 3.3 1976 – Present

Following closure of the brickworks, the site was subsequently leased to a private developer who undertook limited site work for the purposes of establishing a tourist centre. That lease was surrendered to the Commonwealth in 1984 and since that time a site manager has been employed to manage some minor retail, studio and storage uses.

### 3.4 Proposed Use for the Land

Options for the proposed land use are currently being developed. Likely opportunities include

- Cultural and tourist facilities
- An arts and crafts facility, including studio space for visual artists and crafts people
- Facilities for a heritage related commercial or office activities
- Hotels, restaurants and specialty retail tenancies
- Permanent facility for 'Floriade', Canberra's annual flower festival.

### 3.5 The Brickmaking Process

Raw materials for brick and tile making were excavated from the quarry and stored temporarily in a shed located at site NE7.

The material was dumped directly into crushers (C1 and C2) where coarse materials were removed. The screened material was ground and water added to create a consistency similar to cement. This slurry was then conveyed to the brick press which was located in the Machine Workshop area (M1, M2 and M3).

Bricks were fired in the kilns with coal and later oil. During times of high coal prices, timber was used as a fuel instead of coal. Once fired, the bricks were cooled and removed for dispatch. The entire process took 4-5 days.

Oil was supplied through penetrations in the ceiling of the kilns and a network of pipes which led to the oil storage tanks. Coal was loaded manually into the kilns for firing. There were no other additives used for brickmaking.

There was limited waste generated by the brickworks as the majority of fuel was combusted. Ash from wood and coal burning was taken off site for disposal. Gaseous emissions were drawn from the kilns by fanhouses F1 and F2 through a series of underground conduits. These emissions were discharged into the atmosphere through the Chimney Stacks (S1-S4).





## 4. Summary of Findings

### 4.1 Site Inspection

The findings presented in this section are based on a review of site historical documentation and a site inspection undertaken on Friday 22<sup>nd</sup> September. The site inspection included an inspection of all existing site buildings as well as major site features including the quarry, model railway track, filled areas and geological monuments.

The purpose of the site inspection was to determine the likely sources and location of contamination both above and below the surface and to assess other factors which may influence the potential for contamination and to verify the information reviewed during the desktop study.

During the site inspection, no visible signs of plant stress, odour, disturbed or discoloured soil which may have been attributed to contamination were observed. Bare patches of soil do exist, however these are likely to be attributable to other activities (eg site vehicle movements and cleared areas).

Chemical bunds and fuel storage areas were not observed, however the locations for these have been identified by the desktop study. Several empty 44 gallon drums were located in the Kiln/ Workshop areas.

There was no surface water on the site and no records were available of previous water quality sampling undertaken at the site.

Remaining site buildings were observed to be in a dilapidated condition and in some cases in need of repair. Pavement areas, particularly in the workshop and kiln areas were observed to be in generally good condition with only minor cracking present. Site roads are generally unpaved tracks.

### 4.2 Sub-surface Contamination

The likely sources of underground contamination, reference building and typical contaminants is presented in Table 2.

Table 2 Locations and Details of Possible Site Contaminants

Building	Building Reference No	Description	Possible Contaminants <sup>1</sup>
Storage Bunkers	NE5	Initially used for coal then later oil storage	Hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals
Forklift Shed	A6	1000L underground storage tank used for fuel (diesel) storage	Hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals
Model Railway Workshop	R1	Initially used for coal and later oil storage (above ground)	Coal dust, hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals
Model Railway Storage Shed	R2	Initially used for coal and later oil storage (above ground)	Coal dust, hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals



# Summary Findings

1977

Building	Building Reference No	Description	Possible Contaminants <sup>1</sup>
Septic Tank	-	Site Septic tank for domestic sewage and water from wash basins/showers.	Possible contamination due to the disposal of solvents and chemicals
Blacksmiths Shop	M1-M3	Attached to Machine Shop	Aluminium, manganese, iron, copper, nickel, chromium, zinc, cadmium and lead oxides, chlorides, fluorides and sulphates of these metals
Explosives Store	NE 3	Used for storage of explosives for excavation of the quarry (pre 1920)	Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulfuric acid, nitroglycerine, calcium cyanamide, lead, ethyle glycol, methanol, copper, aluminium, bis (2 ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver
Kilns, Workshops and oil storage areas	Miscellaneous	Miscellaneous drippings from leaking/ ruptured oil and fuel lines	Hydrocarbons, BTEX, (ie benzene, toluene, ethylbenzene, xylene), PAHs, Phenols, metals

## Notes

1. Typical contaminants identified in the above table have been derived from "SEPP 55 Planning Guidelines for Remediation of Land"(DUAP 1998).

Product loss and spill history records for the site were not available, however there is a possibility that spillage of materials may have occurred on the site. This may include fuel and oil from transport and site vehicles.

Other possible sources of site contamination include imported fill and ash from the kilns which may have been buried on site and possibly beneath site buildings. It is understood that these practices did not occur however they cannot be eliminated as a source of contamination.

It is also possible that sheep dips may have been located on the site prior to the construction of the brickworks. The likely location of sheep dips would be in the vicinity of the Yarralumla Woolshed which is not located on the site. If however, sheep dips did exist on the site, the likely contaminants would include arsenic, organochlorines, organophosphates, cabramates and synthetic pyrethroids.

### 4.3 Surface Contamination

Likely above ground contaminants include Asbestos, Synthetic Mineral Fibre, Lead Based Paint and Poly Chlorinated Biphenyls. Miscellaneous fuel drums, paints etc are also located in various locations around the site. A description of the likely locations of key contaminants are described below.

#### 4.3.1 Asbestos

The likely locations and uses of asbestos on the site include but are not limited to the following;

- Asbestos roof sheeting and eaves of office and sheds



## Summary Findings

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- Asbestos skin attached to kiln brick doors of firing Kilns (buildings K 1- K4)
- Possible Asbestos lagging of oil pipes located in the general vicinity of the kilns and workshops
- Asbestos backing of switchboards and electrical equipment found within switchboards located throughout the site
- Asbestos materials dumped on site near the septic tank, area now overgrown by blackberry bushes

### 4.3.2 Poly - Chlorinated Biphenyls (PCB's)

The likely locations of PCB's include electrical transformers which are located in the Power House and Workshop/ Machine Bay area as well as capacitors of light fittings located throughout the buildings.

### 4.3.3 Synthetic Mineral Fibre (SMF)

Likely locations of synthetic mineral fibre includes lagging to pipework and insulation in the ceiling and wall panels of the office building. It is unlikely that there is any other SMF present on the remainder of the site.

### 4.3.4 Lead Based Paint

Lead based paints may have been applied to interior and exterior walls throughout the site.

## 4.4 Potential for Off- Site Contamination

Possible pathways for off-site contamination include migration of contaminants through surface (site runoff) water, groundwater and fugitive air emissions.

While the exact nature of the immediate geology and groundwater is unknown, it is difficult to determine whether off site groundwater contamination has occurred. Further investigations would be necessary to determine the extent and nature of off site migration of contaminants through groundwater.

Surface water contamination may have occurred due to the discharge of contaminants into the local drainage system. It is understood that the site runoff water discharges into the urban stormwater system and ultimately into Lake Burley Griffin. Water quality records of Lake Burley Griffin were not reviewed.

Potential fugitive air emissions would have largely occurred during the operation of the facility and would have included gases, soot and dust from the firing of bricks. Since the plant has ceased to operate, site dust is the only likely source of potential air pollution.



## 5. Conclusions and Recommendations

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### 5.1 Conclusions

The Canberra Brickworks property located on Denman St Yarralumla, was the subject of a preliminary site assessment to determine the potential for surface and subsurface contamination as the result of past activities at the site.

Within the limitations and constraints imposed by the study of background information, the following conclusions are provided.

- The site has been filled in places with materials likely to have been sourced from within the site.
- The site soils are likely to be clayey material. The depth of groundwater at the site is unknown
- The surrounding land uses are unlikely to have caused contamination on the site
- The main sources of contamination are likely to be the industrial brickmaking activities which occurred intermittently between 1913 and 1976, in particular the on site storage of fuels, oils and possibly explosives
- There are hazardous substances which exist above the surface which are likely to include asbestos, PCB's, SMF's and lead based paints

### 5.2 Recommendations

Within the limitations and constraints imposed by the study of background information, it is considered that the site is suitable for its intended use, subject to further investigation and possible remediation. The scope of the investigation should include but not be limited to the following;

- Preparation of a site sampling plan including:
  - Sampling and analysis data quality objectives (DQO's)
  - Sampling pattern,
  - Sampling density, location and depths
  - Details of soil and groundwater analytes
  - Detailed description of sampling procedures including sampling devices and equipment, sample handling procedures and sample preservation methods
  - Field safety, quality assurance and quality control procedures
  - Laboratory quality assurance and quality control procedures
- Soil and groundwater sampling and analysis in accordance with the requirements of the site sampling plan
- Site Characterisation of the land including
  - assessment of type and extent of environmental contamination, particularly soil and groundwater
  - assessment of possible exposure routes and exposed populations

The data collected would require analysis and comparison with the Soil Investigation Levels identified in the EPA "Contaminated Sites Guidelines for the NSW Auditors Scheme" (refer to Appendix B). This comparison should contribute to the assessment of the sites appropriateness for it's intended use or whether remedial action is required.

Following analysis of the data obtained in the site sampling phase, a Remedial Action Plan (RAP) should be prepared (if necessary) and include the following key elements

- remediation goal and extent of remediation required
- identification of possible remediation options and risk reduction methods
- proposed testing to validate the site after remediation
- contingency plan if the site remediation strategy fails
- site management plan including soil and stormwater management plan and occupational health and safety plan
- regulatory compliance requirements





## Conclusions and Recommendations

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If site remediation is required, it would be undertaken in accordance with the RAP. Following remediation, site validation would be required to determine whether the site has been satisfactorily remediated and to identify further actions which may be required.

Site validation including validation sampling and analysis plan, statistical analysis of the validation results and assessment against the validation criteria and verification of compliance with regulatory compliance

Further details of the recommended actions is provided in the NSW EPA publication "Guidelines for Consultants Reporting on Contaminated Sites (1997)".

### 5.3 Limitations and Assumptions

The above conclusions and recommendations have been made with the following assumptions and limitations;

- Several of the buildings were unable to be entered during the site inspection including the power house, site offices and downdraft kilns
- Limited groundwater and geotechnical information was available for the site, in particular the groundwater depth and direction of flow. It has been assumed that groundwater flows toward Lake Burley Griffin
- Regulatory and Licensing history was not available for review including rezoning and rebuilding approvals, product spill loss, disposal and complaint history
- The site knowledge of the Caretaker (Bruce McDonald) is limited to his involvement of the site which only covers the recent portion of the site history
- An assessment of the chemical degradation products was not undertaken as part of this study. This would be undertaken when further detail of the sub-surface contaminants is known.



## 6. References

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1. Old Canberra Brickworks, Conservation Plan, Lester Firth and Associates, June 1986
2. Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA , November 1997
3. Guidelines for the NSW Site Auditor Scheme, NSW EPA, June 1998
4. Geology of Canberra, Queanbeyan and Environs, Bureau of Mineral Resources, Geology and Geophysics, 1981
5. Geology of the Canberra 1:100,000 Sheet Area, Bureau of Mineral Resources, Geology and Geophysics, 1991
6. Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land, DUAP/EPA, August 1998



# ***Appendix A***

*Site Photographs*

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Site Photographs



Photograph 1: Powerhouse and Auxiliary Building

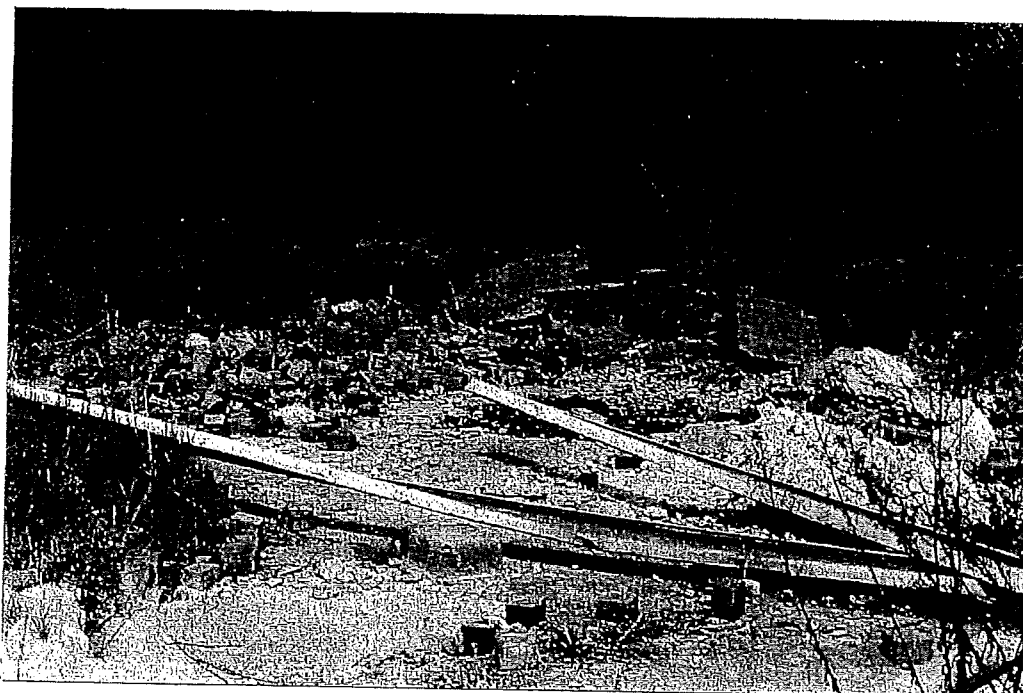


Photograph 2: Powerhouse and Auxiliary Building

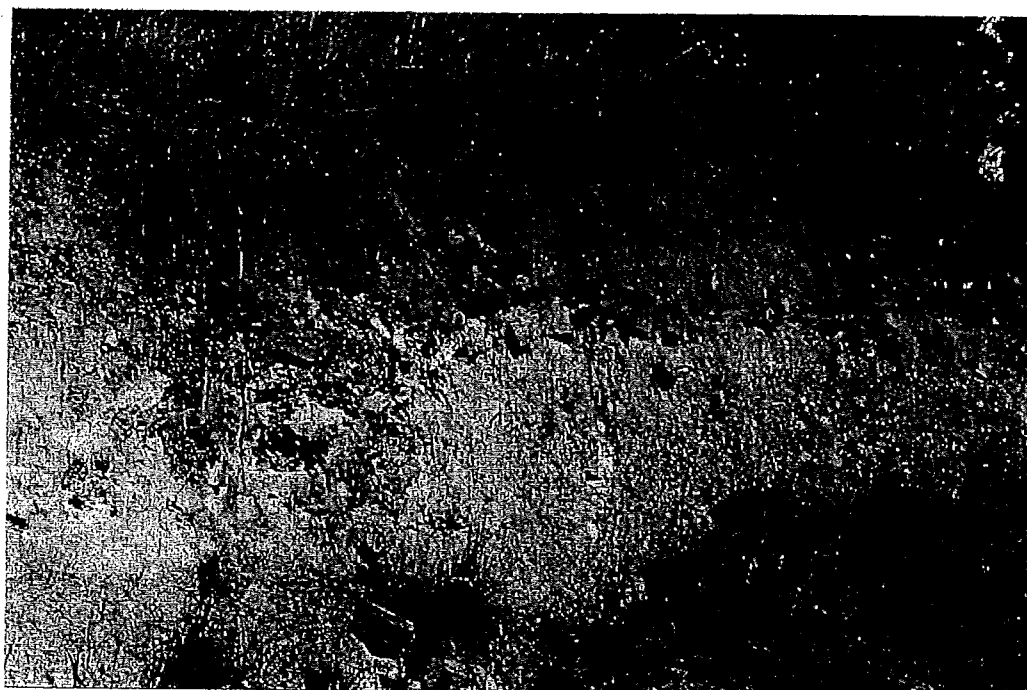




Site Photographs



Photograph 3: Location of Old Forklift Shed and Underground Storage Tank



Photograph 4: Fill area showing mixture of overburden and brick offcuts



## ***Appendix B***

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*EPA Health Investigation Levels*



## Soil Investigation Levels for Urban Redevelopment Sites in NSW

Health-based investigation levels <sup>1</sup> (mg / kg)					Provisional phytotoxicity-based investigation levels for sandy loams pH 6-8 (mg / kg)
Substance	Residential with gardens and accessible soil (home-grown produce contributing less than 10% fruit and vegetable intake; no poultry), including children's day-care centres, preschools and primary schools, or town houses or villas (NEHF A)	Residential with minimal access to soil including high-rise apartments and flats (NEHF D)	Parks, recreational open space, playing fields including secondary schools (NEHF E)	Commercial or industrial (NEHF F)	
	Column 1	Column 2	Column 3	Column 4	Column 5
Aldrin + Dieldrin	10	40	20	50	-
Arsenic (total)	100	400	200	500	20
Benzo(a) pyrene	1	4	2	5	-
Beryllium	20	80	40	100	-
Cadmium	20	80	40	100	3
Chlordane	50	200	100	250	-
Chromium (III)	12%	48%	24%	60%	400
Chromium (VI)	100	400	200	500	1
Copper	1000	4000	2000	5000	100
Cyanides (complex)	500	2000	1000	2500	-
DDT	200	800	400	1000	-
Heptachlor	10	40	20	50	-
Lead	300	1200	600	1500	600
Manganese	1500	6000	3000	7500	-
Methyl mercury	10	40	20	50	-
Mercury (inorganic)	15	60	30	75	1
Nickel	600	2400	600	3000	60
PAHs (total)	20	80	40	100	-
PCBs (total)	10	40	20	50	-
Phenol	8500	34000	17000	42500	70
Zinc	7000	28000	14000	35000	200

Note: Further detail and notes to table are provided in the EPA document "Guidelines for the NSW Auditor Scheme"

