APPLICATION FOR EIS
SCOPING DOCUMENT
SUPPORTING DOCUMENT

Canberra Brickworks Precinct
Blocks 1, 7, and 20; Section 102,
Yarralumla ACT

FINAL

November 2019
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Canberra Brickworks Precinct
Blocks 1, 7, and 20; Section 102, Yarralumla ACT

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Doma Group

Project Director: Karina Carwardine
Project Manager: Caitlin Adcock
Report No.: 8137/R02/V4
Date: November 2019

Canberra

2/99 Northbourne Avenue
Turner ACT 2612
PO Box 6135
O’Connor ACT 2602

T| 1300 793 267
E| info@umwelt.com.au

www.umwelt.com.au

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Document Status

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<td></td>
<td>Name</td>
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<tr>
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<td>Karina Carwardine</td>
<td>5 November 2019</td>
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1.0 Introduction

1.1 Scope of this Report

This report is provided for the information of the Environment, Planning and Sustainable Development Directorate (EPSDD) as supporting documentation for an Application for a Scoping Document for an Environmental Impact Statement (EIS) for the development of the Canberra Brickworks Precinct (the Project).

Information presented in this document and the accompanying preliminary risk assessment (PRA) (Appendix 1) addresses the information requirements outlined in Section 9 of Form 1M ‘Application for Scoping Document, Environment Significance Opinion, s211’ and the associated guidelines (ACTPLA, n.d.) as summarised in Table 1.1.

Table 1.1 Form 1M Information Requirements

<table>
<thead>
<tr>
<th>Required Information under Form 1M</th>
<th>Location in this Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A statement outlining the objectives of the Project and why it is needed.</td>
<td>Section 2</td>
</tr>
<tr>
<td>2. A description of the nature/type of project proposed by providing location map(s) of the project site(s), preliminary design drawings and satellite/aerial photographs.</td>
<td>Section 2</td>
</tr>
<tr>
<td>3. A preliminary risk assessment (PRA) based on the ‘Preparation of an Application for Scoping and Preparation for an Environmental Significance Opinion’ (guidance document) (ACTPLA, n.d.)</td>
<td>Sections 2.7 and 4, Appendix 1</td>
</tr>
<tr>
<td>4. A description of the natural conservation values of the site based on the considerations listed in the guidance document (ACTPLA, n.d.).</td>
<td>Section 3</td>
</tr>
<tr>
<td>5. Not Applicable to Applications for Scoping</td>
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<tr>
<td>6. Any decision made under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act)</td>
<td>Section 3.5</td>
</tr>
<tr>
<td>7. Not Applicable to Applications for Scoping</td>
<td></td>
</tr>
</tbody>
</table>

The Doma Group (Doma) have engaged Umwelt Environment and Social Consultants (Umwelt) to complete the PRA and supporting documentation for the Project. The PRA has been prepared as a component of the EIS that is proposed to be undertaken through the Bilateral Assessment process under Part 8 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) with the Australian Capital Territory (ACT) Government EPSDD.

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1 Approved form AF2017-201, approved by Ben Ponton, Chief Planning Executive, Planning and Land Authority, on 29 September 2017 under section 425 of the Planning and Development Act 2007 and revokes form AF2017-201.
1.2 Document Review

In preparing this report and the PRA, a number of documents have been reviewed from specialist investigations and surveys that have been completed specifically for this Project and the adjacent proposed upgrade of Dudley Street, including but not limited to the:

- Stage 1 Site Investigation Report for Canberra Brickworks by AECOM (2016) and appendices particularly:
  - Preliminary Geotechnical Site Investigation for the Canberra Brickworks, November 2013 by SMEC.
  - Preliminary Environmental Site Investigation for Canberra Brickworks, February 2014 by SMEC.
  - Stage 1 Environmental Site Assessment for Canberra Brickworks, March 2015 by Robson Environmental.
  - Canberra Brickworks and Environs Ecological Assessment, December 2014 by Umwelt.
  - Yarralumla Brickworks Precinct Tree Assessment: Tree Management Report, November 2015 by dsb Landscape Architects.
  - Stage 1 Aboriginal Cultural Heritage Assessment, August 2014 by Navin Officer.

- Conservation Management Plan for the Canberra Brickworks by Lovell Chen, April 2010 and draft updated Conservation Management Plan, June 2017 prepared by GML.

- Phase II Environmental and Geotechnical Site Investigations by SMEC, October 2016 and November 2016.


- Golden sun moth survey and ecological assessment of Dudley Street Road Reserve, February 2017 by Umwelt.


- Online Heritage resources.

- Canberra Brickworks and Environs Planning and Development Strategy, 2013 prepared by the Land Development Agency (LDA).

A summary of the findings of these reports has been provided in this report and in the PRA.
2.0 Project Description and Objectives

2.1 Project Area

The Project Area is located in south-west Yarralumla, to the west of central Canberra in the Australian Capital Territory (ACT) (see Figure 2.1). The Project Area is known as the Canberra Brickworks Precinct (CBP) and is Territory Land located on Blocks 1, 7, and 20, Section 102, with an area of 16.1 hectares (ha).

Current access to the CBP is from Denman Street only. The Project Area is surrounded by Bentham Street to the north; low density residential development of Yarralumla to the north, north-east and east; open space both sides of Dudley Road to the south; and the Royal Canberra Golf Club to the west (see Figure 2.1). The golf club forms a major part of the heritage listed Westbourne Woods that encompasses the arboretum and nursery that were established in 1914 (GML, 2017).

2.2 Existing Environment

2.2.1 Heritage

The Canberra Brickworks were operational in the Project Area from 1913 to 1976. The Project Area has been largely vacant since that time. The Canberra Brickworks are of historical significance at a Territory level as the first industrial manufacturing facility in the ACT, and they had an integral role in the development of Canberra providing material for construction of early buildings (LDA, 2013). The heritage significance of the Canberra Brickworks is recognised in its listing along with the brickworks railway remnants on the ACT Heritage Register.

The Project Area itself contains the buildings of the former brickworks, associated quarry, and railway remnants with landscape trees throughout the quarry area and along the boundaries (see Figure 2.2). A small recycled timber furniture store currently operates from the Canberra Brickworks buildings; otherwise public access is generally limited by fences that surround the property.

For discussion purposes in this report, the Project Area or CBP is further separated into the following areas:

- Canberra Brickworks, also known as Yarralumla Brickworks, containing all of the existing buildings and occurs in Block 1, Section 102 in the north-western portion of the Project Area (Figure 2.2).

- Former quarry or ‘brick pit’ that occurs in the north-eastern portion of the Project Area within the existing boundary of the Canberra Brickworks heritage site (Figure 2.2). It is generally bounded by Bentham Street, Denman Street, and neighbouring residences to the east of the Project Area.

- ‘Railway Remnants’ occurs to the south of the brickwork buildings (Figure 2.2) in part Block 7, Section 102.

- Former worker’s accommodation ‘Brickworks Accommodation Village’ occurs in Block 1, Section 102 to the south of the brickwork buildings and east of the railway remnants (see Figure 2.2).

- Partly cleared land in the east and south-east of Block 7 near the entrance off Denman Street.

There have been no sites of indigenous heritage value recorded within the CBP, and the area does not contain locations of potential value (Navin Officer, 2014).
FIGURE 2.2
CBP and Associated Projects
2.2.2 Landform, Geology and Soils

The topography of the Project Area is variable and has been significantly modified by quarrying and landfill. The Project Area ranges in elevation from approximately 570 metres Australian Height Datum (AHD) to 590 metres AHD, and generally slopes to the west towards the Royal Canberra Golf Course and north-west. A small portion of the Project Area, towards Dudley Street, slopes to the south and south-west.

The Project Area is underlain by the Yarralumla Formation, the only fossiliferous marine unit within the extensive volcanic marker horizons of South Canberra (SMEC, 2013). Excavations at the quarry have exposed the Yarralumla Formation and are recognised as one of the only locations from which the Yarralumla Formation can be closely observed (SMEC, 2013). The Canberra Soil Landscape sheet maps the Project Area as Williamsdale soil landscape; which is characterised by undulating rises and local relief, typically below ten percent in natural terrain. Test pit data has identified that fill soil is approximately 2.5 to 3 metres in depth (Robson, 2015) overlying natural soils. The majority of the CBP is comprised on natural silty clays, underlain by siltstone, sandstone, or Dacite bedrock. In locations which have been historically disturbed, the soils have been modified due to the typically hard-setting, erodible and potentially dispersive soil (SMEC, 2013).

As a legacy of past land uses the Project Area has been subject to extensive contamination assessments. These are summarised further in Section 2.7.5.

2.2.3 Surface Water Hydrology and Drainage

There are no watercourses within the CBP; the nearest surface water body being Warrina Inlet of Lake Burley Griffin, approximately 600 metres to the north-west of the Project Area. Surface water flow has been significantly modified by the historic use of the site, especially relating to the quarry use and fill. The main catchment in the Project Area encompasses the brickworks, quarry, former workers accommodation and cleared land off Denman Street. Surface water runoff from this catchment drains to the north-west corner then via a drainage reserve through the Royal Canberra Golf Course into the Warrina Inlet of Lake Burley Griffin. The drainage reserve includes both piped infrastructure and overland flow path (SMEC, 2013).

2.2.4 Biodiversity

The Project Area has been subject to numerous ecological surveys since 2010 (Rowell 2010, 2011 and 2012; Umwelt 2014 and 2015b; Biosis 2017) as part of the planning and early design phases of the Project. All surveys were undertaken in accordance with the relevant guidelines; and ecological values detected are discussed in Sections 2.7.1-2.7.3.

The Project Area was grazing land prior to its use as the brickworks and has been cleared of native vegetation. Vegetation across the CBP has been heavily modified and is dominated by exotic species; including landscaping trees, garden escapees, and weeds. Areas near the site boundaries and in the quarry contain a planted overstorey – primarily of *Pinus radiata* species (Umwelt, 2014). The vegetation within the CBP has no conservation significance.

Small patches of exotic grassland near the entrance to the CBP are dominated by a weed of national significance: Chilean needlegrass (*Nassella neesiana*). This weed species is known to support golden sun moth (*Synemon plana*) and the patch within the CBP has been confirmed as habitat for this critically endangered species (Biosis, 2017).
The areas of the quarry and historic landfill are highly modified and do not contain any natural features. The exotic composition of the vegetation provides limited opportunities for native species and is unlikely to represent areas of importance.

We note that validation of these previous results is scheduled to occur in November 2019. The results of these surveys will be incorporated into the EIS.

Further consideration of impacts of the Project on threatened species is provided in Section 2.7.1 and the conservation values of the Project Area are discussed in Section 3.0.

### 2.2.5 Bushfire Risk

A preliminary assessment of bushfire hazard risk has identified that vegetation to the west of the CBP, in the adjoining Block 1, Section 127, Yarralumla, may present a low risk of severe bushfire event to development of the CBP if it is left unmanaged. This assumes that vegetation within the Canberra Golf Club land and along Dunrossil Drive continued to be managed. Grassy woodland vegetation on the North Curtin Horse Paddocks to the south of the CBP may present a high risk of severe bushfire event to development of the CBP if it is left unmanaged (ABPP 2016).

### 2.3 The Project

The proposed Project is urban development at the site of the former Canberra Brickworks. The development has been guided by the Yarralumla Neighbourhood Plan (ACT Planning and Land Authority, 2004) and the 2013 ACT Government’s Land Development Agency (LDA) Canberra Brickworks and Environs Planning and Development Strategy, which sought to promote the adaptive re-use to the site and its surrounds with respect to its heritage significance. The Doma Group were successful in the tender to purchase the site from the LDA in April 2017 and propose a mixed use residential, commercial, and retail development that utilises much of the Canberra Brickworks heritage elements.

The Project will provide a maximum of 380 residential dwellings and recreational parkland around the re-purposed Canberra Brickworks buildings. Details of the Project are being refined and a graphic representation has not been included herein, however, a summary of the intent of the Project has been provided in this section.

While the Project Area is currently only accessible off Denman Street, the Project has been designed so that the primary access will be from the south via Dudley Street with only local traffic to discrete residential precincts off the minor access roads from Bentham Street and Denman Street. The Project has been designed to only allow for emergency vehicle access between these three roads. Adequate car parking will be provided within the CBP for residents and public car parking for offices, retail and recreational users. This will be developed in accordance with the ACT Parking and Vehicular Access Code.

Given the heritage value of the CBP, the residential development will be low density, with a focus on maintaining the urban parkland that fits in with the existing landscape and surrounding urban areas. The Project would be divided into four distinct precincts including:

- Low density dwelling house precinct to the east of the gravel pit with access via a public cul-de-sac off Bentham Street. This precinct includes the residential zoned land and will include a 20 metre buffer between the proposed development and existing residential dwellings, in accordance with the Yarralumla Precinct Map and Code requirements. Design of this precinct will consider visual impacts to existing residents.
• Southern precinct around the proposed entrance off Dudley Street will include residential buildings set back from the entrance road with a mix of houses, terraces and apartment buildings no taller than three storeys.

• Higher density more urban setting residential precinct to the west of the brickworks although again no taller than three storeys. The Railway Remnants will be retained within open space/parkland. This precinct will be accessed off Dudley Street.

• Brickyard Heritage Precinct includes the re-purposed buildings to allow for retail and commercial spaces including cafes and industrial crafts; interpretive features; and auxiliary facilities for residents, such as a gymnasium, swimming pool, and gardens. This precinct will be accessed off Dudley Street.

In recognition of the heritage values of the Canberra Brickworks and former quarry the Project would see the majority of ‘core’ and ‘supporting’ individual heritage elements and the essential industrial characteristics of the Canberra Brickworks heritage site retained, conserved, and sensitively re-used.

The former quarry area will be used as urban parkland that will be sensitive to the geological heritage values of the quarry while allowing a recreational space that is linked to existing and proposed walking and cycle paths.

The tree management report by dsb Landscape Architects (2015) has identified that many of the trees on site should be removed and the landscaping plan implemented from an early stage. The Project includes landscaping to provide privacy for existing neighbours; define entrances, streetscapes and pathways; to screen infrastructure elements; and provide parkland and open space. The landscape plan is being refined in development of the Project.

An inner asset protection zone (IAPZ) within the western boundary of the lease will not be required as the requirements are being met by existing management outside the site (i.e. within the Canberra Golf Club, Dunrossil Drive/Cotter Road area and in Block 1, Section 127, Yarralumla).

It is proposed that development of the Project will occur in stages. The initial stage is focused on remediation, infrastructure, adaptation and repurposing of heritage buildings and stage 1 residential development. Remediation includes demolition, site clean-up, storage of reusable material and removal of hazardous materials in accordance with site contamination report. Site preparation and civil works will include: construction traffic management (access from Dudley Street and construction workers carpark); establishment of bushfire management zones; heritage protection works; service infrastructure upgrades; vegetation management and landscaping; and, the conservation and adaptive use works of key heritage elements including establishment of parks and heritage interpretation.

The second stage will include progressive development of residential precincts in response to market demand and finalising landscaping.

The Project is in keeping with the ACT strategies and aims of the ACT Planning Strategy (Environment and Sustainable Development Directorate 2012) to: establish a more compact, efficient city focusing urban intensification around Civic, town and group centres; and a more sustainable city that uses its resources and infrastructure more efficiently.

2.4 Associated Project

The Project is linked to a secondary project to upgrade Dudley Street and to construct an access road into the CBP (Figure 2.2). The access road will service the majority of the proposed residential development and proposed redevelopment of the brickworks buildings.
Dudley Street is currently a 6 metre wide single carriageway (minor collector road) and has been approved to be upgraded to a 10 metres wide single carriageway (a major collector road) to meet current demand and improve public safety. To reduce inconvenience and impacts to the public, it is proposed to construct a 130 metres long access road (minor collector road) from Dudley Street into the CBP.

The Dudley Street access road was approved by the Department of the Environment and Energy (DoEE) on 27 February 2019 (EPBC 2017/8072), and then subsequently approved by the National Capital Authority (application number 101340). A s211 Exemption application (NI2019-183) was submitted to the EPSDD, followed by an Impact Track development application. This was approved in July 2019.

As such, the Dudley Street access road project has received all necessary planning approvals, subject to conditions.

2.5 Stakeholder Engagement and Community Consultation

The CBP has been the subject of public interest for many years, and public consultation has been extensive and continues to occur. A Community Engagement Plan (Elton, 2017) has been prepared, and is continually being refined throughout the design stages. The consultation history (as summarised below), has provided Doma Group with a strong understanding of the general aspirations of the site and have assisted the development of the Project.

The ACT Government, through the then Land Development Agency (LDA), began consultation in 2010. The following key themes for any potential future development of the CBP were identified (Elton, 2017):

- heritage conservation and preservation
- appropriate development for the location and surrounding landscape and uses
- maintenance of access and connectivity
- preservation and maintenance of open space
- increased amenity and vibrancy.

In 2015, the LDA established a Community Panel to build on the key themes above to develop a list of objectives to guide the future development of the CBP. The Community Panel has played a key role in the tender phase of this Project and continues to be a key participant in the consultation process. The objectives raised by the Community Panel include the following (Elton, 2017):

- maintenance/enhancement of the unique heritage of the CBP
- result in a quality development that showcases the heritage buildings
- Pittman (Quarry) Park is readily accessible
- maintain pedestrian/cycle networks
- ensure minimal disruption to existing land users, especially residents
- consider local environmental issues
- have a sustainable built form.
The latest Community Engagement Plan includes the following key elements:

- regular project updates to all stakeholders
- broader updates provided through the website and social media
- utilisation of existing marketing channels that were established by the LDA
- alignment of communication with project program milestones
- utilisation of a range of tools, including one-on-one meetings, monthly meetings with the Community Panel, email updates, website maintenance, public presentations and ‘pop-up’ information stalls, collection of ‘memories’ for the museum, and a quarry party following completion of Stage 1.

The first phase of the engagement milestones has been completed. The next phases will align with Project milestones, as detailed in the Community Engagement Plan.

Indigenous stakeholders identified as Representative Aboriginal Organisations (RAOs) were consulted via email and telephone as part of the Aboriginal Cultural Heritage Assessment (Navin Officer, 2014) in July and August 2014. A representative on one RAO (Buru Ngunnawal) attended the field survey. The Aboriginal Cultural Heritage Assessment concluded that no known Indigenous heritage sites occur and there are no areas of archaeological potential. The Cultural Heritage Assessment has been approved by the ACT Heritage Council on 11 September 2014 (Lovell Chen, 2016).

2.6 Planning Context

The Project Area is located on Territory Land and the Territory Plan is the key statutory planning document that applies to the Project Area. The Territory Plan identifies that the Project Area is zoned CZ6 (Leisure and Accommodation Zone) and with a small part in the north east corner of Block 1 zoned RZ1 (Suburban Zone) (see Figure 2.3).

The Project Area is governed by the Yarralumla Precinct Map and Code (RC1). The code identifies additional controls for the CBP such as floor area for shops and offices, and a maximum three storey residential and two storey other uses development. The code also sets out a minimum setback of 20 metres to the northern and eastern boundary.

The Project is permissible in the CBP and has been designed to reflect zoning and code requirements. The Project will require approval from the EPSDD in accordance with the Planning and Development Act 2007 (ACT) (PD Act). The Project triggers the need for an Environmental Impact Statement (EIS) under the PD Act (i.e. impact track assessment) as a result of potential impacts to protected species, potential impacts to ACT listed heritage matters, and as the Project Area is included on the register of contaminated sites (see Section 2.7.3).

Land to the west and south of the Project Area are designated capital land under the National Capital Plan as part of the National Capital Open Space System associated with Lake Burley Griffin and Foreshores. The National Capital Plan is the strategic plan for Canberra and the Territory to ensure that developments are planned in accordance with national significance recognising the unique purpose, setting, character and symbolism of Australia’s national capital. The Project Area is not designated National Capital Land and is not expected to impact the National Capital Plan or require approval from the National Capital Authority.

The requirements of the EPBC Act also need to be considered for the project. In accordance with the EPBC Act, the project has been referred (2017/8074) to the Commonwealth DoEE.
As an EIS is required under the PD Act and the ACT EIS process has been accredited by the Commonwealth in accordance with the bilateral agreement between the Australian and ACT Governments, the Project can be assessed using an accredited assessment process. Accordingly, the referral has requested that the project be assessed using the ACT EIS process. The EIS will include additional information as identified in this Scoping Document, such that the Minister for the Environment has sufficient information to decide under the EPBC Act.
### 2.7 Planning and Development Act Triggers

A review of all available documentation relating to the Project has identified items that will, or may, trigger impact track assessment pathway under Schedule 4 of the PD Act ([Table 2.1](#)). [Table 2.1](#) does not include items that have been determined to be not applicable to the Project.

**Table 2.1 Schedule 4 Triggers Relevant to the Project**

<table>
<thead>
<tr>
<th>Part</th>
<th>Item</th>
<th>Trigger</th>
<th>Report Section</th>
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</table>
| 4.3  | 1    | Proposal that is likely to have a significant adverse environmental impact on 1 or more of the following, unless the conservator of flora and fauna provides an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact:  
  (a) a critically endangered species;  
  (b) an endangered species;  
  (c) a vulnerable species;  
  (d) a conservation dependent species;  
  (e) a regionally threatened species;  
  (f) a regionally conservation dependent species;  
  (g) a provisionally listed threatened species;  
  (h) a listed migratory species;  
  (i) a threatened ecological community;  
  (j) a protected native species;  
  (k) a Ramsar wetland;  
  (l) any other protected matter. | Section 2.7.1 |
| 4.3  | 6    | Proposal that is likely to have a significant adverse impact on the heritage significance of a place or object registered under the *Heritage Act 2004*, unless –  
  (a) the heritage council produces an environmental significance opinion that the proposal is not likely to have a significant adverse impact; or  
  (b) the proposal is the demolition of a building that is affected residential premises, and the heritage council has approved a statement of heritage effect in relation to the proposal. | Section 2.7.2 |
| 4.3  | 7    | Proposal involving land included on the register of contaminated sites under the *Environment Protection Act 1997*.                                                                                                                       | Section 2.7.3 |
2.7.1 Impacts to Threatened Species or Community

Ecological surveys undertaken by Umwelt (2015b) and Biosis (2017) and a tree survey completed by dsb (2015) have determined that golden sun moth (*Synemon plana*) and trees protected under the *Tree Protection Act 2005* (ACT) (TP Act) are present in the Project Area. No other ecological values were detected in the Project Area.

The following Sections 2.7.1.1 and 2.7.1.2 provide detail on golden sun moth and protected trees, respectively.

2.7.1.1 Golden Sun Moth

### Table 2.2 Summary of Preliminary Risk Assessment Relevant to Golden Sun Moth

<table>
<thead>
<tr>
<th>Phase of development</th>
<th>Activity</th>
<th>Effects</th>
<th>Risk Rating</th>
<th>Mitigation / Management measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Site Investigations</td>
<td>Intrusive site investigations (e.g. geotechnical, contamination test pitting) are undertaken prior to PD Act and EPBC Act Approval resulting in impacts to MNES prior to approval being gained, and potential non-compliance with either Act.</td>
<td>MEDIUM</td>
<td>Liaise with EPSDD and DoEE prior to intrusive site investigations if they are to occur prior to an approval decision being made. Ensure EMP for site investigations identifies go / no-go zones and environmental controls.</td>
</tr>
<tr>
<td>Design</td>
<td>Off-site impacts</td>
<td>Increased run off from impervious surfaces, such as car parks, increases flow downstream and impacts areas beyond the Canberra Brickworks boundaries.</td>
<td>HIGH</td>
<td>Design will meet the requirements of the WSUD General Code (ACTPLA, 2007) to ensure post-development flows do not exceed pre-development flows. WSUD infrastructure will be maintained to standards set out in the WSUD General Code.</td>
</tr>
<tr>
<td>Design</td>
<td>Offsetting significant impacts</td>
<td>No offsets are available within the ACT for golden sun moth.</td>
<td>HIGH</td>
<td>Consult with DoEE and ACT Government at early stage to determine whether biobanking is an appropriate option for offsetting, due to the deficit of local golden sun moth sites (completed) Obtain biobanking credits for golden sun moth in local region to provide appropriate offset for golden sun moth.</td>
</tr>
<tr>
<td>Construction</td>
<td>Vegetation and Habitat clearing</td>
<td>Clearing vegetation outside approved disturbance area due to unclear demarcation of boundaries results in non-compliance with PD Act and EPBC Act approval.</td>
<td>MEDIUM</td>
<td>Conduct pre-clearing surveys to determine clearing boundaries. Establish no-go zones, site boundaries, and fences prior to construction commencing by implementing an industry best practice Construction Environment Management Plan (CEMP) to prevent unauthorised</td>
</tr>
</tbody>
</table>
### Golden Sun Moth Population

Golden sun moth is listed as endangered under the *Nature Conservation Act 2014* (ACT) (NC Act) and critically endangered under the EPBC Act.

Surveys undertaken by Umwelt (2014; 2015b) and Biosis (2017) have recorded 0.9 ha of occupied golden sun moth habitat within the Project Area. In addition, a golden sun moth survey was also undertaken in 2016 for the associated project at Dudley Street (Umwelt, 2017). This survey recorded golden sun moths within the Project Area in locations that were not observed by Biosis (2017). This is demonstrated in Figure 2.4. This additional area consists of 0.27 ha of low-quality mixed feed species.

The total area of golden sun moth habitat within the Project Area is 1.17 ha. It is noted that all identified habitat within the Project Area consists of low-quality exotic pasture, primarily Chilean needlegrass (*Nassella neesiana*). (Figure 2.4)

It has not been confirmed whether breeding occurs within the Project Area, or whether it is just utilised for foraging by individuals breeding in the higher quality habitat surrounding Dudley Street to the south (see Figure 2.4).

The Biosis (2017) surveys recorded the highest density of golden sun moth at the Project Area (12 flying male moths per hour); which was consistent with the densities recorded in surveys undertaken by Umwelt (2017) within the adjacent roads upgrade area. Generally speaking, 2017 recorded higher than average densities of golden sun moth in habitat dominated by Chilean needlegrass, and lower densities in native areas. This is thought to be linked to the high spring rainfall received and subsequent abundance of exotic grass species throughout Canberra; noting that the key drivers of golden sun moth population variance are still being researched and understood.

Golden sun moth surveys are scheduled to occur in November/December 2019 to confirm their continued presence, and current extent within the Project Area.
Impacts and Mitigation/Management Measures

The entire patch within the Project Area boundary is anticipated to be directly impacted by the proposed development (see Figure 2.4). Indirect impacts off-site will be managed through design and construction management practices, including:

- Ensuring that the Project incorporates Water Sensitive Urban Design (WSUD) in accordance with the WSUD General Code to prevent offsite impacts to retained habitat.

- Limiting works to the approved construction area through pre-clearance surveys, demarcation (fencing) and training to all site personnel.

- Implementing sedimentation and erosion controls and water management controls through preparation and ongoing review of a Construction Environmental Management Plan (CEMP).

Due to the low-quality, and non-native golden sun moth habitat present, alternative mitigation methods such as translocation, or retention of habitat within open space, are likely to create adverse ecological outcomes through the spread of noxious weeds (Chilean needlegrass). This will be explored further in the EIS.

The associated, recently approved, Brickworks access road project undertook substantial avoidance of the higher quality golden sun moth habitat in the locality to ensure that the Project as a whole did not result in unacceptable impacts to the species.

The PRA identified that the availability of offsets for golden sun moth in the ACT is a high risk. There is limited habitat available suitable as an offset that is unallocated to future Government projects.

As such, the proponent has undertaken discussions with DoEE and the EPSDD regarding the purchasing of Biobanking credits in NSW as a viable offsetting option for the Project. Based on these discussions, this is likely to be the pathway taken by the proponent.
## 2.7.1.2 Protected Trees

### Table 2.3 Summary of Preliminary Risk Assessment relevant to Protected Trees

<table>
<thead>
<tr>
<th>Phase of development</th>
<th>Activity</th>
<th>Effects</th>
<th>Risk Rating</th>
<th>Mitigation / Management measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Site access and management</td>
<td>Uncontrolled access by vehicles leads to damage to heritage elements or trees to be retained.</td>
<td>MEDIUM</td>
<td>Establish no-go zones, site boundaries, and fences prior to construction commencing by implementing an industry best practice CEMP to prevent unauthorised access into adjacent areas. Inform EPSDD and DoEE immediately if any impacts outside approved area occur.</td>
</tr>
</tbody>
</table>

In 2013 dsb Landscape Architects undertook a tree assessment within the Project Area and adjoining road works area. In general, the Project Area is unmanaged and weed species are prevalent. The majority of trees on site are pines including *Pinus radiata*, *P. ponderosa* and *P. sylvestris* with English elm (*Ulmus procera*) and a copse of oak trees (*Quercus palustris*, *Quercus cerris* and *Quercus* sp.) (dsb 2015). Neighbours have also planted a variety of trees along the eastern boundary and in the north west of the Project Area. The pine trees in the CBP and to the south of the CBP are likely to be self-seeded secondary forest growth from the nearby Forestry Institute site and Westbourne Woods (LDA 2013).

Under the TP Act, protected trees include ‘registered’ trees, and ‘regulated’ trees. There are no registered trees located within the Project Area (dsb, 2013). There are numerous regulated trees within or directly adjacent to the Project Area (see Appendix 2) of which 15 are considered of high quality (dsb, 2013). None of the regulated trees are native species.

In 2015, dsb prepared a tree management plan for the Project Area, which included recommendations as to which trees should be retained and/or enhanced, and which should be removed. These recommendations were incorporated into the Master Plan for the Project and will continue to be considered during the landscape design phase.
2.7.2 **Impacts on a Heritage Place or Object**

Table 2.4 **Summary of Preliminary Risk Assessment relevant to Heritage Places or Objects**

<table>
<thead>
<tr>
<th>Phase of development</th>
<th>Activity</th>
<th>Effects</th>
<th>Risk Rating</th>
<th>Mitigation / Management measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Design Development</td>
<td>The Project results in impacts to the heritage values of the Yarralumla Brickworks and Railway Remnants due to the recommendations of the Conservation Management Plan not being appropriately implemented during the design phase.</td>
<td>HIGH</td>
<td>Consider the Conservation Management Plan and its recommendations throughout the design phase (completed). Update the Conservation Management Plan based on the proposed actions of the Project (in preparation). Design the development to be as least intrusive to the Yarralumla Brickworks and Railway Remnants as practicable. If development is likely to significantly affect the heritage values of the Yarralumla Brickworks or the Railway Remnants, then seek advice from the ACT Heritage Council.</td>
</tr>
<tr>
<td>Design</td>
<td>Design Development</td>
<td>Material selection and finishes result in additional impacts to the heritage values of the Yarralumla Brickworks as they are not consistent with the Conservation Management Plan.</td>
<td>HIGH</td>
<td>Incorporate the recommendations and management guidelines of the Conservation Management Plan into the design of the CBP buildings.</td>
</tr>
<tr>
<td>Construction</td>
<td>Site access and management</td>
<td>Uncontrolled access by vehicles leads to damage to heritage elements or trees to be retained.</td>
<td>MEDIUM</td>
<td>Establish no-go zones, site boundaries, and fences prior to construction commencing by implementing an industry best practice CEMP to prevent unauthorised access into adjacent areas. Inform EPSDD and DoEE immediately if any impacts outside approved area occur.</td>
</tr>
<tr>
<td>Construction</td>
<td>General Construction Activities</td>
<td>Earthworks result in the destruction of previously unidentified Aboriginal or European cultural heritage items.</td>
<td>MEDIUM</td>
<td>Develop and implement an Unanticipated Discovery Plan during clearing and construction activities, including training personnel in Unanticipated Discovery procedures.</td>
</tr>
</tbody>
</table>
### Phase of development | Activity | Effects | Risk Rating | Mitigation / Management measures
--- | --- | --- | --- | ---
Operation | Residential and recreational use | Use of the Canberra Brickworks results in detrimental effects to the heritage values. | HIGH | Restrict access to sensitive heritage features through landscape and building design. Undertake regular maintenance work. Include heritage listed places in a heritage interpretation strategy to educate the public on their values and actions for their protection.

There are two places listed on the ACT Heritage Register present within the Project Area:

- **Yarralumla Brickworks:** Comprising the elements assessed as being of exceptional and moderate significance, within Block 1, Section 102, Yarralumla. The Yarralumla Brickworks is of significant historical value as the first industrial manufacturing facility within the ACT and for its role in providing the base materials used in the construction of many of the early buildings in Canberra. Heritage features generally include remaining built elements such as the kilns and chimney stacks, office, and crusher houses; the on-site quarry and associated geological features; and, the remains of the brickworks workers’ accommodation village (ACT Heritage Council, 2001).

- **Yarralumla Brickworks Railway Remnants:** Covers part of Block 7, Section 102, Yarralumla, extending south from the Yarralumla Brickworks. This listing consists of the remnants of the original earthen railway embankment, cutting, and terraces (ACT Heritage Council, 2013).

The Yarralumla Brickworks (also known as the Canberra Brickworks) is also listed under two non-statutory lists by the Australian Institute of Architects and the National Trust of Australia (ACT) (GML, 2017).

Particular care has been taken in the consultation process and subsequent design process of the Project to make the most of the heritage and geological features identified in the Project Area (see **Figure 2.5**). A Conservation Management Plan prepared by Lovell Chen (2010) for the Project Area has been endorsed by the ACT Heritage Council; and is currently being updated by GML (2017). The recommendations regarding the ongoing management and significance of the individual heritage values have been considered and incorporated into the designs for the Project. The Project will see the majority of the ‘core’ and ‘supporting’ heritage elements and the essential industrial characteristics of the Yarralumla Brickworks retained, conserved, and sensitively re-used.

Given the heritage value of the Project Area, especially to local Yarralumla residents, significant community consultation has occurred as part of the planning and design phases of the Project and will continue to occur in accordance with the Community Engagement Plan (Elton, 2017). In particular, this has included the establishment of a community panel, made up of numerous community and resident’s groups, which acts as an advisory body for the Project (Land Development Agency, n.d).

#### 2.7.2.1 Historic Archaeological Assessment

The 2010 Conservation Management Plan (Lovell Chen, 2010) recommended that an Archaeological Assessment be undertaken to identify areas of historical archaeological sensitivity, consider the likely nature and significance of the sub-surface remains, and provide guidance on the management of any identified archaeological remains (Lovell Chen, 2016). An Archaeological Assessment was undertaken by Lovell Chen (2016); and concluded that archaeological remnants are likely to survive at the site. These
archaeological remnants ranged in archaeological potential from low to high, and were associated with the following elements of the Canberra Brickworks:

- kiln and dormitories
- cottage, stables, coal store
- railway remnants
- railway siding extension
- flues/subsurface workings
- married quarters and Brickworks Hostel
- single men’s quarters
- rubble heap/refuse dump.

The Archaeological Assessment concluded that the artefacts are unlikely to be of sufficient significance to warrant retention in-situ or to preclude development of the Project Area; however, they have the potential to enhance the understanding of the history of the Project Area if kept on display as part of the Project (Lovell Chen, 2016).

**Impacts and Mitigation/Management Measures**

In recognition of the heritage values of the Canberra Brickworks and former quarry the Project would see the majority of ‘core’ and ‘supporting’ individual heritage elements and the essential industrial characteristics of the Canberra Brickworks heritage site retained, conserved, and sensitively re-used. The Brickyard Heritage Precinct would be re-purposed to allow for retail and commercial spaces including an artisanal food, drink and produce hub; specialist arts and crafts retail with studios; bike mechanic; interpretive features; and auxiliary facilities for residents, such as a gymnasium, swimming pool, and gardens.

The former quarry area will be used as urban parkland that will be sensitive to the geological heritage values of the quarry while allowing a recreational space that is linked to existing and proposed walking and cycle paths.

Heritage consultants will be engaged throughout the life of the Project to assess and guide the maintenance and interpretation of the heritage values of the Canberra Brickworks. During construction a Chance Find Protocol will be incorporated into the CEMP. A Heritage Management Plan will then be prepared for the ongoing maintenance of the site once operational.

**2.7.2.2 Indigenous Heritage Values**

The Project Area is located on Ngunnawal traditional land. A Stage 1 Aboriginal Cultural Heritage Assessment (ACHA) was completed by Navin Officer (2014). The ACHA determined that there are no known Indigenous heritage sites or areas of archaeological potential within the Project Area; and that any archaeological deposits would have been disturbed as a consequence of past land use. Indigenous stakeholders (i.e. Representative Aboriginal Organisations) were consulted during the preparation of the ACHA. The ACHA was approved by the ACT Heritage Council on 11 September 2014 (Lovell Chen, 2016).

There are no statutory implications regarding cultural heritage for the Project.
2.7.3 Land on the Register of Contaminated Sites

Table 2.5 Summary of Preliminary Risk Assessment relevant to Contaminated Land

<table>
<thead>
<tr>
<th>Phase of development</th>
<th>Activity</th>
<th>Effects</th>
<th>Risk Rating</th>
<th>Mitigation / Management measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>General Construction Activities</td>
<td>Discovery of previously unidentified contaminated soil during construction results in delays to program implementation or increased costs due to remediation.</td>
<td>HIGH</td>
<td>Undertake remediation of identified contaminated sites prior to general construction commencing. Develop and implement an Unexpected Finds Protocol for all earthworks and construction activities on site, including training personnel in Unexpected Finds procedure.</td>
</tr>
</tbody>
</table>

The Canberra Brickworks (Blocks 1, 7 and 20) is registered as a contaminated site under the Environment Protection Act 1997. A number of investigations have been completed to provide site contamination data on the legacy of the former land uses, including the former quarry operation and demolished workers accommodation.

Studies have been completed on site since 2006 with most recent being:

- Phase 1 preliminary geotechnical (SMEC 2013) and environmental site investigation (SMEC 2014)
- Phase 2 detailed environmental and geotechnical site investigations (SMEC 2016a)
- groundwater investigations (SMEC 2016b)
- Geosyntec (2016) independent review of the Phase 2 assessment.

Phase 1 investigations identified 30 areas of environmental concern (AECs) within the Project Area (SMEC, 2014). The site ecological and health risks associated with the brickworks, quarry and former workers accommodation areas were considered moderate to low (SMEC 2014).

Phase 2 investigations (SMEC 2016a) of the Project Area identified:

- widespread use of fill material (predominantly bricks with concrete, ash, reworked material and trace amounts of metal pipe) to a thickness of 0.1 to 3.3 metres over the operational portion of the former brickworks and former quarry pit
- chemicals of potential concern were low or below detection limits with the exception of some heavy metals, particularly lead, exceedances of health and/or environmental investigation levels at some locations
- concentration of airborne asbestos was below detection limits (0.01 fibres/ml) in all samples
- non-friable asbestos fragments were identified at two locations.

The southern portion of the site was concluded to be suitable for proposed low and medium density housing however further investigation was recommended for the remainder of the site, particularly the 10 AECs (see Figure 2.6) and the pit area.
The groundwater assessment (SMEC 2016b) identified benzene and metals present in the groundwater. The presence of metals (cadmium, copper, nickel and zinc) was to be either a reflection of underlying geology or presence of contaminated material.

Geosyntec’s independent review of the Phase 2 report concluded that the results of investigation to date have only identified a small number of discrete contamination issues, and the widespread presence of fill material does not appear to be associated with widespread chemical or asbestos impact (excluding the asbestos dump area). Uncertainties remain at the site, and unexpected contamination issues may still exist despite a reasonable level of judgemental and systematic investigation, particularly given the inherent variability of fill material (Geosyntec 2016). As recommended by Geosyntec, the design has filed an environmental management plan (EMP) with an unexpected finds protocol.

In addition to the asbestos containing material (ACM) identified in the AEC, Robson Environmental (2015) identified an asbestos dump (1,260 square metres in area) to the west of the Canberra Brickworks in Block 1, which encroaches on the adjoining Block 20, Section 102 and possibly Block 1, Section 102 (see Figure 2.6). Asbestos was identified in mixed-waste that includes soil, brick, tile, metal, glass, wood, ash and slag to a depth of 0.5 metres below ground level in the upper layer of fill (Robson 2015). It is proposed that asbestos impacted material will be managed by onsite encapsulation in a cell designed to contain the impacted soil with at least one metre of clean soil placed over the soil.

Chemical contaminants that may leach into the environment may be destroyed onsite through bioremediation. Doma have engaged ARCADIS Australia Pacific to prepare a remedial action plan. The results of the existing and further investigations will be summarised in the EIS.

It is proposed that remediation works will be undertaken for the site and will be assessed under a separate development application.
3.0 Conservation Values

The following section provides a description of the conservation values of the Project Area. Consideration has been given to the ‘Preparation of an Application for Scoping and Preparation of an ESO Guideline’ (ACTPLA, n. d.); however, given the nature of the Project Area and its heritage significance, this section does not focus only on natural but heritage conservation values also.

The Yarralumla Brickworks is of historical value as the first industrial manufacturing facility within the ACT and one of only three remaining pieces of industrial heritage (the other two being the Kingston Power House and the Cotter Pumping Station). As the Project Area has been left relatively unmanaged since the Yarralumla Brickworks ceased production in 1975, it does not demonstrate existing processes or systems of the ACT.

It is a relatively intact, representative example of large urban brickworks from the early twentieth century, where the key built features demonstrate the evolution of a range of historical industrial processes that were associated with brick and clay production (ACT Heritage Council 2001). The railway remnants also highlight the systems employed to construct the city of Canberra within a short timeframe, a relatively undeveloped area, and constraints on transport and technology (ACT Heritage Council 2013).

Given the highly disturbed nature of the Project Area it is not considered important for demonstrating existing natural processes or systems of the ACT.

3.1 Flora, Fauna, and Landscape Diversity

The Project Area was grazing land prior to its use as an urban brickworks and associated quarry and railway. It is currently surrounded by residential areas, and landscaped buffers to the Royal Canberra Golf Course, Cotter Road, Dunrossil Drive, and Dudley Street.

Umwelt (2014) identified vegetation types present within the Project Area, all of which were highly modified and dominated by exotic species. Trees throughout the area are self-seeded non-native species (predominately Pinus species) and may provide opportunistic shelter for bird species; however, they do not represent habitat for threatened bird species.

Small patches of exotic grassland near the entrance to the Canberra Brickworks are dominated by a weed of national significance: Chilean needlegrass, however are also known to support golden sun moth. Due to the highly disturbed nature of the Project Area, it does not demonstrate areas of important flora or fauna diversity.

The landscape within the Project Area has also been highly disturbed, particularly by the presence of the former quarry. While it is not a natural feature of the landscape, the former quarry and the geological features associated with it, are of heritage significance and will be conserved as part of the Project. The remainder of the landscape is not particularly diverse, nor is it considered unique within the ACT.

3.2 Uncommon, Rare, or Endangered Flora, Fauna, Communities, Natural Landscapes, or Phenomena

The use of the Project Area as brickworks, including an associated quarry and railway, has disturbed most of the natural values of the site. Umwelt (2015a) identified that all vegetation types present within the Project Area were highly modified and dominated by exotic species. No uncommon, rare or endangered flora species or ecological communities have been identified within the Project Area.
The introduced trees (predominately *Pinus* species) may provide opportunistic shelter for bird species; however, they do not represent habitat for threatened bird species (Umwelt, 2015a). Golden sun moth (EPBC Act critically endangered and NC Act endangered species) is known to occur near the entrance to the Canberra Brickworks in three small patches of exotic grassland (see Figure 2.4) dominated by Chilean needlegrass. This is a very small and highly disturbed area, which is separated from the Dudley Street population, approximately 200 metres to the south, by a relatively dense stand of introduced trees.

The historic features of the Canberra Brickworks are unique in Canberra and a rare demonstration of its industrial heritage. In particular, it is the location of the only surviving Staffordshire kiln in Australia (ACT Heritage Council, 2001), and the railway remnants are rare in their intactness (ACT Heritage Council, 2013).

The landscape is typical of geomorphology of the area, characterised by undulating rises and local relief (SMEC, 2016). This is not considered rare or uncommon within the Canberra context.

The Project Area also contains geological features, which formed as part of the Deakin volcanics. The only other features of this type are in Deakin, between the Deakin shops, sports oval and aged care centre.

### 3.3 Location Importance for Demonstrating Principal Characteristics of the Range of Landscapes, Environments, or Ecosystems Identified as Characteristic of their Class

The former quarry is considered of geological importance as containing the type locality for the ‘Yarralumla Formation’. The stratigraphic rock units that are included in the Heritage listing for the Yarralumla Brickworks constitute the reference section against which, all other outcrops within the Yarralumla Formation are compared. It is also the only fossil marine unit within south Canberra, with Site C showing fossils of graciopods, trilobites, coral, and crinoids (ACT Heritage Council 2001).

Due to the highly disturbed nature of the Project Area, it is not considered important for demonstrating principle characteristics of the range of landscapes or ecosystems identified as characteristic of their class.

### 3.4 Location Importance for Providing an Understanding of the ACT’s History

The change in land use from Indigenous cultural uses prior to European settlement, to agricultural grazing within approximately 50 years is consistent with a majority of Canberra, and the Southern Tablelands (Navin Officer, 2014). The Project Area is not considered important for providing a greater understanding of these uses due to the high level of disturbance associated with its use as an urban brickworks.

Similarly, the disturbance of the brickworks and landscape plantings has resulted in little of the natural values remaining on site. Golden sun moth remains in small patches of exotic vegetation that do not reflect the species’ original habitat. The Project Area is not considered important for providing an understanding of the ACT’s natural history.

The historic heritage elements demonstrate a key part of Canberra’s development as the Nation’s Capital. The Canberra Brickworks and the associated railway remnants demonstrate the importance of the construction sector in early Canberra, by providing the red brick synonymous with many Canberra homes and buildings of the era. The features remaining on-site also demonstrate the industrial evolution and technical diversity of the brickworks, which adapted and changed its methodologies over its lifetime (ACT Heritage Council 2001; 2013).
3.5 Decision under the EPBC Act

An EPBC Act Referral (2017/8074) was submitted to the Commonwealth DoEE for consideration. A decision was made on 19 December 2017, finding that the proposed action is a Controlled Action. The project requires assessment and approval under the EPBC Act before it can proceed.

The assessment approach has been determined to be the accredited bilateral approvals process, with the EIS forming the key assessment document for both Commonwealth and Territory approval.

This application for Scoping is for a Bilateral EIS.
4.0 Preliminary Risk Assessment

A Preliminary Risk Assessment (PRA) has been prepared and attached as Appendix 1. According to the ‘Preparation of an Application for Scoping and Preparation of an ESO’ guidelines (ACTPLA, undated) the purpose of a PRA is described as:

“Identifying possible impacts requires the consideration of all of the likely activities that will be involved in the construction, operation and decommission of the project with further consideration given to all the impacts that these activities could lead to”

Based on this, objective environmental risks during design, construction, and operation have been identified and assessed. Decommissioning was not considered relevant for the proposed development given its ongoing nature.

The key risks identified in the PRAs can be summarised as follows:

- Ensuring that individual elements of the Project are well situated and designed particularly with regard to heritage values.
- Managing risks associated with contamination.
- Designing the Project to ensure integration into the existing Yarralumla suburb such that noise, traffic and visual impacts on the community are minimised.
- Risks inherently associated with design and construction projects, including construction traffic and amenity impacts.
- Unavoidable impacts to golden sun moth.

Conversely, for consideration while developing the EIS Scoping Document, the following aspects are considered to be of low, or negligible risk:

- planning and land status
- flora and fauna (other than golden sun moth)
- aquatic flora, fauna
- water quality and hydrology
- aboriginal heritage.

Mitigation measures are discussed in detail in Appendix 1; however, the majority of impacts can be mitigated through environmental management to be implemented during construction. High level mitigation will also be realised through detailed design. Mitigation measures used specifically to manage each risk are discussed in the PRAs in Appendix 1.

For impacts that cannot be avoided or mitigated, namely those to golden sun moth, appropriate offsets would be identified through the EIS process.
It is considered that the proponent has developed a thorough understanding of the environmental, heritage, and engineering conditions and constraints of the Project Area. This is demonstrated through the extent of background studies undertaken to date and the ecologically sustainable development approach used throughout the planning process, including defining the development and conservation areas.
5.0 References


Biosis (2017) Targeted survey for the golden sun moth at the Yarralumla Brickworks (Blocks 1, 7 and 20, Section 102, Yarralumla). Unpublished letter to Doma Group, May 2017.


Robson Environmental (2015) Stage 1 Environmental Site Assessment Canberra Brickworks Remediation Project Block 1 Section 102 Yarralumla, Canberra Central ACT. For Capcorp Constructions Pty Ltd. March 2015.


### Risk Matrix and Criteria for Likelihood and Consequence

Risk matrix and criteria for Likelihood and Consequence is derived from: ACTPLA (undated)
Preparation of an application for scoping; Preparation of an application for an Environmental Significance Opinion, A guide


### Likelihood

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote (R)</td>
<td>Extremely rare or previously unknown to occur</td>
</tr>
<tr>
<td>Unlikely (U)</td>
<td>Unlikely to occur during the Project</td>
</tr>
<tr>
<td>Possible (P)</td>
<td>Possible under exceptional circumstances</td>
</tr>
<tr>
<td>Likely (L)</td>
<td>May occur during the Project or beyond the Project</td>
</tr>
<tr>
<td>Almost Certain (C)</td>
<td>Expected to occur during the Project or beyond the Project</td>
</tr>
</tbody>
</table>

### Consequence

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Insignificant (F)</th>
<th>Minor (I)</th>
<th>Moderate (D)</th>
<th>Major (J)</th>
<th>Catastrophic / Significant (S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Consequence Descriptions</td>
<td>Negligible complaints or concerns</td>
<td>Public concern limited to local complaints</td>
<td>Local public or media attention and complaints</td>
<td>Attention from media or heightened concern from community</td>
<td>Adverse national media or public attention</td>
</tr>
<tr>
<td>People largely unaffected</td>
<td>Temporary and localised effects on peoples livelihoods</td>
<td>Widespread and temporary, or, localised and permanent effects on peoples livelihoods</td>
<td>Widespread and temporary, or, localised and permanent effects on livelihood and/or displacement of people</td>
<td>Entire villages, communities or groups are displaced and livelihoods are affected</td>
<td></td>
</tr>
<tr>
<td>Environmental Consequence Descriptions</td>
<td>Impacts such as localised or short term effects on habitat, species or environmental attributes.</td>
<td>Onsite release with minor environmental impacts.</td>
<td>Onsite release and some detrimental effects.</td>
<td>Resulting in off-site release and some detrimental effects.</td>
<td>Resulting in permanent offsite detrimental effect.</td>
</tr>
<tr>
<td>Negligible environmental impacts</td>
<td>Localised, long term degradation of sensitive habitat, species or environmental attributes.</td>
<td>Localised and irreversible habitat damage or loss of habitat, species or environmental attributes.</td>
<td>Widespread and persistent changes to habitat, individual species or environmental attributes.</td>
<td>Loss of a significant portion of a valued species or loss of effective ecosystem function on a widespread scale.</td>
<td></td>
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<tr>
<td>Health /Safety Consequence Descriptions</td>
<td>No detectable change</td>
<td>Some minor detectable change</td>
<td>Change requiring basic treatment or medical attention</td>
<td>Change resulting in medical treatment and hospitalisation</td>
<td>Significant / life threatening change</td>
</tr>
<tr>
<td>No Injuries</td>
<td>First Aid treatment</td>
<td>Medical treatment, lost time injuries, plant damage</td>
<td>Extensive injuries, plant damage</td>
<td>Multiple deaths or deaths, permanent significant injury</td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>Minimal losses</td>
<td>Several thousand dollars lost revenue or remediation costs</td>
<td>Half million dollars in lost revenue or remediation costs</td>
<td>One million dollars in lost revenue or remediation costs</td>
<td>Several million dollars in lost revenue or remediation costs</td>
</tr>
</tbody>
</table>

### Likelihood

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote (R)</td>
<td>Negligible (N)</td>
</tr>
<tr>
<td>Unlikely (U)</td>
<td>Negligible (N)</td>
</tr>
<tr>
<td>Possible (P)</td>
<td>Very Low (L)</td>
</tr>
<tr>
<td>Likely (L)</td>
<td>Low (W)</td>
</tr>
<tr>
<td>Almost Certain (C)</td>
<td>Medium (M)</td>
</tr>
</tbody>
</table>

### Consequence

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Insignificant (F)</th>
<th>Minor (I)</th>
<th>Moderate (D)</th>
<th>Major (J)</th>
<th>Catastrophic / Significant (S)</th>
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<tbody>
<tr>
<td>Remote (R)</td>
<td>Negligible (N)</td>
<td>Negligible (N)</td>
<td>Very Low (L)</td>
<td>Low (W)</td>
<td>Medium (M)</td>
</tr>
<tr>
<td>Unlikely (U)</td>
<td>Negligible (N)</td>
<td>Very Low (L)</td>
<td>Low (W)</td>
<td>Medium (M)</td>
<td>High (H)</td>
</tr>
<tr>
<td>Possible (P)</td>
<td>Very Low (L)</td>
<td>Low (W)</td>
<td>Medium (M)</td>
<td>High (H)</td>
<td>Very High (V)</td>
</tr>
<tr>
<td>Likely (L)</td>
<td>Low (W)</td>
<td>Medium (M)</td>
<td>High (H)</td>
<td>Very High (V)</td>
<td>Extreme (E)</td>
</tr>
<tr>
<td>Almost Certain (C)</td>
<td>Medium (M)</td>
<td>High (H)</td>
<td>Very High (V)</td>
<td>Extreme (E)</td>
<td>Extreme (E)</td>
</tr>
</tbody>
</table>
### Developments of CBP is not consistent with actions approved in the Project, resulting in non-compliance with PD Act or EPBC Act Approval.

- Design works so that they are consistent with the PD Act and EPBC Act approval conditions for the Project.
- Seek PD Act and EPBC Act Approval for any proposed actions that are inconsistent with the Project.

### Development is not appropriately located within the approved area, resulting in environmental or social impacts beyond those assessed and approved under the PD Act and EPBC Act.

- Ensure land use is appropriate given adjacent residential areas.
- Consider surrounding land uses and existing stakeholders, including adjacent residents.
- Consider transport and pedestrian movements throughout the area to limit the impacts of increased access and usage of the CBP.
- Ensure development is consistent with the Territory Plan, National Capital Plan, and the PD Act and EPBC Act approval conditions.
- Seek PD Act and EPBC Act approval for any proposed development that is likely to have a larger impact due to its locality or land use type.

### Presence or extent of threatened species or ecological communities or other protected matters (e.g. native vegetation) is not identified prior to development design, resulting in unanticipated impacts.

- Base the impact assessment on site specific, recent environmental studies.
- Use a precautionary and risk based approach to impact assessment for the Project.

### The Project results in impacts to the heritage values of the Yarralumla Brickworks and Railway Remnants due to the recommendations of the Conservation Management Plan not being appropriately implemented during the design phase.

- Consider the Conservation Management Plan and its recommendations throughout the design phase (completed).
- Update the Conservation Management Plan based on the proposed actions of the Project (in preparation).
- Design the development to be as least intrusive to the Yarralumla Brickworks and Railway Remnants as practicable.
- If development is likely to significantly affect the heritage values of the Yarralumla Brickworks or the Railway Remnants then seek advice from the ACT Heritage Council.

### Proposed mitigation measures (e.g. Water Sensitive Urban Design (WSUD)) are not designed to adequately mitigate indirect impacts into nearby Lake Burley Griffin or urban Storm Water systems resulting in unanticipated impacts to MNES and local residences through increased water flows and decreased water quality.

- Design mitigation measures so they adhere to ecological limits (e.g. water flow rates or quality) of adjacent MNES and other environmental values.
- Undertake stormwater assessments to ensure the design of the development does not place unnecessary pressure on existing stormwater infrastructure.
- Design mitigation measures in accordance with relevant ACT, Australian, or otherwise best practice standards; and with any PD Act or EPBC Act approval conditions.

### Proposed bushfire mitigation measures (e.g. inner asset protection zones) are not adequately managed, both within the CBP and on adjacent land (e.g. Block 1, Section 127, Yarralumla ACT) over the life of the Project, increasing the bushfire hazard risk to residents.

- Apply regulated asset protection zones to the CBP and incorporate during design phase.
- Collaborate with the adjacent land users (i.e. ACT Government or the Royal Canberra Golf Course) to develop an agreement for the management of inner asset protection zones that fall outside the CBP over the life of the Project.
- Design mitigation measures in accordance with relevant ACT, Australian, or otherwise best practice standards; and with any PD Act or EPBC Act approval conditions.

### Inappropriate landscape plants are chosen, with regard to ecological and social impacts to surrounding areas.

- Ensure landscape species are suitable for urban use and are compatible with surrounding species within Yarralumla.
- Consider feedback from relevant community groups regarding the visual aspects of the design.
<table>
<thead>
<tr>
<th>Phase of Development</th>
<th>Activity</th>
<th>Effects</th>
<th>Mitigation/Management Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material selection and finishes result in additional impacts to the heritage values of the Yarralumla Brickworks as they are not consistent with the Conservation Management Plan.</td>
<td>Environmental</td>
<td>P</td>
<td>J</td>
</tr>
<tr>
<td>Material selection and finishes are not consistent with character of the area or land use zoning resulting in visual impacts.</td>
<td>Community</td>
<td>P</td>
<td>D</td>
</tr>
<tr>
<td>Delays in decision-making, land sale and design processes results in the development goals of the Project not being achieved.</td>
<td>Service Delivery</td>
<td>P</td>
<td>J</td>
</tr>
<tr>
<td>Site does not have adequate access for transport, including active transport options.</td>
<td>Service Delivery</td>
<td>U</td>
<td>J</td>
</tr>
<tr>
<td>Increased run off from impervious surfaces, such as car parks, increases flow downstream and impacts areas beyond the property boundaries.</td>
<td>Environmental</td>
<td>P</td>
<td>J</td>
</tr>
<tr>
<td>The CBP design does not match the designs for the access road being prepared by the ACT Government, resulting in the roads not aligning.</td>
<td>Service Delivery</td>
<td>U</td>
<td>J</td>
</tr>
<tr>
<td>Site Investigations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrusive site investigations (e.g. geotechnical, contamination test pitting) are undertaken prior to PD Act and EPBC Act Approval resulting in impacts to MNES prior to approval being gained, and potential non-compliance with either Act.</td>
<td>Ecological</td>
<td>P</td>
<td>D</td>
</tr>
<tr>
<td>Subsurface conditions that may impact construction activities are not identified and inappropriate design concepts developed as a result.</td>
<td>Infrastructure/Engineering</td>
<td>P</td>
<td>J</td>
</tr>
<tr>
<td>Engineering Inspections; Service Location and Siting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requirement to install new infrastructure to service development impacts existing infrastructure.</td>
<td>Infrastructure/Engineering</td>
<td>P</td>
<td>I</td>
</tr>
<tr>
<td>Consultation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorporating requirements of all stakeholders impacts design outcomes and timing.</td>
<td>Community</td>
<td>P</td>
<td>J</td>
</tr>
<tr>
<td>Increased negative media attention and political interest affects the community interest or perceptions of the development in general.</td>
<td>Service Delivery</td>
<td>P</td>
<td>J</td>
</tr>
<tr>
<td>Phase of Development</td>
<td>Activity</td>
<td>Effects</td>
<td>Without the application of mitigation or management measures</td>
</tr>
<tr>
<td>----------------------</td>
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<td>----------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Approval and delivery</td>
<td>Preparation and approval of the Development Application (DA) documents for the contamination remediation may result in delays for the entire development.</td>
<td>Service Delivery</td>
</tr>
<tr>
<td></td>
<td>Delays in approval decisions result in delayed service delivery and financial implications for the project.</td>
<td>Service Delivery</td>
<td>P D M</td>
</tr>
<tr>
<td></td>
<td>Potential environmental impacts are unacceptable and approval is not granted.</td>
<td>Various</td>
<td>U S H</td>
</tr>
<tr>
<td></td>
<td>Offsets for significant impacts</td>
<td>No appropriate offsets for golden sun moth are available within the ACT.</td>
<td>Service Delivery</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category of Risk</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Risk Rating</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mitigation/ Management Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow for the preparation and approval of the DA in the budget and timeframe.</td>
</tr>
<tr>
<td>Prepare DA with all necessary information included to allow EPSDD to make a quick decision and avoid having to resubmit application.</td>
</tr>
<tr>
<td>Liaise with ACT regulator during preparation to ensure compliance with all requirements.</td>
</tr>
<tr>
<td>Commence planning and approvals processes early.</td>
</tr>
<tr>
<td>Have realistic expectations of potential delays/length of time required for approvals.</td>
</tr>
<tr>
<td>Use the best available information to assess potential impacts of the Project.</td>
</tr>
<tr>
<td>Implement the avoid, mitigate, and offset hierarchy for reducing potential environmental impacts.</td>
</tr>
<tr>
<td>Liaise with EPSDD throughout the process to identify any potential issues early on in the design stages.</td>
</tr>
<tr>
<td>Consult with DoEE and ACT Government at early stage to determine whether biobanking is an appropriate option for offsetting, due to the deficit of local golden sun moth sites (completed).</td>
</tr>
<tr>
<td>Obtain biobanking credits for golden sun moth in local region to provide appropriate offset for golden sun moth.</td>
</tr>
</tbody>
</table>
### Vegetable and Habitat Effects

**Construction**
- **Vegetation and Habitat Clearing**
  - Clearing vegetation outside approved disturbance area due to unclear demarcation of boundaries results in non-compliance with PD Act and EPBC Act approval.
  - Vegetation clearing results in a loss of visual amenity for local residents.
  - Site Access and Management
    - Uncontrolled access by vehicles leads to damage to heritage elements or trees to be retained.
    - Increased volumes of construction traffic on local roads and construction of access road connections results in traffic disruptions.
  - General Construction Activities
    - Earthworks result in the destruction of previously unidentified Aboriginal or European cultural heritage items.
    - Construction activities result in noise and vibration impacts, reducing local amenity, potentially resulting in community complaints, and non-compliance with EP Act.
    - Construction activities result in impacts to air quality (vehicle emissions, dust, etc.), reducing local amenity, potentially resulting in community complaints and non-compliance with EP Act.
    - Construction activities change water regimes including flow rate, quality, sedimentation, and erosion; resulting in environmental impacts beyond the approved development area.

- **Sparks from construction machinery may start a fire.**

### Mitigation/Management Measures

<table>
<thead>
<tr>
<th>Category of Risk</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Risk Rating</th>
<th>Mitigation/Management Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>U</td>
<td>J</td>
<td>M</td>
<td>- Conduct pre-clearing surveys to determine clearing boundaries.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Establish no-go zones, site boundaries, and fences prior to construction commencing by implementing an industry best practice Construction Environment Management Plan (CEMP) to prevent unauthorised access into adjacent areas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Inform EPSDD and DoEE immediately if any impacts outside approved area occur.</td>
</tr>
<tr>
<td>Community</td>
<td>P</td>
<td>D</td>
<td>M</td>
<td>- Develop and implement industry best practice CEMP which includes rehabilitation/ landscaping plan.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>- Plan for early establishment of landscaping features as described in detailed designs.</td>
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<td></td>
<td>- Erect fences and other barricades around construction site such that they reduce the visual impacts of the construction phase.</td>
</tr>
<tr>
<td>Environmental</td>
<td>P</td>
<td>D</td>
<td>M</td>
<td>- Establish no-go zones, site boundaries, and fences prior to construction commencing by implementing an industry best practice CEMP to prevent unauthorised access into adjacent areas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Inform EPSDD and DoEE immediately if any impacts outside approved area occur.</td>
</tr>
<tr>
<td>Community</td>
<td>L</td>
<td>D</td>
<td>H</td>
<td>- Develop and implement industry best practice CEMP which includes a construction traffic management plan.</td>
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<td></td>
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<td></td>
<td>- Engage with YRA regarding any planned traffic disruptions.</td>
</tr>
<tr>
<td>Various</td>
<td>P</td>
<td>J</td>
<td>H</td>
<td>- Undertake remediation of identified contaminated sites prior to general construction commencing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Develop and implement an Unexpected Finds Protocol for all earthworks and construction activities on site, including training personnel in Unexpected Finds procedure.</td>
</tr>
<tr>
<td>Community</td>
<td>P</td>
<td>D</td>
<td>M</td>
<td>- Develop and implement an Unanticipated Discovery Plan during clearing and construction activities, including training personnel in Unanticipated Discovery procedures.</td>
</tr>
<tr>
<td>Environmental</td>
<td>L</td>
<td>D</td>
<td>H</td>
<td>- Develop and implement industry best practice CEMP which includes a noise and vibration management plan.</td>
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<tr>
<td></td>
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<td></td>
<td>- Identify sensitive receptors.</td>
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<td></td>
<td>- Conduct construction activities in accordance with EP Act requirements.</td>
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<td></td>
<td>- Maintain plant and equipment in accordance with manufacturers’ recommendations and best practice.</td>
</tr>
<tr>
<td>Environmental</td>
<td>L</td>
<td>D</td>
<td>H</td>
<td>- Develop and implement industry best practice CEMP which includes an air quality and dust management plan.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Identify sensitive receptors.</td>
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<tr>
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<td></td>
<td></td>
<td>- Conduct construction activities in accordance with EP Act requirements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Maintain plant and equipment in accordance with manufacturers’ recommendations and best practice.</td>
</tr>
<tr>
<td>Environmental</td>
<td>P</td>
<td>D</td>
<td>M</td>
<td>- Develop and implement industry best practice CEMP that includes and implements management plans to avoid or minimise environmental risks (e.g. sedimentation, erosion, weeds, storm water runoff, etc.).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Conduct construction activities in accordance with EP Act requirements.</td>
</tr>
<tr>
<td>Various</td>
<td>U</td>
<td>S</td>
<td>H</td>
<td>- Maintain plant and equipment in accordance with manufacturers’ recommendations and best practice.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>- Observe seasonal and daily fire hazard warnings issued by the ACT Emergency Services Agency.</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>- Implement an approved bushfire hazard management plan during construction and operation.</td>
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<tr>
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<td></td>
<td>- Keep vehicles on formed roads and paths, away from long grass where possible.</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>- Provide appropriate parking areas for personnel that are away from long grass and other ignition sources.</td>
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<td></td>
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<td></td>
<td>- Avoid unnecessary idling of vehicles.</td>
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<td></td>
<td>- Equip all vehicles on site with fire extinguishers.</td>
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<td></td>
<td>- Include fire prevention and fire control instructions in site induction.</td>
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<td></td>
<td>- Do not undertake hot works outside designated workshop areas.</td>
</tr>
<tr>
<td>Phase of Development</td>
<td>Activity</td>
<td>Effects</td>
<td>Category of Risk</td>
<td>Likelihood</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
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</tr>
</tbody>
</table>
| Construction         | Fuel or chemical spills or inappropriate material storage contaminates soil, ground water, and/or local waterways, which could result in environmental degradation and fines under EP Act | Without the application of mitigation or management measures             | Various           | P          | D           | M           | - Develop and implement industry best practice CEMP that includes a waste management plan that addresses the storage and stockpiling of raw materials, transport of materials to site, and disposal of materials.  
- Identify location of site sheds/ storage areas and construction vehicle parking in CEMP away from sensitive areas.  
- Develop a spill management protocol.                                                                                                                                 |
|                      | Spread of invasive species off-site, e.g. Chilean needlegrass            | Without the application of mitigation or management measures             | Environmental     | P          | J           | H           | - Develop and implement industry best practice CEMP that includes a weed management plan that addresses potential spreading of existing invasive species (particularly Chilean needlegrass) through construction vehicles, personnel and vegetation waste.  
- Identify areas of weed infestation for management and avoidance during and after construction.                                                                                                                                 |
|                      | Construction activities result in damage to utilities and other essential infrastructure. | Without the application of mitigation or management measures             | Service Delivery  | P          | D           | M           | - Liaise with utility and service providers to determine the location and risk of damage of services prior to construction commencing.  
- Mark and/ or map the location of utilities at risk of damage and provide to contractors prior to construction commencing.  
- Use hazard identification tools in accordance with WHS standards to identify potential risks to workers.                                                                                                                                 |
| Compliance           | Construction activities result in environmental impacts that are not reported or otherwise acted upon adequately. | Without the application of mitigation or management measures             | Various           | P          | D           | M           | - Require that contractors appoint a third party to conduct audits on environmental approvals and performance against criteria identified in the CEMP.  
- Results of audits are to be reported back to the ACT planning approval authority and other agencies as appropriate.  
- Refer to requirements of EPSDD and DoEE approval under PD Act and EPBC Act respectfully for other monitoring and reporting obligations for associated offsets.                                                                                                                                 |
|                      | CEMP, including monitoring and auditing requirements, is not implemented effectively leading to various environmental, social, and economic impacts. | Without the application of mitigation or management measures             | Various           | P          | D           | M           | - Require as a condition of consent that contractors appoint an independent third party to conduct audits on environmental approvals and performance against criteria identified in the CEMP.  
- Results of audits are to be reported back to the ACT planning approval authority and other agencies as appropriate.                                                                                                                                 |
|                      | Risk not adequately identified resulting in incomplete understanding of environmental constraints. | Without the application of mitigation or management measures             | Various           | P          | D           | M           | - Update PRA as additional information becomes available.  
- Use most up to date information to inform risk assessment.                                                                                                                                                                                                                      |
**Canberra Brickworks Precinct Preliminary Risk Assessment**

<table>
<thead>
<tr>
<th>Phase of development</th>
<th>Activity</th>
<th>Effects</th>
<th>Category of Risk</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Risk Rating</th>
<th>Mitigation / Management Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation</td>
<td>Residential and recreational use</td>
<td>Increased public access to the Canberra Brickworks results in impacts to adjacent residents, including traffic congestion, accidents and parking issues.</td>
<td>Community</td>
<td>L</td>
<td>D</td>
<td>H</td>
<td>Promote active travel options to residents to reduce the need for vehicle traffic. Ensure access points, pedestrian paths and roads are maintained and utilised properly to minimise nuisance to surrounding residents. Maintain public parking on site to reduce overflow on-street parking in neighbouring areas. Restrict access to sensitive heritage features through landscape and building design. Undertake regular maintenance work. Include heritage listed places in a heritage interpretation strategy to educate the public on their values and actions for their protection.</td>
</tr>
<tr>
<td></td>
<td>Use of the Canberra Brickworks results in detrimental effects to the heritage values.</td>
<td>Environmental</td>
<td>P</td>
<td>J</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roads and infrastructure deteriorate due to increased use requiring more frequent maintenance.</td>
<td>Financial</td>
<td>L</td>
<td>I</td>
<td>M</td>
<td></td>
<td>Include internal access roads and intersections in road maintenance and upgrade program.</td>
</tr>
<tr>
<td>Ongoing maintenance</td>
<td>Fire hazard management conducted at an inappropriate interval and intensity leading to increased risk to residents.</td>
<td>Ecological</td>
<td>P</td>
<td>D</td>
<td>M</td>
<td></td>
<td>Maintain inner asset protection zones in accordance with the ACT Strategic Bushfire Management Plan.</td>
</tr>
<tr>
<td></td>
<td>Re-establishment of weed infestation, leading to increased risk to off-site areas.</td>
<td>Environmental</td>
<td>P</td>
<td>D</td>
<td>M</td>
<td></td>
<td>Develop and implement an industry best practice OEMP, including ongoing weed management and monitoring measures</td>
</tr>
</tbody>
</table>
LEGEND

TREE QUALITY TRAINING:
- EXCEPTIONAL QUALITY RATING REGULATED TREE
- HIGH QUALITY RATING REGULATED TREE
- MEDIUM QUALITY RATING REGULATED TREE
- POOR QUALITY RATING REGULATED TREE
- EXCEPTIONAL QUALITY RATING NON-REGULATED TREE
- HIGH QUALITY RATING NON-REGULATED TREE
- MEDIUM QUALITY RATING NON-REGULATED TREE
- POOR QUALITY RATING NON-REGULATED TREE
- NOT ASSESSED
- DEAD TREE
- NO TREE AT THIS LOCATION

TREE GROUP QUALITY RATING:
- COLOUR RATINGS AS ABOVE

SCALE AS SHOWN

CANBERRA BRICKWORKS PRECINCT
ARBORCULTURAL AMENITY ASSESSMENT
Details

Drawing FilePath: G:\LDA\5. LRP A-f\Canberra Brickworks And Environs\CB+E Strategy_from 2008 To June 2015\Maps And Figures\P01192 CB Precinct Tree Assessment\DWG\P01192 CB Precinct ARBORCULTURAL Amenity Tree Assessment.dwg
Layout Name: 03 PDF Creation Date: 21/12/2015 11:26:52 AM
APPENDIX 3

Master Plan