BaT project

Chapter 12
Cultural heritage

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12. Cultural heritage

12.1 Introduction

The purpose of this chapter is to assess the potential impacts on cultural heritage values, including both Indigenous (Aboriginal) heritage and non-Indigenous (historical) heritage. It provides an overview of existing cultural heritage values within the study corridor (both tangible and intangible) and assesses the potential impacts of the Project's design, construction and operation on these values. Strategies to manage potential impacts are also recommended, where required.

This chapter addresses sections 11.21 and 11.22 of the Terms of Reference (ToR).

12.1.1 Methodology

This heritage assessment focusses on the study corridor defined in **Chapter 1 – Introduction**. However, consideration has also been given to cultural heritage places located outside of the study corridor that may also be impacted by the Project.

The methodology for this assessment was informed by the ToR, which seek to ensure that the Project is planned, designed, constructed and operated to protect cultural heritage values within the study corridor, and to enhance these values wherever possible. This assessment involved a desktop analysis of cultural heritage values.

Indigenous cultural heritage

The assessment of impacts on Indigenous cultural heritage values involved:

- review of policies, guidelines and legislation relevant to Indigenous cultural heritage within the study corridor
- review of existing registers, databases and other information relating to Indigenous cultural heritage in the study corridor, including outcomes from the cultural heritage assessment undertaken for the Cross River Rail EIS (Prangnell et al, 2010; SKM Aurecon CRR JV, 2011) and other relevant studies
- consultation and liaison with the Turrbal People as the Aboriginal Party for the study corridor
- Duty of Care assessment, including assessment of past land use, present levels of ground disturbance, and potential of harm to any Indigenous cultural heritage values
- assessment of the likely existence of previously unidentified Indigenous cultural heritage items or values, including both tangible heritage and intangible heritage such as stories, or dreaming tracks
- assessment of the potential impacts of Project activities on Indigenous cultural heritage items, places or values, including both tangible and intangible heritage values
- recommendation of measures to avoid or minimise and manage negative impacts on Indigenous cultural heritage items, places or values in liaison with the Aboriginal Party for the study corridor.

The assessment of potential impacts on Indigenous cultural heritage was undertaken in accordance with the Duty of Care Guidelines outlined in the Queensland *Aboriginal Cultural Heritage Act 2003* (ACH Act). These guidelines categorise activities on their likelihood to harm Indigenous cultural heritage, being:

- **Category 1** activities are those that involve no surface disturbance and which are generally unlikely to harm Aboriginal cultural heritage.

- **Category 2** activities include those that cause no additional surface disturbance and as such will not result in additional harm to Aboriginal cultural heritage.
- **Category 3** activities are those that occur in developed areas (such as road and rail corridors). Activities that occur in these areas are generally unlikely to harm Indigenous cultural heritage provided they do not extend beyond current levels of ground disturbance.
- **Category 4** activities are those that occur in an area that has already been subject to significant ground disturbance. In these circumstances, further activities are unlikely to harm Indigenous cultural heritage although care should be taken in case residual Indigenous cultural heritage values are impacted.
- **Category 5** activities are those that will create additional surface disturbance and therefore have a high risk of harming any extant Aboriginal cultural heritage.

Non-Indigenous heritage

The assessment of potential impacts on non-Indigenous or historical heritage was based on the broader policy setting provided by the guidelines presented in Assessing Cultural Heritage Significance: Using the Cultural Heritage Criteria (Environmental Protection Agency, 2013). This policy describes the assessment criteria for historical heritage outlined in the *Queensland Heritage Act 1992* (QH Act), and provides a framework for the identification of historical significance and a common methodology for analysing historical heritage and archaeological values.

This assessment involved:

- review of existing information on non-Indigenous heritage values in the study corridor, including the cultural heritage assessment undertaken for the Cross River Rail EIS (Prangnell et al, 2010; SKM Aurecon CRR JV, 2011)
- review of relevant Australian, Queensland and local heritage registers to identify places of known heritage significance within the study corridor, including:
    - World Heritage List
    - National Heritage List
    - Commonwealth Heritage List
    - Queensland Heritage Register (QHR)
    - Brisbane City Council Heritage Register
    - Queensland Rail Heritage Register
- assessment of potential impacts on heritage places within the study corridor from the construction and operation of the Project
- identification of measures to avoid or minimise and manage negative impacts and maximise positive impacts on heritage significance.

A number of historic shipwrecks are reported to be in the Brisbane River that are included on the Australian National Shipwreck Database. The Project would pass deep beneath the Brisbane River and would not impact on these shipwrecks. Consequently, they are not considered further in this assessment.

The potential impacts of the Project on non-Indigenous heritage were assessed in accordance with criteria developed from the policy guidelines provided by the Queensland Government (Environmental Protection Agency, 2006), International Council on Monuments and Sites (ICOMOS, 2011), and general impact assessment methods.

Non-Indigenous heritage places may be of differing levels of significance, ranging from local to international. This significance provides an indication of how sensitive the place is to potential impacts. **Table 12-1** describes the various levels of cultural heritage sensitivity.

Table 12-1 Levels of cultural heritage sensitivity

Sensitivity	Justification	Status
Very high	Exceptional, rare or outstanding place demonstrating important themes in national or international history and heritage	Fulfils criteria for local, Queensland, Australian or potentially international listing
High	Place demonstrating important themes in State history and heritage	Fulfils criteria for local and state listing
Moderate	Place demonstrating important themes in local history and heritage	Fulfils criteria for local listing and may fulfil criteria for state listing
Low	Place demonstrating minor themes in local history and heritage	May fulfil criteria for local listing and does not fulfil criteria for state listing
Negligible	Place that has no heritage significance	Does not fulfil criteria for local or State listing

The degree of impact of an activity can generally be measured by the magnitude of the change it creates. In the case of heritage places, this impact is assessed in terms of the magnitude of change to the acknowledged heritage values of a place, such as significant fabric, views and setting, or archaeological potential.

Table 12-2 outlines criteria used to determine the magnitude of potential change.

Table 12-2 Determining magnitude of change to heritage values

Magnitude	Criteria
Major	Change to all or most significant aspects of the place, such that its heritage values are substantially reduced or destroyed
Medium	Change to some significant aspects of the place, such that some of its heritage values are partially reduced
Low	Minor change to significant aspects of the place, such that some of its heritage values are slightly reduced
Negligible	Changes to insignificant aspects of the places, such that its heritage values are not reduced
No Change	No change

Potential changes may result from either direct or indirect impacts. Direct impacts are those that result from a physical connection between the development activities and the heritage place, such as the full or partial demolition of a heritage building. Indirect impacts are those that affect the heritage place via the surrounding environment, such as vibration or dust from nearby construction works causing damage to a heritage building.

The significance of the impact on a heritage place is based on the cultural heritage sensitivity of the place and the predicted magnitude of change (refer to **Table 12-3**). Where a choice of two impact significance descriptors is available, only one is chosen, allowing for professional judgement and a final determination when assessing the risk of impacts on non-Indigenous heritage.

Table 12-3 Significance of impact

Sensitivity	Magnitude of change				
	Major	Medium	Low	Negligible	No change
Very high	Very high	High/ very high	Moderate/ high	Slight	Neutral
High	High/ very high	Moderate/ high	Slight/ moderate	Slight	Neutral
Moderate	Moderate/ high	Moderate	Slight	Neutral/ slight	Neutral
Low	Slight/ moderate	Slight	Neutral/ slight	Neutral/ slight	Neutral
Negligible	Slight	Neutral/ slight	Neutral/ slight	Neutral	Neutral

Note: the shaded boxes indicate a significant effect in terms of impact assessment

12.1.2 Legislative and policy framework

The importance of cultural heritage to the community is reflected in legislation enacted at both a Queensland and Commonwealth levels to recognise, protect and conserve cultural heritage items, places and values. This section provides an overview of the legislative context under which this heritage assessment has been considered.

Burra Charter

The Burra Charter was created in 1979 by the Australian branch of the ICOMOS. It provides the benchmark for cultural heritage management in Australia and is the basis for the majority of heritage legislation and policy (Australia ICOMOS, 2013). The Burra Charter defines a place as being of cultural significance if it possesses aesthetic, historic, scientific or social value, and provides guidance on managing and conserving places in order to preserve this significance.

While the Burra Charter provides a standard framework for heritage management, it also recognises the rights of individual cultural groups, including Indigenous peoples, to identify, assess, and manage their own places of heritage significance (Articles 3-7 of the Code on the Ethics of Co-existence in Conserving Significant Places). This right underpins the Queensland ACH Act, which states that only Aboriginal people can assess Aboriginal heritage significance (s53a).

Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the key national heritage legislation. The Act is administered by the Commonwealth Department of the Environment and aims to provide protection for the environment, specifically Matters of National Environmental Significance (MNES). The EPBC Act defines 'environment' as both natural and cultural environments and includes Indigenous and non-Indigenous cultural heritage items.

The Act establishes the World Heritage List for heritage places of outstanding universal value, and also the National Heritage List, which includes natural, Indigenous and historic places that are of outstanding heritage value to the nation. National heritage places are recognised as a MNES under the Act. The Act also establishes the Commonwealth Heritage List, which includes items or places on Commonwealth lands or waters or under Australian Government control. Under the Act, any action that is likely to have a significant impact on a MNES or impact on Commonwealth land, may only progress with approval of the Commonwealth Minister administering the EPBC Act.

Potential impacts on MNES, including National Heritage Places and World Heritage properties, were considered as part of the referral for the Project under the EPBC Act. There would be no impacts to National Heritage Places or World Heritage properties. In January 2014, the delegate of the Minister determined that the Project is not a controlled action.

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* seeks to preserve and protect from injury or desecration, areas and objects in Australia and in Australian waters that are of particular significance to Aborigines in accordance with their traditions.

This legislation is only enacted when Queensland legislation proves to be inadequate in relation to the protection of Indigenous cultural heritage. In these instances an application can be made to the Minister orally or in writing to seek the protection or preservation of a particular area or object.

Queensland legislation

Aboriginal Cultural Heritage Act 2003

The Queensland ACH Act seeks to provide effective recognition, protection and conservation of Aboriginal cultural heritage. The Act defines Aboriginal cultural heritage as anything that is:

- a significant Aboriginal area in Queensland
- a significant Aboriginal object, or significant archaeological or historical evidence of Aboriginal occupation of an area of Queensland.

A significant Aboriginal area or object under the ACH Act is considered to be any area or object that is of particular significance to Aboriginal people because of Aboriginal tradition and the history, including contemporary history, of any Aboriginal party(s) for the area.

A person who carries out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage (the cultural heritage duty of care). The duty of care guidelines identify reasonable and practicable measures for managing activities in order to avoid or minimise harm to Indigenous cultural heritage. The guidelines also require a land user to make an assessment of their particular land use activity and the likelihood that it will cause harm to Aboriginal cultural heritage.

There are identified Aboriginal heritage sites in the Project area and these, as well as potential sites and other values are discussed in **section 12.2.**

Cultural heritage management plans

The ACH Act provides for the management of Aboriginal cultural heritage under Part 7 of the Act. A cultural heritage management plan (CHMP) is an agreement approved by the State between a land user and the Cultural Heritage Body(s) and/or Aboriginal Party(s) of an area. It outlines how project activities may be managed to avoid harm to Aboriginal cultural heritage, or to minimise harm where avoidance is not reasonably practicable. A formal CHMP establishes a statutory process for addressing Aboriginal cultural heritage with certainty. The CHMP process involves a statutory notification period during which the land user must notify the Cultural Heritage Body(s) and/or Aboriginal Party(s) of their intention to develop a CHMP. A CHMP would be developed for the Project prior to construction in accordance with the Act.

Queensland Heritage Act 1992

The QH Act provides the framework for assessing the significance of items and places of cultural heritage value in Queensland. The Act is administered by the Department of Environment and Heritage Protection (EHP) with advice from the Queensland Heritage Council (QHC).

The QH Act makes provision for the conservation of Queensland's cultural heritage by protecting places and areas listed on the Queensland Heritage Register. Broadly, a place is considered to be of state cultural heritage significance if:

> *its heritage values contribute to our understanding of the wider pattern and evolution of Queensland's history and heritage. This includes places that contribute significantly to our understanding of the regional pattern and development of Queensland (Environmental Protection Agency, 2013).*

Anyone wishing to develop a State Heritage Place must make a development application under the QH Act. For development by the State, a report on the development is required to be provided by the relevant department or agency to the QHC. If the QHC finds that the development would have a detrimental impact on heritage values, it may recommend that the development be approved, approved with alterations, or rejected. If the development would destroy or significantly reduce a place's heritage value, the QHC may only recommend its approval if there is no prudent or feasible alternative to the development. The relevant minister would consider the QHC advice in making the decision to proceed with the Project or not.

The QH Act also provides protection for places that have potential archaeological significance, being a place that is not a State Heritage Place, or has potential to contain an archaeological artefact that is an important source of information about Queensland's history. A person is required to notify the Chief Executive of EHP of an archaeological artefact that is an important source of information about an aspect of Queensland's history.

Historical heritage and sites in the study corridor are discussed in **section 12.2**.

Local legislation

Local heritage places are managed under Part 11 of the QH Act, local planning schemes and the *Sustainable Planning Act 2009* (SP Act). The QH Act provides a process for establishing a local heritage register and nominating places to be included on a local heritage register. As defined by the Environmental Protection Agency (2006), a place is considered to be of local (rather than State) significance if 'its heritage values do not contribute significantly to our understanding of the wider pattern and evolution of Queensland's history and heritage' (Environmental Protection Agency, 2013).

Schedule 4 of the regulations to the SP Act provide the Project with exemption from development against local government planning instruments. However, protection of local heritage values is important to the community and the have been considered in this assessment (refer to **section 12.2**).

Non-statutory registers

A number of community and government organisations also maintain non-statutory heritage lists. These do not provide any legal protection, but indicate places that may be of community importance. They include the Register of the National Estate (superseded by the National and Commonwealth Heritage Lists) and Queensland Rail Heritage Register. There are identified non-statutory heritage sites in the study corridor, and these are discussed in **section 12.2**.

12.2 Existing environment

This section describes the history and listed heritage places of the study corridor. This includes an overview of corridor wide issues and more detailed information on the history and heritage values near construction worksites at Dutton Park, Woolloongabba, George Street, Roma Street and Spring Hill.

This description of existing cultural heritage values has largely been informed by previous cultural heritage assessments undertaken in the study corridor, namely the assessment for the Cross River Rail EIS (Prangnell et al, 2010). This has been supplemented with information from the report prepared by the Turrbal Association (2014) for the Project.

12.2.1 Corridor wide considerations

Indigenous cultural heritage overview

Aboriginal Party and Cultural Heritage Body

The Aboriginal Party for the study corridor is the Turrbal People. The Cultural Heritage Body is the Turrbal Association Inc (Turrbal Association). A cultural heritage assessment report has been prepared by the Turrbal Association for the Project (Turrbal Association, 2014). Findings from the report have been incorporated into this assessment, wherever possible.

Ethnohistorical and archaeological overview

The study corridor occupies part of a wider Indigenous landscape that includes the greater Moreton Bay area and is linked to other regions through social, political and economic networks. Archaeological evidence from North Stradbroke Island suggests that Aboriginal people occupied the Moreton Bay area from at least 21,420 years Before Present (BP). Closer to the study corridor, evidence indicates settlement by at least 4,830 BP, although Aboriginal occupation of Brisbane is probably far older than this date suggests, with earlier evidence likely destroyed by the changing coastal and sub-coastal environment, coupled with rapid urban expansion (Prangnell et al, 2010).

The coastal and riverine environment of the Brisbane area provided Aboriginal people with rich food resources. As noted by early colonial observer Reverend John Gregor:

> *'Their condition is one of plenty… It is a great mistake to suppose that the Aborigines of these districts have not an abundance of food. Throughout the whole year the supply is plentiful, and two hours exertion generally secures them enough to satisfy their wants for twenty-four' (in Prangnell et al, 2010).*

Staples of the diet appear to have been fish and fern root, supplemented by shellfish, mammals, reptiles and birds, as well as various plants. Fishing was predominately a male activity, conducted with nets, weirs and spears, while women shell fished and collected and processed vegetable foods. Variability in the availability of these foods resulted in some group mobility, as Aboriginal people followed seasonal resources across the landscape. The winter dry season was spent in large, essentially sedentary settlements around water courses, while the summer wet season saw the population disperse into smaller family groups to hunt and forage over a wider area (Prangnell et al, 2010).

A large number of the everyday objects used by Aboriginal people in the Brisbane area were constituted by organic materials, such as spears and boomerangs made from wood and nets and bags from hair, tendon and fibre. Other objects were made from stone, or a combination of stone and organic materials, such as stone tomahawk blades mounted into wooden handles, or stone blades decorated with wax and possum fur.

Over 30 different stone raw material types have been documented in the Brisbane area. Some of these occur locally, such as volcanic rocks from Mt Glorious or Brookfield, while others come from further afield, such as the Glasshouse Mountains, demonstrating some of the trade networks that existed across South East Queensland (Prangnell et al, 2010).

When the first British colonists arrived in the Brisbane area in the 1820s, they found a region of well wooded ridges and low lying swamps in the country of the Turrbal people. Some of the richest areas were around present day Roma Street and Victoria Park, where water from 'Spring Hill' fed permanent water courses and swamps. These wetlands, which were likely used as large dry season camping area by the Turrbal people, also attracted the colonists with the promise of good water and timber, and they accordingly established their first settlement near present day William Street in the Central Business District (CBD) (Prangnell et al, 2010).

Despite the competition for resources, Aboriginal people and settlers occupied the space in and around Brisbane fairly peacefully. Violence did break out sporadically, generally settler attacks on Aborigines, but there does not appear to have been the intense conflicts that typify other parts of the frontier. Aboriginal people were allowed into the settlement of Brisbane during the day, but were forced to leave at nightfall, the perimeter of the town marked by the 'Boundary Roads' that still exist today.

Aboriginal people withdrew mainly to the area now known as Roma Street Parkland and Victoria Park, which remained important gathering places for local Aboriginal groups throughout the early colonial period. Colonial observers note seeing large gatherings in the Victoria Park area into the 1850s, and the presence of family camps into the 1870s. Eventually, however, displacement, violence, introduced diseases and the pressure of urban expansion took its inevitable toll on the Aboriginal population, and the remaining Aboriginal camps in the study corridor were relocated to an area near Breakfast Creek in the late 19th Century (Archaeo, 2000; Prangnell et al, 2010). Despite the effects of colonisation, many places within the study corridor, including Victoria Park, Roma Street Parkland, Brisbane CBD, City Botanic Gardens, Woolloongabba and Dutton Park remain important to the Turrbal People today (Turrbal Association, 2014).

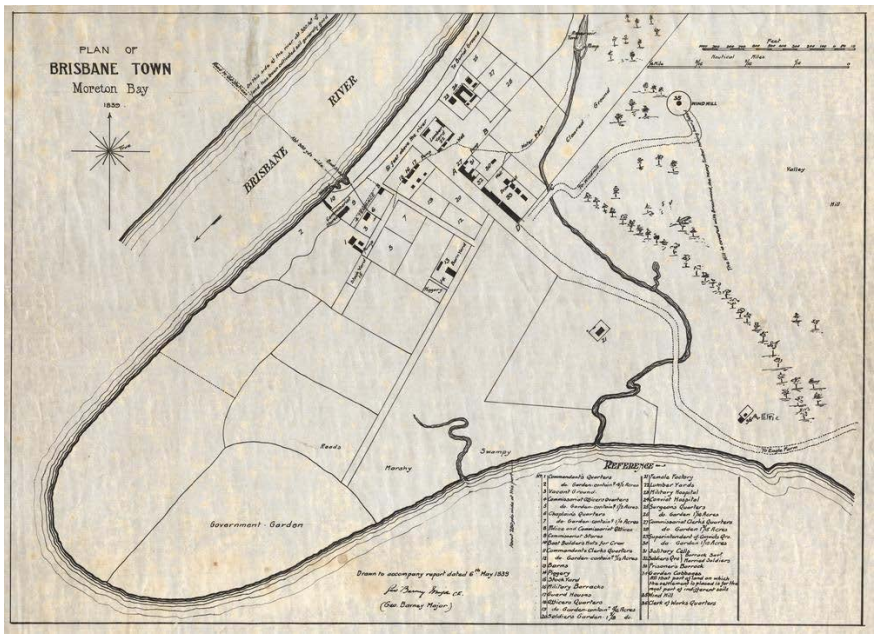
Non-Indigenous historical overview

The first colonists to enter the Brisbane area were explorer John Oxley and his party, dispatched from Sydney in 1823 to locate a site for a secondary penal establishment. Oxley travelled up the Brisbane River, identifying a spot near Breakfast Creek as a good settlement location, with a support base to be established at Redcliffe. The following year, a small party of convicts, military and civilians arrived at Redcliffe to establish the colonial outpost. Met with difficult conditions and unfriendly Aborigines, however, the settlers did not remain long in the area. Declaring Redcliffe 'unhealthy, unsatisfactory and unsafe', they subsequently moved their settlement up river, to a site near present day William Street (Prangnell et al, 2010).

The new location near William Street offered easy access to water holes (at present day Victoria Park), quarrying stone, and fertile land, but proved a difficult environment for the colonists and convicts sentenced to Moreton Bay.

Considerable hard labour was required to establish the settlement, clearing the land, establishing farms and other primary industries, and erecting buildings such as the Commissariat Store on William Street and the Tower Mill on Wickham Terrace (refer to **Figure 12-1**). These conditions, combined with an unsympathetic penal administration, saw up to 25 per cent of the convict population hospitalised each year and an average death rate of 1 in 10 (Prangnell et al, 2010).

Figure 12-1 Brisbane penal settlement c. 1839



Source: SLQ 695459

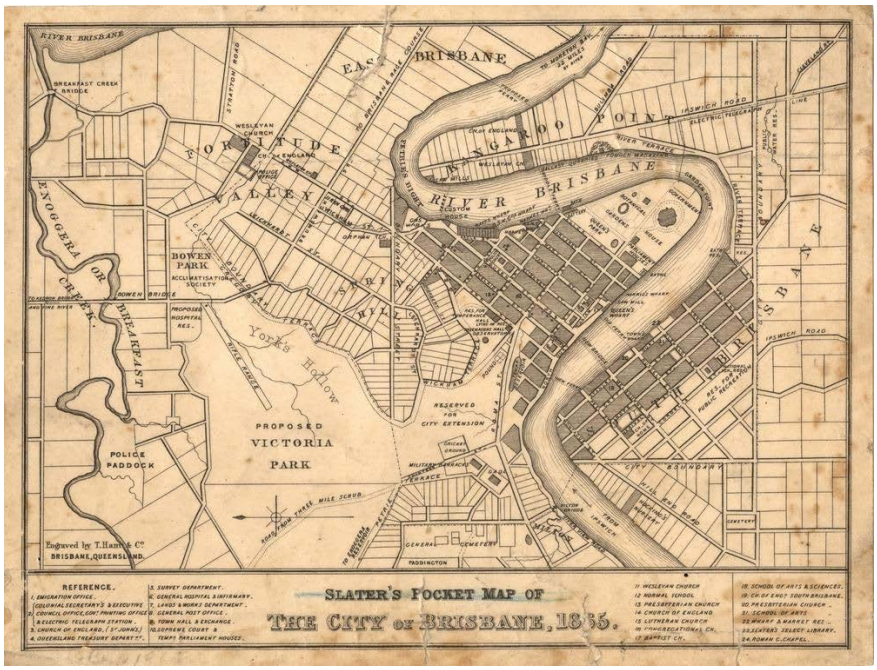
By the 1830s, the transportation system was beginning to wane, and it was thought that the penal colony at Moreton Bay would be abandoned. Instead, the region was opened for free settlement in 1839.

Brisbane was touted as the major centre of the north, and there was considerable interest when the first land sales were conducted in 1842. Land on the north side of the river was the most sought after, but there was extended debate over whether the heart of the new town should lie on the north or south side of the river. The population grew in the ensuing years and there was soon agitation for the establishment of Moreton Bay as a new colony, separate from New South Wales. This was finally attained in 1859, when the colony of Queensland was founded. The following year, work began on Government House, the official residence of the new Governor of Queensland and, in 1865, on the nearby Queensland Parliament Building (Prangnell et al, 2010). Brisbane's population continued to grow, with new suburbs established around the town centre (refer to **Figure 12-2**). Gas lighting was introduced to the town in 1865 and in the 1880s, a horse drawn tramway linked North Quay, Breakfast Creek, Teneriffe, West End and Woolloongabba via the Bulimba Ferry and the Victoria Bridge (1874).

An urban railway extended from South Brisbane to Corinda via Dutton Park in 1884 and to Cleveland in 1889. Electrical supply was progressively extended throughout the city from the early years of the 20th century. Despite these advancements, the development of urban infrastructure was patchy, with some areas lacking sewerage or paved roads into the 1960s (Centre for the Government of Queensland: Brisbane and Greater Brisbane, 2013).

By the time Queensland became a State in 1901 and Brisbane a city in 1902, almost 120,000 people lived in the greater Brisbane area. The city and its environs continued to grow in the ensuing years, despite the Great Depression and two World Wars. Brisbane underwent extensive redevelopment in the last decades of the 20th century, during which time many early buildings in the Brisbane CBD were replaced (Prangnell et al, 2010).

Figure 12-2 Brisbane in 1865



Source: SLQ 694835

Heritage places

This section identifies Indigenous and non-Indigenous heritage places in the study corridor, which are more than 50m from surface works. Places within 50m of surface works are described in **section 12.2.2**

Indigenous heritage places within the study corridor

The report prepared by the Turrbal Association notes that the Project is located within the Turrbal Riverine Network, a complex of resource sites and dreaming tracks associated with the Brisbane River. It concludes that the Project is located in areas (from Dutton Park to Victoria Park) that have *'great tangible and intangible value'*, which have the potential to be impacted by the Project (Turrbal Association, 2014). Further detail on specific Turrbal sites is provided in **section 12.2.2**.

Non-Indigenous heritage places within the study corridor

There are over 100 non-Indigenous heritage places within the study corridor. These are shown on **Figure 12-3**, **Figure 12-4** and **Figure 12-5**.

Heritage places within the study corridor have been categorised based on their proximity to the Project and their potential to be impacted by either construction or operation. They include:

- places within the study corridor, but not within 50m of either the tunnel alignment or surface works
- places within 50m of the tunnel alignment, but not within 50m of surface works
- places within 50m of surface works (refer to **section 12.2.2)**.

An indicative distance of 50m has been applied, as this is the expected maximum range of potential impacts on heritage places due to vibration or settlement from construction activities (refer to **section 12.3.2**).

LEGEND

- Existing rail station
- Existing rail line
- Watercourse
- Heritage places (DEHP)
- Heritage places (Commonwealth / BCC)
- Heritage places (BCC)
- Study corridor

Project Infrastructure

- Construction worksite
- Underground station
- Bus layover
- Dutton Park Station (upgraded)

Alignment

- Above ground
- Underground

Aerial Photo: Brisbane City Council 2012

BUS AND TRAIN PROJECT
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 12-3

Historical heritage places - south

N

0 0.25 0.5
Kilometres
1:15,000 (at A4)
Projection: GDA 1994 MGA56

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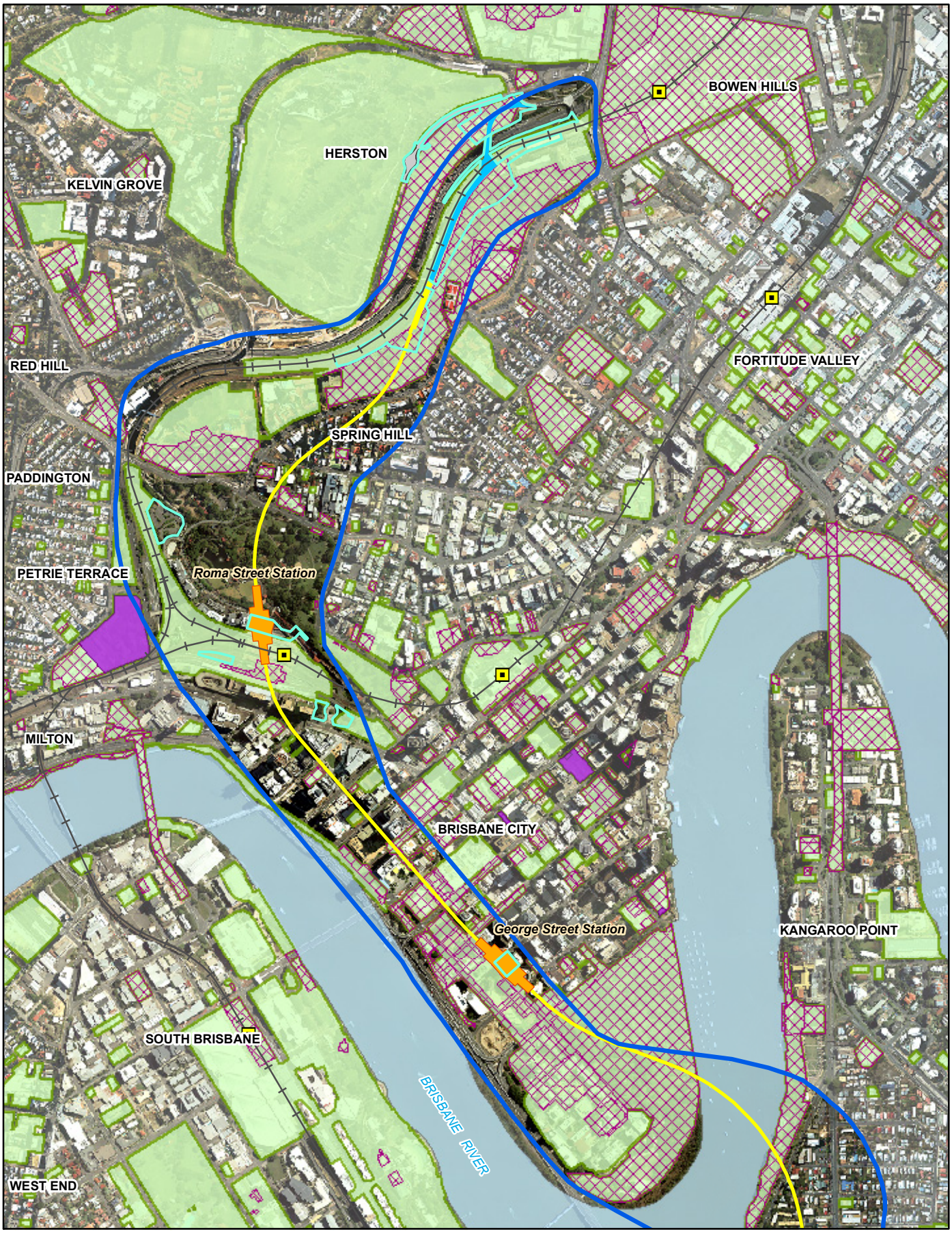

LEGEND

- Existing rail station
- Existing rail line
- Watercourse
- Heritage places (DEHP)
- Heritage places (Commonwealth / BCC)
- Heritage places (BCC)
- Study corridor

Project Infrastructure

- Construction worksite
- Underground station
- Bus layover

Alignment

- Above ground
- Underground

Aerial Photo: Brisbane City Council 2012

BUS AND TRAIN PROJECT
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 12-4

Historical heritage places - north

N

0 0.25 0.5
Kilometres
1:15,000 (at A4)
Projection: GDA 1994 MGA56

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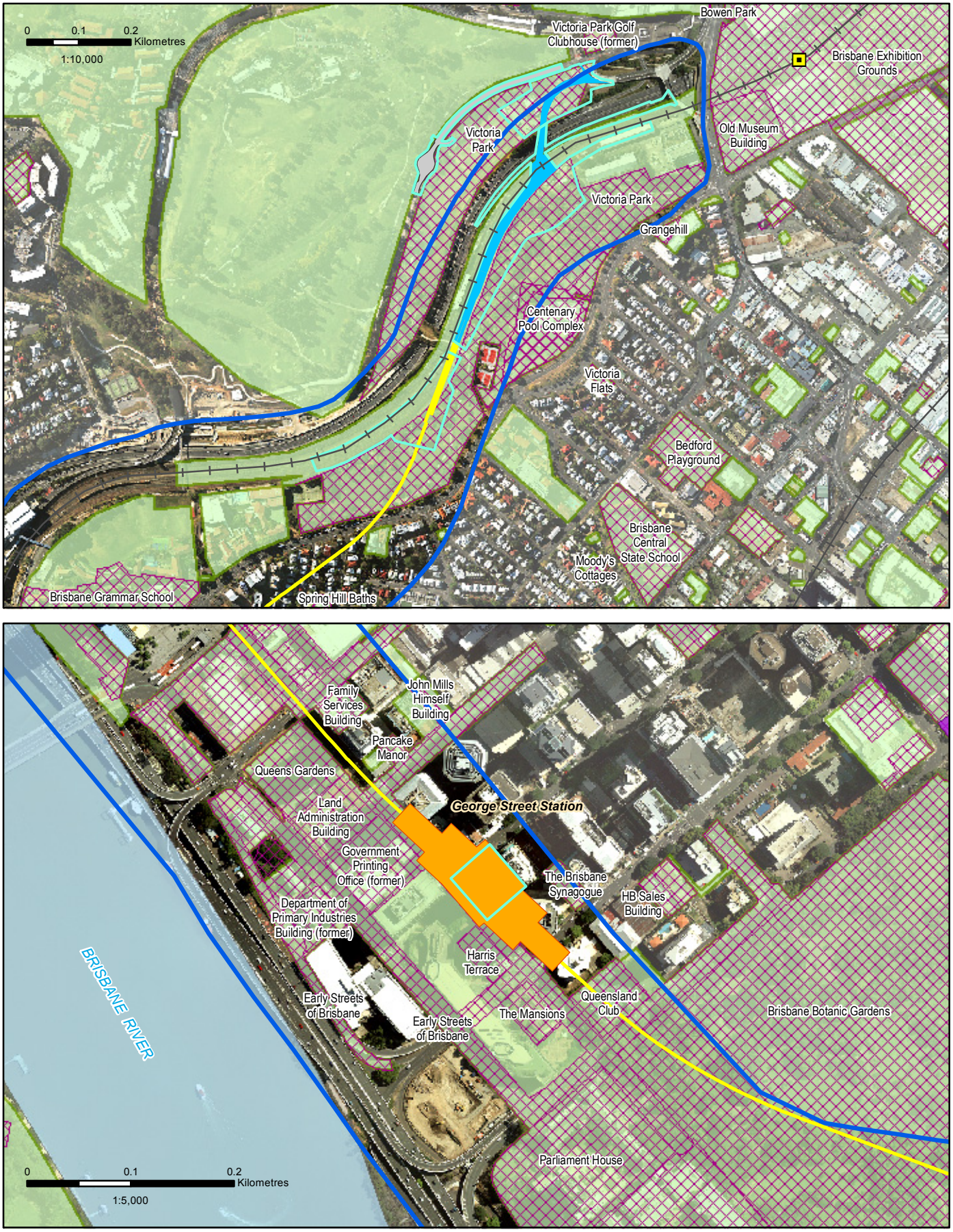

LEGEND

- Existing rail station
- Existing rail line
- Watercourse
- Heritage places (DEHP)
- Heritage places (Commonwealth / BCC)
- Heritage places (BCC)
- Study corridor

Project Infrastructure

- Construction worksite
- Underground station
- Bus layover

Alignment

- Above ground
- Underground

Aerial Photo: Brisbane City Council 2012

BUS AND TRAIN PROJECT
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 12-5

Historical heritage places
George Street Station and Northern Connection

N

Projection: GDA 1994 MGA56

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Places more than 50m from the Project

There are 48 heritage listed places within the study corridor that are situated more than 50m from either the tunnel alignment or surface works (as measured by surface distance). They include:

- one Commonwealth listed heritage place
- 22 State Heritage Places, including places jointly listed with the Register of the National Estate and on the local heritage register
- 26 places that are listed on the local heritage register only.

A full list and description of these heritage listed places is provided in **Appendix G**.

Places within 50m of the tunnel alignment

There are 48 heritage places situated within 50m of the tunnel alignment, but more than 50m from surface works (as measured by surface distance). They include 22 State Heritage Places, including places jointly listed on the Register of National Estate. These places are listed in **Table 12-4**. Further information is also provided in **Appendix G**.

Table 12-4 Heritage places within 50m of the tunnel alignment

Name	Location	Listing
R.A.O.B Lodge Hall	1 Hubert Street, Woolloongabba	BCC
Woolloongabba Post Office (former)	765 Stanley Street, Woolloongabba	QHR, BCC, RNE
BAFS Dispensary building	767-769 Stanley Street, Woolloongabba	BCC
Taceys and Co, Shop (former)	775 Stanley Street, Woolloongabba	BCC
Semi-detached residences	2/38 Mark Lane, Kangaroo Point	BCC
Residence	23 Walmsley Street, Kangaroo Point	BCC
Kangaroo Point Cliffs	Kangaroo Point	QHR, BCC
Brisbane Botanic Gardens (Queen's Park) and Walter Hill Fountain	147 Alice Street, Brisbane City	QHR, BCC, RNE
Queensland Club	19 George Street, Brisbane City	QHR, BCC, RNE
City Electric and Light (CEL) Company junction box	George Street (outside No. 19), Brisbane City	BCC
The Mansions	40 George Street, Brisbane City	QHR, BCC, RNE
City Electric and Light (CEL) Company junction box	George Street (outside No. 125), Brisbane City	BCC
Walker Building	129 George Street, Brisbane City	BCC
Sutton House	133 George Street, Brisbane City	BCC
First World War Honour Board	142 George Street, Brisbane City	QHR, BCC, RNE
Land Administration Building	142 George Street, Brisbane City	QHR, BCC, RNE
Queens Gardens – St John's Church Reserve	144 George Street, Brisbane City	QHR, BCC, RNE
St Luke's Anglican Church (former) – Pancake Manor	10 Charlotte Street, Brisbane City	QHR, BCC
Family Services Building	171 George Street, Brisbane City	QHR, BCC
Treasury Hotel	175 George Street, Brisbane City	QHR, BCC

Name	Location	Listing
Treasury Chambers and St Francis House and Symons Building	179-191 George Street, Brisbane City	QHR, BCC
Pair of Gas Lamps	George Street, Brisbane City (outside 142 William Street)	BCC
Treasury Building	21 Queen Street, Brisbane City	QHR, BCC, RNE
Westpac Bank building	33 Queen Street, Brisbane City	QHR, BCC, RNE
City Electric and Light (CEL) Company junction box	George Street (outside 33 Queen Street), Brisbane City	BCC
ANZ Bank	43 Queen Street, Brisbane City	QHR, BCC
Grosvenor Hotel	320 George Street, Brisbane City	BCC
J.P.C (Jenyns Patent Corset) Building	327 George Street, Brisbane City	BCC
BAFS building	331 and 333 George Street, Brisbane City	QHR, BCC
Grosvenor Hotel and Duncalfe and Co extension (former)	332 George Street, Brisbane City	BCC
Duncalfe and Co Building	338 George Street, Brisbane City	BCC
Turbot House	65-65A Turbot Street, Brisbane City	BCC
Brisbane Fruit & Produce Market/ Exchange (former)	71-97 Turbot Street, Brisbane City	BCC
McDonnell and East Ltd Building	414 George Street, Brisbane City	QHR, BCC
City Electric and Light (CEL) Company junction box	Tank Street (outside 414 George Street), Brisbane City	BCC
Langley's Building	440 George Street, Brisbane City	BCC
Royal Bank of Queensland (former)	458-460 George Street, Brisbane City	BCC
Transcontinental Hotel	462-468 George Street, Brisbane City	QHR, BCC
Roma Street Railway Station	Roma and Countess streets, Brisbane City	QHR, BCC
King George Chambers	154-158 Roma Street, Brisbane City	BCC
Baby Clinic (former)	51 Herschel Street, Brisbane City	BCC
Lady Bowen Hospital Complex (former)	497-535 Wickham Terrace, Spring Hill	QHR, BCC
Ellis's residences	558 Boundary Street, Spring Hill	BCC
Fell's cottage	584 Boundary Street, Spring Hill	BCC
Spring Hill Baths	14 Torrington Street, Spring Hill	QHR, BCC, RNE
Cliveden Mansions	17 Gregory Terrace, Spring Hill	QHR, BCC
Residence 'Lokarlton'	173 Gregory Terrace, Spring Hill	BCC
Residence 'Rutland Court'	183 Gregory Terrace, Spring Hill	BCC

Note: QHR refers to Queensland Heritage Register, BCC refers to Brisbane City Local Heritage Register, RNE refers to Register of National Estate, Commonwealth refers to Commonwealth Heritage List

12.2.2 Local area considerations

This section provides an overview of the history and heritage values of areas near proposed surface works. This includes a description of heritage places within 50m of these works.

Dutton Park

In the early colonial period, the area of Dutton Park, or 'Boggo' as it was initially known, was linked to the Brisbane CBD by Boggo Road (now Annerley Road), which followed a pre-existing Aboriginal pathway.

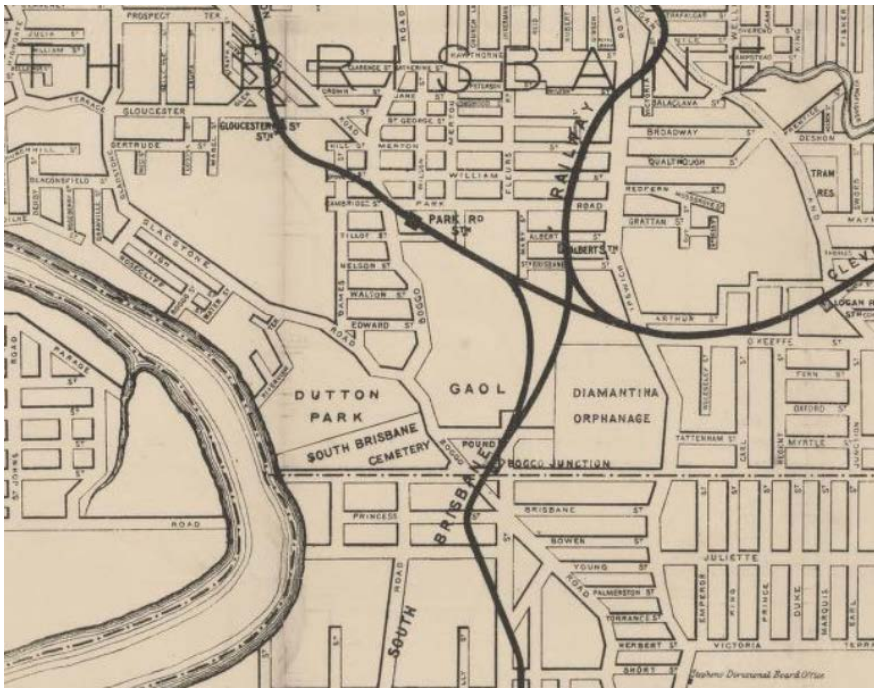
There is little archaeological or ethnohistorical evidence of Aboriginal life in the Dutton Park area, but the proximity of the river for fishing and high ridges for camping would have made it a popular resource extraction and living area (Prangnell et al, 2010). This is borne out by the presence of an artefact scatter near the present day Eleanor Schonell Bridge. The Dutton Park area has been identified by the Turrbal Association as being of cultural and spiritual importance as a ceremonial, pathway and gathering place in their riverine network (Turrbal Association, 2014).

The area was settled by colonists as a rural district in the 1840s. The first land sales took place in 1860, and in 1863 the area was surveyed as a part of the Woolloongabba Divisional Board. At that time, a large river front parcel was set aside as a recreation reserve. This was later divided into a number of separate government reserves, including gaol, asylum, pound and cemetery. In the early 1880s, a rail line and horse drawn tramway was extended to Boggo, and the suburb expanded rapidly.

Part of the government reserve became 'Dutton Park' (for which the suburb was named in 1914) comprising a public recreation and transport hub with amusement areas and an open air theatre. Government facilities were also constructed on the other reserve areas, including the State heritage listed South Brisbane Cemetery (QHR 602406), Boggo Road Prison (QHR 601033), the Diamantina Orphanage, and the Dutton Park Primary School (refer to **Figure 12-6**).

At the same time, residential areas were developed along the river front (Centre for the Government of Queensland: Dutton Park, 2013; Prangnell et al, 2010; QHR 602406), which continued to expand through the early 20th century.

Figure 12-6 Detail of c. 1880 map showing Dutton Park, including park, cemetery and gaol



Source: SLQ 694835

Heritage places

There are no registered Indigenous heritage places within the study corridor at Dutton Park, although a recorded artefact scatter is located approximately 300m west of the study corridor, near the river bank (DATSIMA LB:N49). There are also known intangible Indigenous heritage values and the potential for other remnant Indigenous heritage values associated with this area.

There are two non-Indigenous State Heritage Places within 50m of surface works at Dutton Park, being the Hefferan Park Air Raid Shelter at Annerley Road (QHR 602472) and South Brisbane Cemetery (QHR 602406). While not within the study corridor, the State heritage listed Boggo Road Gaol (QHR 601033) is also near to surface works in this area (approximately 150m) as well as haulage routes to construction worksites within Boggo Road Urban Village.

A non-statutory Queensland Rail Heritage place is also located within the area of surface works at Dutton Park, while a local character residential area is adjacent to the works.

Hefferan Park Air Raid Shelter (QHR 602472)

Following the bombing of Darwin in 1942, the Brisbane City Council undertook to build over 200 air raid shelters across the city. Several of these were designed to be reused after the war as bus, train or park shelters. One of the 'park' shelters was erected at Hefferan Park near the Dutton Park Rail Station to provide protection to local residents and commuters. This shelter still stands in the park and is one of 17 such structures in existence within the Brisbane City Council area (QHR 602472).

The QHR describes the present day Hefferan Park Air Raid Shelter as:

> *The Hefferan Park air raid shelter is a rectangular concrete structure comprising a heavy floor slab and a flat roof supported by concrete piers. It stands adjacent to a playground under the canopies of mature fig trees in the northern end of Hefferan Park, which is located at a major road intersection, and is near the Dutton Park Railway Station. The roof of the shelter is painted light green. The bottom sections of the piers are painted red, while the upper sections of the piers are painted white. The floor of the shelter is paved with red and white pavers in a diagonal pattern.*

The Hefferan Park Air Raid Shelter is historically important as a rare representation of civilian protection measures put in place by the Brisbane City Council during World War Two (WWII). It is an excellent example of the work of the City Architects Office, and in its current form as a park shelter demonstrates the flexibility and reuse options that were part of the original design. The shelter is listed as a State Heritage Place according to the criteria: historical; rarity; representativeness; creative/ technical; and special association.

South Brisbane Cemetery (QHR 602406)

The South Brisbane Cemetery was established in 1866 as one of the replacements for the main cemetery at Milton. The cemetery, which closed in 1962, contains a wide array of graves, including those of Boggo Road Gaol inmates, early Brisbane settlers, and WWII soldiers (Centre for the Government of Queensland 2013: Dutton Park; Prangnell et al, 2010; QHR 602406).

The Cemetery is important as one of the earliest cemeteries in Brisbane, providing an insight into Victorian attitudes to burials and changing burial customs through the 19th century and 20th centuries. Burials in the cemetery represent a cross-section of the local community, making the place of social and spiritual significance. The extensive mature plantings, the grave markers, monuments and other structures also have aesthetic significance.

A small area of the South Brisbane Cemetery near the intersection of Annerley Road, Cornwall Street and Noble Street is located within 50m of the railway corridor at Dutton Park. The Project would not impact on the South Brisbane Cemetery, either directly or indirectly. As such, it has not been considered further in this assessment.

Non-statutory heritage places

The Dutton Park Station platform shelter is listed on the Queensland Rail heritage register (QR 334), but has not been assessed as having local or State significance. The shelter was erected some time before 1914 and is significant as a representation of the original passenger station at Dutton Park. The structure was reported to be in poor condition in 2002, and in situ conservation works were recommended, although the potential for relocation was also noted (Buchanan Architects, 2002).

Character residential areas

A Brisbane City Council character residential area is located adjacent to the Project at Rawnsley, Dutton and Pound streets.

Woolloongabba

Meaning 'whirling waters' in the Turrbal language, Woolloongabba was an important Aboriginal living and ceremonial area at the time of contact. The swamp from which the area took its name provided a rich resource area, and the adjacent ridges were a popular camping site. A pathway passed near the swamp, linking it to Dutton Park in the south (the present day Annerley Road), and to a bora ring used for male initiations on a nearby hilltop (Prangnell et al, 2010). This bora ring was likely an important gathering place not only for the Turrbal people, but also for groups from the surrounding region who visited to participate in ceremony.

Woolloongabba has been identified by the Turrbal Association as an important resource, gathering and ceremonial place in their riverine network (Turrbal Association, 2014). Of particular importance is the bora ring or 'corroboree ground' which was in use until the early 1900s.

Early colonial settlement had little impact on the Woolloongabba area. Referred to as 'One Mile Swamp' by settlers, Woolloongabba was predominately a water reserve used to rest cattle droves from the Logan Valley. The area became more populous after the swamps were drained in the 1870s and 1880s. The discovery of numerous clay beds during the land reclamation works led to the establishment of a large scale brick making industry (refer to **Figure 12-7**), while nearby timber mills and yards supplied the South Brisbane docks.

A growing retail precinct formed along Stanley Street to meet the local community's shopping needs. In the 1890s, part of the Woolloongabba reserve was set aside for a cricket ground (the present day Gabba), police station and school. The cricket ground opened in 1896, with the police station constructed in 1913 (Centre for the Government of Queensland: Woolloongabba, 2013; Prangnell et al, 2010).

The area's population increased sharply in the 1890s with the settlement of a large community of Russian immigrants and again in the 1910s with the arrival of Russian political exiles. They founded a Russian Orthodox Cathedral was constructed in 1935 (Centre for the Government of Queensland: Woolloongabba, 2013; Prangnell et al, 2010).

Figure 12-7 Quarry site at the corner of present day Main Street and Vulture Street c. 1888

Source: SLQ 159524

Heritage places

There is one registered Indigenous cultural heritage place in the study corridor at Woolloongabba. This is an earthen arrangement (DATSIMA LB:O25) located south of Stanley Street, in the vicinity of Merton Road and the present day Holy Trinity Church. There are also known intangible Indigenous heritage values and the potential for other remnant Indigenous heritage values associated with this area.

There is one non-Indigenous State Heritage Place within 50m of surface works at Woolloongabba, being the St Nicholas Russian Orthodox Cathedral (QHR 600358). This is also situated above the tunnel alignment. The Cathedral is located at 330 Vulture Street, Kangaroo Point.

St Nicholas Russian Orthodox Cathedral (QHR 600358)

Small numbers of Russian immigrants began arriving in Brisbane in the 1880s, settling mostly in South Brisbane and Woolloongabba. By 1911, they constituted the fourth largest ethnic group in the city. The size of Brisbane's Russian émigré community grew sharply in the 1910s and 1920s, as large numbers of Russians sought to escape the turmoil surrounding the Bolshevik revolution of 1917.

The first Russian Orthodox parish, St Nicholas Russian Orthodox Church, was established to serve this community in the mid-1920s, and a small house was purchased in Woolloongabba and converted to a church. By the 1930s, this building was proving insufficient for the growing community and a new, purpose built church designed by church parishioners was completed by 1936 (refer to **Figure 12-8**).

The front fence was added in 1939 as a memorial to an immigrant family from the Roma district. In the late 1940s, St Nicholas was consecrated as a cathedral and briefly served as the seat of the Russian Orthodox Church in Australia before this was relocated to Sydney.

The QHR describes present day St Nicholas Russian Orthodox Cathedral (QHR 600358) as:

> *…In plan, the church is a simple rectangle, with a square attached tower over the front entry and an attached rectangular aisle at each long side.*

There are three symmetrically placed entry porches at the front Vulture Street facade, with roof forms and bargeboards shaped to the profile of a cupola and surmounted by ball and cross finials. A three-sided apse is centrally located at the rear.

The square tower houses a choir space directly above the main entry, and a belfry above that, accessed by a series of simple timber ladders.

Above the altar and centrally placed in the main roof is a smaller six-sided tower and cupola.

Constructed on a rendered masonry base, the building is timber framed with a roughcast rendered fibro exterior, save for the western aisle which has been built in rendered masonry subsequent to 1950. The main roof is sheeted in corrugated galvanised iron, and the cupolas and tapering roof to the square tower are made up of flat and curved pieces of galvanised sheeting…

Figure 12-8 St Nicholas Russian Orthodox Cathedral c. 1939

Source: SLQ 125727

St Nicholas Russian Orthodox Cathedral is historically significant as the first purpose built Russian Orthodox Church in Australia, and as the first Russian Orthodox Cathedral. The cathedral is a good representation of Russian religious architecture and adds to the aesthetic value of the Woolloongabba streetscape.

The cathedral is also of importance to the local Russian immigrant community and represents early cultural pluralism in Queensland. St Nicholas Russian Orthodox Cathedral is listed as a State Heritage Place according to the criteria: historical; representativeness; aesthetic; and social/ cultural or spiritual association.

George Street

There are no ethnohistorical accounts or archaeological evidence of Indigenous life in the George Street area. However, given the proximity to the river to the west and large swamps to the east (now part of the City Botanic Gardens), it is likely that this was a popular camping and resource extraction site. The Turrbal Association (2014) identifies the area as an important resource extraction, pathway and dreaming site which is part of their riverine network.

As one of the oldest streets in Brisbane, George Street has been long associated with politics and government. During the earliest days of the settlement, this area along the northern bank of the Brisbane River was home to the penal administration, including Commandants Quarters, Officer's Quarters, hospital, numerous administration buildings and the public gardens (refer to **Figure 12-9**).

Figure 12-9 Detail of 1839 map showing administration buildings around George and Queen Streets

Note: map is oriented west

Source: SLQ 695459

After the separation of Queensland from New South Wales in 1859, the eastern end of George Street was selected as the site of the Governor's Residence (Government House) and the Queensland State Parliament, overlooking the public gardens that had officially been declared a Botanic Reserve in 1855. By the mid-1880s, entrepreneurs were exploiting the need for private accommodation near the government quarter, erecting well appointed row houses along George Street, which were soon joined by a variety of establishments catering to the upper classes, including the Queensland Club.

Heritage places

There are no recorded Indigenous heritage places in the study corridor near the proposed George Street Station. However, there are known intangible Indigenous heritage values and the potential for other remnant Indigenous heritage values associated with this area.

There are three non-Indigenous State Heritage Places and one State archaeological place within 50m of the surface works at George Street.

These are:

- Harris Terrace (QHR 600121)
- Government Printing Office (QHR 600114)
- Brisbane Synagogue (QHR 600127)
- Early Streets Brisbane (QHR 700011).

As indicated in **Table 12-4** a number of State Heritage Places are also located above or near to the tunnel alignment in this area. This includes The Mansions (QHR600119), located at 40 George Street.

The Mansions (QHR600119)

The Mansions were built in 1889 as six elite masonry houses. The building was designed by architect George Henry Male Addison for three Queensland politicians – Boyd Dunlop Morehead, then Premier; William Patterson, Treasurer; and John Stevenson, member for Clermont.

Between 1896 and 1954, The Mansions were used primarily as boarding houses for professional families. Some doctors also continued to practice from The Mansions. The property was purchased by the Queensland Government for use as government offices as part of the 'George Street Plan'. Conversion to government offices included the reconfiguration of the houses, involving the removal of walls, blocking of fireplaces, installation of internal partitions and removal of some of the original details. A range of government departments occupied the Mansions until the 1970s.

The building was identified for demolition in the early 1970s, although was saved following a public campaign by the National Trust. The Mansions servants' wings and stables were demolished in 1979. The remaining part of the building was renovated in the early 1980s as part of the Government Precinct Redevelopment. Following the redevelopment, The Mansion accommodated a variety of offices, exclusive retail stores and a restaurant. The Mansions continues to be used as professional offices and restaurant (QHR600119), Harris Terrace (QHR 600121). **Figure 12-10** shows The Mansions in 2012.

Figure 12.10 The Mansions (2012)

Source: QHR600119

Harris Terrace (QHR 600121)

The concentration of government services in George Street created a need for nearby accommodation for politicians, public servants and other professionals. In 1865, entrepreneur George Harris contracted noted local architect James Cowlishaw to design a set of six 'first class' terraced houses to be constructed on the corner of George and Margaret streets. Construction of 'Harris Terrace' was completed in 1867, providing accommodation for some significant members of the colony's political and professional classes (refer to **Figure 12.11**).

Figure 12.11 Harris Terrace c. 1869

Source: SLQ 241806

Harris Terrace continued to serve largely as private accommodations until the 1940s, when the building was purchased as additional office space by the Queensland Government. The building underwent substantial renovation in the 1950s and 1960s, with the removal of servant's wings and outbuildings, the construction of a new extension, the remodelling of the interior, and the replacement of original fixtures and fittings.

In the 1970s, the Queensland Government planned an extensive renovation of the George Street area, involving the demolition of a number of original buildings and the development of low rise offices. This plan was met with vocal protests from the National Trust and the Brisbane community, and was eventually abandoned. As a compromise, the government redeveloped some of the existing buildings for office use, including Harris Terrace. During this process, Harris Terrace again underwent extensive renovations, restoring many of the building's original layout and features (QHR 600121).

The QHR describes present day Harris Terrace as:

> *Harris Terrace is a row of six, brick, two storeyed attached former houses, located on the corner of George and Margaret streets within the government precinct.*
>
> *The street facade features a double-storeyed verandah with cast iron balusters and posts. The verandah is separated into six sections reflecting the original six houses. Each section has three French doors on the first floor, and two sash windows and the front door on the ground floor.*
>
> *The parapet incorporates a central plaque with the name of the building and date of construction. The tiled gable roof features six chimneys and dormers with barrel shaped roofs and the bull nose verandah roof is corrugated iron.*
>
> *The rear elevation includes four short double-storeyed wings which form shallow courtyards. The first floor windows in the wings have round arches while the rear windows of the main building are flat arched. The roof dormers have barrel vaults and the wings are gabled.*
>
> *The interior consists of modern offices opening onto a central hallway which runs the length of the building (QHR 600121).*

Harris Terrace is historically significant as a representation of the changing face of George Street and as a rare example of a Queensland terrace house. It contributes to the aesthetic qualities of the George Street precinct, and there is a strong potential for significant archaeological deposits to be preserved under and around the building. Harris Terrace is listed as a State Heritage Place according to the criteria: historical; rarity; research; and aesthetic.

Brisbane Synagogue (QHR 600127)

The Brisbane Hebrew Congregation was founded in 1865, and used a variety of venues for services until funds could be raised for a dedicated building. The congregation sought designs for a synagogue in 1885, choosing those of Arthur Morry, an employee of the Government Architects Office. Construction of the building commenced soon after, during which a bottle containing a number of documents and artefacts was placed under the keystone as a time capsule. Work was completed the following year (refer to **Figure 12-12**) and the synagogue was consecrated in late 1886. The building remained little changed until the 1960s, when extensive renovations were carried out, including the installation of new stained glass windows memorialising family and friends lost in the holocaust (QHR 600127).

The QHR describes the present day Brisbane Synagogue as:

> *The building is constructed of stuccoed brickwork on a concrete foundation. The principal feature of the Margaret Street frontage is a doorway surmounted by a massive arch above which is a large circular tracery window of Oamaru stone. The window carries the circular motif through to the geometry of the tracery, and features leadlight panels. The front is flanked on either side by a minaret turret that becomes octagonal in its upper portion with narrow slit openings, and is topped by an octagonal cupola. The end gable above the entry has a central circular ventilator below which is a frieze also including a circular motif. The portions of the building recessed to either side of the entry also have circular tracery windows in recessed arched openings at the upper level. Below these openings on each side are a pair of Romanesque arched windows.*
>
> *The main stepped broad arch of the entry is supported on small Corinthian columns with the front section at the top of the arch inscribed with the words "THE BRISBANE SYNAGOGUE". Above this is an ornamental row of dentils, and to either side geometrical rosettes. The back wall of the building also has a large circular tracery window of Oamaru stone. The side walls have large swinging windows to provide cross ventilation.*
>
> *The building was designed to accommodate 400 people, 260 of them on the ground floor and the remainder on the upper level women's gallery which extends over the entry and down both sides. The interior is divided into a nave and side aisles by large octagonal columns with moulded caps and cement bases. Broad semi-circular arches span between the capitals. The ceiling consists of timber boarding with circular fretwork ventilators evenly spaced down the centre. The gallery is supported on small trusses and is approached by two flights of stairs, one at the front and the other at the rear. The seating on both levels is stepped and faces the centre where there is a carved timber platform. An arched recess approached by stone steps is located in the end wall. This has a circular tracery window above it, and is flanked on either side by marble plaques. Brightly coloured stained glass is situated in the circular windows on the gallery level and also the arched lower openings (QHR 600127).*

The Brisbane Synagogue is historically significant as Brisbane's first synagogue and as a representation of Jewish life in the city since the 1880s. The building contains rare examples of holocaust-memorial stained glass windows and is of great importance to Brisbane's Jewish community. The originality of the design is testament to the work of Arthur Morry, and contributes to the aesthetics of the Margaret Street streetscape. There is also some potential for archaeological remains to be preserved under its foundations. The Brisbane Synagogue is listed as a State Heritage Place according to the criteria: historical; rarity; research; representativeness; aesthetic; creative/ technical; and social/ cultural or spiritual associations.

Figure 12-12 Brisbane Synagogue c. 1906

Source: SLQ 177495

Government Printing Office (QHR 600114)

The original Government Printing Office was constructed on William Street as a two storey timber building in 1862. One of the numerous municipal buildings required by the newly established Queensland Colony, the printery office was responsible for printing Hansard as well as postage stamps, government gazettes and bank notes. The building was expanded numerous times in the 1860s, eventually boasting an underground cistern, engine room, workshop and stables. By 1872 however, it had become evident that an entirely new building would be required to meet the growing demand on the printery (QHR 600114).

A new building was accordingly designed by noted colonial architect FDG Stanley (refer to **Figure 12-13**). Built of machine-pressed brick and fitted with lifts and gas lighting, the building extended over the now demolished timber printery building, as well as the site of the Commandant's Cottage from the penal settlement. In the 1880s the printery's engine room and stables were demolished to make way for three new brick buildings to house offices and a larger engine. The building expanded again in 1910, as the offices were reoriented away from the river and towards the Brisbane CBD, complete with a new wing and façade on George Street. Numerous other changes were made over subsequent decades, with the interior renovated, and structures added to and removed from the exterior (QHR 600114).

In 1983, the government printery was removed to a new location in Woolloongabba. The building at William Street has since fulfilled a number of roles as a museum, government offices, and commercial space. During this time, more renovations have been conducted, including the demolition of a number of printery buildings to create space for the new Executive Annex and car park (QHR 600114).

Figure 12-13 Government Printing Office c. 1883

Source: SLQ 258666

The QHR describes the present day Government Printing Office as:

> *The former Government Printing Office is sited within an important precinct of substantial masonry buildings built for other government uses. It comprises two separate buildings: one facing William Street, the other facing George Street, with a paved courtyard between. The buildings have noticeably robust structural systems and open floor plans lit by many large windows. Stephens Lane (easement not road reserve) runs along the north-western side and, together with a cart lane (access route not road reserve) adjacent to the south-eastern elevation of the William Street building, provides access to the courtyard. The fronts of the buildings are more decorative than the rear and side elevations.*
>
> *The William Street building, located on the corner of William Street and Stephens Lane, is a three-storeyed building with a steeply-pitched mansard roof clad with slate on the steep portion and rib and pan galvanised steel sheets on the shallow remainder. It is L-shaped, comprising a William Street wing and a rear wing around a fenced, paved rear courtyard accessible from the courtyard. The roof has a clerestory of narrow, amber-coloured, fixed glazing at the change in pitch and lengths of cast iron ridge cresting. The building has a rusticated sandstone plinth and brick walls. The front and side walls are face brick while the rear walls are painted with areas of render where extensions have been demolished. Two brick chimneys with distinctive shaped cappings are located at the Stephens Lane end of the building…*
>
> *The George Street building is a substantial brick building of three storeys and a partial basement forming an L-shape around a rear courtyard. One wing of the building fronts George Street and the other fronts Stephens Lane and both have slightly different structural systems. The George Street wing has timber floor and roof framing supported by large timber columns with timber bolsters. The Stephens Lane wing has a concrete floor to the ground floor and timber floor and roof framing supported by cast iron columns... (QHR 600114).*

The Government Printing Office is historically significant as a colonial era civic building and for its role in the political life of Queensland. Despite extensive building works on the site, there is potential for historically significant archaeological remains to be preserved under and around the building. The building is an excellent example of a printery office and is the only building of its type to exist in Queensland. It also contributes to the aesthetic value of the George Street government precinct.

The Government Printing Office is listed as a State Heritage Place according to the criteria: historical; rarity; research; representativeness; aesthetic; and special association.

Early Streets of Brisbane (QHR 700011)

The current layout of the Brisbane CBD largely follows the street plan laid out during the 1843 survey of Brisbane which, in turn, approximates the roads that serviced the initial penal colony (refer to **Figure 12-14**).

For the most part, each successive road has been constructed over the one before it, creating a stratified series of road surfaces and surrounding infrastructure. Minor changes to road alignment and extent mean that building footings or other historical features may also be preserved beneath later road surfaces and adjacent footpaths. These features may date from the earliest period of Brisbane's colonial settlement, through significant periods of 19th and 20th Century history, and have the potential to provide new and important information about the city's past (QHR 700011).

Consequently, those roads that have the highest potential for early and intact archaeological deposits have been listed as archaeological places on the QHR. This 'Early Streets of Brisbane' heritage listing features the majority of roads and footpaths in the south-west corner of the Brisbane CBD, including George Street, which is judged to have 'exceptional' archaeological research potential in the 2013 Archaeological Plan (QHR 700011; Heritage Branch, 2013).

Archaeological potential

In addition to known heritage places, there is also potential for archaeological remains to be uncovered near to the Project at George Street and Mary Street. The Brisbane City CBD Archaeological Plan indicates that the archaeological potential of the Mary Street road and footpath is 'outstanding', while the archaeological potential for the road and footpath at George Street is 'exceptional' (Heritage Branch, 2013). Any archaeological remains uncovered in this area is protected under the QH Act, as indicated in **section 12.1.2**.

Roma Street

At the time of colonial settlement, the Roma Street area was an important Aboriginal camping and resource extraction site. The waterways and swamps in what was referred to as 'Green Hills' provided rich wildlife and year round water, and likely supported large, dry season camps. The importance of the area is further demonstrated by the reported presence of numerous burial trees along 'Wheat Creek' which flowed from Green Hills towards modern day Creek Street (Prangnell et al, 2010).

The Turrbal Association identify the Roma Street area as being of cultural and spiritual significance as a gathering and dispute resolution place, as well as a resource extraction and pathway site (Turrbal Association, 2014).

The Roma Street area remained an undeveloped open space through to the 1860s, when it was set aside for 'city extension' (SLQ 694825). One of the first and most significant developments to take place in this reserved area was the construction of the Brisbane rail terminus (now Roma Street Station) in 1875 (refer to **Figure 12-14**).

The station continued to evolve and expand over the ensuing decades, as did the streets and buildings around it. The 'Green Hills', however, largely remained public space, and now make up part of the Roma Street Parkland (Prangnell et al, 2010; QHR 601208).

Figure 12-14 Roma Street Station 1898

Source: QSA 2186

Heritage places

There are two Indigenous recorded cultural heritage places in the study corridor near Roma Street. These include a resource extraction site located in the parkland near Roma Street Station, formerly a string of waterholes and the source of Wheat Creek (DATSIMA LB:N74), and a cultural site to the west of the station in the vicinity of Petrie Barracks (DATSIMA LB:N80). There are also known intangible Indigenous heritage values and the potential for other remnant Indigenous heritage values associated with this area.

There are no non-Indigenous State Heritage Places within the surface works at Roma Street. The State heritage listed Roma Street Railway Station building and platform (QHR 601208) is located more than 100m from surface works for the station cavern, but would be within 50m of the ventilation outlet. The local heritage listing of the station currently falls within the surface works, although Brisbane City Council is intending to reduce the boundary of the local heritage listing to replicate the boundary of the State heritage listing.

Spring Hill

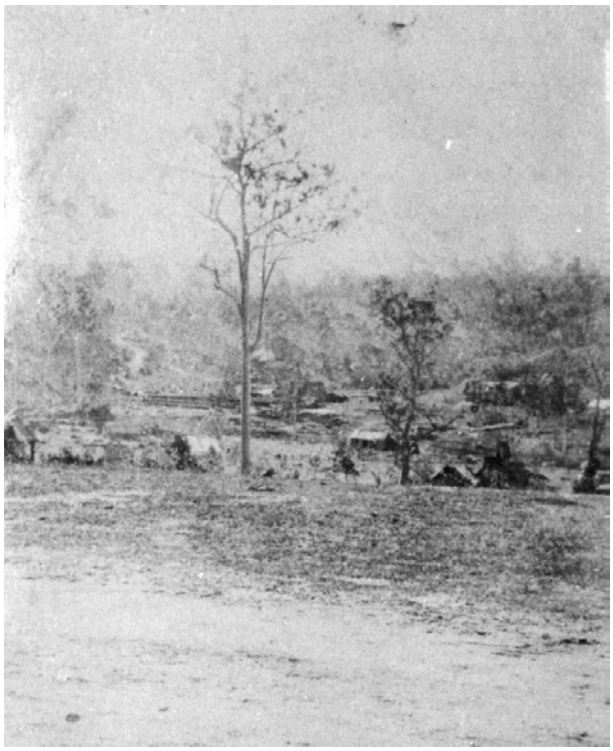
Like Green Hills at Roma Street, the waterways and swamps on the northern side of Spring Hill, in present day Victoria Park, were an important camping and resource extraction site (refer to **Figure 12-15**). Referred to as 'Barrambin' by the Turrbal people, the significance of this area increased during the early contact period as it became the prime gathering place for local Indigenous people. The Turrbal Association identifies the area as being of cultural significance as a Dreaming site and Corroboree ground, as well a resource extraction site and pathway (Turrbal Association, 2014).

At the time of colonial settlement, the Spring Hill area was densely wooded, and named for the springs that supplied the water holes in the present day Roma Street Parkland and Victoria Park. These waterholes were vital to the survival of the fledgling settlement and the area consequently remained largely undeveloped for over 30 years.

By the mid-1850s however, Spring Hill's proximity to the city made it an attractive residential area, and soon a variety of houses were being constructed. Wealthier residents took advantage of the views and breezes on the ridgelines, while the poor settled in the gullies.

A series of public buildings, including churches, schools and baths were constructed in the late 1880s and Victoria Park was proclaimed two decades later (Centre for the Government of Queensland: Spring Hill, 2013; Prangnell et al, 2010).

Figure 12-15 Barrambin (Victoria Park) c. 1864



Source: SLQ 103030

Heritage places

There is one recorded Indigenous heritage place in the study corridor around Spring Hill, being a contact site/ cultural site in Victoria Park (DATSIMA LB:N62). This is the area of York's Hollow, the semi-permanent base of the Brisbane Aborigines. A small number of Aboriginal stone artefacts were also recovered during 1999 archaeological excavations adjacent to the Project alignment (Archaeo, 2000). There are also known intangible Indigenous heritage values and the potential for other remnant Indigenous heritage values associated with this area.

There is one non-Indigenous State Heritage Place in Spring Hill, being Victoria Park (QHR 602493).

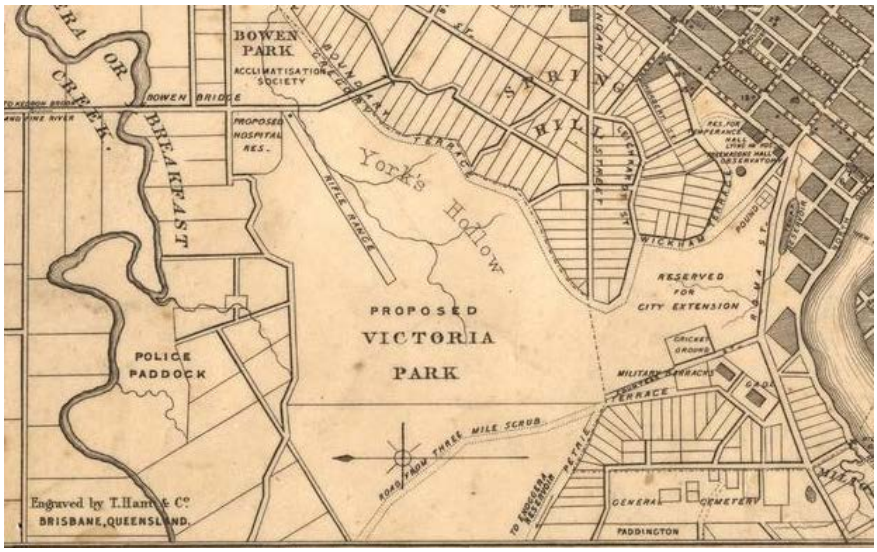
A porphyry retaining wall, dated at 1936, is also located on the north-western side of Gilchrist Avenue, Herston. The wall is not listed individually on either the QHR or local heritage register. A conservation management plan for various retaining walls and cuttings was prepared in 2002 for Brisbane City Council, which examined the potential heritage significance of Brisbane's remaining early stone retaining walls, cuttings and embankments. The management plan recognises the importance of retaining walls and cuttings in Brisbane's inner suburbs as important in demonstrating the evolution or pattern of the city or local area's history (Brisbane City Council, 2002).

Victoria Park (QHR 602493)

Prior to colonial settlement, Victoria Park was a swampy area, which offered abundant resources to Aboriginal people and was used as a living and resource extraction site (Archaeo, 2000). After colonisation, settlers used the area to source timber and water as well as clay for brick making, but the area remained an Aboriginal gathering place and the colonists named it 'York's Hollow' after the 'Duke of York', the elder of the local Turrbal people. The site grew in importance over the ensuing years as other Aboriginal groups dispossessed by the colonists used it as a camping place. Large scale gatherings and ceremonial events were held in the area into the 1850s. Eventually, the encroachment by settlers became overwhelming. In addition to its industrial purposes, the area was used as a temporary camp ground for newly arrived immigrants, and soon the vegetation had been removed and the water sullied. Some sources suggest that the remaining Aboriginal people living in York's Hollow were relocated to Breakfast Creek or Enoggera by 1860, although others suggest that small groups were continuing to use the space into the 1870s (Archaeo, 2000).

By the early 1860s, there was growing community pressure to recognise the informal York's Hollow reserve as an official public park under the auspices of the newly created Brisbane Municipal Council, although the colonial government was reluctant to cede control of this valuable section of land (Archaeo, 2000). As a compromise, York's Hollow became a recreation reserve (refer to **Figure 12-16**), offering public space for the people of Brisbane while remaining under the colonial government's purview. By the late 1860s, heavy industry had been removed from the reserve, although other developments had taken their place, including a police and military rifle range and the establishment of temporary hospital wards during the outbreak of measles, scarlet fever, and other infectious diseases.

Figure 12-16 1865 map showing Victoria Park



Source: SLQ 694825

During the late 19th century, the park underwent a number of improvements, with the establishment of gardens, pathways, and ponds (reusing the clay pits from the brick making industry). One of the main concerns was to reclaim the low lying, swampy areas, which was accomplished by the systematic dumping of municipal and domestic rubbish in pits along the creek lines. At the same time, the colonial government exercised its right over the land, excising sections for hospitals, railways and schools, resulting in the park being substantially smaller than the original reserve by the time it was finally gazetted in 1908 (Archaeo, 2000). The Exhibition Line was constructed in the late 19th century separating the northern portion of Victoria Park from the section of the park adjacent to Gregory Terrace.

Victoria Park continued to be improved through the 20th Century, with the development of the golf course and playing fields, although it was also used for a variety of other purposes, including a camp ground for unemployed men during the Great Depression, and barracks and camps for American and Australian forces during WWII. A Brisbane City Council electricity substation was also constructed on a portion of land excised at the far northern end of the park (Archaeo, 2000).

In the early 2000s, more land was excised from the park for infrastructure developments including the Inner City Bypass (ICB) and the Inner Northern Busway.

The QHR describes present-day Victoria Park (QHR 602493) as:

> *Victoria Park occupies undulating land which generally falls steeply from the ridge at Gregory Terrace down to the railway line, across the railway line, north to Gilchrist Avenue. The ridge offers expansive views across to the Old Museum [QHR 600209], RNA Showgrounds [QHR 601709] Bowen Bridge Road, Royal Brisbane Hospital, Herston Medical School [QHR 601167], Victoria Park Golf Course, Red Hill, Mt Coot-tha and across to the City and beyond.*
>
> *A pair of Brisbane Tuff entrance gate piers stand to Bowen Bridge Road. The tall stepped and tapered Brisbane Tuff piers have dressed stone bases and dado panels with quarry-faced stone corners. Decorative metal lamp holders crown the piers.*
>
> *The Park has large open grassed areas and is planted with mature figs, eucalypts, shade trees, ornamental trees, palms and planted beds. The Gundoo Memorial Grove of eucalypts stands to the south east end of the park.*
>
> *A freestanding, single-storey red face and rendered brick pavilion, former BCC Substation No. 4 stands to the corner of Gregory Terrace and Bowen Bridge Road opposite the Old Museum [QHR 600209]. The Substation addresses the corner at an angle to Bowen Bridge Road complementing that of the more prominent Old Museum to the northeast across Bowen Bridge Road.*
>
> *The Substation building is rectangular in plan with a timber-framed tiled hip roof behind a rendered brick parapet with a moulded cornice. The elevations are characterised by arch openings, accented keystones and rendered lintels. The front elevation is symmetrical about a projecting central entrance porch in which a decorative crest bearing the lettering BCC sits within an arched doorway. The front elevation end bays are capped by gable fronts to the parapet. The side elevations have parapets with a central gable front. A number of small metal plaques are embedded in the lower part of the front elevation, to the riser of the front concrete stair and to the front stone fence.*
>
> *A random course quarry-face ashlar wall of Brisbane Tuff runs to the front of the Substation from the Gregory Terrace corner and around into Bowen Bridge Road terminating in a tall capped pier. A small flight of stone stairs flanked by low piers within the wall defines an entrance from Bowen Bridge Road.*

The railway and inner-city bypass run directly through the park from the south west to the north east and divide the two sections of the park. This division is approximately 150 meters in width throughout the park.

The northern section of the park contains several sheltered barbeque and picnic areas amid large expanses of lawn and playing fields. Gilchrist Avenue has been made a cul-de-sac. A wooden and steel footbridge has been constructed over the lake from the end of Gilchrist Avenue over the lakes. The lake contains water-lilies and high grasses. At the east end of the lake is a bronze statue.

Victoria Park has provided the setting for many major events in Brisbane's history, from the industries and immigrant camps of early settlement, to the Depression era housing of the unemployed, the expansion of the city's electricity grid, and the encampment of Allied forces during WWII. The park's layout reflects the landscaping ideals of the mid-20th Century, and offers expansive views in all directions. It offers opportunities for both formal and informal recreation and, as such, is highly valued by the local Brisbane community. Victoria Park is listed as a State Heritage Place according to the criteria: historical; rarity; representativeness; aesthetic; and social/ cultural or spiritual associations.

12.3 Impact assessment and mitigation measures

This section describes the potential impacts on cultural heritage values from the design, construction and operation of the Project.

12.3.1 Indigenous cultural heritage

The study corridor is located in the heart of a broader Indigenous social, spiritual and cultural landscape. As such, Indigenous cultural heritage values within the study corridor will not only be manifested in residual physical cultural heritage items, but also through intangible cultural heritage values, which may extend beyond the boundaries of the study corridor.

Direct impacts

The Project is not expected to impact directly any recorded Indigenous cultural heritage places at Dutton Park, Woolloongabba, George Street, Roma Street or Spring Hill. However, the design and construction of the Project may impact on residual Indigenous cultural heritage items in the form of subsurface material, or intangible cultural heritage values.

The implementation of cultural heritage management measures during construction (eg cultural heritage awareness training) would assist in minimising potential impacts on residual Indigenous cultural heritage items. These measures would be outlined in the CHMP prepared for the Project. The recognition of intangible cultural heritage values through the design of Project infrastructure (eg urban design themes, landscaping works) would also assist in managing potential impacts on these values.

Further information on management measures for Indigenous cultural heritage is provided in **section 12.4.1**.

Duty of Care assessment

This section assesses the likely impact of the Project in the areas of proposed surface works, in accordance with the Duty of Care Guidelines set out in the ACH Act.

Dutton Park

Works at Dutton Park are generally proposed to occur within the existing road and railway corridors (or 'developed areas'). As such, they are classified as Category 3 activities – *unlikely to harm Aboriginal cultural heritage provided they do not extend beyond current levels of ground disturbance*.

However, potential changes to landscape, viewscape or land use may impact on intangible cultural heritage values.

Woolloongabba

Surface works at Woolloongabba would occur at the site of the former GoPrint building. As such, they can be classified as being Category 4 activities – *those that occur in an area that has already been subject to significant ground disturbance, and are unlikely to harm Aboriginal cultural heritage*. However, there is the potential for impact to intangible values, or to other remnant Indigenous heritage values. This potential is considered to be high in this area, given the nearby Indigenous cultural heritage place.

The implementation of cultural heritage management measures during construction would assist in minimising potential impacts on residual Indigenous cultural heritage items. The recognition of intangible cultural heritage values through the design of Project infrastructure would also assist in managing potential impacts on these values.

George Street

The surface works are proposed in and around George Street. The works can be classified as being Category 4 activities – *those that occur in an area that has already been subject to significant ground disturbance, and are unlikely to harm Aboriginal cultural heritage*. However, there is potential for impact to intangible values, or to other remnant Indigenous heritage values. This potential is considered to be high in this area, given that modern development has largely been placed on top of earlier infrastructure, possibly preserving pre-colonial and contact era ground surfaces beneath historical structures.

The implementation of cultural heritage management measures during construction would assist in minimising potential impacts on residual Indigenous cultural heritage items. The recognition of intangible cultural heritage values through the design of Project infrastructure would also assist in managing potential impacts on these values.

Roma Street

The surface works at Roma Street are planned for the area under an existing car park. As such, they can be classified as being Category 4 activities – *those that occur in an area that has already been subject to significant ground disturbance, and are unlikely to harm Aboriginal cultural heritage*. However, there is the potential for impact to intangible values, or to other remnant Indigenous heritage values. This potential is considered to be high in this area, given the nearby Indigenous cultural heritage places.

The implementation of cultural heritage management measures during construction would assist in minimising potential impacts on residual Indigenous cultural heritage items.

The recognition of intangible cultural heritage values through the design of Project infrastructure would also assist in managing potential impacts on these values.

Spring Hill

The surface works at Spring Hill are planned for an area within Victoria Park (previously *Barrambin*, and York's Hollow). The works can be classified as being Category 4 activities – *those that occur in an area that has already been subject to significant ground disturbance, and are unlikely to harm Aboriginal cultural heritage.* However, this area retains residual cultural heritage values due to previous Indigenous use of this area, or intangible values, which have the potential to be impacted by the Project. This potential is considered to be particularly high in this area, given that Victoria Park encompasses a registered Aboriginal cultural heritage place, and that previous archaeological excavations have recovered Aboriginal artefacts.

Concerns were also raised by the Turrbal Association about the visual impacts of surface infrastructure within the York's Hollow area. In particular, concerns related to the busway bridge across the ICB in the context of the cumulative impacts of this Project with other projects in this area on the cultural vistas associated with Barrambin. Consultation would be undertaken with the Turrbal Association during the detailed design phase to identify opportunities to reduce the visual impacts of the busway bridge in culturally appropriate ways. Further discussion on the Project's impacts on landscape character and visual amenity is provided in **Chapter 13 – Landscape and visual amenity**.

The implementation of management measures during construction, would assist in minimising potential impacts on residual Indigenous cultural heritage items. The recognition of intangible cultural heritage values through the design of Project infrastructure would also assist in managing potential impacts, including visual impacts on these values.

12.3.2 Non-Indigenous heritage

This section describes potential impacts on heritage places within the study corridor.

Places within the study corridor

There are 48 State and local heritage places that are located within the study corridor, but are beyond 50m of the proposed tunnel alignment or surface works. It is not anticipated that there would be any impacts on these places from the construction or operation of the Project, given their distance from construction activities or the tunnel alignment.

Places near the Project

There are 22 State Heritage Places and 48 local heritage listed places, including places jointly listed on the QHR, near the Project. In addition, there are a number of places located within 50m of surface works at Dutton Park, Woolloongabba, George Street, Roma Street and Victoria Park, as described in **section 12.2.2**.

Without mitigation or management, the potential impacts of the Project on these heritage places could mainly result from:

- possible settlement effects near to the tunnel alignment
- vibration from construction or operation of the Project, particularly construction of the tunnel or station caverns
- deposition of dust from construction activities, resulting in possible corrosion of fabric.

During construction, potential impacts could also result from the possible physical interaction between a built heritage item and construction equipment as well as possible disturbance or destruction of subsurface archaeological deposits.

Groundwater draw down, clearing of vegetation or disruptions to heritage setting and streetscapes from the presence of surface infrastructure, could also impact on the heritage values of some places within the study corridor.

Settlement

Potential impact on heritage places near the Project could result from possible differential settlement effects from tunnelling and excavation. Preliminary modelling undertaken for the Project predicts that absolute settlement at heritage places along the tunnel alignment would be 10mm or less, while differential settlement would be less than 1:1000. This would result in a negligible magnitude of change to these structures, and neutral or slight significance of impact.

Prior to construction, building condition surveys for heritage places likely to be affected by settlement would be required. Any damage resulting from the tunnelling and excavation would need to be repaired by a suitably qualified professional, in accordance with the requirements of the Burra Charter. With this measure in place, there are unlikely to be any overall changes to heritage places.

An overview of predicted settlement impacts on individual buildings near the Project is provided in **Table 12-5**. Further detail on issues relating to settlement is provided in **Chapter 6 – Topography and soils**.

Vibration

Vibration from construction or subsequent rail operation has the potential to cause cosmetic damage to some heritage structures, where continuous vibration levels exceed 2mm/s. Predictive modelling undertaken for the EIS however, indicates that continuous vibration levels from tunnel construction at heritage listed properties near to the tunnel alignment are predicted to be below 2mm/s and are not expected to cause damage to these properties. However, there is the potential for some marginal exceedance of the 2mm/s vibration goal due to works associated with the construction of the station shaft at George Street. Further detail on issues relating to vibration are described in **Chapter 11 – Noise and vibration**.

Hydrological changes

The tunnel sections constructed by the tunnel boring machine would be lined, which would minimise the potential for groundwater inflow and subsequent hydrological changes due to groundwater drawdown. As such, potential impacts on the heritage values of places such as the City Botanic Gardens due to groundwater draw down effects on mature vegetation, are unlikely. Further discussion about potential impacts on significant vegetation from possible groundwater drawdown are discussed in **Chapter 8 – Ecology**.

Visual impact

Surface infrastructure associated with the Project has the potential to disrupt views to and from heritage places, and to impact on their settings. This is particularly the case at George Street, Roma Street and Victoria Park, given the proximity of surface infrastructure in these locations to heritage places. Further discussion about the visual impacts on heritage buildings near the surface works is provided in the following sections (ie local area impacts). Ensuring the design of stations and associated infrastructure is sympathetic to, and recognises the heritage values in these areas, would assist in minimising potential impacts on these heritage places.

Further information on the Project's landscape character and visual impacts is also provided in **Chapter 13 – Landscape and visual amenity**.

Local area impacts

This section describes potential impacts on heritage listed places within 50m of surface works.

Dutton Park

There are not expected to be impacts on the Hefferan Park air raid shelter or the South Brisbane Cemetery from the construction or operation of the Project.

The Project would require significant upgrades to the Dutton Park Station, which may impact on the platform shelter, either through changes to the fabric or to the setting. As this place is of low cultural heritage sensitivity, the significance of the impact is anticipated to be slight. As the Dutton Park platform shelter is not a listed heritage place, there are no legal requirements relating to its protection. However, as part of Queensland Rail's heritage program, the preservation of its heritage values would be considered in the detailed design phase, and consultation between the Project and Queensland Rail would be undertaken to identify appropriate management measures.

Woolloongabba

Predicted settlement effects from construction on the State heritage listed St Nicholas Russian Orthodox Cathedral would result in a negligible magnitude of change and slight level of potential impact. The preparation of a building condition survey for the Cathedral prior to construction, as well as ongoing monitoring during construction, would assist in mitigating potential impacts on this building and ensure that any overall changes to the heritage place are unlikely. Works near the cathedral that might impact its heritage values would be referred to the Queensland Heritage Council for advice.

Surface infrastructure such as the station and ventilation outlet, are not expected to impact negatively on the heritage setting of St Nicholas Russian Orthodox Cathedral, considering the substantial redevelopment that has occurred, or is planned to occur, in the surrounding area. Ensuring that the design of surface infrastructure is sympathetic to the heritage values of the Cathedral would assist in improving the existing setting of the Cathedral. Recognising the role of Russian émigrés in the development of this part of Brisbane through the Project design, for example through interpretive signage, would also assist in enhancing the heritage values of the Cathedral.

George Street

Project works at George Street have the potential to impact on the State heritage listed Harris Terrace, Government Printing Office and Brisbane Synagogue, as well as the State archaeological place, the Early Streets of Brisbane.

Predicted impacts on Harris Terrace, the Government Printing Office and Brisbane Synagogue from construction related settlement would result in a negligible magnitude of change and slight level of impact. The preparation of a building condition survey for each of these heritage places, prior to construction works, as well as ongoing monitoring during construction would assist in managing potential impacts. Any damage resulting from the tunnelling would need to be repaired by a suitably qualified professional, in accordance with the requirements of the Burra Charter. With this measure in place, there are unlikely to be any overall changes to the places.

Predictive vibration modelling indicates a potential for a marginal exceedance of the 2mm/s vibration goal for Harris Terrace during the initial stages of the shaft construction, which may result in cosmetic damage.

A building condition survey would be prepared for Harris Terrace prior to construction, which would assist in managing potential impacts and may indicate preventive works that need to be completed before Project construction begins. The Mansions is also located near to the tunnel alignment and station cavern. Vibration from tunnel construction at The Mansions is predicted to be below the vibration goal for heritage structures. Vibration monitoring during construction would also assist in managing impacts. Further detail on vibration are described in **Chapter 11 – Noise and vibration**.

Surface infrastructure such as the station and ventilation outlet are not expected to impact negatively on the setting of the heritage places in this area, considering the substantial development that has occurred, or is planned to occur in this area. Ensuring the design of surface infrastructure is sympathetic to the heritage values of Harris Terrace, the Government Printing Office and the Brisbane Synagogue, as well as the wider George Street setting would assist in improving the heritage setting. Recognising or highlighting the heritage of this part of Brisbane's CBD through the Project design, for example through interpretive signage, would also assist in enhancing the heritage values of these places.

Sections of the State archaeological listed Early Streets of Brisbane have the potential to be impacted by excavation or temporary pavement works required for construction at George and Mary streets. As indicated in **section 12.2.2**, the area of George Street and Mary Street adjacent to surface works is also recognised as having archaeological potential (Heritage Branch, 2013). Works on the pavements or adjacent roadway involving ground disturbance have the potential to impact on any archaeological deposits in this location. Depending on the degree of disturbance and the nature and extent of any archaeological deposits, the magnitude of change may range from none (eg no disturbance to significant archaeological deposits) to major (eg significant archaeological deposits destroyed). Consequently, the significance of any potential impact could range from neutral to high/ very high.

The implementation of management measures during construction would assist in managing potential impacts of any possible archaeological deposits. This would include early 'test pitting' by a suitably qualified archaeologist prior to any ground breaking works, followed by more extensive excavations and/ or monitoring as required based on test pit results. Site management procedures would also be required in the event of any unexpected archaeological finds being discovered during construction. With appropriate management measures, the magnitude of change is likely to range from none to low, reducing the significance of Project impacts on the Early Streets of Brisbane and on areas near the George Street Station of archaeological potential neutral to slight/ moderate. Works near these State Heritage Places that might impact their heritage values would be referred to the Queensland Heritage Council for advice.

Roma Street

The State heritage listed Roma Street Station is not expected to be impacted by the Project with the implementation of the general mitigation measures outlined in **section 12.4**.

Ensuring the design of the ventilation outlet is sympathetic to the heritage values of the Roma Street Station would assist in managing potential impacts on the setting of this State Heritage Place. Development Approval (development by the State) would also be sought for any works on or near this State Heritage Place that may affect its heritage values.

Spring Hill

Construction works at Spring Hill would occur within Victoria Park, which is listed on the QHR and local heritage register. These works have the potential to impact on non-Indigenous archaeological deposits, particularly in the lower lying areas of the park. Based on the results of previous archaeological research, these deposits have the potential to be of State heritage significance (Archaeo, 2000).

Depending on the degree of disturbance and the nature and extent of archaeological deposits, the magnitude of change may range from none (eg no disturbance to significant archaeological deposits) to major (eg significant archaeological deposits destroyed). Consequently, the significance of any potential impact could range from neutral to high/ very high.

Permanent surface infrastructure would generally be located within the existing railway corridor and ICB corridor, with permanent impacts on Victoria Park generally limited to that part of the Park north of the ICB. The presence of this surface infrastructure may result in changes to significant view scapes. Construction activities would impact on an area of Victoria Park located south of the ICB. These works would require the removal of some mature trees and vegetation. This includes trees identified as part of the original Harry Oakman landscape design for the Park. Other trees within Victoria Park that are recognised on the heritage listing (eg trees within the Gundoo Memorial Grove) would not be impacted by the Project. Construction activities would not require the clearing of the mature fig trees planted prior to World War II located north of the tennis courts.

The magnitude of change resulting from these impacts is likely to range from low (eg removal of minor plantings) to medium (eg blocking of significant view scapes). Consequently, the significance of these impacts could range from slight to high. Following construction, areas of Victoria Park disturbed by construction activities would be reinstated. This would include provision of screening trees, which would assist in mitigating visual impacts of the Project infrastructure. Further discussion on the Project's impacts on landscape character and visual amenity is provided in **Chapter 13 – Landscape and visual amenity.**

The Project would not impact on the porphyry wall located at Gilchrist Avenue, Herston.

The development and implementation of a CHMP covering works within Victoria Park would assist in managing potential impacts on the heritage values of the park. Where required, this could include early test pitting by a suitably qualified archaeologist prior to any ground breaking works, controlled excavation and/ or monitoring or the implementation of work procedures for the management of any archaeological deposits discovered. With appropriate management measures, the magnitude of change is likely to range from low to medium, reducing the significance of project impacts to slight/ moderate. Works near these State Heritage Places that might impact their heritage values would be referred to the Queensland Heritage Council for advice.

Overview of impacts on individual places

Table 12-5 provides an overview of potential impacts on heritage listed places within 50m of tunnel alignment or ground works.

Table 12-5 Potential impacts on heritage listed properties

Place	Potential impact	Reference within EIS for more information
Dutton Park		
Hefferan Park air raid shelter	The Project is not expected to impact on this State Heritage Place due to its distance from proposed works.	n/a

Place	Potential impact	Reference within EIS for more information
Woolloongabba		
R.A.O.B. Lodge Hall	The tunnel is located directly beneath this local heritage place. With the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be up to 5mm, while differential settlement would be 1:1000. The significance of this impact would be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Woolloongabba Post Office (former)	The Project would be located beneath this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be up to 5mm, while differential settlement would be 1:1000. The significance of this impact is expected to be neutral/ slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
BAFS Dispensary building	This local heritage place is located at Stanley Street near to the Woolloongabba Station. Considering the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be up to 5mm, while differential settlement would be 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Taceys and Co. Shop (former)	This local heritage place is located at Stanley Street, Woolloongabba near to the tunnel alignment. Construction and operation of the Project is not expected to impact on this place.	n/a
St Nicholas Russian Orthodox Cathedral	The Project would be located beneath this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be less than 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**

Place	Potential impact	Reference within EIS for more information
Kangaroo Point		
Semi-detached residences (38 Mark Lane, Kangaroo Point)	This local heritage place is located near to the tunnel alignment. Considering the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 1mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Residence (23 Walmsley Street, Kangaroo Point)	This local heritage place is located near to the tunnel alignment. Considering the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 1mm, while differential settlement would be greater than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Kangaroo Point Cliffs	The Project would pass about 50m below the State heritage listed Kangaroo Point Cliffs. Construction and operation of the Project is not expected to impact on this place.	n/a
Brisbane CBD		
City Botanic Gardens (Queen's Park) and Walter Hill Fountain	The Project would pass beneath the State heritage listed City Botanic Gardens. Potential impacts on the heritage values of the City Botanic Gardens due to groundwater draw down effects on mature vegetation are unlikely.	Effects on vegetation are described in **Chapter 8 – Ecology** Groundwater drawdown is discussed in **Chapter 9 – Hydrology**
Queensland Club	The Project would pass beneath this State heritage listed building at the corner of George Street and Alice Street. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Vibration effects are discussed in **Chapter 11 – Noise and vibration**
City Electric and Light (CEL) Company junction boxes	A number of local heritage listed junction boxes are located along George Street, above the tunnel alignment. Considering the nature of these heritage places and the depth of the tunnel, construction and operation of the Project is not expected to impact on these places.	n/a
The Mansions	This State Heritage Place is located near to the tunnel alignment. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Vibration effects are discussed in **Chapter 11 – Noise and vibration**

Place	Potential impact	Reference within EIS for more information
Harris Terrace	The State heritage listed Harris Terrace is located adjacent to the station cavern for George Street Station. Preliminary modelling predicts absolute settlement at this place would be less than 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Predictive vibration modelling indicates a potential for cosmetic damage due to a marginal exceedance of the 2mm/s goal during the initial stages of the shaft construction. Surface infrastructure is not expected to negatively impact on the setting of the heritage places.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Government Printing Office	The State heritage listed former Government Printing Office is located next to the station cavern for George Street Station. Preliminary modelling predicts absolute settlement at this place would be less than 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Surface infrastructure is not expected to negatively impact on the setting of the heritage places.	Implications of surface disturbance and settlement are discussed in **Chapter 6 – Soils and topography**
Brisbane Synagogue	The State heritage listed Brisbane Synagogue is located in Margaret Street near to construction worksite and station cavern for George Street Station. Preliminary modelling predicts absolute settlement at this place would be less than 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration at this place from the construction of the station is predicted to be below the vibration goal for heritage structures. Surface infrastructure is not expected to negatively impact on the setting of the heritage places.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Early Streets of Brisbane	Excavation or temporary pavement works required for construction at George Street and Mary Street have potential to impact on this State Heritage Place. The significance of this impact would depend on the degree of disturbance and nature and extent of any archaeological deposits.	n/a

Place	Potential impact	Reference within EIS for more information
Walker Building	The tunnel alignment would be located beneath this local heritage place. Considering the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Sutton House	This local heritage listed place would be located adjacent to the tunnel alignment. Considering the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Land Administration Building/ First World War Honour Board	This State Heritage Place would be located near to the tunnel alignment. Preliminary modelling predicts absolute settlement at this place would be about 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
St Luke's Anglican Church (former) – Pancake Manor	This State Heritage Place would be located near to the tunnel alignment. Preliminary modelling predicts absolute settlement at this place would be up to 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Queens Gardens – St John's Church Reserve	The tunnel would be located beneath George Street adjacent to this State Heritage Place. Construction and operation of the Project is not expected to impact on this place.	n/a
Family Services Building	The tunnel would be located beneath George Street adjacent to this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Treasury Casino Hotel	The tunnel would be located beneath George Street adjacent to this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential	Settlement implications are discussed in **Chapter 6 – Soils and topography**

Place	Potential impact	Reference within EIS for more information
	settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Treasury Chambers and St Francis House and Symons Building	The tunnel would be located beneath George Street adjacent to this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Treasury Building	The tunnel would be located beneath George Street adjacent to this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Westpac Bank building	The tunnel would be located beneath George Street adjacent to this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
ANZ Bank	This State Heritage Place would be located near to the tunnel alignment. Construction and operation of the Project is not expected to impact on this place.	n/a
Grosvenor Hotel	The tunnel would be located beneath George Street adjacent to this local heritage place. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**

Place	Potential impact	Reference within EIS for more information
J.P.C. (Jenyns Patent Corset) Building	The tunnel would be located beneath George Street adjacent to this local heritage place. The depth of the tunnel at this location means that significant impacts on this place are unlikely. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
BAFS building	The tunnel would be located beneath George Street adjacent to this State Heritage Place at the corner of George Street and Turbot Street. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Grosvenor Hotel and Duncalfe and Co extension (former)	The tunnel would be located beneath George Street adjacent to this local heritage place. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Duncalfe and Co Building	The tunnel would be located beneath George Street adjacent to this local heritage place. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Turbot House	This local heritage place would be located near to the tunnel alignment. Construction and operation of the Project is not expected to impact on this place.	n/a
Brisbane Fruit and Produce Market/ Exchange (former)	This local heritage place would be located near to the tunnel alignment. Construction and operation of the Project is not expected to impact on this place.	n/a

Place	Potential impact	Reference within EIS for more information
McDonnell and East Ltd Building	The tunnel would be located beneath George Street adjacent to this State Heritage Place at the corner of George Street and Tank Street. Preliminary modelling predicts absolute settlement at this place would be about 2mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Langley's Building	The tunnel would be located beneath George Street adjacent to this local heritage place. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 3mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Royal Bank of Queensland (former)	The tunnel would be located beneath George Street adjacent to this local heritage place. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 3mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Baby Clinic (former)	The tunnel would be located beneath George Street near to this local heritage place at Herschel Street. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 3mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Transcontinental Hotel	The tunnel would be located beneath George Street adjacent to this State Heritage Place at the corner of George Street and Herschel Street. Preliminary modelling predicts absolute settlement at this place would be about 3mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**

Place	Potential impact	Reference within EIS for more information
Roma Street Railway Station	The tunnel would be located directly beneath this State Heritage Place. Preliminary modelling predicts absolute settlement at this place would be up to about 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration at this place from the construction of the driven tunnel and station cavern is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
King George Chambers	This local heritage place would be located near to the tunnel alignment. Construction and operation of the Project is not expected to impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 3mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Spring Hill		
Lady Bowen Hospital Complex (former)	This State Heritage Place would be located near to the tunnel alignment. Preliminary modelling predicts absolute settlement at this place would be about 4mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Fell's cottage	The tunnel would be located beneath this local heritage place. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be up to about 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Ellis's residences	This local heritage place would be located near to the tunnel alignment. Given the depth of the tunnel at this location, the Project is unlikely to significantly impact on this place. Preliminary modelling predicts absolute settlement at this place would be up to about 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be neutral/ slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**

Place	Potential impact	Reference within EIS for more information
Spring Hill Baths	This State Heritage Place would be located near to the tunnel alignment. Preliminary modelling predicts absolute settlement at this place would be up to about 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Cliveden Mansions	This State Heritage Place would be located near to the tunnel alignment. Preliminary modelling predicts absolute settlement at this place would be up to about 5mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Residence 'Lokarlton'	The tunnel would be located beneath this local heritage place at Gregory Terrace. Preliminary modelling predicts absolute settlement at this place would be up to about 10mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight. Vibration from tunnel construction at this place is predicted to be below the vibration goal for heritage structures.	Settlement implications are discussed in **Chapter 6 – Soils and topography** Vibration effects are discussed in **Chapter 11 – Noise and vibration**
Residence 'Rutland Court'	This local heritage place would be located near to the tunnel alignment. Construction and operation of the Project is not expected to impact on this place. Preliminary modelling predicts absolute settlement at this place would be about 10mm, while differential settlement would be less than 1:1000. The significance of this impact is expected to be slight.	Settlement implications are discussed in **Chapter 6 – Soils and topography**
Victoria Park	Construction works would occur within the State heritage listed Victoria Park. These works have the potential to impact on non-Indigenous archaeological deposits, particularly in lower-lying areas of the park. The significance of this impact would depend on the degree of disturbance and nature and extent of any archaeological deposits. Construction works would not impact on trees within the Gundoo Memorial Grove or require the removal of fig trees planted prior to World War II, located north of the tennis courts.	Effects on vegetation are further described in **Chapter 8 – Ecology** Landscape and visual impacts are discussed in **Chapter 13 – Landscape and visual amenity**

12.4 Management measures

Table 12-6 describes management measures to protect cultural heritage values during the construction and operation of the Project. As indicated in **section 12.1.2**, a CHMP would be developed for the Project prior to construction in accordance with the ACH Act, which would outline specific measures for managing impacts on Indigenous cultural heritage values.

These measures, action and controls are to be implemented through the Outline Environmental Management Plan (EMP) (refer to **Chapter 18 – Draft Outline EMP**).

Table 12-6 Indigenous and non-Indigenous heritage management measures

Impact	Project phase	Management measure
Changes to intangible Indigenous cultural heritage values	Detailed design	Recognise intangible Indigenous cultural heritage values in the design of Project infrastructure, where possible
Changes to the non-Indigenous cultural heritage setting and values of the George Street precinct	Detailed design	Recognise non-Indigenous cultural heritage values in the design of Project infrastructure, where possible
Disturbance of residual Indigenous cultural heritage items in the form of subsurface material	Construction	• Avoid heritage places and, where possible, avoid impacting on heritage values • Prepare and implement a CHMP where impacts are unavoidable, in consultation and negotiation with the Aboriginal Party for the area and in accordance with the ACH Act • Provide cultural heritage awareness training in site induction processes
Settlement and vibration effects on non-Indigenous cultural heritage buildings	Construction and operation	• Settlement implications are identified in **Chapter 6 – Soils and topography** • Vibration implications are identified in **Chapter 11 – Noise and vibration**
Deterioration of non-Indigenous cultural heritage buildings and places (ie deposition of dust resulting in possible corrosion of fabric, disturbance archaeological deposits)	Construction	Implement non-Indigenous cultural heritage management measures including: • avoid heritage places and, where possible, avoid impacting on heritage values • provide cultural heritage awareness training in employee induction processes • implement appropriate monitoring and oversight to protect heritage places and values • minimise dust levels at construction sites and during spoil haulage • where possible, no storage of construction materials on or adjacent to heritage places • construction site traffic to be routed away from heritage places wherever possible • implement appropriate traffic management around heritage places, where required

12.5 Summary

12.5.1 Indigenous heritage

The study corridor passes through a number of areas of great significance to Aboriginal people and incorporates a number of important Aboriginal living, resource extraction and ceremonial sites. These are represented by four recorded heritage places within the study corridor, including:

- an Earthen Arrangement at Woolloongabba
- a Cultural Site and a Resource Area at Roma Street
- a Contact Site and Cultural Site at Spring Hill.

The Turrbal Association note the study corridor contains both tangible and intangible Indigenous cultural heritage values through a system of dreaming tracks that incorporate a number of culturally significant places.

The Project has the potential to impact on Indigenous cultural heritage values at Dutton Park, Woolloongabba, George Street, Roma Street and Victoria Park. However, given the level of disturbance and the nature of the works at Dutton Park (Category 3), it is less likely that Indigenous cultural heritage values would be impacted at this location. Aboriginal cultural heritage would be managed through a CHMP negotiated with the Aboriginal Party(s) and Cultural Heritage Body(s) prior to construction.

12.5.2 Non-Indigenous heritage

In relation to non-Indigenous heritage, the study corridor extends across some of the oldest and most historically significant parts of Brisbane, including the initial penal settlement site in what is now the Brisbane CBD and early resource extraction sites in present day Roma Street, Woolloongabba and Victoria Park. This history is represented by the 104 Commonwealth, State or local heritage places across the study corridor. This includes eight State Heritage Places located within 50m of surface works including:

- Hefferan Park Air Raid Shelter and South Brisbane Cemetery at Dutton Park
- St Nicholas Russian Orthodox Cathedral at Woolloongabba
- Harris Terrace, Brisbane Synagogue, Government Printing Office and Early Streets of Brisbane at George Street
- Victoria Park at Spring Hill.

There is also high potential for archaeological deposits of State significance to exist in Mary Street and George Street, adjacent to the George Street Station.

The main potential impacts on non-Indigenous heritage associated with the Project include:

- settlement resulting from construction works
- cosmetic damage from construction vibration, particularly at Harris Terrace
- disturbance or destruction of subsurface archaeological deposits.

The implementation of management measures during construction would assist in mitigating potential impacts on heritage values in the study corridor. Ensuring that the design of the Project's surface infrastructure is sympathetic to heritage values would assist in improving the setting of heritage places nearest to the Project. Recognising heritage values through the Project design would also assist in enhancing the heritage values of places in the study corridor.