



Appendix E
**HISTORIC HERITAGE
ASSESSMENT**

Statement of Heritage Impact

Sundown Solar Farm

Prepared for Sundown Solar Pty Ltd

November 2022

Statement of Heritage Impact

Sundown Solar Farm

Sundown Solar Pty Ltd

J210075 RP1

November 2022

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Executive Summary

Sundown Solar Pty Ltd (Sundown Solar) proposes to develop a large-scale solar photovoltaic (PV) generation facility in Spring Mountain, approximately 30 km east of Inverell in the New England Tablelands region of northern NSW.

This report will form part of the environmental impact statement (EIS) and addresses the historic heritage of the project area in the form of a statement of heritage impact (SoHI) and archaeological assessment.

After completing an extensive background research, EMM Consulting Pty Limited (EMM) conducted an archaeological field survey of the survey area between 20–22 September 2021. The archaeological field survey identified four historical heritage sites:

- a rubbish pit (HH3);
- a shearing shed (HH4);
- a sheep dip and associated yards (HH5); and
- an unidentified structure (HH6).

The potential archaeological significance of these sites was assessed in general accordance with the *Burra Charter* (Australia ICOMOS 2013). The assessment concluded that, when assessed individually, none of the four sites meets the threshold for local significance. However, when assessed as part of the broader cultural landscape the sites have the potential to contribute to an understanding of historical land use patterns and therefore have local significance when considered collectively.

Each of the four sites are located within the conceptual disturbance footprint (Figure 7.1) and will therefore result in direct impacts.

The following mitigation measures are proposed:

- prior to construction, prepare a Historical Heritage Management Plan (HHMP). Ensure the HHMP requires:
 - digital archival recording of:
 - HH4 (shearing shed)¹; and
 - HH5 (sheep dip and yards);
 - archaeological investigation (including archaeological excavation) of:
 - HH3 (rubbish pit) to build an appreciation of life in the region during pastoral operations in early 20th century; and
 - HH6 (unidentified structure) to try to determine the function and nature of the structure;
- protocols for managing unexpected finds.

¹ Prior to construction, HH4 will be relocated to outside of the development footprint. The digital archiving will be completed prior to relocation of HH4.

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1 Introduction

1.1 Background

Sundown Solar Pty Ltd (Sundown Solar) proposes to develop a large-scale solar photovoltaic (PV) generation facility in Spring Mountain, approximately 30 km east of Inverell in the New England Tablelands region of northern NSW (Figure 1.1).

The project will be assessed as a State significant development (SSD) under *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). Accordingly, an Environmental Impact Statement (EIS) for the project is required under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Secretary's Environmental Assessment Requirements (SEARs) were issued in 2017, and then re-issued in August 2020. Sundown Solar has engaged EMM Consulting Pty Limited (EMM) to prepare the EIS and supporting technical assessments.

1.2 Project description

The project will have an estimated capacity of 360 megawatts (MW) and will comprise solar arrays, onsite battery storage, transformers, inverters and associated infrastructure. The electricity generated onsite will contribute to and connect to the national electricity grid via an existing 330 kilovolt (kV) transmission line that traverses the site. The electricity generated from the project will be sold to one or more registered energy retailing organisations, large energy users (governmental or private) or to the National Electricity Market that is operated by the Australian Energy Market Operator (AEMO).

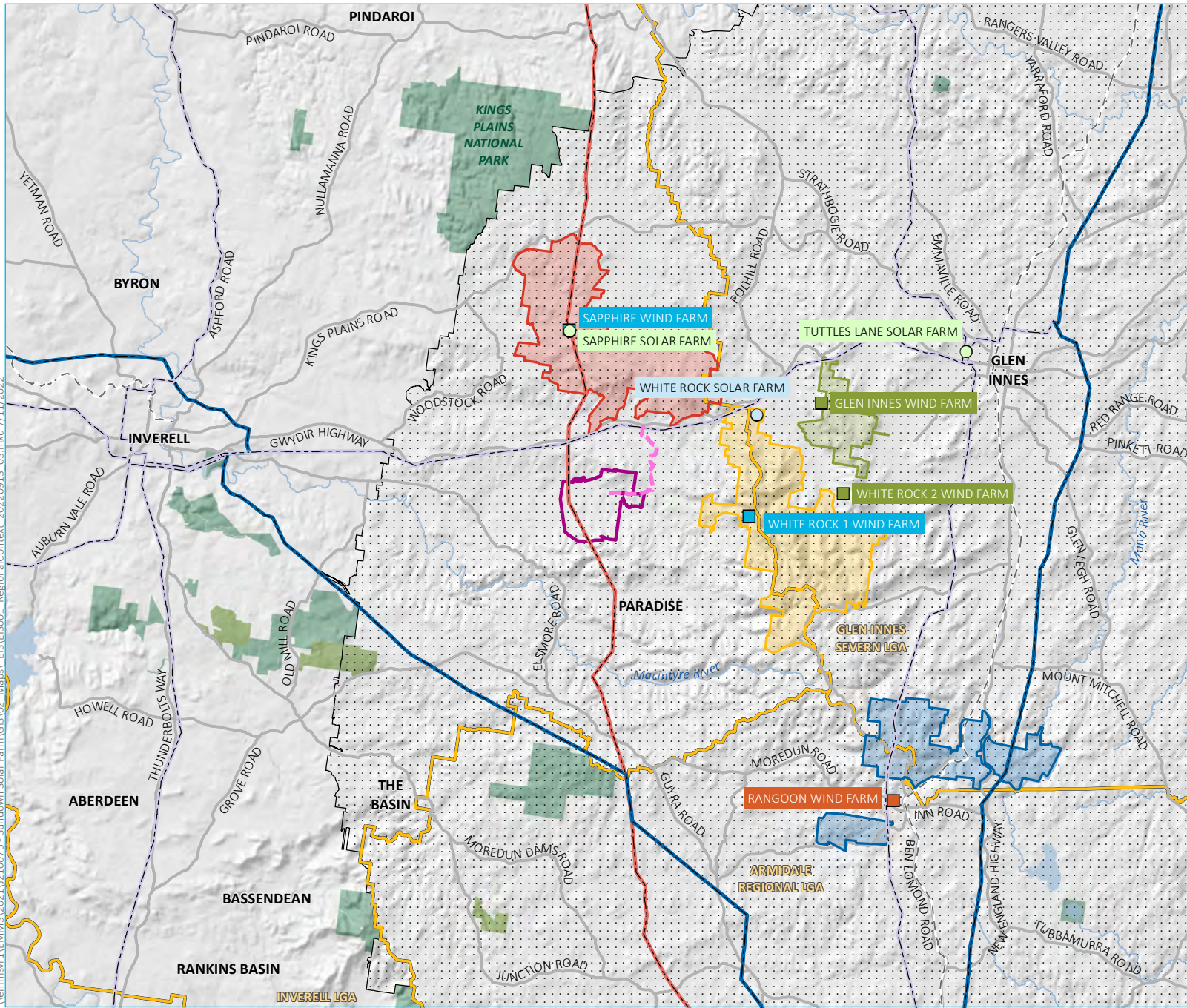
Key infrastructure comprises:

- a network of approximately 660,000 panels and associated mounting infrastructure;
- a 150 MW battery energy storage system (BESS) with up to four-hour storage capacity;
- 330 kV substation connected to the existing onsite 330 kV overhead powerline;
- electrical collection and conversion systems, including inverter and transformer units, switchyard and control room;
- underground and aboveground cables;
- a management hub, including demountable offices and amenities and equipment sheds;
- onsite creek crossings;
- security fencing;
- temporary laydown areas (during construction and decommissioning);
- parking and internal access roads;
- lighting; and
- firefighting infrastructure.

The project will also include the upgrade of the access road (Spring Mountain Road and Sturmans Road) and the Gwydir Highway/Spring Mountain Road intersection.

The conceptual site layout is shown in Figure 1.2.

The project life is estimated to be up to 35 years.



- KEY**
- Proposed Sundown Solar Farm (Project area)
 - Access road
 - New England Renewable Energy Zone
 - Electricity transmission line
 - 66 kV
 - 132 kV
 - 330 kV
 - Surrounding renewable development
 - Solar development
 - Operational
 - Approved
 - In planning
 - Wind development
 - Glen Innes Wind Farm
 - Rangoon Wind Farm
 - Sapphire Wind and Solar Farm
 - White Rock Wind and Solar Farm
 - Existing environment
 - Rail line
 - Major road
 - River
 - Named waterbody
 - NPWS reserve
 - State forest
 - Local government area

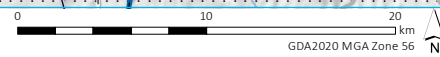
Regional context

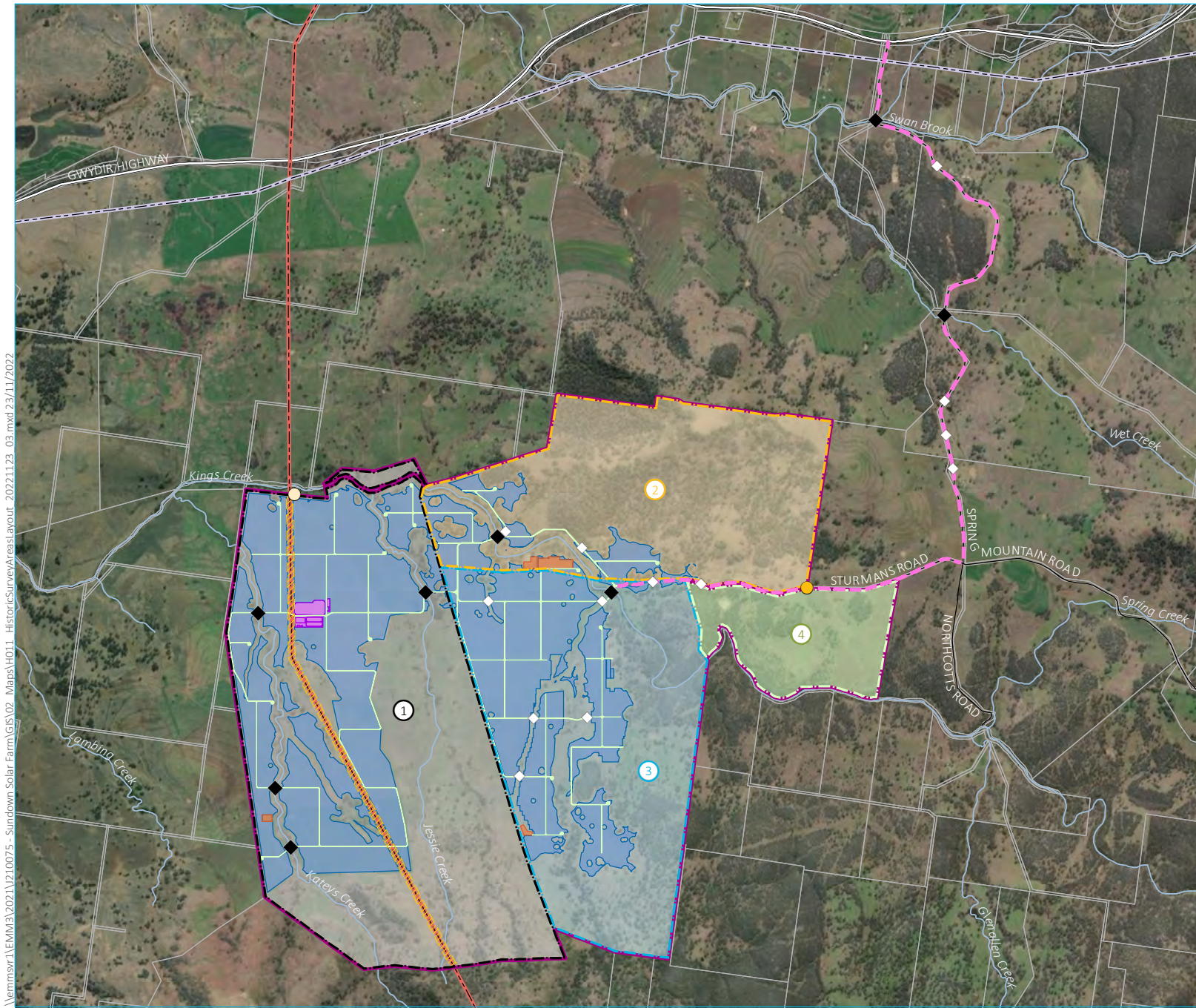
Sundown Solar Farm
Statement of heritage impact
Figure 1.1



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Source: EMM (2022); Canadian Solar (2022); DPIE (2022); DCS (2020); GA (2011); ASGC (2006)





- KEY**
- Proposed Sundown Solar Farm (Project area)
 - Major road
 - Minor road
 - Named watercourse
 - Cadastral boundary
 - Existing overhead transmission line
 - Armidale to Dumaresq (330 kV)
 - Glen Innes to Inverell (132 kV)
 - Development footprint
 - Access road
 - 330 kV OHL easment (60 m)
 - Internal access road
 - BESS/switchroom/substation
 - Construction and laydown
 - Potential PV area
 - Emergency access/egress point
 - Primary
 - Secondary
 - Potential water crossing
 - ◆ Named watercourse
 - ◇ Drainage line
 - Survey area
 - 1
 - 2
 - 3
 - 4

\\lemmsvr1\EMM3\2021\210075 - Sundown Solar Farm\GIS\02 Maps\H011_HistoricSurveyAreas\layout_20221123_03.mxd 23/11/2022

Source: EMM (2022); Canadian Solar (2022); ESRI (2022); DFSI (2017)



Conceptual site layout

Sundown Solar Farm
Statement of heritage impact
Figure 1.2



1.3 Site description

The site comprises three privately-owned lots, namely Lot 148 DP 753299, Lot 141 DP 753305 and Lot 1 DP 1064358. The site is accessed off the Gwydir Highway, via Spring Mountain Road then Sturmans Road.

The surrounding land is used for farming and generation of renewable energy, including the Sapphire Wind and Solar Farms, White Rock Wind and Solar Farms and Glen Innes Wind Farm (Figure 1.1).

The project area comprises a footprint of approximately of 2,097 hectares (ha). Of this, the development footprint is approximately 651 ha.

The entire site is zoned RU1 – Primary Production under the *Inverell Shire Local Environmental Plan 2012* (Inverell LEP) and is currently and has historically been used for farming (cropping and grazing).

There is some Crown land within the site, largely associated with road reserves.

1.4 Objectives of this report

The key objectives of this report are to:

- describe the applicable historical heritage regulatory framework;
- describe and characterise the existing historical heritage environment relevant to the project;
- identify and assess potential historical heritage impacts of the project construction and operation; and
- identify appropriate mitigation and management measures for the project.

1.5 Key terminology

The following terminology has been adopted throughout this report (Table 1.1).

Table 1.1 Key terminology

Terminology	Description
The project	The Sundown Solar Farm. This refers to all elements that comprise the project for which approval is sought.
The site	The area proposed to be developed as Sundown Solar Farm.
Project area	Comprises the three lots on which the project will be developed. The project area comprises the development footprint as well as the areas that will remain undeveloped. The project area comprises an area of approximately 2,097 hectares (ha).
Development footprint	The extent of surface area within the project area that will comprise project-related infrastructure (such as the PV panels, BESS, substation, switchroom, internal access roads etc). The development footprint comprises an area of approximately 651 ha.
Disturbance footprint	The extent of surface area within the project area that will be disturbed to facilitate the construction of the project plus the extent of surface area associated with the access road that will be disturbed to facilitate the construction of the access road and associated intersection. The disturbance footprint comprises an area of approximately 729 ha (including approximately 7.6 ha associated with the access road).

2 Statutory framework

2.1 Legislation

In NSW, heritage items and relics, that is archaeological sites, assessed to be of local or State significance, are protected by two main pieces of legislation: the EP&A Act and the NSW *Heritage Act 1977*. An additional layer of protection is added, in certain circumstances, by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth EPBC Act provides a legal framework to protect the environment. The EPBC Act definition of environment includes places of natural, Indigenous and historic heritage value. Under the EPBC Act, heritage places can be listed on:

- World Heritage List (WHL) – places inscribed on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List;
- National Heritage List (NHL) – places of significance to the nation; and
- Commonwealth Heritage List (CHL) – items belonging to the Commonwealth or its agencies.

The EPBC Act requires actions on Commonwealth land (Section 26) and actions undertaken by a Commonwealth agency (Section 28) to be assessed to determine whether they are likely to have a significant impact on the environment. Heritage places may be listed on a statutory register, such as the WHL, NHL, CHL or State-based registers, or may be an unlisted item identified by a Commonwealth agency.

Additionally, actions that may impact on Matters of National Environmental Significance (MNES) must also be assessed for impacts. MNES that relate to heritage include identification on the WHL or NHL. Under the EPBC Act, an action that may have a significant impact on a MNES is deemed to be a ‘controlled action’ and can only proceed with the approval of the Commonwealth Minister for the Environment. An action that may potentially have a significant impact on a MNES is to be referred to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for determination as to whether or not it is a controlled action. If deemed a controlled action the project is assessed under the EPBC Act for approval.

The project is not considered to have a significant impact on world heritage properties or places listed on the National or Commonwealth Heritage List. Accordingly, the EPBC Act is not discussed further.

2.1.2 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) serves to conserve the heritage places, items and objects of NSW. The Heritage Council of NSW is constituted under the Heritage Act to advise the Minister with responsibility for heritage on matters relating to the conservation of the State’s heritage. In practice, this power is largely delegated to Heritage NSW.

Under the Heritage Act, items of significance to the State can be recognised on the State Heritage Register (SHR). Items on the SHR cannot be demolished, damaged, developed, altered or excavation undertake without approval from the Heritage Council of NSW (or its delegate) under Section 59 of the Act.

Archaeological relics, defined as “any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and is of State or local significance”, are protected under Section 139 of the Heritage Act. A person cannot knowingly disturb or excavate land when they suspect a relic to be present without holding an excavation permit or an exemption. Section 139 applies to all land in NSW not listed on the SHR. Section 146 requires persons to notify the Heritage Council of NSW within a reasonable time if an unanticipated relic is discovered. The Heritage Act identifies the category of ‘works’, which refers to historical infrastructure, and is viewed as separate to that of archaeological ‘relics’ under the Heritage Act. ‘Works’ may be buried, and are therefore archaeological in nature, but exposing a ‘work’ does not trigger reporting obligations under the Heritage Act unless it is of demonstrable significance.

Section 170 of the Heritage Act requires State government agencies establish and maintain a register of heritage items, to be known as a Heritage and Conservation Register. State agencies are required to undertake due diligence with regard to the care, control and management of items listed on their Section 170 Heritage and Conservation Register. Additionally, State agencies must notify the Heritage Council of NSW 14 days in advance if they intend to remove an item from their register, transfer ownership, cease occupation, demolish. Section 170 does not place statutory requirements on individuals or non-State government entities.

Approval under the Heritage Act is not applicable for projects such as this which are assessed as SSD or SSI under the SRD SEPP, in accordance with Division 4.7, Section 4.41(1)(c) of the EP&A Act.

2.1.3 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the framework for development assessment within NSW, with one of the objects of the Act being to promote the sustainable management of built and cultural heritage, including Aboriginal cultural heritage.

As the majority of development assessment and consent is undertaken by Local Government (council), the EP&A Act directs council to prepare a local environmental plan (LEP) and development control plans (DCPs) for their local government. LEPs are to be developed under the standard instrument, which provides planning consistency across the State. Schedule 5 of the Standard Instrument provides a list of identified environmental heritage within the LGA, impacts to which are to be considered during the development assessment and approval process. DCPs provide policies that are specific to the local environment and character of the LGA or a subset of the LGA. The NSW department with responsibility for planning may also prepare state environmental planning policies (SEPPs) to guide planning across the State.

Government departments developing infrastructure such as roads, assess their proposed works through the preparation of a review of environmental factors (REF). This process is self-assessed and while council has the opportunity to comment, it does not have powers of approval. Other Acts, such as the Heritage Act, still apply in this instance.

Due to the size, economic value or impacts, some types of development are assessed as State Significant Development (SSD) or State Significant Infrastructure (SSI). Where a project is identified as SSD or SSI as this project is, the NSW department with responsibility for planning is the consent authority and directs the proponent to prepare an application for the secretary’s environmental assessment requirements (SEARs), which define the various studies and guidelines for the preparation of an environmental impact statement (EIS) and supporting technical reports.

The purpose of all assessment processes is to consider impacts to, among other things, cultural heritage items and places as well as archaeological sites and deposits associated with the proposal and to identify measures to avoid, mitigate or ameliorate impacts.

2.1.4 Inverell Local Environmental Plan

Part 5, Section 5.10 addresses the conservation of heritage significance within the LGA. The objectives of the LEP in relation to heritage are:

- a) to conserve the environmental heritage of Inverell;
- b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views;
- c) to conserve archaeological sites; and
- d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

To achieve these objectives, development consent is required to demolish, move, alter, disturb or excavate a heritage item, an Aboriginal object or a building, work, relic or tree within a heritage conservation area. Schedule 5 of the LEP provides a list of heritage items and conservation areas within the LGA.

As the project is considered SSD, the controls within the LEP will not apply to the project.

2.2 Identifying listed heritage items

Listing on statutory registers provides a basis under which the item or place is protected, and change is managed through project approval. Statutory listings provide legal protection for heritage items under the legislation outlined above.

Statutory registers reviewed as a part of this assessment include:

- World Heritage List (WHL) – the register is managed under the EPBC Act;
- National Heritage List (NHL) – the register is made under the EPBC Act;
- Commonwealth Heritage List (CHL) – the register is made under the EPBC Act;
- State Heritage Register (SHR) – this register is made under Part 3A of the Heritage Act;
- s170 register – this register is made under Section 170 of the Heritage Act;
- Schedule 5 of the Inverell local environmental plan; and
- State Heritage Inventory (SHI), which was cross-checked with Schedule 5 of the Inverell LEP and the s170 register. The SHI is not a single statutory register, but a central collection of State and locally listed statutory heritage items maintained by Heritage NSW.

Non-statutory listing is an acknowledgment of a site's or place's importance to sections of the community. Listings on such registers do not place legal requirements on development, but nevertheless influence the future of such listed items. Non-statutory registers reviewed as a part of this assessment include:

- National Trust of Australia, NSW (NT) – the NT is made up of autonomous state chapters. Each chapter is a community-based and non-government organisation, with a mandate to conserve and promote Australia's natural and cultural heritage. Classification by NT is a strong acknowledgment of heritage significance and while statutory constraints are not applicable, classification offers protection through visibility and community action.
- Register of the National Estate (RNE) – the RNE is an archived list of heritage items that were protected under the now repealed Commonwealth *Heritage Commission Act 1975*, which was replaced by the EPBC Act. While many items were transferred from the RNE to the NHL or CHL, those that were not remain on the RNE as an indication of their heritage value.

3 Existing environment

3.1 Introduction

The environmental characteristics of any area influenced the way people used the landscape. In the past, the availability of resources such as water, flora, fauna, stone material and topography played a substantial role in the choice of camping, transitory movement and ceremonial areas used by Aboriginal people.

Migrants from the early colony looked for the same landscape characteristics but manipulated their environment in ways that left more obvious marks. Water, level or gently sloping ground, and suitable soils to grow crops and animals was sought after. Therefore, understanding environmental factors assists with predicting where sites are likely to occur. Additionally, natural and cultural (human-made) site formation processes that occur after the deposition of archaeological material influence the way archaeological material is distributed and preserved across a landscape.

3.2 Landscape overview

The study area is part of the New England Tablelands Bioregion, which covers an area of more than 3,000,000 ha. Over 95% of this bioregion is within NSW, the rest extending north into Queensland. The New England Tableland Bioregion is a stepped plateau of hills and plains with elevations between 600 and 1,500 m on Permian sedimentary rocks, intrusive granites and extensive tertiary basalt flows.

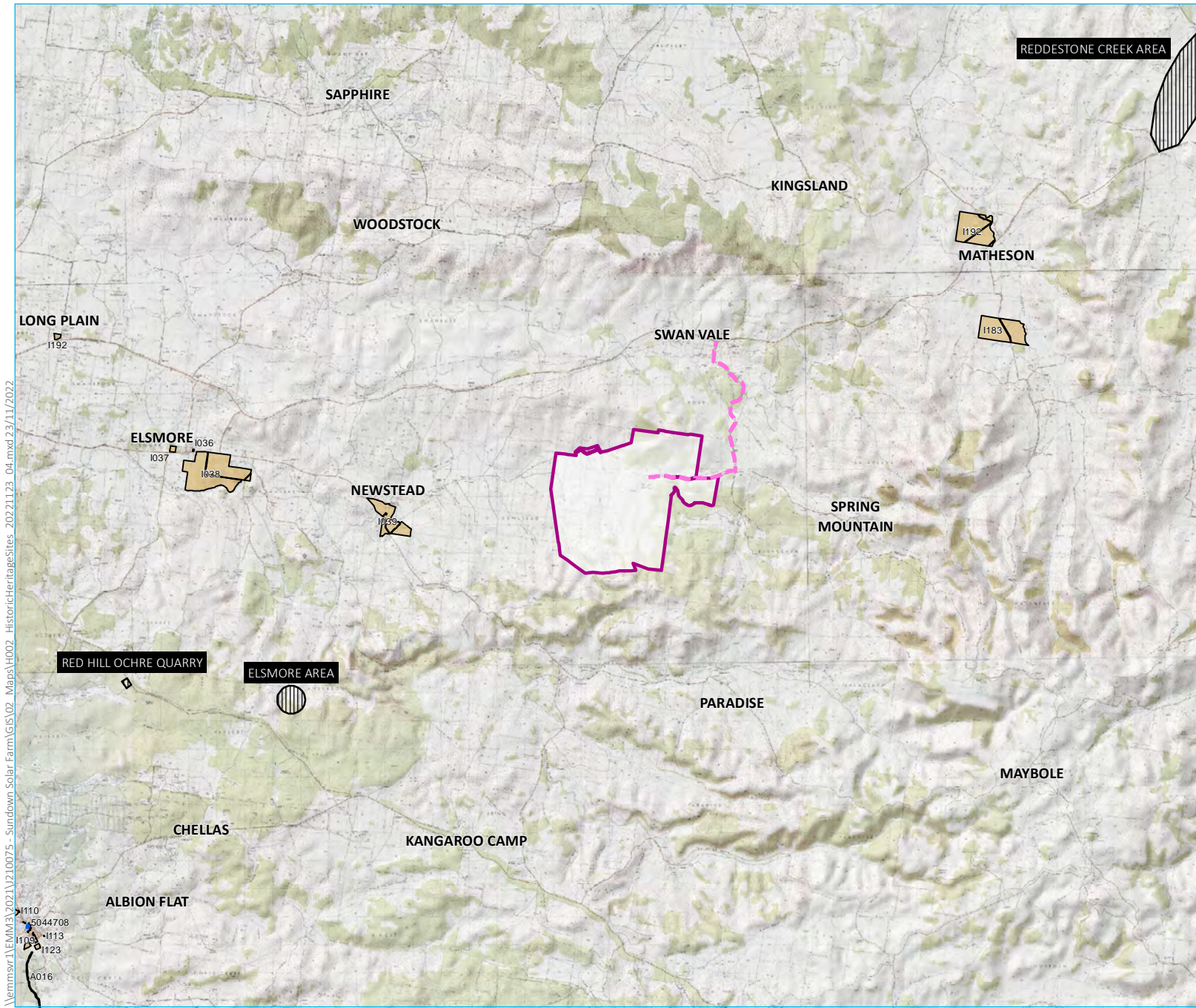
The landscape of the study area is characterised by broad low hills, with a creeks and drainage lines running south to north into Kings Creek. The study area consists of two primary ridges, sloping from south to north, subdivided by Jessie Creek and bordered by Kateys Creek to the west and an unnamed second order stream to the east. These ridges originate in a main ridge, running roughly east to west to the south of the study area at an elevation of over 900 m Australian Height Datum (AHD). Elevation at the southern end of the project footprint is around 840 m AHD sloping to 720 m AHD in proximity to Kings Creek at the northern end of the study area. Slopes are generally gently inclined, ranging from a 2.9% north to south slope on the western ridge is 2.9% up to 10% beside Jessies Creek in the east and Kateys Creek in the west.

The geology of the project area includes Permian sedimentary rocks and intrusive basalts and granites. This is evident in the project area as the pastures have been raked into piles throughout the years to make agricultural work easier.

The majority of water sources that run through the project area are semi-permanent, the one exception is Kings Creek. Kings Creek is a 4th order waterway (Strahler System) that runs through the eastern section of the project area. Early pastoralists to the region would have looked for areas close to permanent water in order to build huts, yards and sheds to make watering of stock and humans easier.

3.3 Heritage listings

There are no heritage listings within the project footprint. The closest listed heritage item to the project footprint is located 5.1 km west and is listed on the Inverell LEP as 'Newstead Station Group', item I039 (Figure 3.1).



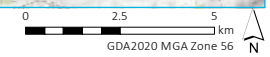
- KEY**
- Proposed Sundown Solar Farm (Project area)
 - Access road
 - HERITAGE ACT
 - State Heritage Act
 - LEP LISTING
 - Item - General
 - Item - Archaeological
 - NON-STATUTORY LISTING
 - Register of the National Estate

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Source: EMM (2022); Canadian Solar (2022); OEH (2022); LPMA (2006)

Listed sites and items

Sundown Solar Farm
Statement of heritage impact
Figure 3.1



4 Historical summary

4.1 Key findings

The north-east portion of the project area (Lot 141 DP 753305) is located in the Parish of Ross, County of Gough. The central, southern and western portion of the project area (Lot 1 DP 1064358 and Lot 148 DP 753299) is located in Parish of Newstead and County of Gough. The project area is within the New England Tablelands bioregion.

The project area has been used as agricultural land since the early to mid-1800s and once formed a part of the Newstead (and later Newstead South) Station.

The project area has largely been used for cattle and sheep grazing, as well as for crops. In the past 30 years the development footprint has largely been used for cattle grazing and crops.

4.2 Historic themes

The Australian and NSW heritage systems employ a series of historic themes to guide the understanding of history and historical investigation in the nation and state. As part of any historic heritage assessment, it is important to review the historic themes when undertaking research on an area or place to provide proper context. The state and national themes are complementary to enable the historian to present a unified understanding of how an area fits into Australian history. The historic themes are also an important guide when assessing an item's heritage significance. They provide information on how an item may be historically significant at the local, state or national level.

Finally, historic themes help to develop interpretation and management strategies for items of heritage significance. A full list of these themes can be found on the Heritage NSW website. Historic themes in the study area were identified based on the historical background (as described below) and the results of the historical survey (Section 5.6). The Australian and NSW historic themes relevant to the project boundary that have been used in this report are listed in Table 4.1.

Table 4.1 Historic themes

Australian historic themes	NSW historic themes
2. Peopling Australia	2. Migration
3. Developing local, regional and national economies	3. Agriculture
3. Developing local, regional and national economies	3. Exploration
3. Developing local, regional and national economies	3. Mining
3. Developing local, regional and national economies	3. Pastoralism
4. Building settlements, towns and cities	4. Land tenure
5. Working	5. Labour
8. Developing Australia's cultural life	8. Domestic life
8. Developing Australia's cultural life	8. Creative endeavour
8. Developing Australia's cultural life	8. Religion

4.3 Historical context

4.3.1 Key phases

Key phases in the region's development are outlined below:

- Phase 1: Aboriginal;
- Phase 2: Exploration and early contact;
- Phase 3: Establishment of squatting runs;
- Phase 4: Newstead Station; and
- Phase 5: Development of the mining industry.

4.3.2 Pre-contact environment and early contact

The pre-pastoral landscape has been described as a plateau dominated by woodland and grasses. Various Eucalypt species clustered in stands of different species based on the distribution of the underlying geology, either slate, basalt or granite formations. A large variety of native grasses covered the area offering potential for extensive pasture which, although abundant in summer, was poor in the winter months and would have been unlikely to support year-round grazing by introduced species and native animals (Campbell, 1922, p. 252). Stories attributed to the local Aboriginal people describe the region generally as a land in three parts based on topography and the water resources within them: a high country where the waters come from; the lowlands where water remained; and, a region in between where water flowed in various ways (Ferry, 1999, pp. 2–3).

The study area is within the traditional Country of *Nganyaywana* (Anaiwan) and *Ngarabal* people of the large Gamilaraay language group (Gomerioi, Kamilaroi, Kamillaroi). *Ngarabal* Country encompasses the area from Glencoe, north to Bolivia, then slightly east to the Bundjalung border and west to Beardy plains and the upper Seven River area. *Ngarabal* were also known to frequent areas around Kingsplains, Wellingrove and Strathbogie stations (Tindale, 1974).

The landscape of the New England Tablelands was used as a natural and cultural resource. There is a strong oral history indicating seasonal movement of Aboriginal people between the coastal plains and tablelands with the tablelands occupied in during summer and autumn and the warmer coast or the western river systems occupied during the winter. On a visit near Gwydir Sir Thomas Mitchell recorded a group resided in circular grass covered huts which were grouped close to the trunk of a tree and around a central hearth (McBryde, 1974, p. 9). The temporary or semi-permanent nature of the huts suggests there was relatively frequent movement throughout the landscape.

Mammals such as kangaroo and possum were used for food, clothing and decoration. Ethnographic accounts mention wooden tools such as spears, clubs, waddies (a type of hunting stick) and boomerangs as well as stone axes and other stone tools (McBryde, 1974). Wood, bark and animal materials were also used to make items like rugs, clocks, bags, fishing nets and wooden vessels (McBryde, 1974).

The New England Tablelands are known to be spiritually linked to Baimai (creator god), Birrahgnooloo (his emu-wife) and Daramulan (son of Baimai) (Flood, 2010, p. 238). The region is also known for ornately carved trees, ceremonial bora grounds and art sites, indicating an intimate spiritual, as well as a physical, attachment to the sacred landscape the Aboriginal people inhabited.

4.3.3 Exploration and displacement of Aboriginal people

The New England Tablelands were explored by Surveyor-General John Oxley in 1818 who reported that the area would be perfect for pastoral development. Oxley's optimistic verdict encouraged both the Australian Agricultural Company and explorers to venture north, outside the boundaries of the colony (The Australian Science and Technology Heritage Centre, 2010). The prevailing view of the colonial settler was the right to take control of the land and to improve it through settlement and pastoral activity. This was done by clearing existing vegetation and erecting permanent structures, which introduced increasing pressure on existing Aboriginal ways of life and was the pre-condition for continued hostility between settlers and the Aboriginal people of the area.

The increasing numbers of squatters and pastoral runs in the district restricted access to traditional lands, including hunting and fishing grounds. From the 1830s, the pastoral runs of the Tablelands were the location of many varied interactions between Aboriginal people and white squatters. These interactions ranged from atrocities, including the murder of Aboriginal, to working arrangements between settlers and local Aboriginal people.

Tensions between Aboriginal people and settlers increased over the early to mid-nineteenth century with frequent conflicts recorded in the region. Aboriginal people stole sheep and attacked shepherds while defending their territory and family members. Shepherds raped Aboriginal women and killed Aboriginal people in retaliation for real or imagined offences (Pickard, 2008, p. 78). Outward aggression reached a head in June of 1838 when a dozen or so stockmen murdered 28 Aboriginal men, women and children in an event known as the Myall Creek massacre (53 km west of the project area) (Roberts, 2006, p. 104). Seven of the eleven perpetrators were hanged and this was the first time settlers were punished for killing Aboriginal people (Roberts, 2006). Subsequent massacres often went unreported.

By 1845, the Aboriginal population of the New England Tablelands was estimated by Commissioner George McDonald to number around 600 (McDonald 1845 in Hudson 2006). McDonald also noted disease and land clearance for sheep grazing, which diminished macropod numbers, had heavily impacted on the Aboriginal population. By the early 1850s, the local Aboriginal people had effectively been displaced from their land and other traces of former custodianship of the land were eroded by the renaming of much of the topography and local watercourses (Ferry, 1999).

Working on stations was a way Aboriginal people could retain their connection to their traditional landscapes and practices. Some squatters employed Aboriginal people as shepherds (such as Edward Ogilvie in northern NSW) and it was often women who did much of the shepherding. Yet, if they were paid wages at all, they were much lower than white employees and more often they were given rations and cast-off clothes (Pickard, 2008). Despite the forceful disconnection from the land, traditional practices such as corroborees and encampments are recorded throughout the nineteenth century (Ferry, 1999).

In 1883, the Board for the Protection of Aborigines was established to provide recommendations concerning the welfare of Aboriginal people and to manage Aboriginal Reserves in New South Wales. The responsibilities of the Board included organising housing, and issuing blankets, clothing and ration coupons (NSW Government State Records, 2010). During this time, the Aboriginal population was concentrated in rural areas, however as large pastoral properties were subdivided, government resettlement schemes encouraged people to move from stations and towns to Aboriginal camps and reserves (Giggs et al., 1977, p. 202; Hall, 1977, pp. 27–28; Moran, 2004, p. 7).

Between 1883 and 1908, 16 Aboriginal reserves were established approximately 250–300 km south-east of the project area in the Macleay, Nambucca and Bellinger valleys. For many years families also lived on the fringes of towns. In 1890 the Board reported that 142 Aboriginal people were in the Glen Innes District, which stretched west to include Inverell. By 1910, there were said to be only 262 Aboriginal people in the Tablelands (including those who were then called 'half castes'). However, by the 1950s there were nearly 1,000. Today, over 5% of the regional population is of Aboriginal descent (Jordan 2006, p.123).

4.3.4 Land Acts

From 1787, Governor Phillip had the ability to grant land to convicts who had served their time (or been pardoned). By 1790 the Governor had power to grant land to settlers (larger plots to those who were married), by 1794, women were entitled to receive land grants; as was the military by 1789 (NSW State Archives, 2021). Following this, a variety of Acts have influenced the transition of land ownership in Australia, the following is just a few of the most influential since the 1800s.

In 1831 the *British Imperial Land Act* (BIL act) (2 Wm IV 1831) changed how land was handled throughout Eastern Australia. The BIL act abolished land grants in replace of auction sales. This was introduced by first Viscount Goderich (Australian National University, 2021) and known colloquially as the Rippon regulations.

The *Crown Land Protection Act* (CLP Act) (4 William IV c 10 1833) prevented unauthorised occupation of crown land; the Act stayed in place until 1836 when the *Crown Lands Unauthorised Occupation Act* came into force. This allowed squatters to graze land which was outside the nineteen counties for an annual licence fee. The Act was further amended in 1839 to adjust for tax and stock details (Terry, 2014 p. 315).

It was not until 1842 that all land had to be surveyed prior to sale; a consequence of the *Sale of Waste Lands Act* (2 Victoria c 27, 1842). This act was further refined in 1846 and informally known as the 'The Squatters Act', which allowed for seven or fourteen-year leases to be taken out on land outside the nineteen counties (Terry, 2014 p. 315) (Kass, 2019, p. 19).

The 1860s saw a flurry of Acts come to legislation, the prominent Acts included the *Crown Lands (Alienation of) Act* (24 Victoria c 15, 1860). This ACT set aside land for agricultural pursuits known as 'pastoral leases', plus began the process of gazetting land for public purposes. During this time improvement purchases were granted, allowing up to 640 acres (258.9 ha) to be purchased on squatting lands, where infrastructure and homesteads were built. In 1862 the Torrens Title Certificates became common place, replacing common law titles (now known as 'Old System' titles). The *Pastoral Occupation Act* (26 Victoria c 8, 1862) gave more structure to applying for a pastoral run, while the *Crown Lands (Pastoral Leases) Act* (27 Victoria c 17, 1863) started to identify 'settled' vs 'unsettled' areas. Throughout the 1860s Britain was slowly removing their troops from the colony, which paved the way for the Australian military. At this time the *Volunteer Force Regulation Act* (5 Victoria c 31, 1867) allowed every person who freely volunteered for five or more years, 50 acres (Terry, 2014 pp 316-317) (Kass, 2019, p. 20).

The *Crown Lands Act* (40 Victoria c 16, 1884) saw large amounts of pastoral runs resumed for Crown Land, which was then offered for lease with a maximum of 2280 acres (922 ha) for up to 50 years. This Act was attempting to reframe pastoral holdings, partially due to a large fire that tore through the Garden Palace in the Sydney botanical gardens. The fire destroyed records from the Forest Conservancy Department, geological and mining information was destroyed alongside the Railway Survey Department and many land surveyors and pastoral run information ("Garden Palace Fire", 1882), resulting in a loss of information (Kass, 2019, p. 22).

4.3.5 Squatting

The rights of squatters were tenuous in theory but, in reality, their occupation of land paid off. 'Squatting' was a method of pastoral landholding that occurred from the 1820s, whereby sheep and cattle farming was established on Crown land outside the limits of location. The limits of location in NSW were defined by Governor Darling in 1826 and were restricted to nineteen counties within which settlers were permitted to take up land. They were contained within a semicircular line roughly 400 km from the centre of Sydney (Sydney Living Museum, 2017). Stuart (1999) argues that while the main driving force of squatting was the economics of the wool industry, it was the Colonial Government's land policy that produced the phenomenon of illegal occupation of Crown land.

Governor Thomas Brisbane (from 1821–1825) instituted the 'ticket of occupancy' to give graziers already occupying land some security (Starr & Nicholas, 1978, pp. 9–10). This new system of pastoral 'licences' allowed squatters to occupy lands outside the settled districts provided they did so for pastoral purposes. The squatters paid an annual fee to the Crown.

Off the back of the depression of the 1830s, Governor Gipps tried, unsuccessfully, to control government lands more effectively. Squatters who had weathered the storm of the economic depression were demanding secure title to their vast runs. By 1847, the squatters had succeeded in their campaign to obtain leases with rights to pre-emptive purchase and compensation for their improvement of the land (Stuart, 1999, p. 2). An Order in Council provided for 'pastoralists' (squatters) to hold land on eight- or fourteen-year leases for an annual rent. The Crown continued to hold a right of resumption. This new form of Australian tenure, the pastoral lease, had not existed in England and was a result of the 1847 Order in Council rather than common law (Esmaili and Grigg 2016, p.184).

In 1861, land ownership in New South Wales was transformed. John Robertson, Premier of NSW, in order to break the long-established monopoly of the squatter pastoralists, forced two Acts through Parliament to open up free selection of Crown Land; the *Crown Lands Alienation Act 1861* and the *Crown Lands Occupation Act 1861* colloquially known as the 'Robertson Land Acts'. The Acts permitted any person (free selectors) to select up to 320 acres on the condition of payment of a deposit of one quarter of the purchase price after survey and living on the land for three years. As a result, conflict between squatters and selectors increased, corruption and scheming to acquire land became rife, and the close settlement of pastoral lands further restricted the access Aboriginal people had to their land (MoAD n.d.).

This process of creating squatting landscapes had been driven by the settlers' desires to claim their land, the Lands Acts and regulations around improvement, and the environment itself. Settlers built huts, erected fencing, ringbarked trees and cleared the land.

Huts were improved or abandoned, and larger, more modern, dwellings and farm infrastructure was built, trees were planted and grew tall, fences were replaced, and dry-stone walls were built and dismantled. The resulting landscapes were shaped by both broader economic and political processes and by the responses of the individuals (Stuart, 1999, p. v). The very process of clearing and developing the land was seen as virtuous, productive and contributing to the progress of the colony. Moreover, the Robertson Lands Acts (1861) required settlers to improve the landscape. This was largely done by ring-barking to open up the land, promote grass coverage and fulfil their obligation to improve (Stuart, 1999, p. 320).

4.3.6 Newstead station

The project area is located within the historical boundaries of Newstead station and the Squatting Act of 1836 appears to have influenced the establishment of the property (Figure 4.1). The land was first claimed by Joseph King in 1836 on behalf of the firm Clerk & Rankin and by 1838 the property was a working as a sheep station known as Frenchaye (Gerald Steding Photography, 2016, p. 8). In 1840, the property was sold to John Rankin, who named the property Glencorse, however, Rankin soon sold the property to the firm of Anderson and Sinclair in 1841, who renamed the property Newstead (Plate 4.1) (Gerald Steding Photography, 2016, p. 8). The western portion of Newstead was located in the Parish of Newstead, while the eastern portion was located in the Parish of Ross (Figure 4.2 and Figure 4.3).

Anderson and Sinclair was not a mercantile firm, but a financial partnership between brothers-in-law Dr. Colin Alexander Anderson (MD) and Duncan M. Sinclair. The brothers-in-law moved their families beyond the official nineteen counties and constructed a homestead on Kings Creek (Plate 4.1 and Plate 4.2) (NSW Government, 2021) (Gerald Steding Photography, 2016, p.7). An undated water colour painting by Patrick William Anderson (c. 1847–1883) shows the Newstead homestead as being comprised of two cottages, possibly built for each family. Anderson and Sinclair were granted a de-pasturing license for Newstead in 1842 (The Sydney Morning Herald, 1842, p.3).



Source: State Library of NSW, SV1B/Glen I/1

Plate 4.2 Anderson Bros. Newstead, Glen Innes

Table 4.2 Employees at Newstead 1851 to 1852 (Heritage Futures Research Centre n.d.)

Date	Employee name	Position	Payment
8 February 1851	John Kennedy	Shepherd (for 6 months)	The sum of £12 and weekly rations of 10 pounds of flour, 10 pounds of meat, quarter pound of tea, 2 pounds of sugar.
13 June 1851	Francis Murphy	Sheep watchman (for 3 months)	The sum of £5 and weekly rations of 10 pounds of flour, 10 pounds of meat, half a pound of tea and 2 pounds of sugar.
30 August 1851	William Mccarty	Shepherd (for 6 months)	The sum of £12 and weekly rations of 10 pounds of flour, 10 pounds of meat, quarter pound of tea, 2 pounds of sugar.
14 April 1852	John McCormick	Shepherd (for 12 months)	The sum of £25 and weekly rations of 10 pounds of flour, 10 pounds of meat, half a pound of tea and 2 pounds of sugar.
8 May 1852	Ludovic Devereaux	Shepherd (for 6 months)	The sum of £6 and weekly rations of 10 pounds of flour, 10 pounds of meat, quarter pound of tea, 2 pounds of sugar.
14 May 1852	John Rennie	Shepherd (for 6 months)	The sum of £12 and weekly rations of 10 pounds of flour, 10 pounds of meat, quarter pound of tea, 2 pounds of sugar.
4 June 1852	John O'Brien	Shepherd (for 6 months)	The sum of £12/10 and weekly rations of 10 pounds of flour, 10 pounds of meat, quarter pound of tea, 2 pounds of sugar.

In 1847, an Order in Council established the pastoral lease system that granted “pastoralists” (squatters) the ability to apply for an eight- or fourteen-year lease for an annual rent (State Archives and Records of NSW, n.d.). Anderson was granted the Crown pastoral lease for the 71,680 acres (29007.9 ha) of Newstead in 1848, however, there was some dispute over the boundaries of the station with Brown and Alcorn of Elmsmore and Mary McIntyre of Waterloo claiming issue with the surveyed property boundaries (New South Wales Government Gazette, 1848, p. 1002; The Maitland Mercury and Hunter River General Advertiser, 1849, p. 2).

Colin Anderson died on Newstead in 1852 leaving his wife Mary Anderson (nee Sinclair) and seven children to manage the property (Gerald Steding Photography, 2016, p. 8). Colin was buried on the property, northwest of the homestead (Gerald Steding Photography, 2016, p. 8). By 1855, Charles Campbell was employed as the superintendent of Newstead as Mary and the Anderson family began to spend time between Newstead, England and Scotland (Steve Evans, 2018; The Maitland Mercury and Hunter River General Advertiser, 1855a, p. 1). An 1855 list of donors to a patriotic fund indicates the Campbell family were living on Newstead and around 20 individuals including three Chinese men were also on the property (The Maitland Mercury and Hunter River General Advertiser, 1855b, p. 2). Duncan McCrae had taken over as superintendent by 1859 (The Armidale Express and New England General Advertiser, 1859, p.1).

In 1861 Premier of NSW John Robertson aimed to break the land monopoly held by the squatter pastoralists- by forcing two acts through parliament: the *Crown Lands Alienation Act 1861* and the *Crown Lands Occupation Act 1861*, colloquially known as the ‘Robertson Land Acts’ (State Archives and Records of NSW, n.d.). The Acts allowed any person, ie free selectors, to claim up to 320 acres (129.5 ha) on the condition of a deposit of one quarter of the purchase price. Tension between squatters and selectors increased with squatters scheming to acquire land and free selectors were blamed for “peacocking”, that is, selecting the best land on pastoral properties (Glen Innes Examiner, 1933, p. 8; State Archives and Records of NSW, n.d.). As it can be seen in Table 4.3 Mary Anderson and her sons Patrick William, Duncan Sinclair, and John Archibald Anderson purchased a number of grants within the boundaries of Newstead. In 1862, the Andersons constructed a church adjacent to the family cemetery (Gerald Steding Photography, 2016, p. 1).

Mary Anderson died at Newstead in 1875 and the property passed to her sons (Gerald Steding Photography, 2016, p. 8). Newspaper articles suggest Patrick William took over the running of Newstead until he died after a buggy accident in 1883 (“Impounded at Inverell, on the 29th Day of July, 1876, from Newstead, by P. W. Anderson, Esq,” 1876, p. 3108; “INVERELL,” 1883, p. 2). John and Duncan split the property between them with Duncan becoming the property holder of Newstead North, centred on the original homestead and John establishing Newstead South with a new homestead constructed on Newstead Creek (Glen Innes Examiner, 1933, p. 8).

Artist Tom Roberts came to stay with Duncan Anderson at Newstead North between 1893 and 1895 and created a number of important Australian impressionist works while in residence (Gerald Steding Photography, 2016, p. 8). Roberts’ Newstead works focused on themes of pastoralism and bushrangers and include: *The Golden Fleece* (1894), *Bailed up* (1895) and *In a corner on the Macintyre (The bushranger)* (1895) (Art Gallery of NSW, n.d.; National Gallery of Australia, n.d.). Roberts also created a sketch of Newstead’s shearing shed, which was constructed in 1857 (Plate 4.3) (Gerald Steding Photography, 2016, p. 7). A later reminiscence of Roberts’ creation of *Bailed up* (1895) recalls that the figures in the painting were all Newstead employees and that Bob Bates, the coach driver, had actually been held up by bushrangers in the 1860s (Glen Innes Examiner, 1923, p. 5).

In 1904, Duncan Anderson sold Newstead North to Norman C. Bucknell, but Newstead South remained in the Anderson family until 1974 (Gerald Steding Photography, 2016, p. 8). The Newstead church burned down in 1912 (Gerald Steding Photography, 2016, p. 7). An aerial photograph from c.1930 show the outbuildings of Newstead North and the surrounding open pastoral landscape (Plate 4.4). Both properties were purchased by the McNeill Pastoral Company in 1985 (Gerald Steding Photography, 2016, p. 8).



Source: National Gallery of Australia

Plate 4.3 **Shearing shed, Newstead, 1893–94. Tom Roberts**

Table 4.3 Mary Anderson's grants in the project footprint

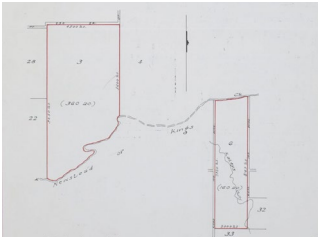
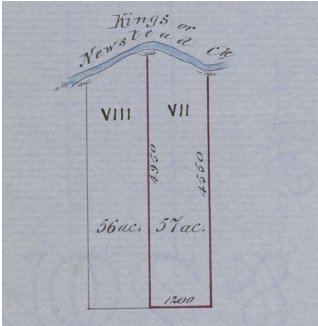
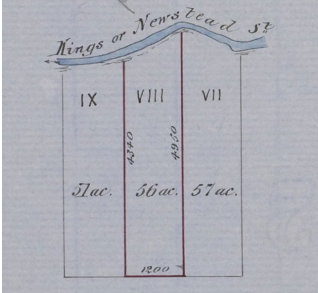
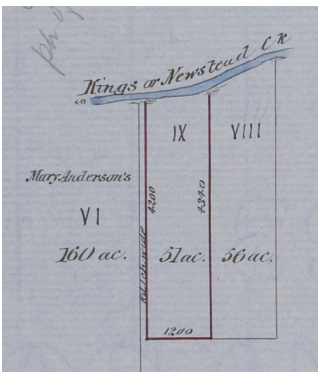
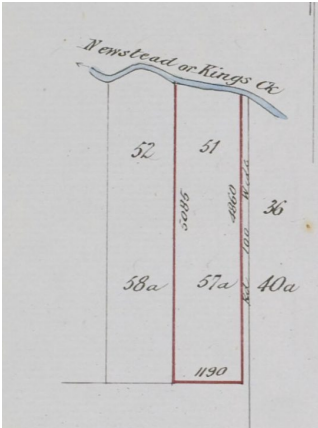
Year	Details	Vol – Folio	
1857	6	7105–227	
1866	7	56–150	
1866	8	56–151	
1866	9	56–152	
1873	51	248–247	

Table 4.3 Mary Anderson's grants in the project footprint

Year	Details	Vol – Folio	
1873	52	248-248	
1873	53	248-249	
1873	54	248-250	
1868	32	82-9	

Table 4.3 Mary Anderson's grants in the project footprint

Year	Details	Vol – Folio
1868	33	82-10
1873	63	250-5
1873	65	250-6

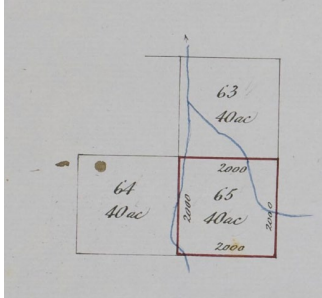
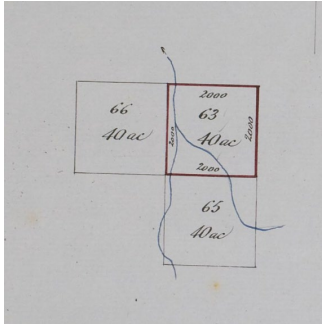
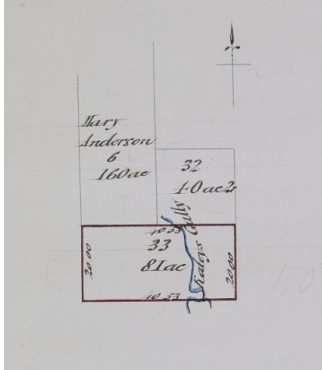


Table 4.4 P.W.D.S and J.A Anderson grants in the project footprint

Year	Details	Vol – Folio	
1881	89	579-94	
1880	90	573-192	
	91	973-191	Incorrect volumn and folio



Source: Heritage Futures Database, Family Ties Record No. 132

Plate 4.4 Newstead North homestead – aerial view, c1930

4.3.7 Development of mining industry

Newstead is claimed to have been the first place in New South Wales where tin was discovered (The Sydney Morning Herald, 1872, p. 5). Local histories state that North Newstead shepherd Joseph Webb discovered tin ore in an old saw pit near his hut on the edge of Newstead and Elsmore in around 1870 (Glen Innes Examiner, 1921, p. 3). The ore ended up in the hands of commercial traveller McGlew who took it to Sydney where the value of the ore was recognised (Glen Innes Examiner, 1933, p. 8). The area where the tin was found began to be prospected soon after, but Webb was cut out of the endeavour, a point which aggravated him until his death in 1873 (The Maitland Mercury and Hunter River General Advertiser, 1873, p. 1).

The Newstead Mining Company discovered a rich load of tin ore in 1871 (Plate 4.5) (The Newcastle Chronicle, 1871). By the next year, machinery had been brought to the Newstead mine, which was being worked by 20 men and managed by Mr Jenkins (The Armidale Express and New England General Advertiser, 1872a, 1872b). Mining continued at Newstead mine into the twentieth century.



Source: National Library of Australia

Plate 4.5 **Detail map of the County of Gough, 1916, Eastern Division. Arrow shows Newstead Mining.**



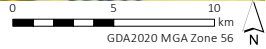
KEY
 - - - Access road
 [] Proposed Sundown Solar Farm (Project area)

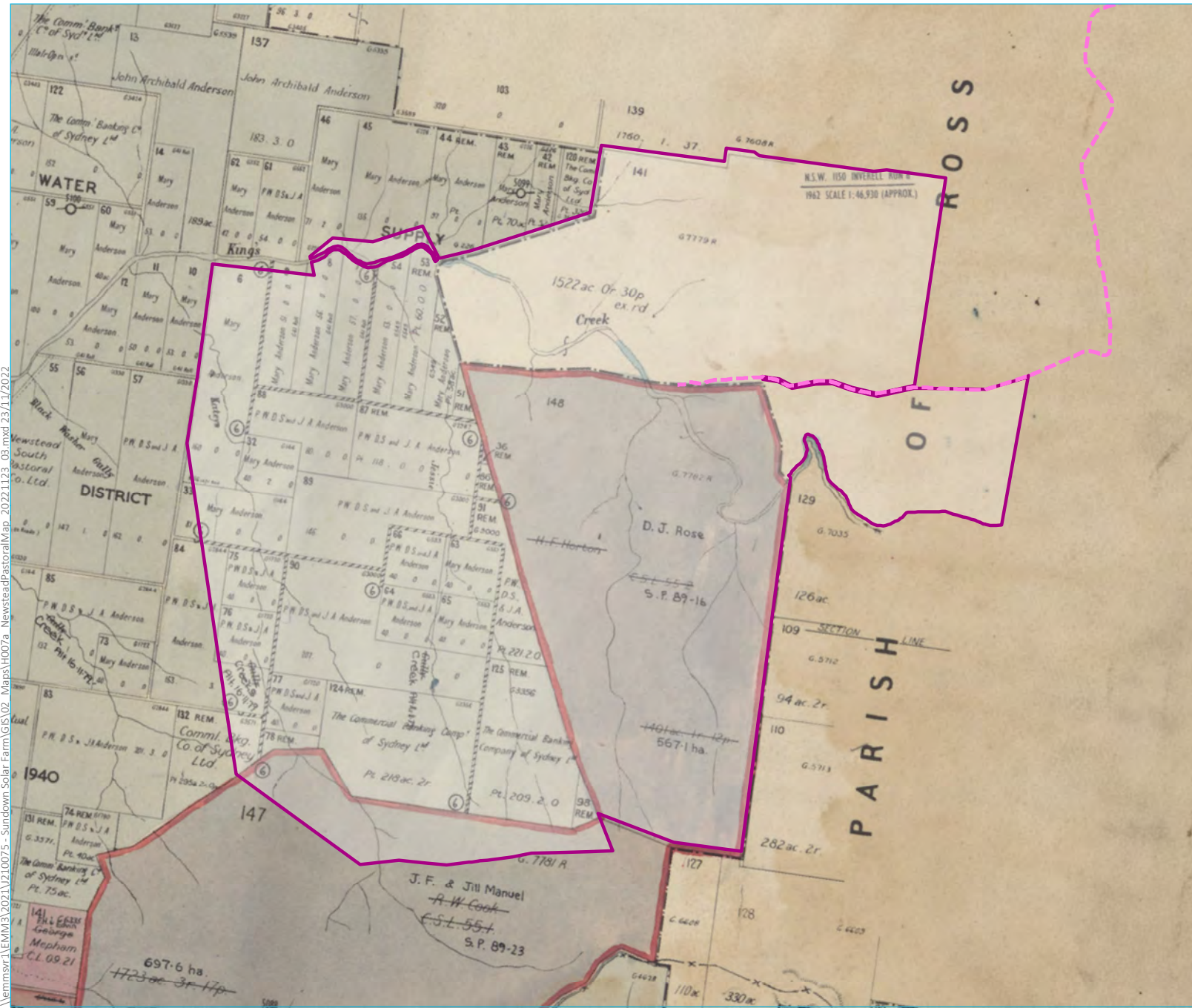
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Squatters run
c.1923

Sundown Solar Farm
Statement of heritage impact
Figure 4.1

Source: EMM (2022); Canadian Solar (2022); NLA (1993); H.E.C. Robinson (1923)





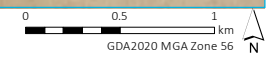
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- Proposed Sundown Solar Farm (Project area)
 - Access road

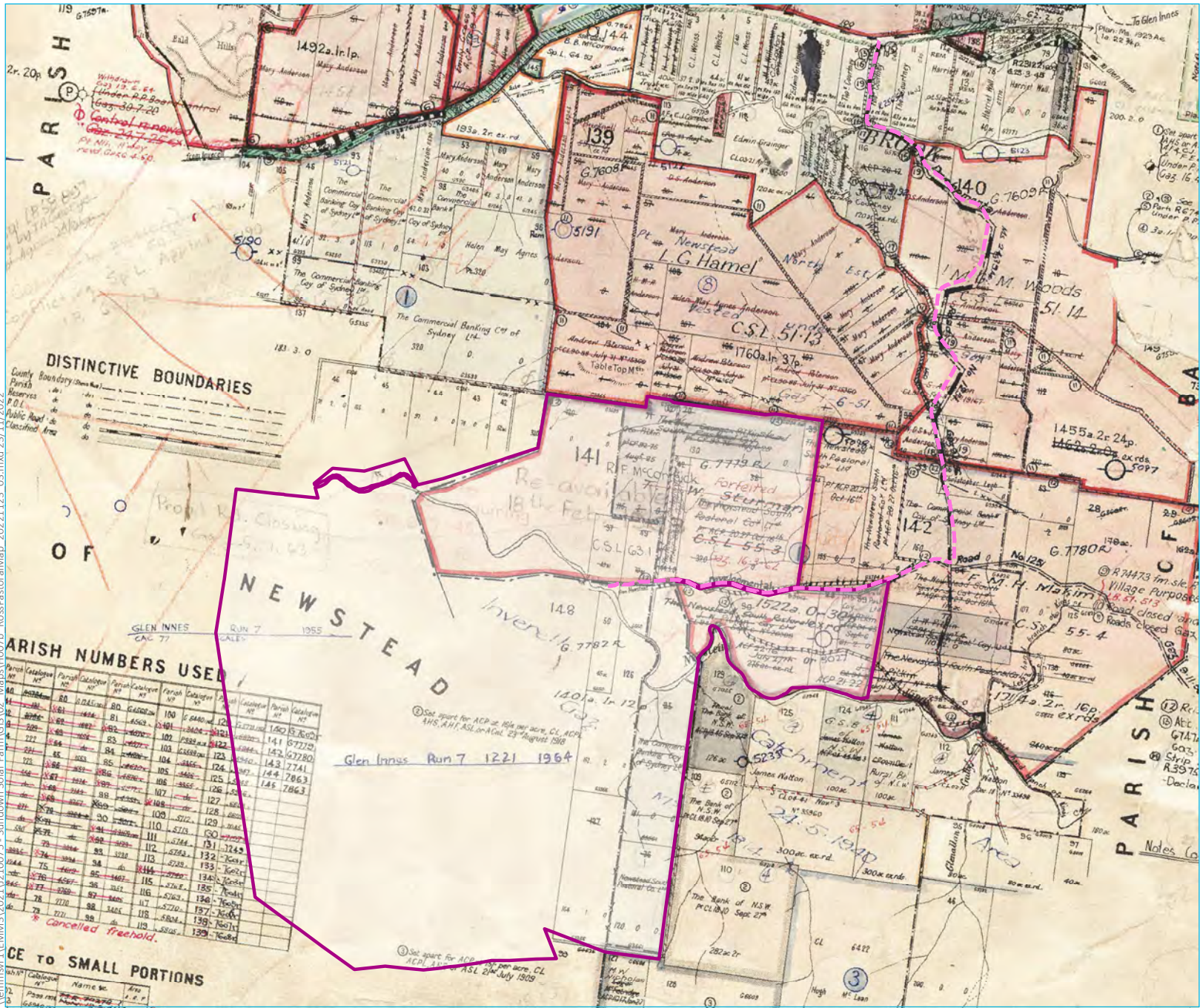
Complete Parish Map of Newstead c.1964

Sundown Solar Farm
Statement of heritage impact
Figure 4.2

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Source: EMM (2022); Canadian Solar (2022); LRS (2008); Department of Lands (1964)





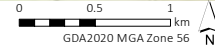
- KEY
- Proposed Sundown Solar Farm (Project area)
 - Access road

Complete Parish Map of Ross c.1921

Sundown Solar Farm Statement of heritage impact Figure 4.3

\\emmsvr1\EMM3\2021\1\210075 - Sundown Solar Farm\GIS\02 - Maps\H0075 - RossPastoralMap_2022\1123_03.mxd 23/11/2022

Source: EMM (2022); Canadian Solar (2022); Department of Lands (1921)



5 Evaluation of the project area

5.1 Key findings

The project area has predominately been used for agricultural purposes throughout the last 180 years. The project area was located in the boundary of the Newstead station owned by Joseph King in 1836 and sold to Anderson and Sinclair in 1841. In 1845, Colin Anderson took over ownership from Sinclair; the core of the property stayed within the Anderson family until 1974, however parcels of land have been sold off over time. The project area appears to be located on a portion of the station predominately used for grazing or cropping continually since the early 1800s.

Although extensive mining has taken place west of the project area; the project area itself has not been disrupted in the same way. Agriculture creates ground disturbance at the upper levels of the soil profile, but it does not remove all traces of the past as mining is more inclined to do.

5.2 Land use summary

The project area has been continually used as agricultural land since the 1830s. The original Newstead run has had areas resumed and sold off through the years, but the individual homesteads and farms that took over these properties continued to use the land for stock and crops.

The conceptual disturbance footprint appears to have very few structures within it, which could be due to these pastures being utilised more for crops than stock and therefore not needing protective supervision from dingoes and foxes.

5.3 Significant cultural landscapes

Cultural landscapes come in different forms, from having the appearance of wilderness to countryside to urban areas. The common factor that all cultural landscapes possess is they are a moment in time in a continuum of change created by human action (Meinig 1979).

Cultural landscapes can be broadly defined as designed, evolved or associative (Australia ICOMOS nd), with designed landscapes being largely represented by gardens; evolved landscapes by development; and associative landscapes being more indebted to the intangible, the religious or sacred. Cultural landscapes are also dynamic (Stuart 1997, p.28), regardless of the pace of change.

The significance of a landscape is dependent on how it reflects values of the heritage standards in Australia and the Burra Charter, which was developed to reflect the values of the community. Interpretability is an important factor, ie the ability of a landscape to tell a story is a socially and scientifically valuable attribute. So, while all human interactions with nature result in the formation of cultural landscapes, significance varies depending on what values can be identified and interpreted.

The project area is strongly suggestive of its squatting roots. The pastures have been largely cleared of timber except around the creek line and sporadic areas for shading stock (Plate 5.2). The landscape is easily identifiable as New England Tablelands; signature rocky countryside (Plate 5.2) due to the Permian volcanic geology in the area.



Plate 5.1 Typical landscape of the project area



Plate 5.2 Photograph within Area 5 showing the rocky landscape

5.4 Predictive model

Development of a predictive model for the survey is based on background research, which includes documentary sources, maps and plans, and where possible, landholder discussions and field observations. Further, the data used to inform predictive models for Aboriginal sites are useful for planning historical survey. Access to water, soil landscapes, geomorphology and land disturbance are characteristics that would have been valuable to Aboriginal people and squatters alike.

The project has been utilised for agricultural use and the historical summary has provided information that suggests that archaeological sites that may exist in the project area include:

- mud or slab huts and a stockyards;
- detached kitchen areas, privies and other associated buildings;
- stockyards from later periods constructed in timber or stone;
- stone flooring or flagging for domestic or pastoral purposes;
- sheep washes and scouring sheds;
- modifications in the landscape to manage water flows such as flooding and to create pens etc;
- bridges and other river crossings;
- historically modified trees; and
- roads.

5.5 Field survey methods

5.5.1 Introduction

EMM conducted an archaeological field survey of the survey area between 20–22 September 2021. The survey was completed over a total of three days and covered 48.5 km. The complete survey effort can be seen in Figure 5.1.

The primary aims of the survey were to:

- identify historical built or archaeological sites;
- characterise the landscape to aid predictions of archaeological potential;
- identify culturally significant landscapes;
- identify sites or areas that would require further investigation if planned for development as part of the project;
- identify sites or areas to be avoided by development, where possible; and
- identify areas with minor or negligible historical significance that are most suitable for development.

5.5.2 Survey limitations

The project area is approximately 2,097 ha. Due to the limited field survey days, only a portion of the conceptual disturbance footprint was covered. All efforts were made to cover the landforms and areas that would provide the greatest amount of information to supplement this report. The site access road was not included in the archaeological field survey, as disturbance to this area will be limited to widening the road from a single lane to a dual lane road.

5.5.3 Data collection methods

Information was collected using a handheld Garmin GPS and notebook, DSLR Canon camera, along with ArcGIS 123 survey forms.

5.5.4 Survey method

The archaeological field survey was undertaken over three days and targeted areas that would have been attractive to settlers and shepherds. The areas targeted were near permanent water for stock and humans, rivers were also used for sheep washing stations from the mid-1800s and often near wool sheds. Sheltered areas with panoramic views across multiple pastures were favoured for huts and outstations. Wells, tanks and water reserves were located near a consistent source of ground water and roads or tracks were used to link these different sites.

The archival research identified Newstead station as a large, productive sheep station. It would be expected that it would include many outstations, huts, homesteads and wool sheds peppered throughout the landscape, however the project area appears to demonstrate that it was mainly used for crops and unsupervised pasturing. Research has not indicated any structures in the project area, nor travelling stock routes or water reserves, which seem to follow the rivers to the north and south of the project area.

As the field survey would not allow for complete coverage of the project area, the survey was designed to cover as much of the expected development footprint as possible. The project area has been divided into four areas for the purpose of the archaeological field survey. These areas are numbered 1–4 (Figure 1.2).

5.6 Survey results

5.6.1 Area 1

The survey of Area 1 covered a length of 35.4 km over two days. Area 1 included both cropped (Plate 5.3) and grazing (Plate 5.4) pastures, with rolling low hills and Jessie's Creek, a perennial creek. The survey included following the creek line to the south, and then traveling back north through the pastures. During this time areas that offered shelter from the wind, above the creek line with good visibility to the pastures around were identified (Plate 5.5); however, none of these had exposed signs of previous occupancy.

The southern and central section of Area 1 appears to have been used as pastureland with little modification to the landscape through the years. The area has been cleared with only sporadic clumps of trees left for the stock to shelter in and no European plantings were noted. Locations that appeared favourable for occupation were examined for evidence of wells, tanks, cisterns, footings, bricks, metal, timber or flooring, but nothing was identified. Trees were examined for cultural markings (European cultural markings) such as survey markers, but again, none were identified.

Three sites were identified within Area 1; namely HH4 (shearing shed), HH5 (sheep dip and yards) and HH6 (unidentified structure).



Plate 5.3 Cropped pasture in Area 1 (view north)



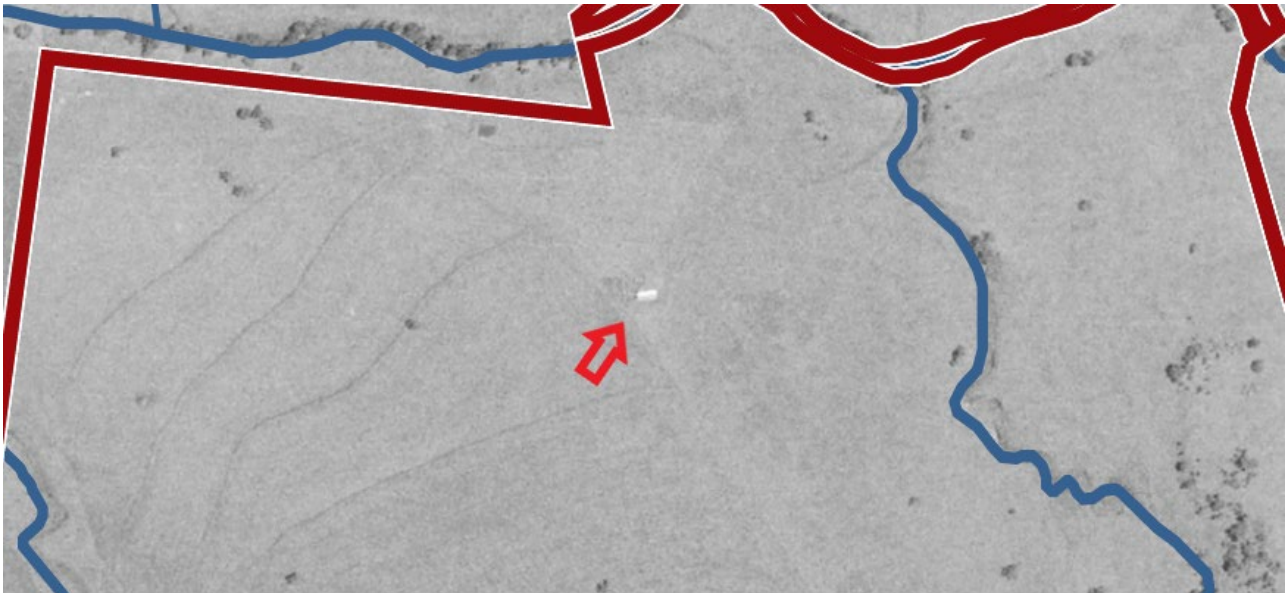
Plate 5.4 Grazing pasture in Area 1 (view west)



Plate 5.5 Sheltered area above Jessie's Creek, with good visibility (view south-east)

i HH4 (shearing shed)

In the central, northern portion of Area 1, which runs south of Kings Creek, is HH4 (shearing shed). This shed likely replaced the earlier yards (HH5) as it does not appear on the aerials until 1982 (Plate 5.6). This complex includes a raised shearing barn, with races both under the shed and behind the shed. The yards include a crush and stock load ramp, which allows the facility to hold stock, drench or treat the animals, prepare them for shearing, shear, transport and cull if need be (Table 5.1).



Source: Liresources

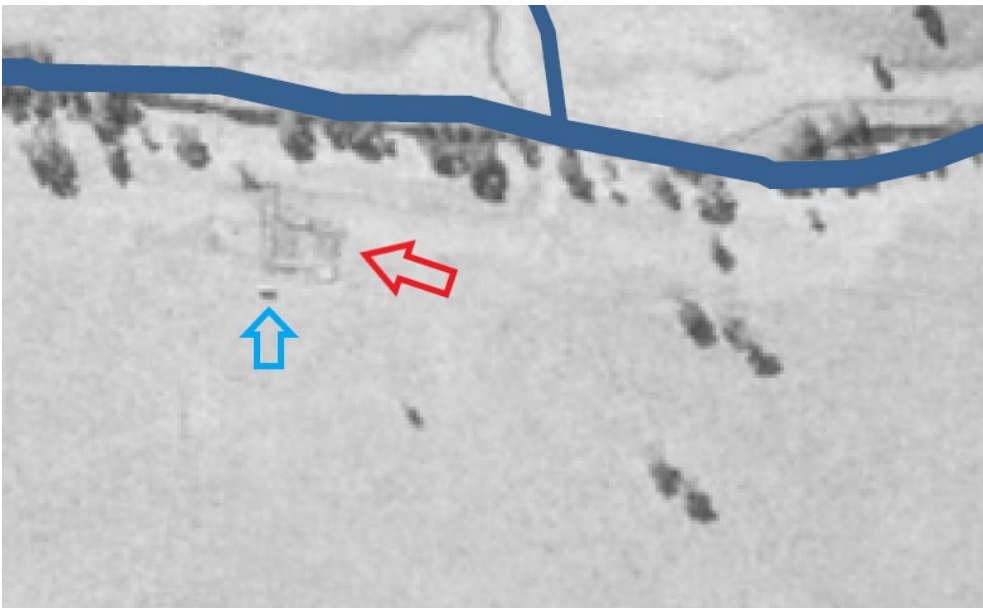
Plate 5.6 1982 aerial photograph of HH4 (shearing shed)

Table 5.1 HH4 (shearing shed) photographs



ii HH5 (sheep dip and yards)

In the north-west corner of Area 1, which runs south of Kings Creek a small, dilapidated shed and yards were identified (HH5), largely covered in brambles (Table 5.2). The shed and yards are located 75 m south of Kings Creek and measured approximately 10 m across and 35 m long. The shed consisted of a wooden frame, split rail fence with both round and half cut timber with a corrugated iron floor. The size of the run, the corrugated iron flooring and proximity to water indicate the structure was likely a sheep dip. It is necessary to have plenty of water available while dipping, which is why they are generally found close to a water source or very large tank. Sheep dips were also generally located near shearing sheds as it was most beneficial to dip the sheep after shearing while the wool is short. The structure appears on the 1962 aerial (Plate 5.7) along with another small structure located to the south which may have been a shearing shed. The structure when measured on the 1962 aerial photograph measures 50 m x 30 m likely due to extra pens.



Source: Liresources

Plate 5.7 1962 aerial photograph of HH5 with sheep dip indicated by the red arrow, and the second structure indicated by the blue arrow

Table 5.2 HH5 (sheep dip and yards) photograph



iii HH6 (unidentified structure)

Within the central section of Area 1 a small structure was identified on the 1962 aerial photograph (Plate 5.8). No further information could be found regarding this structure, and during the field survey there were no above ground remnants visible (Plate 5.9). The structure is identified as HH6 and is further addressed under Section 5.7.5.

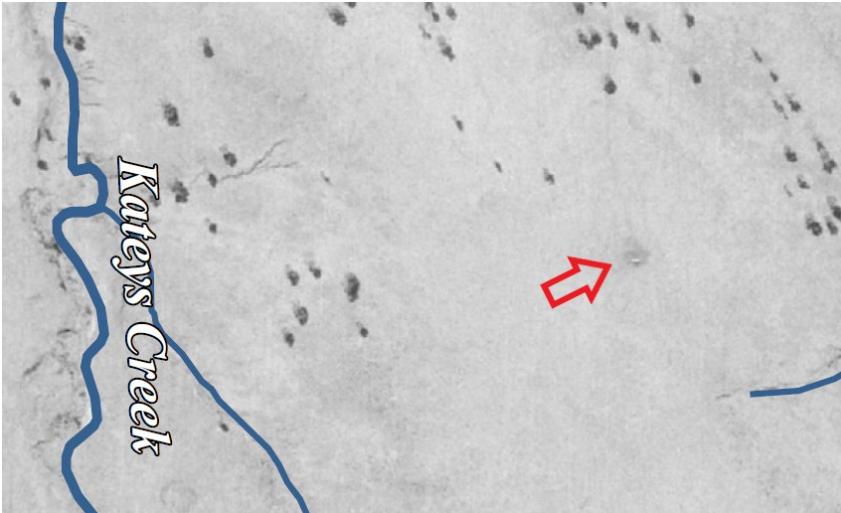


Plate 5.8 1962 aerial photograph showing structure present (HH6)

Source: Liresources



Plate 5.9 View west toward the area the HH6 would have been located

5.6.2 Area 2

Due to limitations in fieldwork days, no survey was undertaken in Area 2.

5.6.3 Area 3

The survey length of Area 3 totalled 13.1 kms and comprised cultivated pastures and ephemeral waterways (Plate 5.10). The landforms throughout Area 3 are predominately low rolling hills (Plate 5.11), with flats and crests situated in between. The area has been cultivated and cleared, but there are currently no active crops in this portion of the project area.

No European plantings were noted during the survey to indicate occupation. Much of the area had been cleared, however native olive trees were still present (Plate 5.12), which may have been utilised by Europeans. During the survey a lone fence post (Plate 5.13) was identified, this was noted as it may indicate an earlier fence alignment. The post was 1.1 m high, 20 cm in diameter and the holes indicate the fence line ran north-west to south-east, no other posts were present in the area. Both round and square cut posts were still in use across the entire property.



Plate 5.10 Area 3 landscape showing ephemeral waterway (view north)



Plate 5.11 Area 3 landscape (view east)



Plate 5.12 Area 3 native olive tree



Plate 5.13 Area 3 fence post

i HH3 (rubbish pit)

The manager of the Glen Eisle station (located in the north-east corner of Area 3, outside the conceptual disturbance footprint) pointed out a historical rubbish pit (HH3) located in the central northern portion of Area 3 (Table 5.3). The pit is set into a hill and is approximately 20 m long and 8 m wide, 300 m west of the Glen Eisle main residence. It mainly holds glass and scrap metal. According to the dates found on the bottles, the pit appears to have been in use between 1960 and 1980. It did not appear that items were buried, although brambles had grown over the site. There were a few intact bottles, no distinguishable metal items and no other materials appeared on the surface.

No other sites or areas of interest were noted during the survey.

Table 5.3 HH3 (rubbish pit) photographs



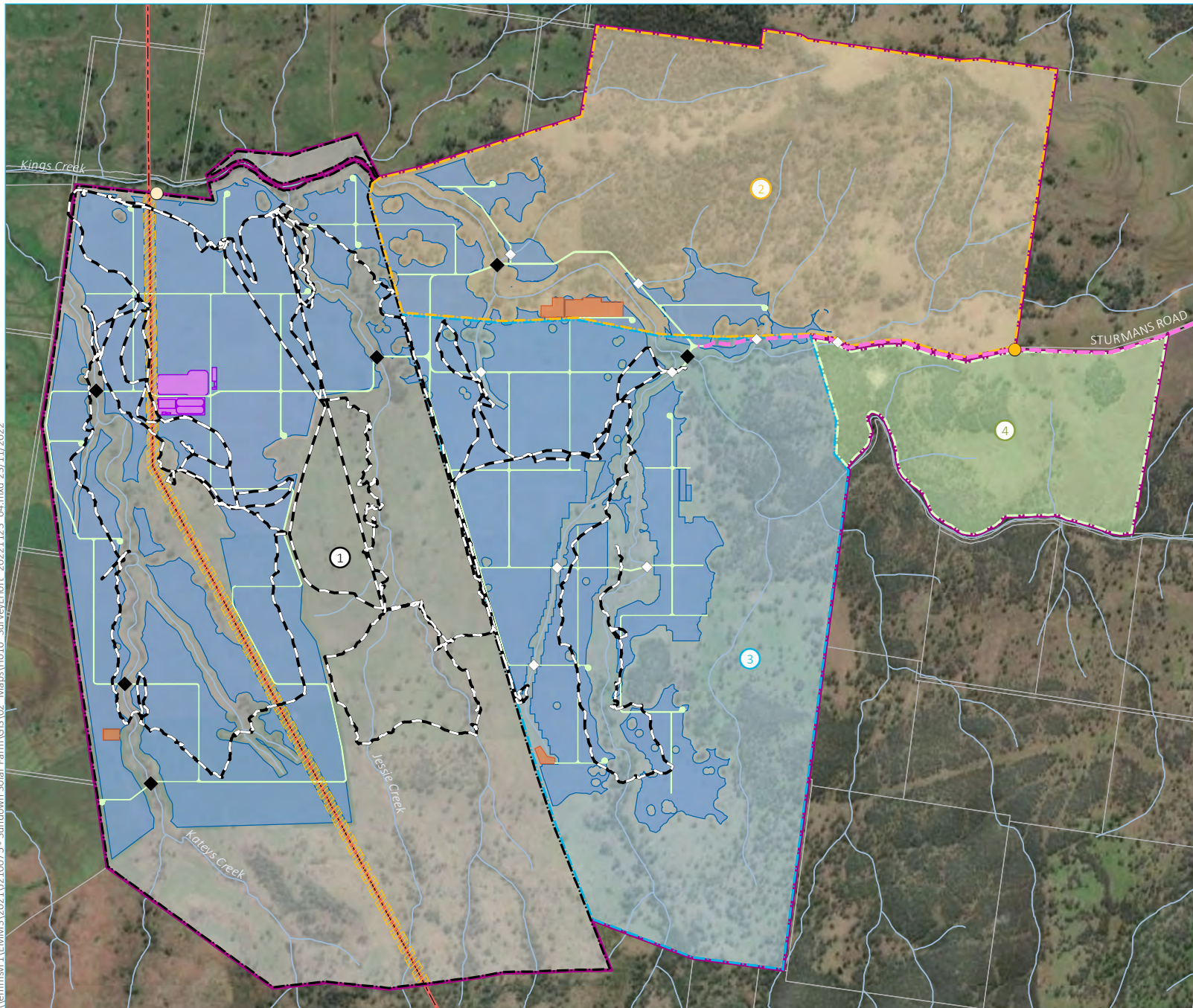
Table 5.3 HH3 (rubbish pit) photographs



5.6.4 Area 4

Due to limitations in fieldwork days, no survey was undertaken in Area 4.

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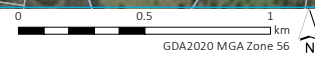
- KEY**
- Proposed Sundown Solar Farm (Project area)
 - Survey track
 - Minor road
 - Watercourse/drainage line
 - Cadastral boundary
 - Existing overhead transmission line
 - Armidale to Dumaresq (330 kV)
 - Development footprint**
 - Access road
 - 330 kV OHL easment (60 m)
 - Internal access road
 - BESS/switchroom/substation
 - Construction and laydown
 - Potential PV area
 - Emergency access/egress point**
 - Primary
 - Secondary
 - Potential water crossing**
 - ◆ Named watercourse
 - ◇ Drainage line
 - Survey area**
 - 1
 - 2
 - 3
 - 4

Survey effort

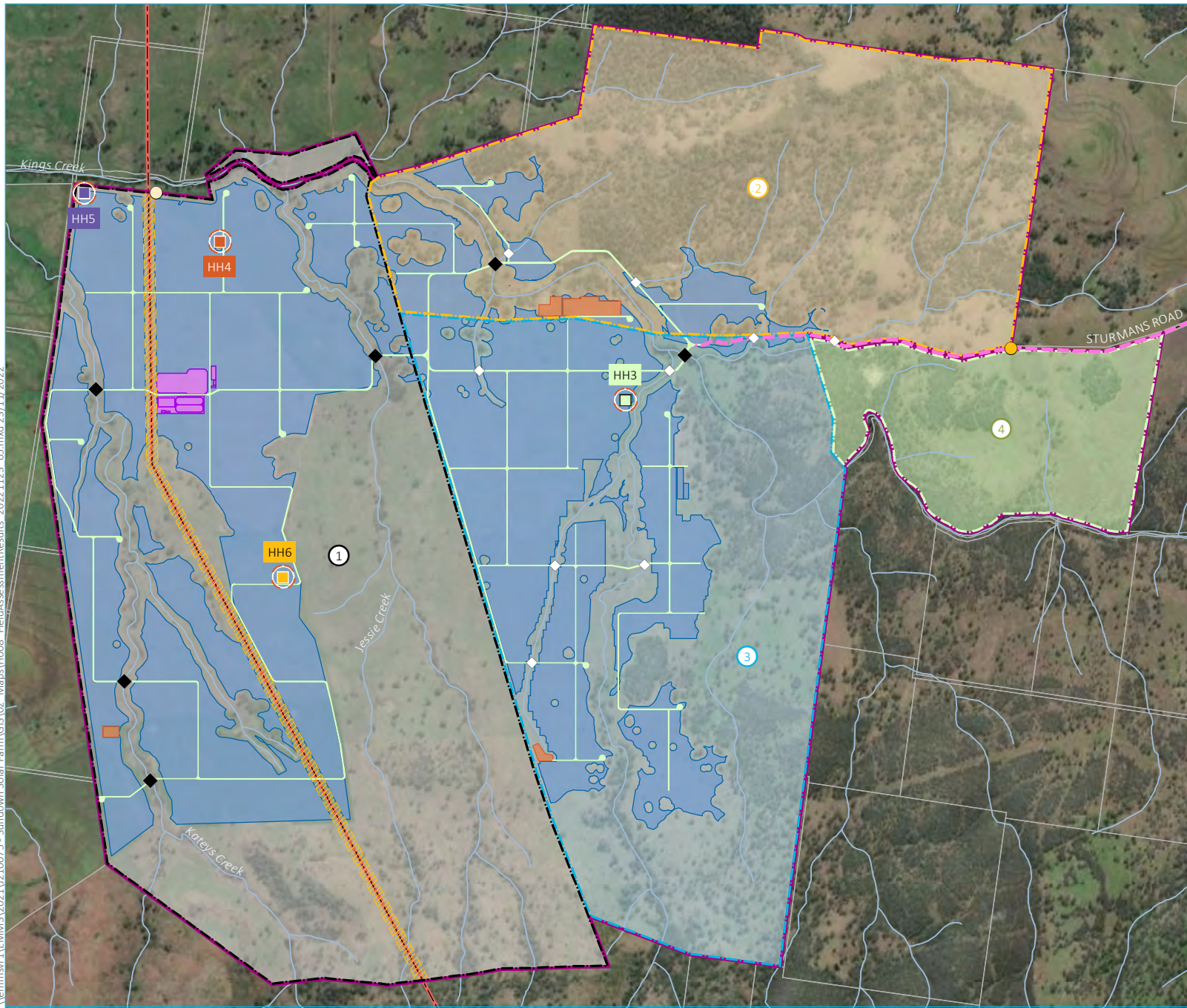
Sundown Solar Farm
Statement of heritage impact
Figure 5.1



Source: EMM (2022); Canadian Solar (2022); ESRI (2022); DFSI (2017)



\\lemmsvr1\EMM3\2021\210075 - Sundown Solar Farm\GIS\02 Maps\H008 FieldAssessmentResults_2022.11.23_05.mxd 23/11/2022



- KEY**
- Proposed Sundown Solar Farm (Project area)
 - Minor road
 - Watercourse/drainage line
 - Cadastral boundary
 - 20 m impact buffer (offset for display)
 - Historic heritage site
 - HH3 - Rubbish pit
 - HH4 - Wool shed
 - HH5 - Sheep dip and yard
 - HH6 - Unidentified structure
 - Existing overhead transmission line
 - Armidale to Dumaresq (330 kv)
 - Development footprint
 - Access road
 - 330 kv OHL easment (60 m)
 - Internal access road
 - BESS/switchroom/substation
 - Construction and laydown
 - Potential PV area
 - Emergency access/egress point
 - Primary
 - Secondary
 - Potential water crossing
 - ◆ Named watercourse
 - ◇ Drainage line
 - Survey area
 - 1
 - 2
 - 3
 - 4

Source: EMM (2022); Canadian Solar (2022); ESRI (2022); DFSI (2017)



Survey results

Sundown Solar Farm
Statement of heritage impact
Figure 5.2



5.7 Archaeological potential and sensitivity

5.7.1 Introduction

The consistent agricultural use throughout the last 180 years has shaped the project area into a historical working cultural landscape. The project area has been subject to ground disturbance in the form of inundation and pastoral uses throughout the years. This disturbance is unlikely to have removed all evidence of early occupation of the runs as these uses are low impact and usually only affect the top of the soil profile.

Aerial imagery, in conjunction with the field survey, suggests that two buildings (HH5 and HH6) and one rubbish pit (HH3) within the conceptual disturbance footprint may hold archaeological resources. It is considered that HH4 does not hold archaeological potential or sensitivity.

5.7.2 HH3 (rubbish pit)

Rubbish pits, like outhouses and wells, often provide research information on both the domestic and commercial realm. This can include food remains (bones, shells, etc), broken goods such as glass, ceramics or items unable to be repaired. Many of these objects could be useful for dating as well as help determine the type of occupation within the site. Although HH3 did not appear to have anything other than metal or glass, both of these materials can provide context for site dating and use.

It is considered that HH3 holds archaeological potential and sensitivity.

5.7.3 HH4 (shearing shed)

HH4 is a 1980s shearing shed. The structure itself and the associated archaeological deposits (if present) would not yield information that is not available from other sources. Other sources include oral histories and extant examples of 1980s shearing sheds.

It is considered that HH4 does not hold archaeological potential or sensitivity.

5.7.4 HH5 (sheep dip and yards)

During the field survey it was noted the site of HH5 was approximately 10 m across and 35 m long and consisted of one building and additional yards. The 1962 aerial photograph, however, reveals that the site was originally larger (50 m x 30 m) with an additional building to the south. Although the building has been removed; the lack of disturbance to the project area allows for a moderate likelihood of resources being present sub-surface.

The archaeological potential for HH5 include a small, earlier version of a woolshed. The area may hold the commercial tools and fittings used in cleaning, preparing and shearing the stock. Foundations of the buildings and pens may remain, indicating the functional layout of the site. Woolsheds tend to be lifted off the ground for ease of cleaning and to allow sheep to be penned below in wet weather. As many woolsheds are near a water supply the height also reduces the risk of flooding. The additional structural components required to hold the weight on the pillars means extremely sturdy material tends to be utilised, which has a better chance of surviving archaeologically.

It may be possible that the use, whether commercial, domestic or both, of the area could be determined through an examination of sub-surface deposits in the form of an archaeological excavation. Shearing teams worked extremely long hours, which meant kitchen facilities or permanent camp sites were located near the shed for the workers to use. Remnants of these cooking areas could indicate what was being prepared and the size of the workforce expected.

It is considered that HH5 holds archaeological potential and sensitivity.

5.7.5 HH6 (unidentified structure)

HH6 is located almost halfway between Katy's Creek and Jessie's Creek on Lot 89, which was shown to be under the name of Patrick William Anderson, Duncan Sinclair Anderson and John Archibald Anderson (in the late 1800s). The crown plan was acquired but does not show any structures on it. It is possible this structure was a hut, outstation or shelter of some kind. It is impossible to tell from the aerial photograph whether there are other items associated with the structure however it is possible gardens, tanks or cisterns could have been present. Archaeological resources left behind may indicate what the site was used for, its layout and surroundings and what sort of flooring was present.

It is also possible with the presence of timber floorboards (and prior to tongue and groove flooring which was introduced in the mid-1880s) that there is a chance domestic items slipped through the cracks and into the dirt below. These items could include glass and ceramics, coins, writing materials, medicine containers, children's toys, and other household items. In addition to everyday items, evidence of footings and floorplans could remain along with the building materials.

It is considered that HH6 holds archaeological potential and sensitivity.

5.8 Comparative analysis

5.8.1 Review of similar sites

i HH3

Currently there are no sites on the state heritage inventory which refer specifically to dump or trash sites. This may be because many of them are buried and harder to detect; or they are encompassed into a larger site. However, these types of sites are valued in Australian archaeology. Archaeology is known to study human cultural material and from that infer about the humans lives during that time period. A rubbish pit tends to be a culmination of every day life, and depending on the context, rolling working and domestic activities together. Patterns can certainly be interpreted from material found in rubbish pit presuming the pit was used over a period of time (as most tend to be). While there have been numerous archaeological excavations in the Sydney region, archaeological investigations in rural areas are rare. A brief review of archaeological excavation reports held by Heritage NSW did not identify archaeological investigations of a similar feature.

ii HH5

There are three sheep dips identified on the NSW State heritage inventory, two of the sites (Sheep Dip (associated with *Milamba* Homestead) and H8 Sheep Dip) are listed as local significance, and the Eighteen Mile Sheep Dip is listed as State significant. No photos are available for these sites.

The H8 Sheep Dip is an archaeological site, the other two are both built.

a Eighteen Mile Sheep Dip

Eighteen Mile Sheep Dip is located 130 km north-east of the project area at Carnham. The significance of this sheep dip comes from its association (SHR Criterion a) with the Clarence River sheep industry, and the fact it was located on one of the earlier stations in the region. This sheep dip was constructed in the mid to late 1800s and is noted as a rare structure (SHR Criterion f) from the early sheep industry. The sheep dip is noted to have the roof removed, but otherwise be in excellent condition.

b H8 Sheep dip

This sheep dip is part of the Tralee homestead complex (located on the eastern edge of the ACT border), though it is listed as an individual item. The item is listed for archaeological potential but no further information is offered on the item. Year of construction is unknown.

c Sheep dip (associated with *Milamba* Homestead)

The *Milamba* Homestead is located 140 km south-east of the project area in Ebor. Constructed in the late 1800s this sheep dip has been listed due to its rarity within the region, specifically because it was built into a natural rock face. It is expected this was done to keep costs down for the farmers, as the region was a less profitable area than some. The sheep dip is listed as a way to contribute to the understand of smaller, owner farmer establishments, rather than larger manager run, stations.

iii HH6

a Newstead Station Group

As the project area was once part of the Newstead run, the Newstead Station Group listing may hold clues as to what the structure once was. Newstead station was described as a small village, having workers huts, stables, stations and wool sheds. In the early days of Newstead station (1840–1850s) the property employed 138 people including cooks, carpenters, boundary riders, shearers and gardeners. These employees were comprised of free folk, convicts, Aboriginals and immigrants (German, Scottish and Chinese), all which bought some of their own customs to the station. It is unclear whether the structure was part of the Newstead complex, or whether it was a later development.

The site is noted for its built characteristics, but also its archaeological potential and the contribution it may have to understanding early pastoral life and activities within the region.

5.8.2 Analysis

In comparing HH3 with the information available for the listed sheep dips it is concluded that HH3 does not have features that suggest it is rare, representative or of technical assistance. It is simply a functional farm asset. Similarly, in comparison with other sites HH5 and HH6 do not stand out as making a contribution to our understanding of the historical development, as being representative or rare. However, HH3, HH5 and HH6 each have the potential to add to the body of research; their value comes from the combination of the three as a part of the pastoral cultural landscape. It maybe that these sites are not related, however it is likely that all reflect pastoral life in the New England Tables during the 1800 and 1900s.

6 Assessment of significance

6.1 The significance framework

In NSW, historical value is ascribed to buildings, places, archaeological sites and landscapes modified in the Australian historical period for purposes other than traditional Aboriginal use. The assessment of heritage significance is based on the *Burra Charter* (Australia ICOMOS 2013) and further expanded upon in *Assessing Heritage Significance* (NSW Heritage Manual Heritage Office 2001). The heritage manual lists seven criteria to identify and assess heritage values that apply when considering if an item is of state or local heritage significance, which are set out in Table 6.1. It also identifies the heritage gradings for which items (or features or components) that were recorded onsite have been assessed against, which are set out in Table 6.2, and which provide context for each individual item's contribution to the cultural landscape. The result of the assessments of significance may determine that an individual component does not meet the threshold for local or State significance as an individual item, but that it does contribute to the significance of the cultural landscape.

The criteria against which heritage significance have been assessed are reproduced in Table 6.1. Gradings of significance are reproduced in Table 6.2. The assessment of relics is hypothetical as their existence as intact and substantial sites is predicted.

Table 6.1 NSW heritage assessment criteria

Criterion	Explanation
a)	An item is important in the course or pattern of NSW's (or the local area's) cultural or natural history (Historical Significance).
b)	An item has strong or special association with the life or works of a person, or group of persons of importance in NSW's (or the local area's) cultural or natural history (Associative Significance).
c)	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area) (Aesthetic Significance).
d)	An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons (Social Significance).
e)	An item has the potential to yield information that will contribute to an understanding of NSW's (or the local area's) cultural or natural history (Research Significance).
f)	An item possesses uncommon, rare or endangered aspects of NSW's (or the local area's) cultural or natural history (Rarity).
g)	An item is important in demonstrating the principal characteristics of a class of NSW's (or the local area's) cultural or natural places or environments (Representativeness).

Source: *Assessing heritage significance* (NSW Heritage Office 2001, p.9).

Table 6.2 NSW heritage assessment gradings

Grading	Justification	Status
Exceptional	Rare or outstanding element directly contributing to an item’s local or state significance.	Fulfils criteria for local or State listing.
High	High degree of original fabric. Demonstrates a key element of the item’s significance. Alterations to not detract from significance.	Fulfils criteria for local or State listing.
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Fulfils criteria for local or State listing.
Little	Alterations detract from significance. Difficult to interpret.	Does not fulfil criteria for local or State listing.
Intrusive	Damaging to the item’s heritage significance.	Does not fulfil criteria for local or State listing.

Source: Assessing heritage significance (NSW Heritage Office 2001, p.11).

6.2 Assessment of sites in the development footprint

Table 6.3, Table 6.4, Table 6.5 and Table 6.6 assess HH3, HH4, HH5 and HH6 against the significance assessment criterion. In assessing the significance of the individual sites, consideration has been given to what information they could provide in understanding the broader pastoral landscape.

Table 6.3 Assessment of significance HH3 (rubbish pit)

Criterion	Assessment
a) Historical	The site already contains datable items from the mid 1900s, if further debris is located sub surface it could provide information about pastoral pursuits and life in Spring Mountain during the 1900s or earlier. The archaeological potential meets the threshold for local as part of a broader landscape significance.
b) Associative	The site does not meet this criterion.
c) Aesthetic	The site does not meet this criterion.
d) Social	The site does not meet this criterion.
e) Research	The site does not meet this criterion.
f) Rarity	The site does not meet this criterion.
g) Representativeness	The site does not meet this criterion.

i Statement of significance HH3

A known historical rubbish pit within a pastoral run is a common feature when examining cultural landscapes and early pastoral pursuits, however, few if any have been investigated archaeologically. Any intact, sub-surface deposits still present could provide a unique viewpoint from early, rural Australia.

Table 6.4 Assessment of significance HH4 (shearing shed)

Criterion	Assessment
a) Historical	<p>The shearing shed was likely built in the late 1970s to replace the failing smaller complex to the west (HH5). The value of the shed comes from the continuation of the story of sheep work on this property, and how its growth led to evolution of the facilities HH4 gains its significance partially from the surrounding items which form a complex.</p> <p>The site meets the threshold for local as part of a broader landscape significance.</p>
b) Associative	The site does not meet this criterion.
c) Aesthetic	The site does not meet this criterion.
d) Social	<p>Although shearing sheds often have strong social connections due to the large volume of shearers that tend to pass through over the years, this is less likely at the turn of the 20th century were more stable staff are hired year round.</p> <p>The site does not meet this criterion.</p>
e) Research	The site does not meet this criterion.
f) Rarity	<p>This shearing shed is typical of the shearing sheds that pepper the NSW landscape currently, it does not hold specifically unique features that would be classed as rare.</p> <p>The site does not meet this criterion.</p>
g) Representativeness	The site does not meet this criterion.

ii Statement of significance HH4

The shearing shed and washing facilities are often the heart of a sheep station. Although sheep are brought in annually for shearing, other essential health checks tend to be done on a quarterly basis requiring the sheds to be in use all year round. Shearing sheds tend to be well cared for through the years due to the fact they must be well made from the start to take the weight of the sheep, shearers and equipment. Additionally, this shearing shed was built toward the end of the 20th century, likely to replace the smaller shed to the west. It is not as old as some examples of listed heritage but its value comes from the contrast to the earlier structure found on the property which shows the growth of the industry for this property, through the years.

Table 6.5 Assessment of significance HH5 (sheep dip and yards)

Criterion	Assessment
a) Historical	<p>Sheep dips were an integral part of Australia’s history. Sheep through Australia were subject to pests that were not familiar to Europeans often causing devastation to whole herds at a time. The management of pests was necessary for the health of the livestock and the livelihood of the settlers. Through the years different combinations of chemicals have been used to combat these pests, remnants of which may still be present at the site today. The structure itself holds information on early building techniques and innovation to create a practical working area for this particular site as each working area tends to be unique to the landscape, managers and type of stock present.</p> <p>The site meets the threshold for local as part of a broader landscape significance.</p>
b) Associative	The site does not meet this criterion.
c) Aesthetic	The site does not meet this criterion.
d) Social	<p>Although shearing sheds often have strong social connections due to the large volume of shearers that tend to pass through over the years, this smaller operation was unlikely to have that magnitude of workers.</p> <p>The site does not meet this criterion.</p>
e) Research	<p>Sheep dips are not often noted as part of a pastoral setting but can add great value to the research record by themselves. Additionally, the layout and structure of the shed could be recreated digitally to see how the original structure was used.</p> <p>Sub-surface deposits may still be present both at the dip site and where the shed was located.</p> <p>The site meets the threshold for local as part of a broader landscape significance.</p>
f) Rarity	<p>There are no other sheep dips sites noted within the regional area. As operations expanded over the years the smaller, original sheep dips were replaced with larger woolsheds, yards and chutes; often leading to the destructions of the smaller sites. It is likely many have been destroyed, their locations lost to history.</p> <p>The site meets the threshold for local as part of a broader landscape significance.</p>
g) Representativeness	<p>The sheep dip is representative of small operations as shown by the smaller size of the pens and the fact that corrugated iron was a cheap method to allow for proper drainage and drying. However there is known item of similar style located within the region.</p> <p>The site does not meet this criterion.</p>

iii Statement of significance HH5

The sheep dip and shed was likely the heart of the sheep operation in that section of the run. Although sheep are brought in annually for shearing, other essential health checks tend to be done on a quarterly basis requiring the sheds to be in use all year round. Additionally, the method of stock handling that was conducted on the site was successful enough for the operation to continue to grow throughout the years resulting in the larger shearing shed to the east.

It is also possible the area also contained some form of kitchen, or cook area used to feed the workers during larger stints of work. This site holds both built and archaeological research potential for early stock handling in the region.

Table 6.6 Assessment of significance HH6 (unidentified structure)

Criterion	Assessment
a) Historical	Structures and huts help connect the topography of a pastoral station. The location can help demonstrate the development of the settlement and how different parts interacted with each other. It is unclear from the assessment what type of structure was located here, although it is probable, they were shepherding huts due to the use of the land. The site meets the threshold for local as part of a broader landscape significance.
b) Associative	The site does not meet this criterion.
c) Aesthetic	The site does not meet this criterion.
d) Social	The site does not meet this criterion.
e) Research	This site has the potential to yield information pertaining to early life in Spring Brook for pastoralists. The site is located between two main water ways, but quite a distance from both, further understanding of what the structure is and possibly why it was removed could be gained through excavation of sub-surface deposits. The site meets the threshold for local as part of a broader landscape significance.
f) Rarity	The site does not meet this criterion.
g) Representativeness	The site does not meet this criterion.

iv **Statement of significance HH6**

If archaeological deposits are still present at the site, the resources may hold enough information to describe the structure, who it was utilised by, when and why. The placement of footings, appearance of floor or debris that remains could hold some context of what the area looked like prior to the structure being removed. Largely, the identification of what the structure is, would contribute to the deeper understanding of the Newstead property and early pastoralism in Spring Brook.

6.3 Summary

The four identified sites have been identified as contributing to the broader understanding of land use patterns and the cultural landscapes of the New England Tableland pastoral runs, but as individual sites do not meet the threshold for local significance.

7 Heritage impact assessment

7.1 Background to assessing impacts

7.1.1 Introduction

The assessment of a project's impacts to the heritage significance of a place or an item is to understand change, if it is beneficial to the place or item, and how changes can be managed to best retain significance. The historical landscape in Australia, be it rural or urban, is by social agreement, a significant aspect of our identity (refer to Section 7.1.2). That agreement is codified in legislation, the intent of which is to encourage the conservation of cultural heritage by incorporating it into development where feasible. In many situations avoiding impacts is impossible, but the aim is to reduce those impacts by either project re-design or managing the loss of information through methods that reduce and/or record significance before it is removed.

The framework around assessing significance and therefore suitable levels of impact is to understand how the place or item came to be, how important it was (and may be still) in the development of the local area or the state (the colony at the time) and providing guidance on its management. This is what this report aims to do.

The nature of historic heritage impacts can be summarised as follows:

- Major negative impacts (substantially affects fabric or values of state significance).
- Moderate negative impacts (irreversible loss of fabric or values of local significance; minor impacts on State significance).
- Minor negative impacts (reversible loss of local significant fabric or where mitigation retrieves some value of significance; loss of fabric not of significance but which supports or buffers local significance values).
- Negligible or no impacts (does not affect heritage values either negatively or positively).
- Minor positive impacts (enhances access to, understanding or conservation of fabric or values of local significance).
- Major positive impacts (enhances access to, understanding or conservation of fabric or values of state significance).

7.1.2 Inter-generational equity

Aboriginal cultural heritage management is based on the principle of inter-generational equity, the intent of which is to ensure present generations consider future generations when making management decisions about culture. This principle is possibly the most relevant part of the notion of ecologically sustainable development (ESD) when considering Aboriginal cultural heritage management.

The same philosophy is applied to historical heritage management and is covered under the ICOMOS *Burra Charter*:

Article 1.2 Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present and future generations (Australia ICOMOS 2013, p.2).

The Burra Charter continues:

Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are historical records, [sic] that are important expressions of Australian identity and experience. Places of cultural significance reflect the diversity of our communities, telling us about who we are and the past that has formed us and the Australian landscape. They are irreplaceable and precious.

These places of cultural significance must be conserved for present and future generations in accordance with the principle of inter-generational equity.

The Burra Charter advocates a cautious approach to change: do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained.

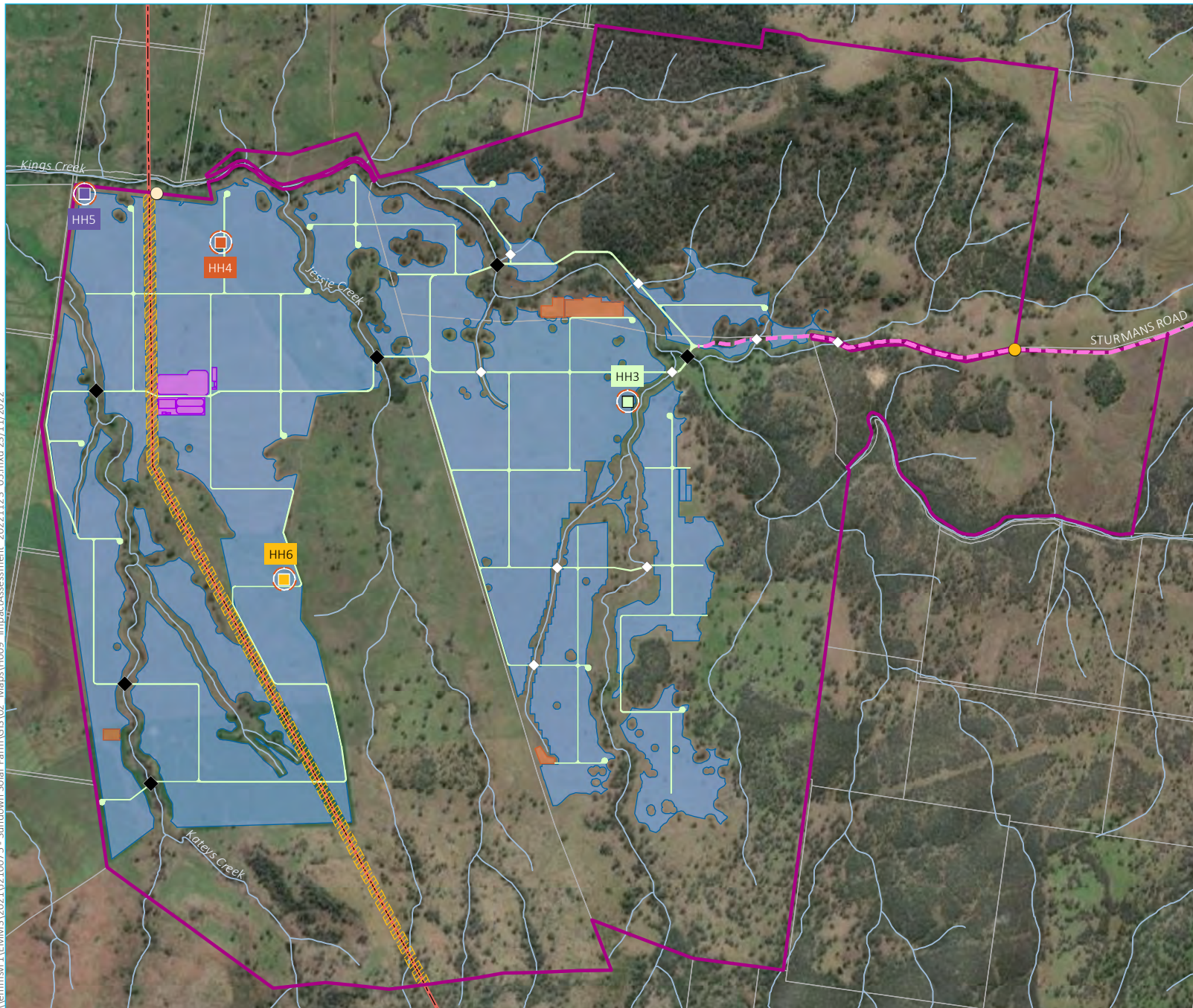
(Australia ICOMOS 2013, p.1)

7.2 Statement of heritage impact

The four identified sites have been identified as contributing to the broader understanding of land use patterns and the cultural landscapes of the New England Tableland pastoral runs, but as individual sites do not meet the threshold for local significance. The preferred management for all sites is that they be retained in situ, in line with Burra Charter Article number 3.1. However, to enable a viable generation capacity for the project, it is not possible to design the PV panels around each of the sites. Each of the four historical heritage sites are located within the conceptual disturbance footprint (Figure 7.1) and will therefore result in direct impacts.

Site access will be via the existing access road, namely Spring Mountain Road and Sturmans Road. The site access road will be widened from a single lane road to a dual carriage road and will result in only minimal ground disturbance along this alignment.

\\lemmsvr1\EMM3\2021\1210075 - Sundown Solar Farm\GIS\02 - Maps\H009 - ImpactAssessment - 2022\1123 - 05.mxd 23/11/2022



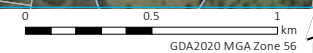
- KEY**
- Proposed Sundown Solar Farm (Project area)
 - Minor road
 - Watercourse/drainage line
 - Cadastral boundary
 - 20 m impact buffer (offset for display)
 - Historic heritage site
 - HH3 - Rubbish pit
 - HH4 - Wool shed
 - HH5 - Sheep dip and yard
 - HH6 - Unidentified structure
 - Existing overhead transmission line
 - Armidale to Dumaresq (330 kV)
 - Development footprint
 - Access road
 - 330 kV OHL easment (60 m)
 - Internal access road
 - BESS/switchroom/substation
 - Construction and laydown
 - Potential PV area
 - Emergency access/egress point
 - Primary
 - Secondary
 - Potential water crossing
 - ◆ Named watercourse
 - ◇ Drainage line

Historical heritage impacts

Sundown Solar Farm
Statement of heritage impact
Figure 7.1



Source: EMM (2022); Canadian Solar (2022); ESRI (2022); DFSI (2017)



8 Management measures

Proposed measures to manage and mitigate potential historical heritage impacts are outlined in Table 8.1.

Table 8.1 Historical heritage mitigation measures

Mitigation measure	Timing
<p>Prior to construction, prepare a Historical Heritage Management Plan (HHMP). Ensure the HHMP requires:</p> <ul style="list-style-type: none"> • digital archival recording² of: <ul style="list-style-type: none"> – HH4 (shearing shed)³; and – HH5 (sheep dip and yards); • archaeological investigation (including archaeological excavation) of: <ul style="list-style-type: none"> – HH3 (rubbish pit) to build an appreciation of life in the region during pastoral operations in early 20th century; and – HH6 (unidentified structure) to try to determine the function and nature of the structure; • protocols for managing unexpected finds. 	Pre-construction

2 The digital photographic record will be prepared in accordance with Photographic Recording Of Heritage Items Using Film or Digital Capture (NSW Heritage Office 2006) and How to Prepare Archival Records of Heritage Items (NSW Heritage Office 1998).

3 Prior to construction, HH4 will be relocated to outside of the development footprint. The digital archiving will be completed prior to relocation of HH4.

9 Conclusion

The project area was once part of the larger Newstead Station, however very little development appears to have been located within the portion of the station that comprises the proposed development footprint.

There are four historical sites within the development footprint. As it is not practical to avoid these sites, and as none of these sites meet the threshold for local significance, each site will be recorded as per the proposed measures in Table 8.1 and will then be developed as part of the project.

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