

Underground Overground Archaeology

Darfield Solar Farm

An archaeological assessment

Report prepared for Darfield Solar & Energy Storage Limited c/- Mitchell Daysh Author: Tristan Wadsworth and Lydia Mearns Reviewed by: Kirsa Webb Submitted: August 2024



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Project details

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Executive summary

Underground overground Archaeology Ltd (UOA) has been commissioned by Mitchell Daysh Ltd, on behalf of Darfield Solar & Energy Storage Limited to undertake an archaeological assessment of the proposed formation of a solar farm 1352 Homebush Road, Darfield (Lot 1 DP 434071 and Lot 2 DP 60325). This archaeological assessment has been prepared to consider the necessity of an archaeological authority application under the Heritage New Zealand Pouhere Taonga Act 2014.

The results of the archaeological research found that the project area is located at least 1.5 km from any previously recorded archaeological sites. The historical research indicates that the area was part of much larger pastoral stations from the mid-19th century into the 20th century, and has remained primarily pastoral in use to this day. No evidence was found for any form of pre-1900 occupation or use likely to result in archaeological remains, and it is not considered likely that the proposed work will affect an archaeological site.

An authority under the Heritage New Zealand Pouhere Taonga Act 2014 is not required. It is recommended that the proposed works assessed by Underground Overground Archaeological take place under an Accidental Discovery Protocol (ADP). In the event of archaeological discoveries works must cease and Heritage New Zealand Pouhere Taonga and an archaeologist must be contacted. Lastly, it is recommended that Darfield Solar & Energy Storage Ltd engage Ngāi Tūāhuriri Rūnanga as the project area may have cultural values and require cultural input.

Abbreviations

Abbreviation	Definition
AMP	Archaeological Management Plan
HNZPT	Heritage New Zealand Pouhere Taonga
HNZPTA 2014	Heritage New Zealand Pouhere Taonga Act 2014
NZAA	New Zealand Archaeological Association
RMA 1991	Resource Management Act 1991
UOA	Underground Overground Archaeology Ltd

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1 Introduction

Darfield Solar & Energy Storage Limited is proposing to construct a solar farm at 1352 Homebush Road, Darfield (Lot 1 DP 434071 and Lot 2 DP 60325: Figure 1-1). Underground Overground Archaeology Ltd (UOA) has been commissioned by Mitchell Daysh on behalf of Darfield Solar & Energy Storage Ltd to undertake an archaeological assessment of the project area and proposed works. This archaeological assessment has been prepared to assess the archaeological potential of the project area and to consider the impact that the proposed works will have on any archaeological sites. Archaeological sites are defined within legislation as areas that witnessed human occupation prior to the year 1900 and can provide information on the history of New Zealand through archaeological investigation. Archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

1.1 Project area

The project area is defined as 1352 Homebush Road, Darfield (Lot 1 DP 434071 and Lot 2 DP 60325), and a summary of the project area is provided in Table 1-1.

Table 1-1. Summary of project area.

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Site address	1352 Homebush Road, Darfield	
Legal descriptions	Lot 1 DP 434071 and Lot 2 DP 60325	
Landowner	Charles Buttle	
Territorial authority	Selwyn District Council	
Archaeological site no.	n/a	
Previous archaeological authorities	None known	
New Zealand Heritage List/Rārangi Kōrero	n/a	
Covenant or heritage order	n/a	
Scheduled on district plan	n/a	
Reserve status	n/a	
Statutory acknowledgement area	n/a	
Customary marine title	n/a	

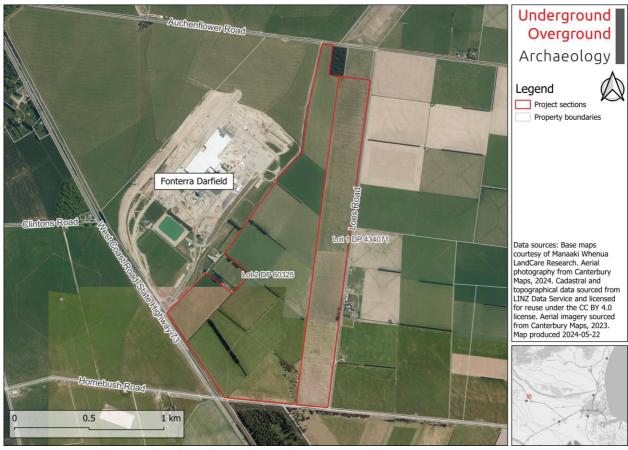


Figure 1-1. Proposed location of Darfield Solar Farm, Canterbury.

1.2 Proposed activities¹

The Darfield Solar & Energy Storage Project (DAR) is a proposed 148 ha solar farm. The proposed project includes a solar array, internal accessways, fencing, lighting, electrical infrastructure, planting and landscaping, and buildings, including a site office and a substation. The detailed design of the solar farm has yet to be undertaken, but concept layouts have been prepared. The basic principle is that photovoltaic solar panels will generate direct current electricity, which will then be converted to alternating current electricity by an inverter.

Approximately 186,000 solar panels are to be installed, and will stand approximately 0.3 (lowest point of ground clearance) to 3.1 m (highest point of ground clearance) off the ground, allowing livestock grazing beneath (c.f. Figure 10-5). Solar panels will be mounted on Single Axis Tracking Solar Tables, in multiples of 24, with up to four such sets mounted on a single tracker. Trackers will range from 31-115 m long and will be 2.47 m long. There will be an approximately 3.22 m gap between each row of solar tables. Solar Tables are fixed to the ground by driven steel foundation posts.

Solar panels will be connected to approx. 24 inverters situated throughout the site and connected to the substation and battery energy storage systems.

The solar farm will be connected to the Kimberley Substation, located to the northeast at Lot 2 DP 456083, within the area occupied by the Fonterra Kimberley Factory, either by way of an overhead line or underground cable. Where possible, the project is to utilise existing infrastructure, and no additional crossings of the railway line and the West Coast Road water race are required.

¹ Based on information provided by NZ Clean Energy, 15 August 2024.

New accessways will involve the construction of new culverts across existing water races within the project area, though the details on these have yet to be finalised.

2 Statutory requirements

The legislative requirements relating to archaeological sites and artefacts are detailed in the following sections. There are two main pieces of legislation that provide protection for archaeological sites: the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014) and the Resource Management Act 1991 (RMA 1991). Artefacts are further protected by the Protected Objects Act 1975.

2.1 Heritage New Zealand Pouhere Taonga Act 2014

The HNZPTA 2014 came into effect in May 2014, repealing the Historic Places Act 1993. The purpose of this act is to promote identification, protection, preservation, and conservation of New Zealand's historical and cultural heritage. HNZPT administers the act and was formerly known as the New Zealand Historic Places Trust (Pouhere Taonga).

Archaeological sites are defined by this act as

- (a) any place in New Zealand, including any building or structure (or part of a building or structure), that:
 - (i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900; and
 - (ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand; and
- (b) includes a site for which a declaration is made under section 43(1)

Additionally, HNZPT has the authority (under section 43(1)) to declare any place to be an archaeological site if the place

- (a) was associated with human activity in or after 1900 or is the site of the wreck of any vessel where that wreck occurred in or after 1900; and
- (b) provides, or may be able to provide, through investigation by archaeological methods, significant evidence relating to the historical and cultural heritage of New Zealand.

Archaeological sites are protected under Section 42 of the act, and it is an offense to carry out work that may "modify or destroy, or cause to be modified or destroyed, the whole or any part of that site if that person knows, or ought reasonably to have suspected, that the site is an archaeological site", whether or not the site has been previously recorded. Each individual who knowingly damages or destroys an archaeological site without having the appropriate authority is liable, on conviction, to substantial fines (Section 87).

Any person wishing to carry out work on an archaeological site that may modify or destroy any part of the site, including scientific investigations, must first obtain an authority from HNZPT (Sections 44(a,c)). The HNZPTA 2014 stipulates that an application must be sought even if the effects on the archaeological site will be no more than minor, as per Section 44(b). A significant change from the Historic Places Act (1993) is that "an authority is not required to permit work on a building that is an archaeological site unless the work will result in the demolition of the whole of the building" (Section 42(3)).

HNZPT will process the authority application within five working days of its receipt to assess if the application is adequate or if further information is required (Section 47(1)(b)). If the application meets the requirements under Section 47(1)(b), it will be accepted and notice of the determination will be provided within 20 to 40 working days. Most applications will be determined within 20 working days, but additional time may be required in certain circumstances. If HNZPT requires its own assessment of the Māori values for the site, the determination will be made within 30 working days. If the application relates to a particularly complex site, the act permits up to 40 working days for the determination to be made. HNZPT will notify the applicant and other affected parties (e.g., the landowner, local authorities, iwi, museums, etc.) of the outcome of the application.

Once an authority has been granted, modification of an archaeological site is only allowed following the expiration of the appeals period or after the Environment Court determines any appeals. Any directly affected party has the right to appeal the decision within 15 working days of receiving notice of the determination.

HNZPT may impose conditions on the authority that must be adhered to by the authority holder (Section 52). Provision exists for a review of the conditions (see Section 53). The authority remains current for a period of up to 35 years, as specified in the authority. If no period is specified in the authority, it remains current for a period of five years from the commencement date.

The authority is tied to the land for which it applies, regardless of changes in the ownership of the land. Prior to any changes of ownership, the landowner must give notice to HNZPT and advise the succeeding landowner of the authority, its conditions, and terms of consent.

An additional role of HNZPT is maintaining the New Zealand Heritage list, which is a continuation of the Register of Historic Places, Historic Areas, Wāhi Tapu, and Wāhi Tapu Areas. The list can include archaeological sites. The purpose of the list is to inform members of the public about such places and to assist with their protection under the Resource Management Act 1991.

2.2 Resource Management Act 1991

The RMA 1991 defines historic heritage as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, and it may include historic sites, structures, places, and areas; archaeological sites; and sites of significance to Māori. It should be noted that this definition does not include the 1900 cut-off date for protected archaeological sites as defined by the HNZPTA 2014. Any historic feature that can be shown to have significant values must be considered in any resource consent application.

The heritage provisions of the RMA 1991 were strengthened with the Resource Management Amendment Act 2003. The Resource Management Amendment Act 2003 contains a more detailed definition of heritage sites and now considers historic heritage to be a matter of national importance under Section 6. The act requires city, district, and regional councils to manage the use, development, and protection of natural and physical resources in a way that provides for the well-being of today's communities while safeguarding the options of future generations.

Under the RMA 1991, local authorities are required to develop and operate under a district plan, ensuring that historic heritage is protected. This includes the identification of heritage places on a heritage schedule (or list) and designation of heritage areas or precincts and documents the appropriate regulatory controls. All heritage schedules include, but are not limited to, items on the New Zealand Heritage List/Rārangi Kōrero. Additional sites of significance to the local authority may also appear on the schedule.

The regulatory controls for historic heritage are specific to each local authority. However, most local authorities will require resource consent under the RMA 1991 for any alterations, additions, demolition, or new construction (near a listed place) with HNZPT being recognised as an affected party. Repair and maintenance are generally considered permitted activities.

Iwi/hapū management plans are planning documents that are recognised by an iwi authority, relevant to the resource management issues, including heritage, of a place and lodged with the relevant local authority. They have statutory recognition under the RMA 1991. Iwi management plans set baseline standards for the management of Māori heritage and are beneficial for providing frameworks for streamlining management processes and codifying Māori values. Iwi management plans can be prepared for a rohe, heritage inventories, a specific resource or issue or general management or conservation plans (NZHPT, 2012).

2.3 Protected Objects Act 1975

The Protected Objects Act 1975 was established to provide protection of certain objects, including protected New Zealand objects that form part of the movable cultural heritage of New Zealand. Protected New Zealand objects are defined by Schedule 4 of the act and includes archaeological objects and taonga tūturu. Under Section 11 of the Protected Objects Act 1975, any newly found Māori cultural objects (taonga tūturu) are automatically the property of the Crown if they are older than fifty years and can only be transferred from the

Crown to an individual or group of individuals through the Māori Land Court. Anyone who finds a complete or partial taonga tūturu, accidentally or intentionally is required to notify the Ministry of Culture and Heritage within:

- (a) 28 days of finding the taonga tūturu; or
- (b) 28 days of completing field work undertaken in connection with an archaeological investigation authorised by HNZPT.

3 Methodology

This archaeological assessment has been prepared in accordance with HNZPT's (2019) guideline on preparing an archaeological assessment. Presented below are the methods used to gather information to identify the archaeological potential of the project area, determine the archaeological significance, and assess the effects of the proposed work on archaeological values.

3.1 Research to identify archaeology and inform archaeological values

The first part of this report provides the information gathered to inform on the archaeological values of the project area, including the setting, historical background, archaeological context, and the site survey. Documentary research was undertaken to inform the background research sections of this assessment. The physical environment section documents the setting of the project area, its land use, and considers environmental factors that may influence how the site was occupied through time. The historical background first provides an overview of human history for the wider area before narrowing down on evidence that is specific to the project area itself to determine the nature and significance of the archaeology. Previous archaeological research and investigations for the project area provides an understanding of research results, areas of modification, and informs on the potential for the proposed works to affect archaeology. This section also considers the wider archaeological context, including the consideration of sites recorded near the project area and how identified site types are represented in the archaeological record at the local, regional, and national level. Sources utilised for this research include:

- Published primary and secondary sources,
- Ka Huru Manu, Ngāi Tahu's digital atlas
- Historic newspaper articles through PapersPast,
- Historic photographs
- Historic maps accessed via Grip and from Archives New Zealand,
- ArchSite, the digital web portal for the New Zealand Archaeological Association's archaeological site recording scheme
- The HNZPT archaeological reports digital library,
- New Zealand Heritage List/Rārangi Kōrero,

A site visit provides the opportunity to identify archaeological features that are present within the project area along with their condition. The site visit also notes any disturbances to the site that may affect the distribution or preservation of subsurface archaeology. The site visit was conducted by Tristan Wadsworth on 13 June 2024.

3.2 Assessment of archaeological values

The assessment of archaeological and other values is based on criteria established by HNZPT (2019):

- The **condition** of the site(s).
- Is the site(s) unusual, **rare or unique**, or notable in any other way in comparison to other sites of its kind?
- Does the site(s) possess **contextual value**? Context or group value arises when the site is part of a group of sites which taken together as a whole, contribute to the wider values of the group or archaeological, historic or cultural landscape. There are potentially two aspects to the assessment of contextual values; the relationship between features within a site, and the wider context of the surroundings.
- Information potential. What current research questions or areas of interest could be addressed with information from the site(s)? Archaeological evaluations should take into account current national and international research interests, not just those of the author.

- Amenity value (e.g. educational, visual, landscape). Does the site(s) have potential for public interpretation and education?
- Does the site(s) have any special cultural associations for any particular communities or groups (e.g., Māori, European, Chinese.)

The criteria outlined above help to build an assessment of significance of an archaeological site, and UOA have adopted the following scale to which overall archaeological value is assigned (Table 3-1). This scale follows the recommendations proposed by Department for Transport (2008); although, this steers away from the use of local, regional, and national importance, which Kerr (2013) argues is irrelevant to the assessment process. It is important to note that it is not possible to fully understand the archaeological value of subsurface sites, and that the significance of a site may change on the basis of what is found during the work programme.

Table 3-1. Scale of overall archaeological value (adapted from DfT, 2008).

Overall value	Criteria	
Very high	World Heritage Sites (and proposed sites) An archaeological site of acknowledged international importance	
High	Listed archaeological sites, including those of listing quality and importance Category 1: places of special or outstanding historical or cultural heritage significance or value; Category 2: places of historical or cultural heritage significance or value; and Scheduled archaeological sites, including those of scheduling quality and importance Archaeological sites with exceptional values	
Medium	Archaeological sites that can be shown to have moderate values	
Low	 Archaeological sites with limited value, including those that are highly represented, have low information potential, have poor preservation, and/or poor survival of contextual association 	
Negligible	Sites with very little surviving archaeological interest	
Unknown	The importance of the site is not yet known	

3.3 Assessment of effects

After determining if there is evidence that archaeology is present within the project area and evaluating its archaeological value, an assessment of the effects of the proposed work on those values was completed. Specifically, consideration was given to the following matters as outlined by HNZPT (2019):

- How much of the site(s) will be affected, and to what degree, and what effects this will have on the
 values of the site(s).
- Whether the proposed work may increase the risk of damage to the site(s) in future. For example, change from farming to residential use may make sites vulnerable to increased pedestrian and vehicular activity.
- Whether a re-design may avoid adverse effects on the site(s). It is recognised that detailed evaluation
 of alternatives may be beyond the scope of the archaeological assessment, however, some
 consideration of alternatives should be considered where possible.
- Possible methods to protect sites, and avoid, minimise or mitigate adverse effects should be discussed. These will form the basis of any recommendations in the final section.

The magnitude of impact on archaeological values is defined below with a scale ranging from no impact to major impact. In most instances these impacts are adverse; however, there may also be positive impacts on the site.

- Major impact to the archaeological site, such that the asset is totally altered (e.g., a site is totally destroyed) and all archaeological values are removed or are significantly reduced.
- Moderate impact to the archaeological site, such as the asset is significantly modified (e.g., at least half of a site is affected) and its overall values are decreased.
- **Minor** impact to the archaeological site, such that the asset is slightly different (*e.g.*, a small portion of the site is affected) and some archaeological values are reduced but the overall value is not affected.
- Negligible slight changes to archaeological site that hardly affect it or alter the archaeological values.

- No impact the works will not affect the site or its values.
- **Positive** the archaeological values of the site are enhanced.

4 Physical environment and setting

The project area is located 3-4 km northwest of the township of Darfield. Fine detailed geomorphological plans of the area are not available, but the entire area is part of the alluvial river plains of central Canterbury south of the Waimakariri River (Forsyth et al. 2008). The surrounding area is almost entirely agricultural, divided up into numerous paddocks and fields, with scattered farmhouses (Figure 4-1).



Figure 4-1. The broader geographical setting of the proposed works.

5 Historical background

Traditional accounts relate successive migrations to Te Wai Pounamu from Te Ika a Māui (the North Island). The earliest groups noted in oral traditions include Kāhui-Tipua, Hawea, and Te Rapuwai. Ngāi Tahu scholars have considered these groups as at least semi-mythical, as traditions regarding them are typically aetiological narratives explaining the origins of such things as kūmara or the Moeraki Boulders. Traditions regarding later group-ups (Waitaha, Ngāti Māmoe, and Ngāi Tahu) are by contrast primarily related to human events, rather than the supernatural (Tau and Anderson, 2008).

The first human settlers of Te Wai Pounamu (the South Island) for which traditional accounts and whakapapa are clear were Waitaha, descendants of the explorer Rākaihautū who arrived in the waka *Uruao*. They were followed later by Ngāti Māmoe, who migrated from Te Ika a Māui to Te Wai Pounamu around the late 16th/early 17th centuries. The relationship between Waitaha and Ngāti Māmoe was complicated, with periods of peace and intermarriage as well as conflict, but Ngāti Māmoe gradually came to establish mana whenua through both means over much of Te Wai Pounamu. In the early to mid-17th century, Ngāi Tahu migrated to the Te Wai Pounamu from lower Te Ika a Māui, and traditions recount their whakapapa to the East Coast and the Tākitimu waka. As with their predecessors, Ngāi Tahu came to establish mana whenua over most of the Te Wai Pounamu through both conflict and intermarriage (Anderson, 1998; Tau and Anderson, 2008).

During the exploration of the Canterbury coast, Te Waihora (Lake Ellesmere) was found to be a plentiful source of fish and birds and attracted many Māori settlers to the area. Similarly, the Waikirikiri (Selwyn), Waiāniwaniwa, and Te Hororātā (Hororata) Rivers which flow from the Canterbury foothills across Kā Pākihi-whakatekateka-a-Waitaha (the Canterbury Plains) into Te Waihora, were also found to be a plentiful source for tuna (eels), inaka (whitebait), pūtakitaki (paradise duck), pārera (grey duck), pākura/pūkeko (swamp hen), pora (Māori cabbage), tutu, and aruhe (bracken fernroot). Numerous kāinga and mahinga kai were established along their courses, including the key settlement of Te Waikari, near modern-day Chamberlains Ford (Te Rūnanga o Ngāi Tahu, 2024). Although the Kā Pākihi-whakatekateka-a-Waitaha was known to have been a treasured landscape for local Māori, as the current project area is located nearly 2 km away from the major natural waterways, it is unlikely that Māori archaeological material will be uncovered during the current project.

Following the acquisition of the land by the British Crown under the Kemp purchase in 1848, the land directly adjoining the city of Christchurch was surveyed into small rural sections while the surrounding land was taken up as large pastoral runs in the early 1850s. The land comprising the current project area appears to have been taken up at this time as part of Pastoral Run 49, which formed part of the Racecourse Hill Station.

5.1 Racecourse Hill Station

John Charles Watts-Russell and Richard Alfred Creyke took up Pastoral Runs 49 and 65 in September 1852 (Acland, 1946: 29). This station extended over thirty-five thousand acres of land between the Waimakariri and Hawkins Rivers (Figure 5-1). The station was initially called Wantwood, most likely due to its lack of trees, but by 1854 it had become known as Racecourse Hill (*Lyttelton Times*, 4/10/1854: 1). Creyke managed the station and constructed a homestead on the property adjoining the Waimakariri River (outside of the current project area) which he called Bleak House. Creyke stocked the land with sheep, and by 1858 over 6300 sheep were on the station. Creyke moved the Bleak House homestead to the modern address of 3979 West Coast Road (approximately 2 km west of the current project area) in 1859 (Tremlett, 2013). Creyke continued to manage the station until 1860/1861 when he sold it (Acland, 1946: 30). While it is likely that the land comprising the current project area was utilised for agricultural/pastoral purposes during Watts-Russell and Creyke's ownership of the Racecourse Hill station, there is no information to suggest that development occurred on the land beyond these activities during this period.

² Creyke and Watts-Russell initially purchased the station in the name of Hon. Joseph Denman. However, Denman appears to have never come out to New Zealand and so he later conveyed his interest in the station to Creyke who was the managing partner (Acland, 1946: 29).

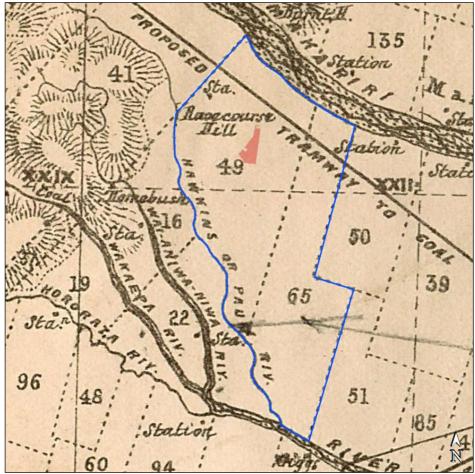


Figure 5-1. Detail from 1860 map of Canterbury Pastoral Runs, showing the approximate location of the current project area (coloured red) located within the Racecourse Hill pastoral run (outlined in blue). Image: Browning, 1860.

Racecourse Hill Station passed through a number of owners during the 1860s, including: Edwin Fereday in 1860/1861-1863; Francis Edward Steward in 1863-1865; Robert Heaton Rhodes and Robert Wilkin in 1865-1868; and Edward and Wilfred Constable Maxwell in 1868-c.1881 (Acland, 1946: 30-31). No information could be found to suggest that the land comprising the current project area was development beyond use for agricultural/pastoral purposes during this period.

Edward Constable Maxwell took Herbert John Mathias into partnership in 1881, after his brother Wilfred had died (Acland, 1946: 31; *Globe*, 11/4/1881: 2). Together, Maxwell and Mathias began freeholding the land in smaller rural sections. A survey plan of the area in 1880 shows the current project area surveyed as part of Rural Sections (RS) 26110 and 26674 and Reserve 1751 (Figure 5-2). It is interesting to note that the survey plan shows a fence bisecting Rural Section 26674 through the project area. The presence of the fence suggests that the land comprising the project area was utilised for pastoral purposes during the 1850s-1870s as part of the Racecourse Hill Station. This is the only feature shown on the survey plan within the current project area. In total, Maxwell and Mathias purchased eleven thousand acres of the Racecourse Hill Station in the 1880s, while the remainder of the land was purchased by others (Acland, 1946: 30). Included among the many sections purchased by Maxwell and Mathias in the early 1880s were Rural Sections 26110 and 26674 and the portion of Reserve 1751 which comprises the current project area (LINZ, 1880a; LINZ, 1881; LINZ, 1885).

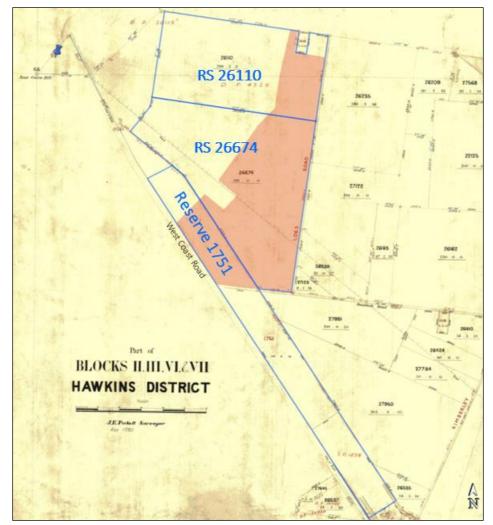


Figure 5-2. Detail from Survey Plan 2381, showing the current project area (coloured red) surveyed as part of Rural Sections 26110 and 26674 and Reserve 1751 (outlined in blue). The location of the Racecourse Hill homestead is indicated with a blue pin. Image: LINZ, 1880b.

Maxwell and Mathias sold a portion of Rural Sections 26110 and 26674 (which included part of the current project area Lot 1 DP 434071) to the Selwyn County Council in 1883 (Figure 5-3). A summary of the subsequent occupation and development of this land is provided in Section 5.3.

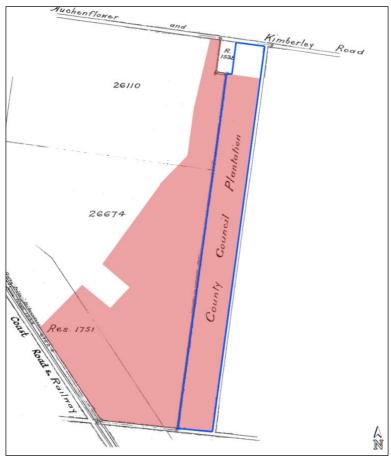


Figure 5-3. Detail from Deposited Plan 4320, showing the portions of Rural Sections 26110 and 26674 purchased by the Selwyn County Council in 1883 (outlined in blue). Current project area coloured red. Image: LINZ, 1910.

The remaining portion of Rural Sections 26110 and 26674 and Reserve 1751 continued to be part of the Racecourse Hill station property for the remainder of the 19th century. After both Maxwell and Mathias died in 1885, the Racecourse Hill property was taken over by Henry Arthur Knight (Acland, 1946: 30; LINZ, 1885). Knight resided in the Racecourse Hill homestead (3979 West Coast Road) and continued to own and farm the land comprising the project area into the 20th century (LINZ, 1886; Acland, 1946: 30; Tremlett, 2013). No information could be found to indicate that the land was occupied or developed beyond use for agricultural or pastoral purposes during the 19th century.

The land comprising the project area was first subdivided from the Racecourse Hill station in 1910 as part of Lot 1 DP 4320. A survey plan drawn of the subdivision shows the land surveyed as a 590-acre block of land fronting on West Coast Road, Homebush Road, and Auchenflower Road (Figure 5-4). The block of land is shown to have been fenced with wire and gorse fencing, but no further developments are evident on the survey plan within the project area. The fence depicted on the 1880 survey plan is not shown on the 1910 survey, suggesting it may have been removed by this time.

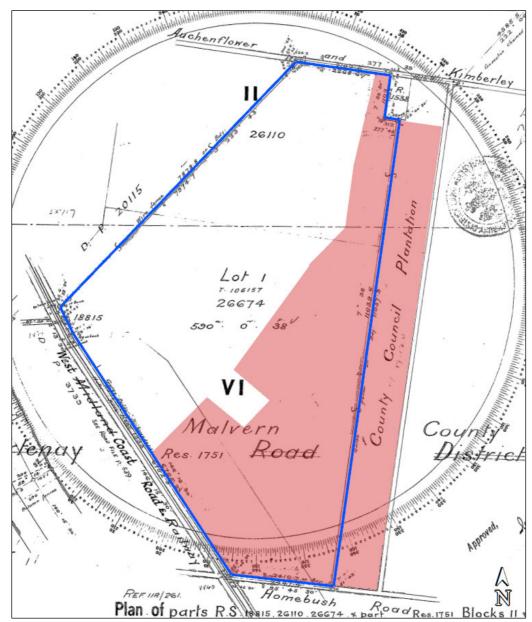


Figure 5-4. Detail from Deposited Plan 4320, showing portions of Rural Sections 26110 and 26674 and Reserve 1751 comprising the project area (coloured red) surveyed as a 590 acre block in 1910 (outlined in blue). Image: LINZ, 1910.

5.2 Lot 1 DP 4320

William McSweeney, a farmer from Darfield, purchased Lot 1 DP 4320 from Knight in 1915 (LINZ, 1915). McSweeney constructed a dwelling and farm buildings on Lot 1 DP 4320 and called the property Kia Ora farm (*Press*, 25/3/1961: 15). He continued to own and farm Kia Ora until 1924. In March 1919, McSweeney advertised Kia Ora farm for sale. At this time the property was described as 590 acres of agricultural land containing buildings which were "all new, and of the best, and near the railway" (*Press*, 1/3/1919: 15). This indicates that all of the buildings on the property were constructed between 1915 and 1919.

George Ewards Thompson, a farmer from Darfield, purchased Kia Ora farm from McSweeney in 1924 and continued to own the property until 1947. Aerial imagery of Kia Ora farm from 1941 shows a central area of occupation on the farm property, which is believed to be the dwelling and outbuildings constructed by McSweeney between 1915 and 1919 (Figure 5-5). In addition to the central occupation area, the aerial imagery also shows another small building present near the northern boundary of the property. This building is also believed to have been constructed by McSweeney between 1915 and 1919.

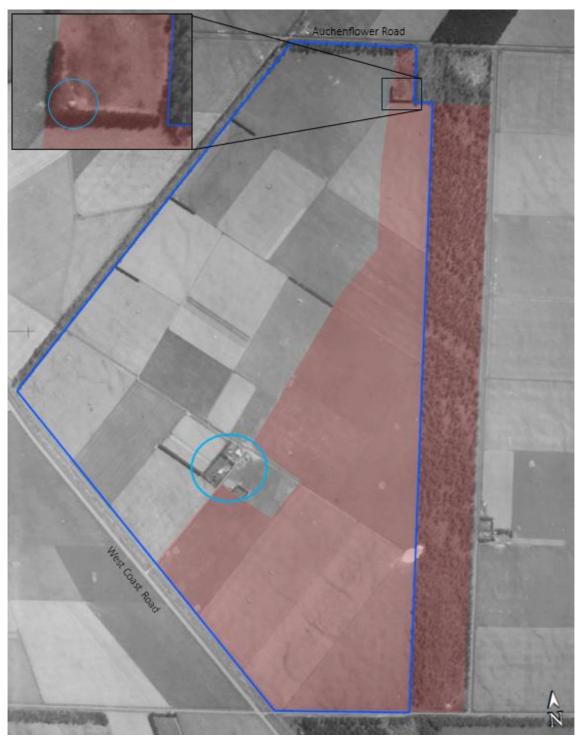


Figure 5-5. Aerial imagery from 1941, showing the developments present on Lot 1 DP 4320 (outlined in blue). The current project area coloured red. Image: LINZ, 1941.

Father and son, John Aitken and John Columbus O'Donnell Aitken, purchased Kia-Ora Farm in 1948 as tenants in common. The farm remained in the Aitkens' ownership until 1963, when it was transferred to Kia Ora Farm limited. The following year, William Band purchased Kia Ora farm and continued to own it until the 1990s (LINZ, 1915). The 590-acre Kia Ora farm property was subdivided in 1991, at which time the section boundaries of Lot 2 DP 60325 were formed (Figure 5-6).

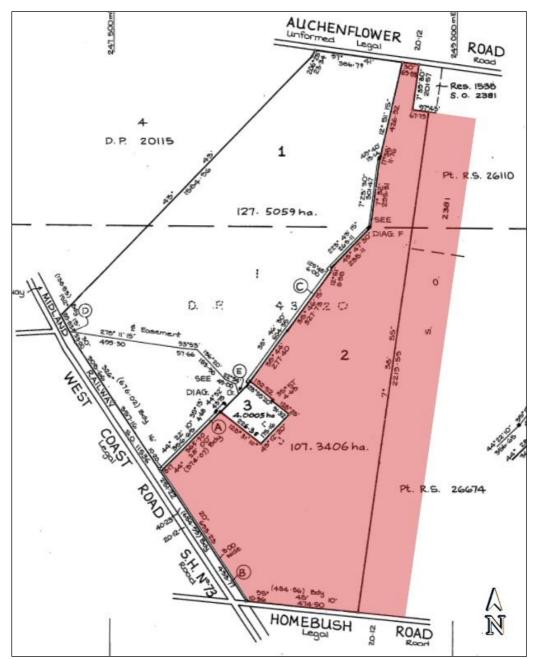


Figure 5-6. Detail from Deposited Plan 60325, showing Kia Ora farm subdivided in 1991. The current project area coloured red. Image: LINZ, 1991.

Aerial imagery of Lot 2 DP 60325 shows the extant building on the property constructed by this time (Figure 5-7). Suggesting that the building was constructed between 1991 and 1998 after the property was subdivided. The block around this dwelling has continued to be developed and occupied since this time. No further developments are known to have occurred on the land.



Figure 5-7. Aerial imagery from 1998, showing the showing Kia Ora farm (outlined in blue) and showing the extant homestead (blue arrow) constructed by this time. The current project area coloured red. Image: LINZ, 1998.

5.3 Selwyn County Council Plantation Reserve

The Selwyn County Council purchased 123 acres of land fronting on Homebush Road, Loes Road, and Auchenflower Road from the Racecourse Hill Station in 1883 (Figure 5-8). This land was reserved for planation purposes, but it is unclear if the Selwyn Council planted any trees on the property at this time. The Selwyn Council offered the plantation reserve on Rural Sections 26110 and 26674 for lease for grazing purposes for a term of seven years in January 1887 (*Lyttelton Times*, 3/1/1887: 1). The lease was taken up by James Manson a local farmer (*Star*, 25/1/1887: 3). The lease for the planation reserve specified that the land was only to be used for grazing purposes, which suggests that Manson did not develop the land beyond pastoral purposes during his seven-year lease. Following the expiration of Manson's lease, the Selwyn Council again offered the plantation reserve for lease for grazing purposes for seven years in May 1894 (*Lyttelton Times*, 8/5/1894: 8). The tender for lease was won by Hugh Butler, who leased the plantation reserve into the early 20th century (*Press*, 30/5/1894: 6). The Selwyn County Council again offered the plantation reserve for lease in June 1901,

but decided to defer the selection of a lessee for the land and it is unclear if they rented the land at this time (*Lyttelton Times*, 7/6/1901: 8; *Star*, 26/6/1901: 3). By 1914 the Council had planted the reserve with trees, as they offered 15 cords of gum for sale from the reserve in March 1914 (*Press*, 14/3/1914: 17). Aerial imagery from 1941 shows the reserve planted with trees at this time (Figure 5-9). Aerial imagery from 1998 shows the reserve still planted with trees at this time (Figure 5-10). The reserve continued to be planted with trees until the early 21st century. The trees were felled c.2004-2009 and the land has since remained vacant, likely in use as pasture again (Canterbury Maps, 2024).

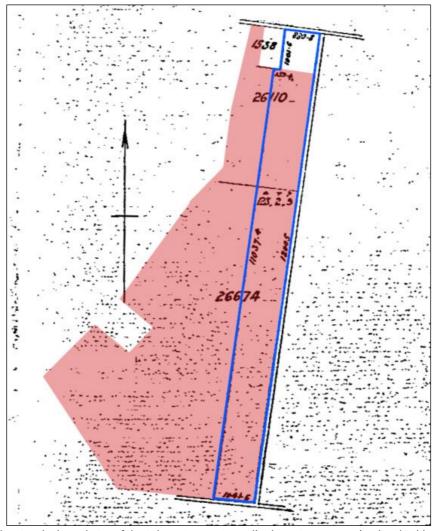


Figure 5-8. Diagram showing the boundaries of the Selwyn County Council's Plantation Reserve (outlined in blue). The current project area coloured red. Image: LINZ, 1883.

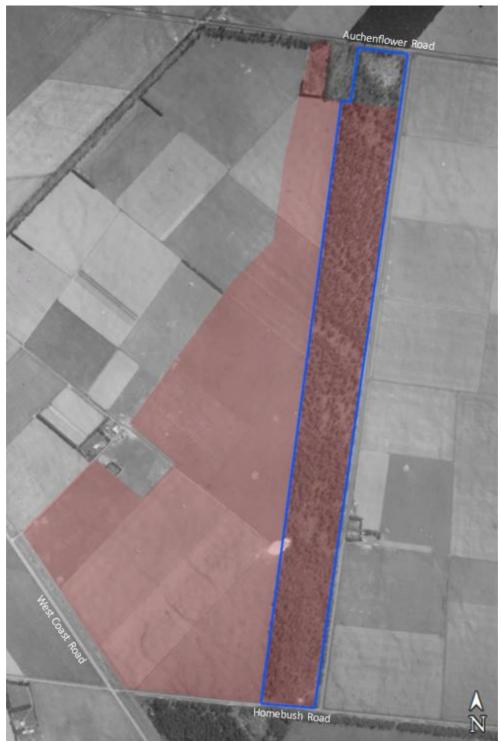


Figure 5-9. Aerial imagery from 1941, showing the Selwyn County Council's plantation reserve (outlined in blue) planted with trees at this time. The current project area coloured red. Image: LINZ, 1941.

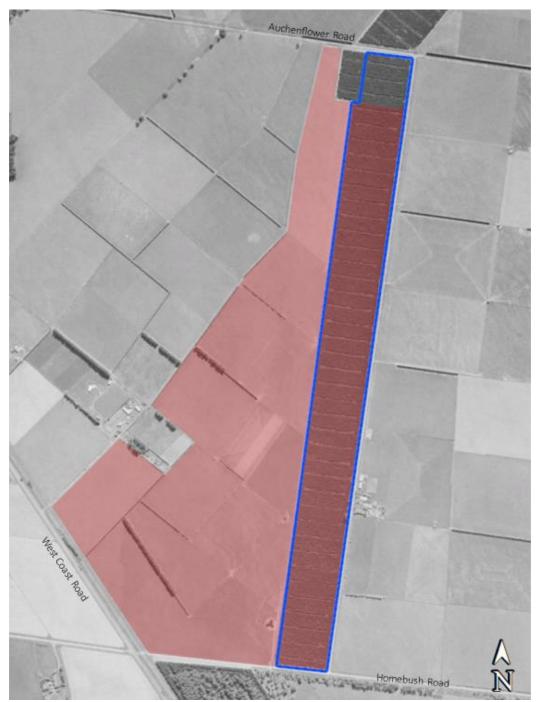


Figure 5-10. Aerial imagery from 1998, showing the Selwyn County Council's plantation reserve (outlined in blue) planted with trees at this time. The current project area coloured red. Image: LINZ, 1998.

5.4 The West Coast Road corridor

The western boundary of the project area is bound by the West Coast Road corridor. The road appears on early survey plans of the area by the 1860s, at which time it is labelled as the 'Racecourse Hill and Kowai Road' as it extended through the Racecourse Hill pastoral run towards the Kowai River (Archives New Zealand, 1862). As the road formed part of the main route between Christchurch and the West Coast, it eventually became known as the 'West Coast Road'. The road corridor was formed during the 1870s and had continued to be maintain and improved since this time (Canterbury Maps, 2024; *Press*, 15/5/1873: 4, 2/3/1878: 3).

Meetings were being held to consider the construction of a railway line to connect Rolleston with and the Malvern Hills coalfields by the late 1860s (*Timaru Herald*, 11/1/1868: 2). This line of railway was surveyed in 1872, with part of the line being surveyed along the northern side of the West Coast Road corridor between Darfield and Sheffield (*Lyttelton Times*, 11/3/1872: 2, 24/6/1872: 1). Construction of the Malvern Branch

Railway was underway by 1873, and by mid-1874 the work was progressing favourably (*Lyttleton Times*, 25/3/1874: 2; *Press*, 19/7/1872: 4). The Malvern branch railway was officially opened on 1 December 1874 (*Star*, 24/11/1874: 2). Since this time the railway has continued to be maintained and upgraded, and remains in use today (Canterbury Maps, 2024). There is no evidence to suggest that any pre-1900 archaeological remains associated with construction of the rail would be encountered within the project area.

The Canterbury Provincial Council began discussing the best means of irrigating the extensive farmland extending between Christchurch and the Malvern Hills in 1872 (Lyttelton Times, 10/5/1872: 3). After much discussion, a plan was made to erect a dam in the Kowai River and divert water through a tunnel into a network of water races throughout the district (Lyttleton Times, 4/6/1872: 3). The initial works for the scheme, the dam and tunnel, began construction in 1874 and were completed in 1877 (Lyttelton Times, 3/9/1874: 1, 28/12/1877: 3; Press, 21/8/1874: 1; Star, 15/1/1875: 2). Following the completion of these initial main works, plans were made to begin the construction of the network of open water races which would be extended throughout the country incrementally over a number of years (Globe, 29/3/1878: 3). By December 1880, an open water race had been excavated from the main works which terminated at Sheffield as far as Darfield (Star, 1/12/1880: 3). This race was located within the West Coast Road corridor, between the roadway to the south and the railway to the north, and outside the project area (Archives New Zealand, 1880). Within this open race, timber falls were installed to help the flow of water, the construction of which is believed to have been completed in early 1881 (Star, 1/12/1880: 3; Globe, 27/41881: 2). Each of the timber falls required timber wings to be constructed into the bank to support them, and an apron of boulders at the base of each fall (Globe, 27/4/1881: 2). Although the race was intended to be used to irrigate the land, as late as the 1960s residents within the Darfield township were still obtaining their household water supply directly from the open race (Press, 25/7/1960: 3, 6/10/1962: 10). The water race continues to be used today, but it is unclear how much, if any, of the 19th century fabric or the original 19th century excavation cuts remains in situ along the portion of the race which extends along the western boundary of the current project area. Modification of the water race is not included in the proposed works assessed here. Although there are water races within the proposed project area, no historical evidence was found to indicate that these were formed during the 19th century.

6 Previous archaeological investigations and archaeological context

There are few recorded archaeological sites in the Darfield area, and no archaeological sites have been recorded within 1.5 km of the project area (Figure 6-1; ArchSite, 2024). The two closest recorded archaeological sites to the project area are L35/39, the location of the Racecourse Hill Homestead at 3979 West Coast Road; and L35/56, the location of a derelict cottage at 291 Hordon Street, Darfield (ArchSite, 2024; Tremlett, 2013). The closest recorded Māori archaeological sites are a complex of oven and occupation sites (L35/12, L35/13, L35/14, L35/15, L35/16, and L35/17) around the Homebush Station and the Waiāniwaniwa River. There is no evidence to suggest any previously recorded archaeological sites would be affected by the proposed works.



Figure 6-1. Previously recorded archaeological sites within the vicinity of project area.

7 Site survey

A site visit was undertaken by Tristan Wadsworth on 13 June 2024, meeting with Charlie Butler, landowner, who said the family had managed the land within the project area since 1990. During that time, Charlie said the water races had been maintained regularly by digger, and the fences had been similarly maintained, though the race running northwest-southeast from the area of the Fonterra factory was dry and hadn't been in use for some years. Charlie said there were no offal pits or the like on the land and was not aware of any potential heritage items.

The length of both the north-south live water race and the roughly northwest-southeast water race were inspected. The north-south water race was approximately ≥1 m wide and 500 mm deep, with relatively shallow water run at the time. The sides of the race were by turns vertical or gently sloping, and there was clear evidence in places of recent digger cuts representing maintenance of the race. The bases of the water races were stony, typical of Canterbury Plains greywacke river deposits. The race alternated either side of the fenceline, dog-legging under the fence in several places. These dog-legs are not clearly visible in early aerial photographs, and it is considered possible that these alignments have been altered during the 20th century to form the current alignment. Culverts were simple modern concrete pipes of approximately 200 mm diameter.

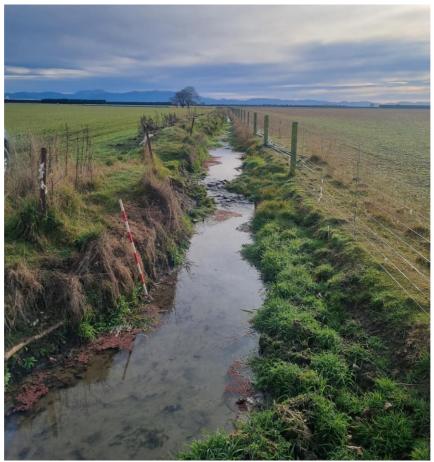


Figure 7-1. View north along north-south waterline, from near south end. Scale in 100 mm increments.



Figure 7-2. View north along north-south water race, near north end. Scale in 100 mm increments.



Figure 7-3. Recent digger maintenance of north-south water race, looking south. Scale in 100 mm increments.

The east-west water race was dry, but similarly approximately 1 m wide and 500 mm deep, with similar sloping or vertical sides. At the east end, the race dog-legged around a couple of trees. These are not visible in aerial photographs until after the 1960s, indicating that the alignment of the water races has been altered during the late 20^{th} century at least in some locations.



Figure 7-4. View west along east-west water race.



Figure 7-5. East-west water race dog-legging around trees planted post 1960.

Fences all appeared to be modern tanalised timber or waratahs. No evidence for pre-1900 archaeological features was observed during the site visit.

8 Research results

Historical research indicates that area was used by Māori as part of a broader network of seasonal mahinga kai and kā ara tawhito. No specific information was found suggesting that the land comprising the current project area was permanently settled upon by Māori or that any archaeological remains of Māori origin would be encountered during the proposed works.

The land comprising the current project area was first taken up for European pastoral pursuits in the early 1850s as parts of the large Racecourse Hill pastoral run, covering around 35,000 acres. The pastoral run was divided into smaller rural sections in the 1880s, and the sections that would make up the project area – Rural Sections 26110 and 26674 and the portion of Reserve 1751 – were purchased by Edward Constable Maxwell and Herbert John Mathias in the early 1880s (LINZ, 1880a; LINZ, 1881; LINZ, 1885). A portion of this (including Lot 1 DP 434071 of the current project area) was sold to the Selwyn County Council in 1883 (LINZ, 1910). Apart from this section sold to the council, the rest of the project area remained in pastoral use as part of the Racecourse Hill station into the 20th century (LINZ, 1886; Acland, 1946: 30; Tremlett, 2013). No evidence was found to indicate any use of the project area beyond pasture during the 19th century. Although fencing was present on the section during the 19th century, no evidence for 19th century remains such to be present could be found, and appear to have been replaced in the intervening decades. Subsurface remains of pre-1900 fencing, in the form of post holes, would be unlikely to be definitively distinguished from similar 20th century features. Although water races have been present on the section for some time, no historical evidence could be found to indicate the date of formation of these features. The site visit indicated the existing water races are relatively shallow, and had clear sign of been maintained by digger to this day, making it unlikely any archaeological evidence of earlier water race cuts would be encountered during excavation within their extent. The site visit did not encounter any evidence that would suggest pre-1900 archaeological material would be encountered within the project area.

8.1 Constraints and limitations

The implementation of Optical Character Recognition (OCR) software to convert 19th century newspapers into digitised word-searchable text by Papers Past has created some errors in translation which limits a researcher's ability to accurately identify all contemporary newspaper articles on a specific topic.

Historical evidence for the formation of water races/open drains within the project area are limited, both in local newspapers and survey plans. This makes it difficult to determine when these features were formed.

9 Conclusions and recommendations

Darfield Dolar & Energy Storage Ltd are proposing earthworks for the formation of a solar farm at 1352 Homebush Road, Darfield (Lot 1 DP 434071 and Lot 2 DP 60325). Works will involve the driving of foundation piles for solar arrays, and mechanical excavation for internal accessway, fencing, lighting, electrical infrastructure, and buildings, including a site office and a substation. Historical research has revealed the land within the proposed area was primarily pastoral in use well into the 20th century, remaining so today, with no evidence for pre-1900 occupation likely to result in archaeological remains.

Based on the available evidence, the potential for the project works to affect pre-1900 archaeological evidence is considered to be low. As such, this assessment has determined that an archaeological authority is not required to complete the works.

As such, UOA makes the following recommendations:

- 1) As a first principle, every practical effort should be made to avoid damage to any archaeological site, whether known, or discovered during any works programme.
- 2) The project should proceed under an accidental discovery protocol (ADP), outlined in Appendix B. Any archaeological material encountered during works should be reported to Heritage New Zealand Pouhere Taonga and an archaeologist.
- 3) Despite the determination of this archaeological assessment, the client is advised to engage with Ngāi Tūāhuriri rūnanga, as there may be cultural values, exclusive of archaeological values, within the project area.

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Appendix A Development plans

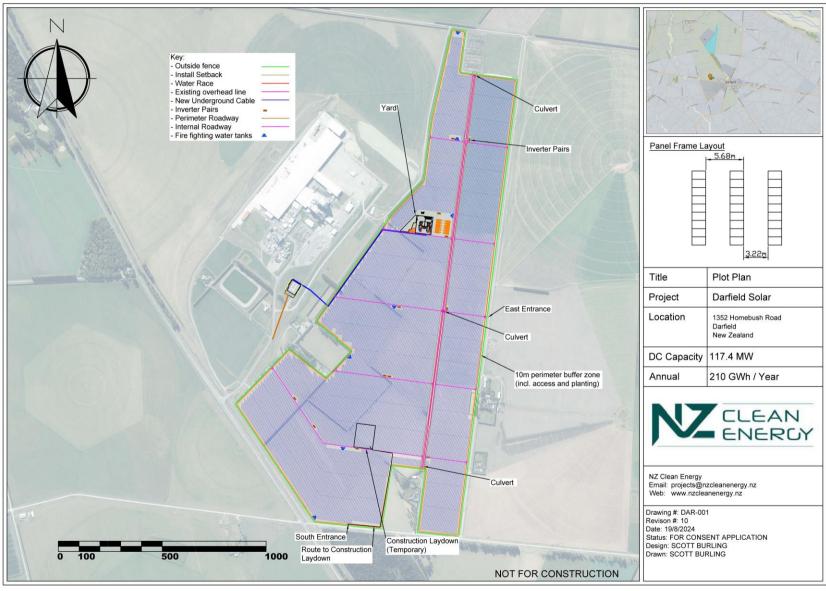


Figure 10-1. Preliminary plan of proposed solar farm works. Supplied by NZ Clean Energy.

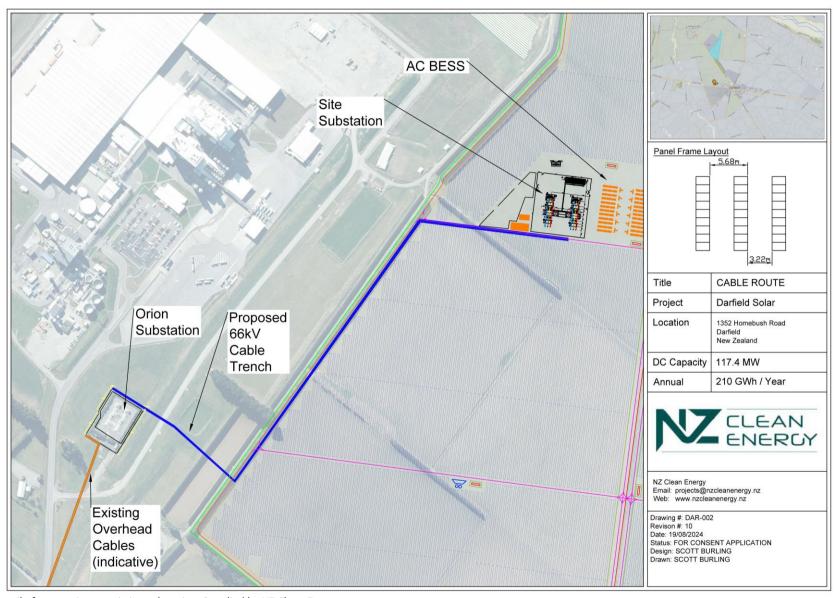


Figure 10-2. Detail of connection to existing substation. Supplied by NZ Clean Energy.

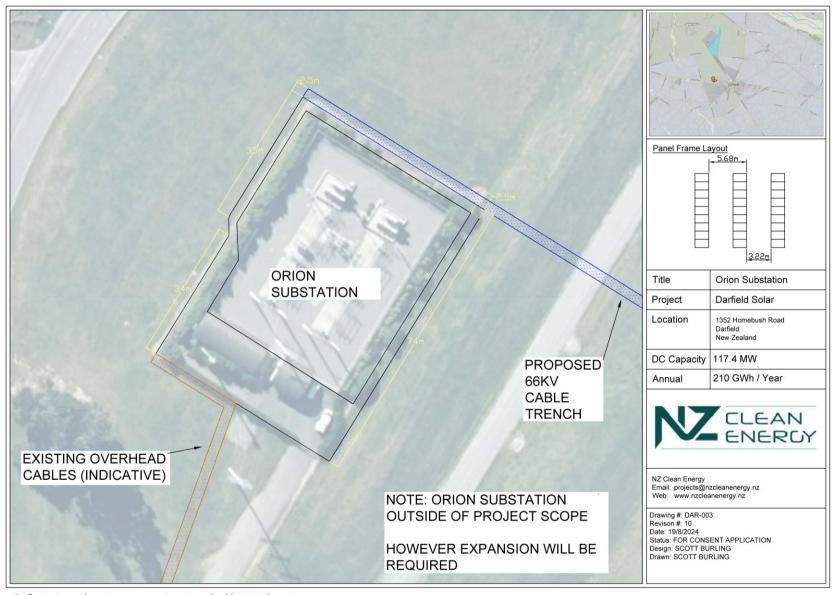


Figure 10-3. Detail of existing substation connection. Supplied by NZ Clean Energy.

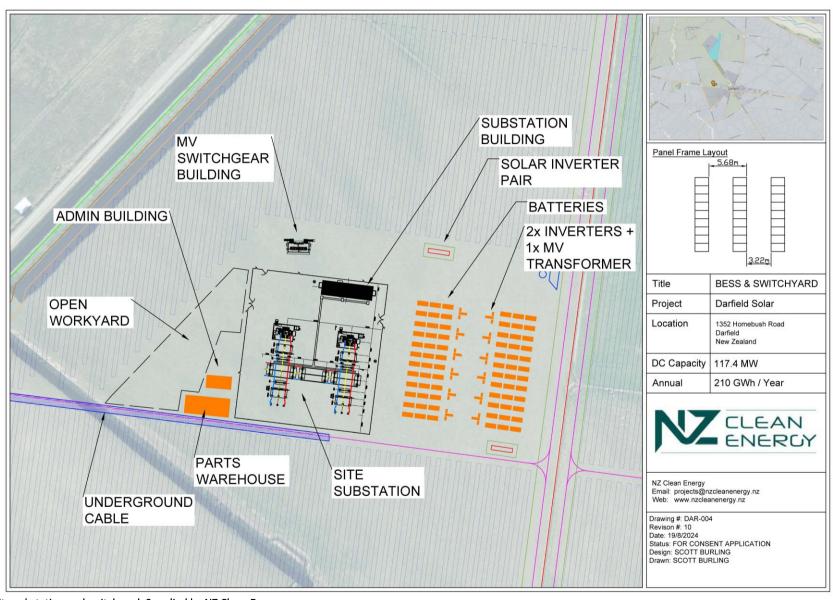


Figure 10-4. Site substation and switchyard. Supplied by NZ Clean Energy.

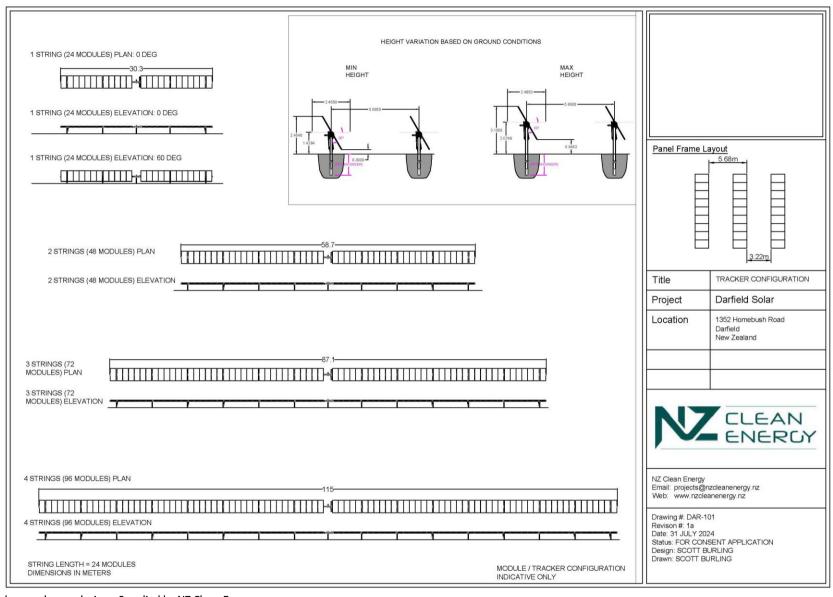


Figure 10-5. Solar panel array designs. Supplied by NZ Clean Energy.



Archaeological Discovery Protocol

In the event that an unidentified archaeological site is located during works, the following applies:

- 1. Work shall cease immediately at that place and within 10 m around the site.
- 2. The contractor must shut down all machinery, secure the area, and advise the Site Manager.
- 3. The Site Manager shall secure the site and notify Underground Overground Archaeology Ltd. Further investigation by an archaeologist may be required.
- 4. If the site is of Māori origin, the Site Manager or project archaeologist shall notify the Heritage New Zealand Regional Archaeologist and the appropriate iwi groups or kaitiaki representative of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met (*Heritage New Zealand Pouhere Taonga Act*, Protected Objects Act).
- 5. If human remains (kōiwi tangata) are uncovered the Site Manager or project archaeologist shall advise the Heritage New Zealand Regional Archaeologist, NZ Police and the appropriate iwi groups or kaitiaki representative and the above process under 4 shall apply. Remains are not to be moved until such time as iwi and Heritage New Zealand have responded.
- 6. Works affecting the archaeological site and any human remains (kōiwi tangata) shall not resume until Heritage New Zealand gives written approval for work to continue. Further assessment by an archaeologist may be required.
- 7. Where iwi so request, any information recorded as the result of the find, such as a description of location and content, is to be provided for their records.
- 8. The project archaeologist, in consultation with Heritage New Zealand, will determine if an archaeological authority under the *Heritage New Zealand Pouhere Taonga Act* 2014 is required for works to continue.

It is an offence under S87 of the *Heritage New Zealand Pouhere Taonga Act* 2014 to modify or destroy an archaeological site without an authority from Heritage New Zealand irrespective of whether the works are permitted or a consent has been issued under the Resource Management Act.

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