

Historical Archaeology Management Plan, Ballarat

Report for Heritage Council of Victoria

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Acknowledgement of Country

For tens of thousands of years this place has been cared for and protected by the Wadawurrung peoples and their ancestors. In Wadawurrung language Ballarat, or Ballaarat, means bended elbow or resting place in reference to its position in a basin, the abundance of life, and protection from harsh weather (Powell 2019).



Figure 1: Eugene von Guerard, 'Warrenheip Hills near Ballarat', 1854. Source: National Gallery of Victoria.

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Cover images

Above left: New Moon Quartz Mine (H1366), 13 January 2023, Jacinta Bauer, Heritage Victoria

Above right: *Revised plan, blocks Q & R, Main Street, Ballarat*, 1859, SLV, available at <http://handle.slv.vic.gov.au/10381/104329>

Below left: *Plan of Sandhurst*, 1857, SLNSW, available at https://search.slnsw.gov.au/permalink/f/lq5tom/SLNSW_ALMA21120885030002626,

Below right: *Part of Main Road, Ballarat East*, 1859, SLV, available at <http://handle.slv.vic.gov.au/10381/290577>

Executive summary

In 2023, Heritage Victoria received funding from the Heritage Council of Victoria to prepare an Historical Archaeology Management Plan for parts of the Victorian Goldfields, with a particular focus on the city of Ballarat. This management plan draws on the results of recent research, much of which has focused on the effects of mining waste on the landscape of the city in the nineteenth century. This report includes Digital Elevation Models of Difference (DoDs) which indicate the amount of ground level change that may have occurred across the study areas. The significant landscape alterations that have occurred have wide-reaching implications for the survival and condition of archaeological remains throughout the goldfields.

A detailed program of background historical research has been undertaken to identify places that were once the focus of mining, settlement or other activity in the nineteenth century, and where archaeological remains may still survive. Individual sites have been assessed for inclusion in the Victorian Heritage Inventory (Heritage Inventory) – the listing of all known historical archaeological sites in the state, established under the terms of the *Heritage Act 2017* (the Act). As a result of this study, 90 new archaeological sites have been added to the Heritage Inventory in Ballarat. Eight other sites from the townships of Gowar, Fryerstown, Yapeen, Chewton and Vaughan have also been included.

If works are proposed at Heritage Inventory sites that may affect archaeological remains, it is necessary to obtain a Heritage Act Consent to authorise the works. In most cases, a program of archaeological investigation, recording, reporting and artefact management will be required as conditions on any issued Consent.

The addition of a large number of sites to the Heritage Inventory, the identification of key historical sources and records that provide information about the goldfield's towns, and new information about the landscape changes that were caused by the byproducts of goldmining are some of the key outcomes of this project. The implementation of the project will lead to an increase in the number of excavations in the historic townships, which will provide another dimension to our understanding of the goldfields and their archaeology.

1 Introduction

The Victorian Gold Rush was a defining event in the fledgling state's history. Much has been written about the built heritage and historic streetscapes that adorn the cities and towns of the Victorian Goldfields, but the historical archaeological remains of the gold rush are not understood or protected to the same degree.

In recent years, archaeological investigations and new research have demonstrated that in parts of the state significant historical archaeological sites survive in remarkable condition, beneath the modern urban setting. In Melbourne, this state of preservation is due to the City of Melbourne's practice of requiring the burial of low-lying parts of the city in the mid-nineteenth century to address drainage and sanitation concerns. In some cases, well-preserved building remains and associated artefacts are now being discovered buried 2 to 3 metres beneath the current ground level in Melbourne. In the goldfields, it is likely that the same level of preservation will be found for nineteenth century sites buried beneath metres of mining waste – the sands, clays, silts and gravels that were the inadvertent byproduct of large-scale mining. It is now possible to map and identify parts of the goldfields cities where these layers of mining waste may bury significant archaeological remains, and much of this work underpins the results of this study.

This study also draws on extensive research to identify historical records that provide evidence of the establishment, growth and change of the goldfields centres, with a focus on Ballarat. This work has enabled the identification of sites where significant historical activities have taken place that may still be reflected in the archaeology of the place.

The scope of this project has not extended to a complete archaeology management plan for Ballarat or Bendigo, and the absence of sites recorded in any area does not mean that archaeological remains may not survive. This document is the first step in promoting an understanding of potential archaeological values in the cities and towns of the goldfields, and demonstrating how sites might be researched, identified, managed, protected and promoted. The report is timely, given that development and growth pressures are increasing in the state's regional centres.

2 Project objectives

The key project objective was the identification of sites that may be suitable for inclusion on the Heritage Inventory, particularly in Ballarat but also in parts of Bendigo and some other goldfields townships. The project also included the assessment of sites that were identified as having archaeological value, and their inclusion in the Heritage Inventory. The Heritage Inventory is a listing of all known historical archaeological sites in the state, established under Section 117 of the Act.

The project also required the development and delivery of a Communications and Public Engagement Program. This program provided information to the community, site owners, local government staff and other key stakeholders about the project and its outcomes. The program provided the opportunity to promote an understanding of the likely survival and significance of the archaeology of the goldfields. The Communications and Engagement Program was presented in a number of ways, including lectures, seminars and presentations, and online through Heritage Victoria and City of Ballarat websites.

The final project objective was the production of this project report, which details the project aims, method, findings, recommendations and other significant program results.

3 Project method

The method that was used to identify prospective historical archaeological sites and progress their inclusion in the Heritage Inventory is detailed in the five-step process below:

- **Identifying** locations where significant historical occupation and activity occurred. Section 4 details how this program of historical research and place identification was undertaken.
- **Assessing** current site condition to determine if it is likely that archaeological remains survive at the place. There is no need to include a site on the Heritage Inventory (even if it was the location of significant historic activity) if recent development work and below-ground disturbance is likely to have removed all archaeological remains. Accordingly, an assessment of current site condition for the subject sites was conducted as part of the study – see Section 5. Section 5 also provides extensive details relating to the degree to which the goldfields centres have been buried beneath 'sludge' – the byproducts of mining. The burial of parts of the nineteenth century mining and urban landscapes beneath these layers is likely to have resulted in the preservation of archaeological remains in conditions that may, in some cases, be remarkable. Results from some remote sensing (ground penetrating radar) work are also included in this section.
- **Mapping** the location and extent of new sites – see Section 6 and VicPlan website.
- **Developing** individual site records and add the new sites to the Heritage Inventory – see Section 6.
- **Undertaking** a program of consultation, engagement and education with site owners, key stakeholders and the community – see Section 7.

Note: the budgetary and time constraints of the project meant that only a sample of places within the study areas (primarily Ballarat but also Bendigo and other goldfields towns) could be assessed for inclusion in the Heritage Inventory. However, the study has identified a range of historical sources and other factors relating to site preservation and condition that will be useful for the identification, protection and management of sites throughout the broader study area.

4 Historical research

A key component of this project was the identification and assessment of historical resources (maps, plans, images and other records) that could provide evidence of activities that might be reflected in archaeological remains. Once records were identified, they were assessed in relation to each of the 9 blocks that formed the basis of the Ballarat study. Maps and plans were integrated into a Geographic Information System (GIS) which enabled them to be transposed onto modern cadastral layers.

The full list of historical resources identified and used during this project is listed at Section 10. The details of historical resources are also listed on each of the related Heritage Inventory site cards. Some key historical sources are discussed below and listed in Table 1.

The 1857 *Revised Survey of Main Street* was created by the Department of Crown Lands and Survey, Ballarat Division, and are available at State Library Victoria (SLV) and Public Records Office Victoria (PROV), see VA 575. These plans provide a high level of detail about the location of structures in the Main Street allotments from Grenville Street to Clayton Street, the Eureka Street area, and other parts of Ballarat. The plans record outbuildings, auxiliary structures, tents and mining equipment. The survey identifies some structures in areas that are now roadways.

The Ballarat Sewerage Authority plans (1926–1939) were accessed through the archive at Central Highlands Water. Some of the plans are available at PROV. These plans are similar in many ways to the Melbourne and Metropolitan Board of Works (MMBW) plans. They show the design and development of Ballarat's sewerage and drainage systems and provide a historical record of extant structures, including features such as cesspits. Unlike the MMBW plans, these plans include details about the building materials that have been used.

Ballarat's first water supply system was established in 1862 and utilised a supply from Kirk's Reservoir (Brazenor 1925). The Ballarat Water Commission was established in July 1880, and the Ballarat Sewerage Authority was established in November 1920 (Commonwealth Bureau of Census and Statistics 1932). Mr A Farrer was appointed the Engineer of the Authority and prepared a report to initiate the sewerage scheme by 1921 (Brazenor 1925). Farrer's report would be useful for understanding how the Ballarat Sewerage System developed but is not available at this time. By June 1925, 813 properties within the CBD had been seweraged (Brazenor 1925). As of January 1932, 6,798 houses had been connected to the sewerage system, which utilised the already existing Ballarat Outfall Sewer (Commonwealth Bureau of Census and Statistics 1932). The Bendigo Sewerage Authority was established at a similar time (Commonwealth Bureau of Census and Statistics 1932).

Another series of plans that provide information about Ballarat's built history (and potentially its archaeology) is the *Record Plan* series (VPRS 16306). This series was produced by surveyors at the Department of Crown Lands and Survey and is described by PROV as: 'the definitive legal documents that determine the status of land in Victoria that has been sold by the Crown (alienation) or reserved for public purposes. These plans which show the boundaries of Crown land surveyed by the Department form the basis of the current land titles system.' The records are available through <https://prov.vic.gov.au/archive/VPRS16306/records>. They have been digitised and are also available through the Landata website.

Mining Lease plans created by the Mines Department of Victoria are available through SLV and PROV. Many plans for the Ballarat area are available online. The level of detail contained in the plans varies, but generally includes leaseholder and mine company details, mining surveyor notes and allotment numbers. Not all mining lease plans in the study area were able to be assessed in detail, with the exception of the records that relate to the Golden Point Chinese Camp. Many mining lease plans are held by PROV (see series VPRS 16163 *Historic Mine and Infrastructure Plans*), although many have not been digitised. They were compiled by the Geological Survey of Victoria, with the earliest dating to 1851.

Table 1: Primary Map Resource Information

Block	Date	Title	Permalink	Institution
1	1857	<i>Revised plan of blocks A. B. C. D., Main Street, Ballaarat</i>	http://handle.slv.vic.gov.au/10381/259563	State Library of Victoria
1	1924	<i>Ballarat Sewerage Authority Plan No. 21</i>	Not available online	Central Highlands Water
2	1857	<i>Revised plan of blocks E, F & H, Main Street, Ballaarat</i>	http://handle.slv.vic.gov.au/10381/104387	State Library of Victoria
2	1857	<i>Plan of subdivision of Allotments Bakery Hill Ballaarat (Block I, G and N).</i>	Department of Crown Lands and Survey, Ballarat Division. VPRS 4775/P00000	Public Records Office of Victoria
2	1924	<i>Ballarat Sewerage Authority Plan No. 53</i>	Not available online	Central Highlands Water
3&4	1859	<i>Revised plan, blocks Q & R, Main Street, Ballaarat</i>	http://handle.slv.vic.gov.au/10381/104329	State Library of Victoria
3	1939	<i>Ballarat Sewerage Authority Plan No. 176</i>	Not available online	Central Highlands Water
4	1933	<i>Ballarat Sewerage Authority Plan No. 174</i>	Not available online	Central Highlands Water
5	1883	<i>Plan of 86. 1. 37 1/2 applied for on lease under the Gold Mining Leases Regulations by T. Williams, Appln. 426.</i>	http://handle.slv.vic.gov.au/10381/300850	State Library of Victoria
5	1933	<i>Ballarat Sewerage Authority Plan No. 151 & 149</i>	Not available online	Central Highlands Water
6	1859	<i>Town lots, Peel and Mair Streets, Ballarat East</i>	http://handle.slv.vic.gov.au/10381/104595	State Library of Victoria
6	1861	<i>Ballaarat gold field No.1</i>	http://nla.gov.au/nla.obj-232397158	National Library of Australia
7,8,9	1861	<i>Ballaarat gold field No.1</i>	http://nla.gov.au/nla.obj-232397158	National Library of Australia
7	1925	<i>Ballarat Sewerage Authority Plan No. 27</i>	Not available online	Central Highlands Water
8	1925	<i>Ballarat Sewerage Authority Plan No. 09</i>	Not available online	Central Highlands Water
9	1924	<i>Ballarat Sewerage Authority Plan No. 25</i>	Not available online	Central Highlands Water

Other than historical plans, other sources assessed for this study include lithographs, drawings, and photographs (including aerial photographs). The 1870–75 photograph, *Panorama of Ballarat taken from the Town Hall tower* at the State Library of New South Wales (SLNSW), captured the built environment in extraordinary detail. Lithographs and drawings also provide historic context, information about site structures and occupants, and an understanding of landscape and setting. Many of the lithographs used were the work of celebrated artist ST Gill, who captured scenes in the goldfields and the developing townships, including Main Street in Ballarat.

The Ballarat Historical Society collection (<http://www.ballarathistoricalsociety.com/collection/index.htm>) contains a number of photographs and sketches of hotels and mine sites from the early years of the gold rush. Other key collections include the Victorian Collections website (<https://victoriancollections.net.au/>), the Ballarat Mechanics' Institute image collection (<https://ballaratmi.org.au/research/ballaarat-mechanics-institute-image-collection/>), and the Ballarat Mechanics' Institute heritage library resources (<https://ballaratmi.org.au/library/#heritage-book-collection>).

The Australian Centre for Gold Rush Collections (ACGRC) (<https://www.sovereignhill.com.au/experiences/australian-centre-for-gold-rush-collections/collections/>) contains a number of significant references and artefacts, and key resources for some sites were discovered in its map and photograph collections.

In addition to historical resources, consultation was undertaken with experts and researchers, community members and other stakeholders to identify source material and sites of potential significance. The key project collaborators are noted and thanked in the acknowledgements at the beginning of this report.

5 Condition assessment

A key part of the development of any Archaeological Management Plan is an assessment of the condition of the study area. The condition assessment evaluates events, patterns of use, landscape change, building and development pressures and other factors that may have resulted in the survival or removal of archaeological remains. For the Ballarat study, the condition assessment was undertaken in four different ways: ground truthing (see Section 5.1); an evaluation of the 'sludge' or mining waste phenomenon (Section 5.2); Digital Elevation Modelling (Section 5.3); and 'remote sensing' work (Section 5.4).

5.1 Ground truthing

Ground truthing is the process of physically walking or surveying the study area to identify sites where extensive (often recent) construction or development work has taken place, and which is likely to have resulted in the removal of all significant historical archaeological remains. This may be the case if a building with a basement level, underground car park or extensive footings has been constructed, or if a landscape has been altered by large-scale infrastructure (road or rail) works. The survey of the Ballarat study area (which included the use of aerial photography to provide information about recent building and development works) found that unlike Melbourne, the Ballarat city area has not experienced the scale of extensive below-ground disturbance that might have affected the condition of many of its archaeological sites. Sites that were identified during the ground truthing program as having been significantly disturbed were not progressed for Heritage Inventory listings.

5.2 Sludge

In recent years, awareness has grown about the scale and wide-ranging effects of one of the biproducts of the gold rush – the millions of cubic metres of gravels, sands and tailings that were released by mining activities, known as 'sludge'. The recent publication of the landmark study *Sludge: Disaster on Victoria's Goldfields*, by Susan Lawrence and Peter Davies (2019) has revealed the staggering impact of the layers of sludge on the state's mining towns and landscapes. For the purposes of this study, and the question of archaeological preservation and condition in particular, the sludge phenomenon is of great importance because of the potential for archaeological remains to survive in good or excellent states of preservation buried in or beneath sludge layers.

It has been estimated that approximately 67 million litres of sludge were discharged into the Bendigo Creek during the mid-1850s (Lawrence, Davies and Turnbull 2017). At the same time, the Ballarat irrigation and drainage systems were overrun, particularly when the water-rich process of sluicing began.

In the goldfield towns, rising tides of sludge threatened properties so much that citizens thought they would meet the same fate as the people of Pompeii:

The sludge is rolling down, like a lava-tide, upon the cities of Ballarat and Sandhurst [Bendigo], threatening to submerge them, and thus preserve them, like Pompeii or Herculaneum, for the delectation of antiquaries a thousand-years hence. No less overpoweringly does the avalanche of imported sludge shoot into the seaboard towns, bearing down all native industry as effectually as the sea would sweep the fields of Holland if her dikes were thrown...

(Geelong Advertiser, 19 April 1859: 2)

The location of active mine sites in the centre of the Ballarat heightened the impact of the sludge, which inundated the town throughout the 1850s and 1860s:

Sludge had become the chief product of Ballarat East. The serious deterioration in the drainage system between 1856 and 1857 was stifling compared with the changes that followed when puddlers were joined by large-scale sluicing operators, who began to wash away all the soil down to bedrock on the slopes of the great basin above the road. It descended, half-liquid, half-solid, into the area behind those valuable frontages and made them, if possible, even more vulnerable to flooding. Yet, because wooden buildings predominated along Main Street, it was not too difficult a task to raise them many feet above the original level of the ground to keep up with the high embankments

that the Central Roads Board found necessary. In some places the level of the road was eleven feet [3.4 metres] above the former ground level.

(Bate 1978: 101)

There is an interesting Victorian parallel for the sludge-buried archaeological sites of the goldfield townships and landscapes. In Melbourne, in 2017, historical archaeological sites in remarkable states of preservation, also dating to the gold rush years, were uncovered during excavations on Little Lonsdale Street (see *Heritage in Ruins: an investigation into Melbourne's 'buried blocks'*, report to the Heritage Council of Victoria, Alliance Archaeology, May 2019). Investigations and research have revealed that these sites were intentionally buried beneath layers of introduced fill from the mid-1850s onwards, to address the City Council's regulatory requirement for ground levels to be raised in areas prone to inundation. The requirement to raise ground levels applied equally to crown and private land and resulted in some sites being buried beneath more than 2 metres of fill.

In Ballarat, the historic record contains many references to the ground level alterations that were required to address the impact of the rising tide of sludge. In some cases, these references specifically mention archaeological remains and artefacts that have been uncovered at significant depths. The Nathan Spielvogel papers, a series of radio talks presented in 1936 and 1937, included the following observations:

During the excavations for the building of the present Red Lion Hotel a log bridge was found five to six feet below the surface, and a long way from where the creek bed is today.

Whilst sinking a shaft on the western side of Main Road we went through a good six feet of bottles before reaching the original surface.

During the 1930's... [whilst] mining for gold on the vacant blocks along Main Road between York and Eureka Streets and when sinking shafts as many as three wooden floors were passed through, the lowest being on the original surface, the others were separated by feet of sludge, gravel, and waterlogged tailings and in some places a thick layer of ashes containing melted glass and many fragments of china. These Floors Showed definite evidence that new buildings had been erected on top of flood debris or ashes after the destruction of the previous one.

(Spielvogel and Ballarat Historical Society 2004)

William Withers, in his account of the history of Ballarat, observed that:

...old Main road, now called Bridge street, but before the old levels were raised to what they are now, with some of the shop floors in the present street eleven feet above the original surface

(Withers 1887: 282)

Although archaeological excavations are yet to be conducted that conclusively demonstrate the survival of significant remains preserved beneath sludge layers in the study area, the potential for sites to survive warrants their consideration and inclusion in this Historical Archaeology Management Plan. As sites in the sludge-affected areas are investigated, our understanding of the impact of mining wastes on the condition and preservation of historical archaeological sites will continue to be refined.

5.3 Digital Elevation Modelling

Another important component of this project, particularly in relation to the identification of sites where archaeological remains are likely to survive, was the development of a GIS-based Digital Elevation Model of Difference (DoDs) – a system for comparing nineteenth century topographic maps with current elevation records. The comparison of historical and modern elevations enables the identification of locations where ground levels have significantly changed over time. Locations where the ground level during the gold rush years was much lower than it is today have high potential to contain archaeological remains buried and preserved at depth. In the Ballarat and Bendigo areas, the importance and relevance of the Digital Elevation Model (DEM) was underlined by the likelihood that significant ground level changes had taken place as a result of the sludge inundations, as detailed in Section 5.2.

Dr Greg Hil (La Trobe University) created the DEM by comparing elevation data from 1858 with Lidar records from 2019 (see Appendix 1 *Technical Report*, Hil 2024). The DoDs (see Figure 2) show areas of elevation increase in green and areas of elevation decrease in red. As part of this study, areas of increased elevation (green) were identified as having the potential to contain remains from the historic period buried and preserved beneath sludge or other filling layers.

The findings from the model are in many ways remarkable, and they bear testament to the scale of landscape change that was caused by the sludge tides, particularly in low-lying parts of Ballarat and along the historic waterways. In some locations, particularly along parts of Eastwood and Humffray Streets, fill or sludge depths of up to 3 metres are indicated. Although a model from Bendigo could not be included in this report, Hil's research shows that similar depths are likely to be found across the city, and an assessment of Bendigo's archaeological condition and potential is included in Section 6.2.

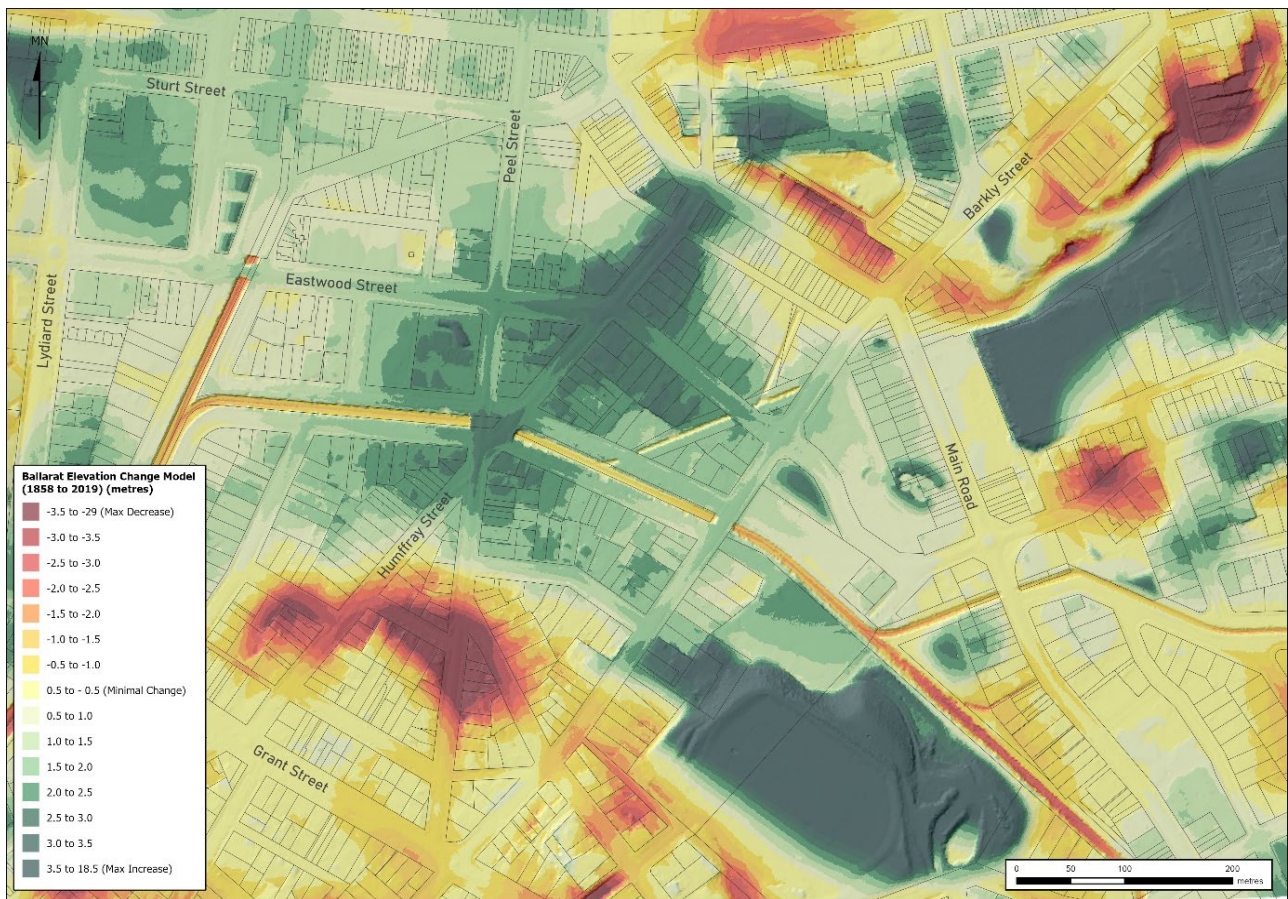


Figure 2: Digital Elevation Model of Difference, Ballarat 1858 to 2019.

The findings from the DoDs are indicative rather than definitive, and have contributed one source of information to be considered as part of individual site assessments, together with historical and other source material. Change and landscape alteration had already started in the goldfields prior to the production of the contour plan in 1858, but that is the starting point for the DEM so the earliest changes will not be identified. A middle elevation checkpoint (perhaps for levels in the early twentieth century) would also help to refine the model, but no suitable records have yet been found. However, the model provides another valuable and thought-provoking component of the Archaeology Management Plan, which will be tested and refined as opportunities for site investigations arise.

5.4 Remote Sensing

The fourth source of information relied on for the development of the Archaeology Management Plan was a Ground Penetrating Radar (GPR) survey. In 2021, an archaeology team from La Trobe University was commissioned by Heritage Victoria to undertake a GPR survey in two locations: the LT Fraser Reserve in Ballarat East and part of Lewis Street in Ballarat Central (see Appendix 1). GPR is a geophysical method that uses high-frequency radio waves to produce an image of underground features or anomalies, and the aim of the project was to identify sub-surface signatures that were likely to represent historical archaeological remains.

The LT Fraser Reserve was an ideal location for a GPR assessment because it is a location where substantial historical activity took place. The reserve is bounded by Main Road to the northeast, Eureka Street to the east and Barkly Street to the west. In the mid-nineteenth century, the block contained 4 hotels and 22 commercial allotments. Most of the buildings constructed across the site in the 1850s were timber structures but following the Great Fire of 1859, the streetscape was altered, and many buildings were reconstructed in brick.

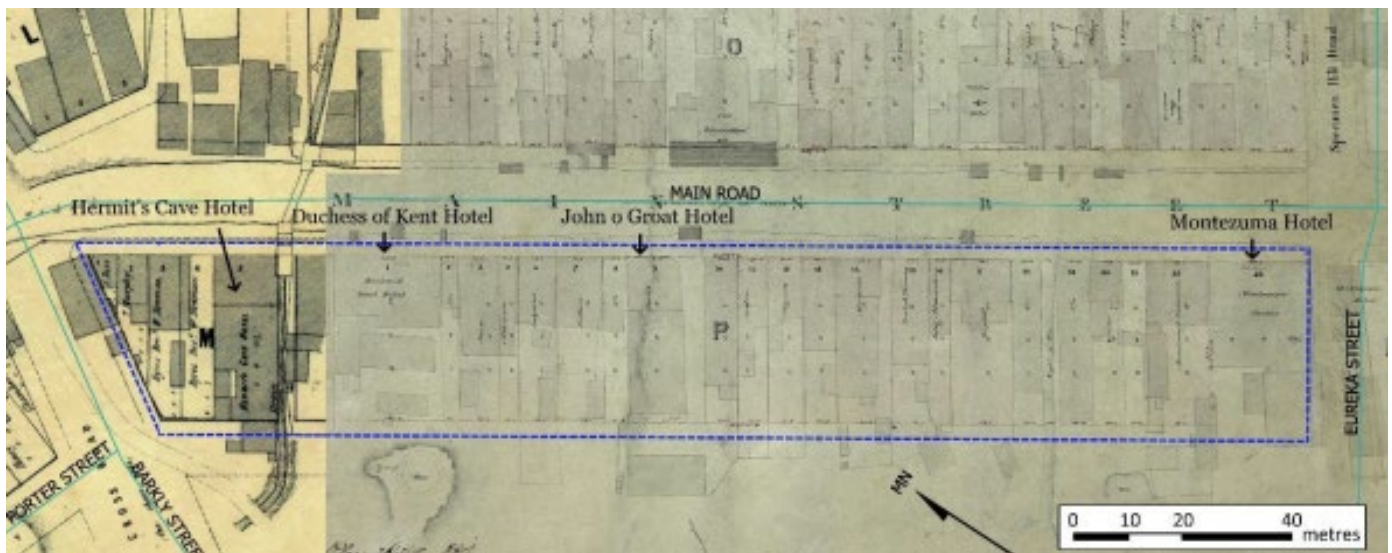


Figure 3: Revised Town Plan of Blocks L, M combined with 1858 Revised Town Plan of Blocks O and P, showing the LT Fraser Reserve survey area. Source: Hil et al. 2021: 8.

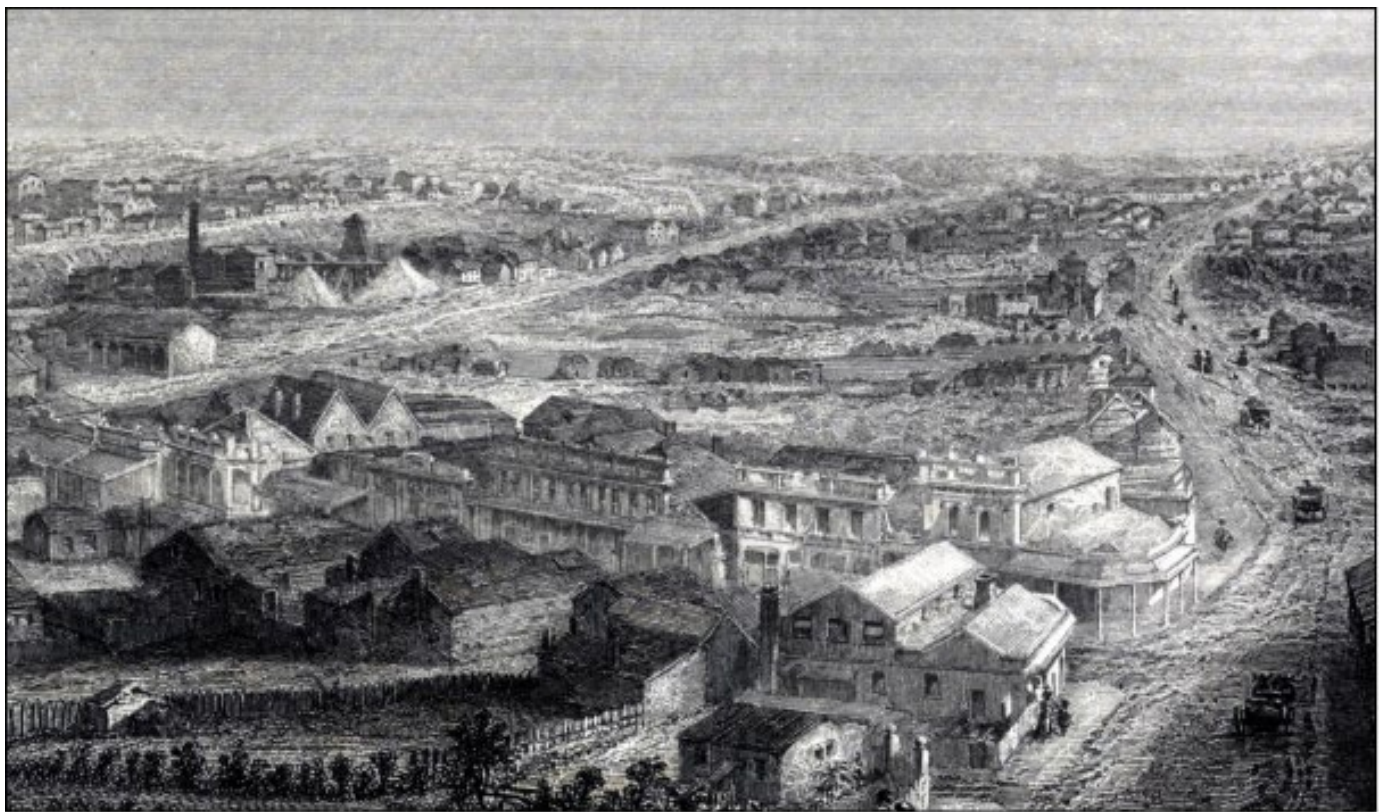


Figure 4: 1860s Ballarat [facing west] by J Saddler, ca. 1875 (BIB ID 2117377) showing the historical layout of LT Fraser Reserve. Source: Hil et al. 2021: 6.

The GPR survey across the LT Fraser Reserve identified a series of features, some of which extended to depths of more than 3 metres below current ground level (Hil et al. 2023 and see Figure 5). When these features were overlaid with the 1850s revised town plans, the finds from the GPR survey were found to correlate with many of the historical structures.

The John O'Groats Hotel operated on Main Road from the 1850s until it was demolished in 1893. It had a brick cellar constructed in 1857 (Hil et al. 2021). Figure 5 shows the location of the John O'Groats Hotel overlaid on the results from the GPR survey. The results of the GPR survey indicate high amplitude reflections, generally referred to as anomalies, that may relate to sub-surface features such as walls, other structural elements or even gold workings (Hil et al. 2021). The heatmap shows anomalies aligning with rectangular features across the former O'Groats Hotel and adjacent laneway. The patterning shown in the area between allotments 9 and 10 may relate to a laneway surface, perhaps with gravel or paving/flagging stones.

The GPR results are particularly strong at a depth of approximately 1 metre below current ground level. This accords well with the elevation change modelling for this area (see Section 5.3), which also indicated a ground level alteration of close to 1 metre in this part of Ballarat (Hil et al. 2021).

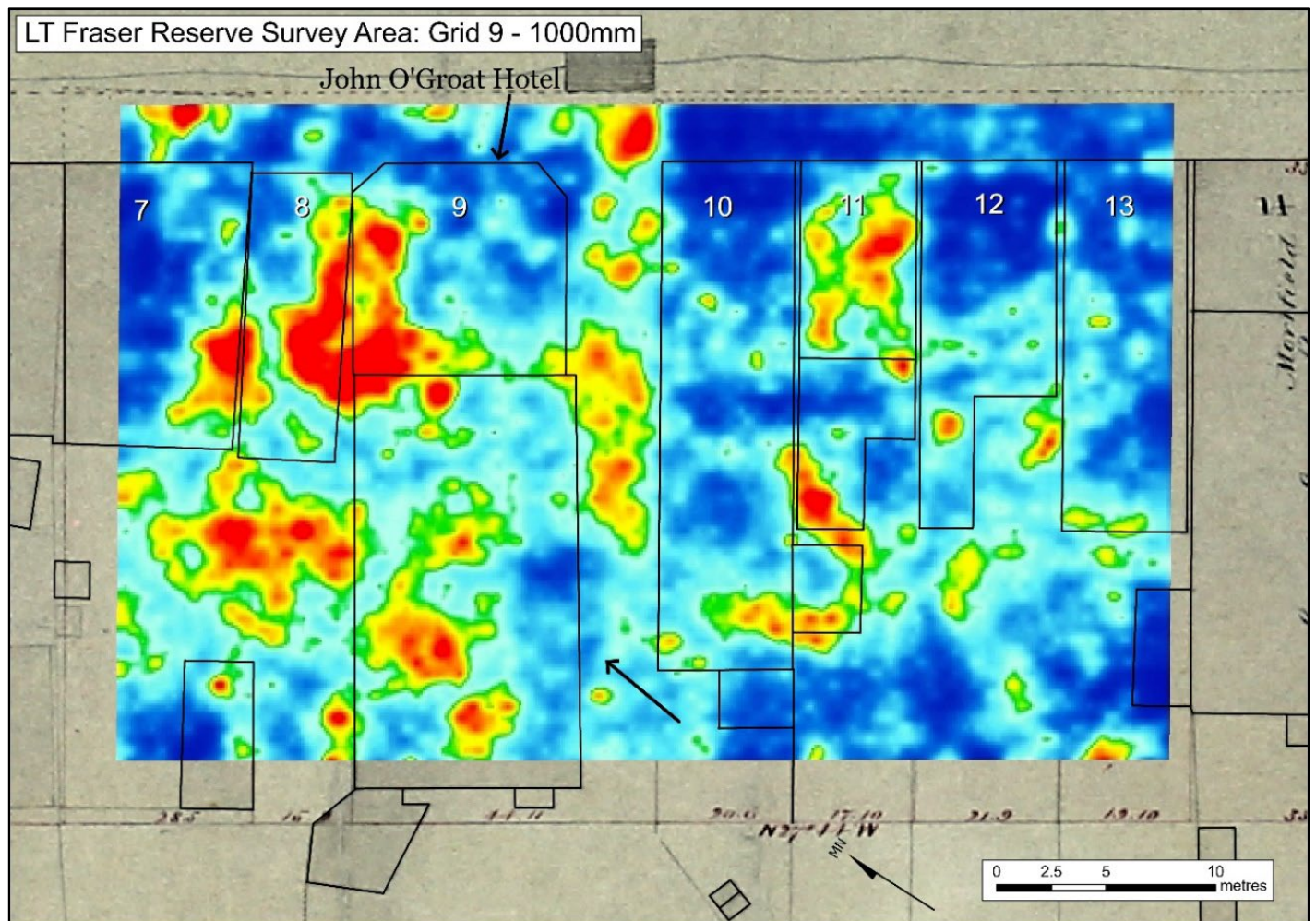


Figure 5: Hil Et al 2023 GPR results from 1 metre in depth at Grid 9 of the LT Fraser Reserve survey area. Areas in red reflect locations with higher relative sub-surface density, with areas in blue representing lower density.

Other parts of the LT Fraser Reserve also presented strong anomalies, including some distinctive right-angled shapes. Anomalies were identified in the southeast corner of the reserve that may relate to the former Montezuma Theatre/Hotel and adjacent buildings (Hil et al. 2021) which were located on this corner of the block.

The GPR survey has demonstrated that it is likely that significant historical archaeological remains have survived across parts of the reserve and that some of them are likely to be in a good state of preservation. The survey accords well with the findings from the DEM and suggest that archaeological remains are likely to be located at least 1 metre beneath the current ground level. As a result of this study the LT Fraser Reserve was added to the Heritage Inventory as the Former Main Street Commercial Precinct Archaeological site (Heritage Inventory number H7622-0465).

6 Heritage Inventory listings and additions

Sections 4 and 5 of this report have detailed how sites that are likely to contain significant historical archaeological remains have been identified. This section details how these sites have been added to the Heritage Inventory to facilitate their protection and management in accordance with the requirements of Part 6 of the Act.

The Heritage Inventory is a list of all known historical archaeological sites in Victoria established under the provisions of the Act. The Act defines an archaeological site as a place (other than a shipwreck) which —

- a. contains an artefact, deposit or feature which is 75 or more years old; and
- b. provides information of past activity in the State; and
- c. requires archaeological methods to reveal information about the settlement, development or use of the place; and
- d. is not associated only with Aboriginal occupation of the place.

In addition to the establishment of the Heritage Inventory, the Act also provides 'blanket protection' for all historical archaeological sites in the state, including ones that have not been reported to Heritage Victoria or assessed for inclusion in the Heritage Inventory (see Section 123b of the Act).

Given that the Act provides blanket protection for all historical archaeological sites, the inclusion of a place on the Heritage Inventory should not be thought of as a new planning control that has been applied. Rather, the inclusion of a site in the Heritage Inventory is a strategic tool which provides information about the probable existence of archaeological remains, to promote awareness and facilitate strategic place management.

Under the terms of the Act it is necessary to obtain a Consent to authorise any works that may affect historical archaeological remains at a site. In most cases, Heritage Victoria will allow Heritage Inventory sites to be disturbed, subject to the undertaking of a program of archaeological investigating, recording, reporting and artefact management. The identification of sites, their inclusion in the Heritage Inventory and the requirement for Heritage Act Consents to be obtained to authorise works that may affect archaeological remains are the cornerstones of the system that will lead to a better understanding of the archaeology of the goldfields.

In many ways, the successful management of Melbourne's historical archaeology provides a relevant case study for the cities and towns of the goldfields. An Archaeology Management Plan, which identified more than 800 sites for inclusion in the Heritage Inventory, was completed in 1993 and implemented by Heritage Victoria by 2007. As a result, more than 200 archaeological investigations have now been conducted across Melbourne, and remarkable sites and artefacts have been uncovered providing a unique understanding of the city's historical settlement, growth and change. The listing of sites in the Heritage Inventory has also provided a high level of certainty and strategic direction for owners, developers, planners, City of Melbourne staff and other key stakeholders who have interests in sites across Melbourne.

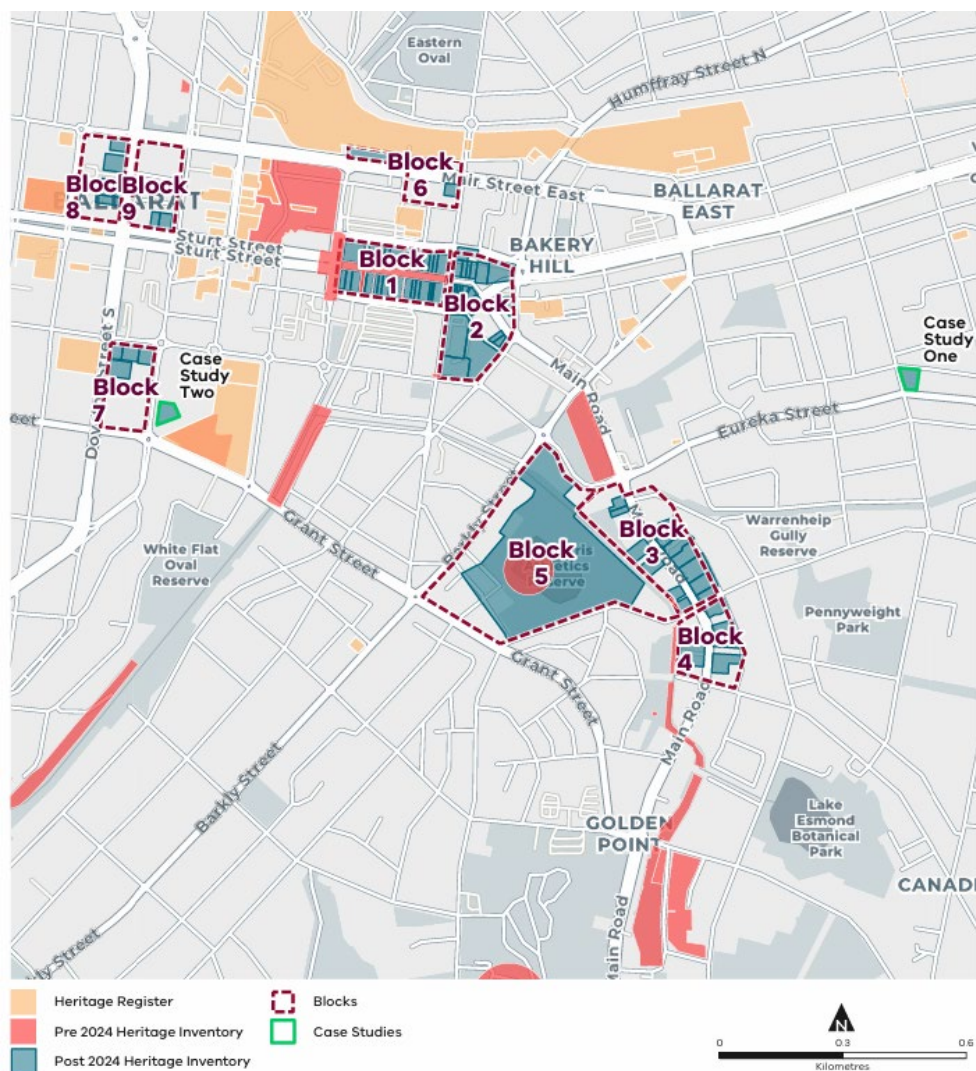
Below is a brief overview of site names, numbers and mapped extents that have been added to the Heritage Inventory over the course of the project. To see the mapped site extents for the places listed below, head to VicPlan (<https://mapshare.vic.gov.au/vicplan/>). To turn on the heritage layers use the left-hand legend and tick 'heritage'. The Heritage Inventory sites are coloured light blue. Other relevant site information (including site description, history and significance) is included on the Victorian Heritage Database (<https://vhd.heritagecouncil.vic.gov.au/>) or, if you are eligible, accessed through Heritage Victoria's Hermes Orion system.

6.1 Ballarat

Previous heritage assessments conducted in Ballarat have focused more on built heritage rather than the identification of archaeological sites, or they have recorded some goldmining sites across a broad area (Supple 1999). While this study has looked to address the need for an Archaeology Management Plan for the historic goldfields centre of Ballarat, an assessment of the entire city was beyond the resourced scope of the project.

Accordingly, a representative area of nine city blocks and two additional key sites (Case Study 1 – the Former Eureka Hotel Site and Case Study 2 – Former Welsh Church Complex) have been selected for the first stage of this project (see Figure 6 below). The blocks were chosen to ensure that a diverse range of different site types were identified, reflecting the complexity and diversity of life in a goldfields town. Other factors, including the expected state of preservation of parts of the city (see section 5), were also considered. All of the following site types have been included and represented in the study:

- sites of commerce and business activity
- sites of residential occupation
- sites relating to entertainment and recreation
- sites that were the focus of ethnic and community life (including the Chinese community)
- places of worship and religion
- civic infrastructure
- industry (including goldmining)



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Figure 6: Plan showing the nine blocks and two case study locations as part of the Ballarat Archaeology Management Plan.



- Blocks
- Case Studies

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Figure 7: 1861 Ballaarat Gold field No. 1 underlying the nine blocks and two case study locations as part of the Ballarat Archaeology Management Plan.

6.1.1 Block 1 – Bridge Street, Ballarat

Background

Block 1 is bounded by Curtis Street to the north, Peel Street to the east, Little Bridge Street to the south and Grenville Street to the west. The area was a focus of early mining and settlement activity, and Bridge Street was a key connection between East and West Ballarat. The block is located on an area of alluvial workings that was known as the Gravel Pits Lead (see Figure 8).



Figure 8: c. 1854 SDS Huyghue 'Gold workings Ballarat'. According to Weston Bate this scene is at the Gravel Pits, Bakery Hill and Main Road (Bate 1978: 43).

The original alignment of the Yarrowee River ran west of Bridge Street (down Grenville Street). In 1854, a bridge was constructed over the Yarrowee (Bradby 2020), and the street was formally proclaimed Bridge Street in 1858 (The Star, 31 March 1858). Figure 8 above shows the area of the Gravel Pits in 1854. The alignment of substantial built structures is already emerging along Bridge Street in contrast to the canvas tents and workings that cover other parts of the town at the time.

This block was one of the first commercial precincts established in the Ballarat goldfield. By the late 1850s, the block contained seven hotels, four draperies, three ironmongers, two tobacconists, two butchers, two grocers, three chemists (including the early Robinson and Wayne's Apothecary), one watchmaker, one ceramics dealer, one glass dealer, one confectioner, and the Fountain Bakery (established in 1854 and recorded as the earliest permanent structure on Main Street). The block was prone to inundation by water and sludge due to its proximity to the Yarrowee. It was also affected by devastating fires. Despite these hardships, settlement and growth continued along Bridge Street and the block remained a key commercial precinct throughout the nineteenth and twentieth centuries.

The key historical reference for this Block is the 1857 *Revised plan of blocks A. B. C. D., Main Street, Ballarat* (SLV), see Figure 9. The plan is a testament to the dynamic activity and change that is taking place in the city at this time. It records mine workings, the establishment of the first properties, landscape change and the development of civic infrastructure as Ballarat is transformed in the late 1850s. Many of these phases of mining and town growth are likely to be reflected in surviving archaeological remains across the Block 1 area. Other key sources include newspaper articles, photographs and secondary sources. The 1870–1875 image, *Panorama of Ballarat taken from the Town Hall tower* (SLNSW) was used, as was the 1924 *Ballarat Sewerage Authority Plan No. 57* (Central Highlands Water).

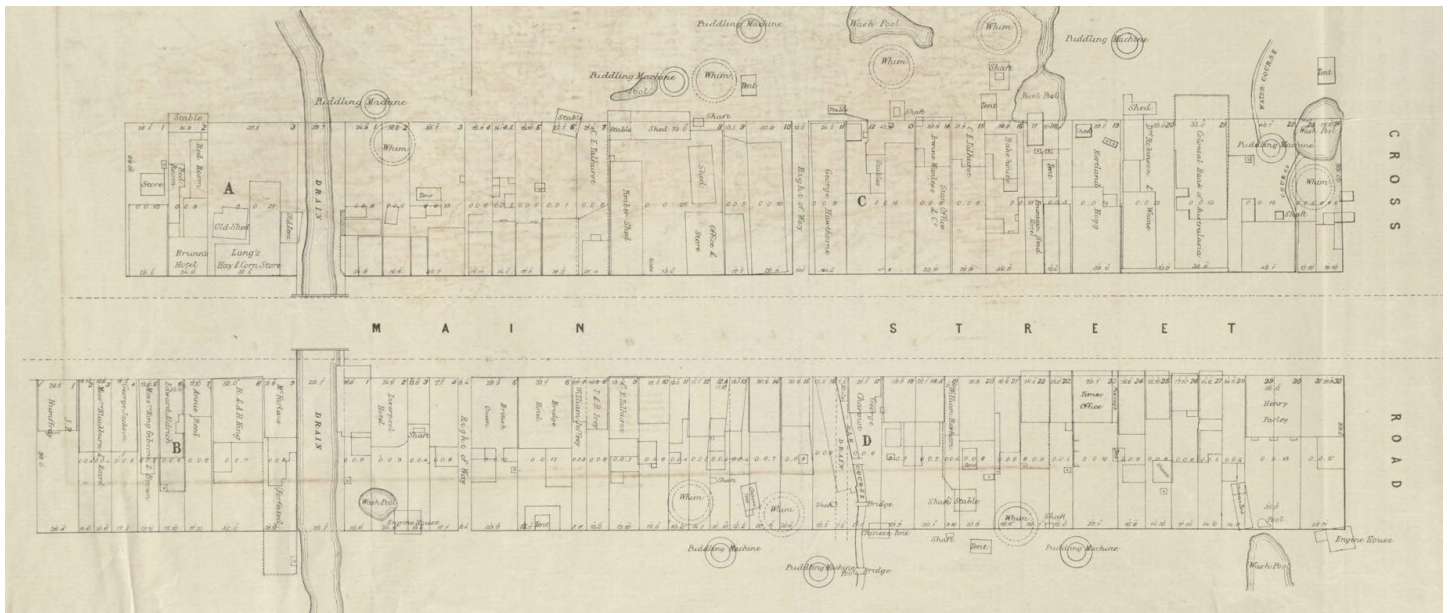


Figure 9: 1857 Revised plan of blocks A. B. C. D., Main Street, Ballarat. Source: SLV.

Pre-existing Heritage Inventory listings

Prior to this project, there were two Heritage Inventory sites listed in this area:

- Bridge Street Mall Ballarat, Roadways Precinct (H7622-0469)
- Bridge Street Mall, Ballarat Culverts (H7622-0470)

The Bridge Street Mall Ballarat, Roadways Precinct includes the footprint of Bridge and Grenville streets and extends into Sturt Street. This site recognises that the early mining of the Gravel Pit goldfield took place in this area, and it includes part of the original alignment of the Yarrowee River. The entire area of Block 1 has the potential to contain mining relics (shafts, workings, artefacts and other features) and remains associated with the construction and use of Bridge Street itself (also known as Main Street).

The Bridge Street Mall, Ballarat Culverts site runs north-south in two parts of Block 1. The westernmost site component is the location of a buried culvert that carried flows of the Yarrowee River, redirected from its original course in the Grenville Street area. The culvert was initially constructed of timber and was later reinforced with brick and stone. It was designed to try to enhance the flow of the river, particularly in response to the challenges created by the sludge menace. The Heritage Inventory listing also recognises a small culvert or drain feature that is shown on the 1857 plan in the vicinity of Time Lane.

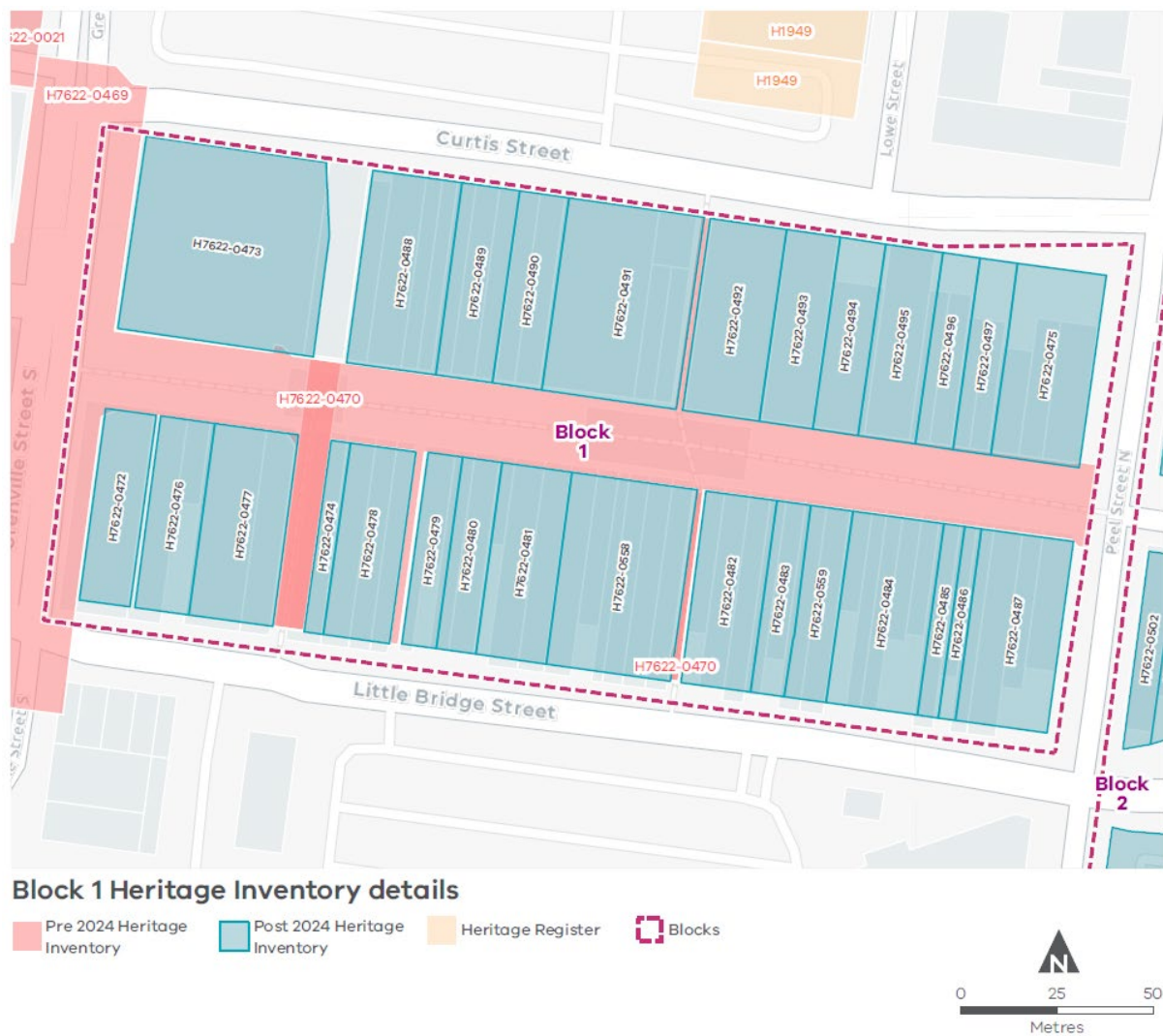


Figure 10: Plan of Block 1 showing previously listed Heritage Inventory sites in pink and Heritage Inventory sites listed as part of the Ballarat Archaeology Management Plan research in blue.



Block 1 Heritage Inventory details

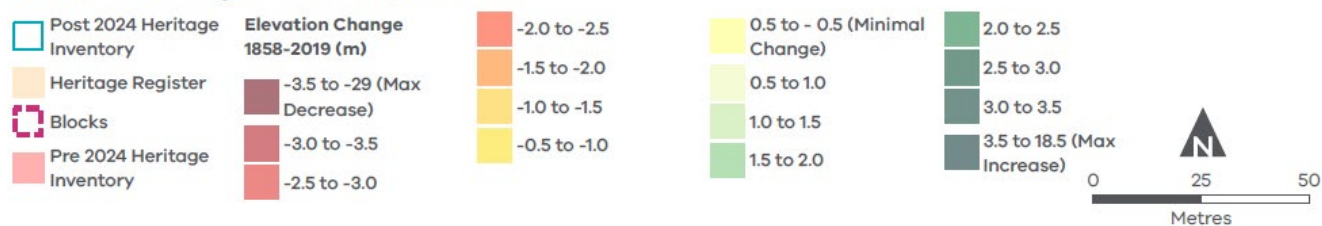


Figure 11: Plan of Block 1 showing the Digital Elevation Modelling indicates that Block 1 is likely to contain varying depths, depth range of approximately 0–2 metres. The areas of the channels are higher.

Heritage Inventory additions

Twenty-eight historical archaeological sites were added to the Heritage Inventory in Block 1 (see Table 2). Other relevant site information (including site description, history and significance) is included on the Victorian Heritage Database (<https://vhd.heritagecouncil.vic.gov.au/>) or, if you are eligible, accessed through Heritage Victoria's Hermes Orion system.

Table 2: Block 1 – Heritage Inventory additions

Site name	Address	HI ID
Former Bucks Head Hotel site	2 Bridge Mall, Ballarat Central	H7622-0472
Former Main Street Block A – Allotments 1a–3 site	Norwich Plaza, Ballarat Central	H7622-0473
Former Wittkowski Bros. Tobacco Shop site	1–3 Colosseum Walk, Ballarat Central	H7622-0474
Former Biggs and Shoppe Ceramic Dispensary site	75–81 Bridge Street Mall, Ballarat Central	H7622-0475
Former Jackson Farrier and Ironmonger site	8–6 Bridge Street, Ballarat Central	H7622-0476
Former King Ironmonger and Temperance Hotel site	10–14 Bridge Street Mall, Ballarat Central	H7622-0477
Former Liverpool Hotel site	22–26 Bridge Street Mall, Ballarat Central	H7622-0478
Former British Queen Hotel site	28 Bridge Mall, Ballarat Central	H7622-0479
Former Bridge Hotel site	30–32 Bridge Street Mall, Ballarat Central	H7622-0480
Former Café Du Paris site	34–40 Bridge Mall, Ballarat Central	H7622-0481
Former Lister and Angel Fruiter site	56–62 Bridge Street Mall, Ballarat Central	H7622-0482
64–66 Bridge Street Mall site (Former Allotments 19 and 20 of Section D)	64–66 Bridge Street Mall, Ballarat Central	H7622-0483
Former Times Buildings site	72–78 Bridge Street Mall, Ballarat Central	H7622-0484
Former Pickford Watchmaker site	80 Bridge Street Mall, Ballarat Central	H7622-0485
82 Bridge Mall Site (Allotment 27 of Section D)	82 Bridge Street Mall, Ballarat Central	H7622-0486
Former Stark Grocers site	77–90 Bridge Street Mall, Ballarat Central	H7622-0487
Former Bridge House site	17–23 Bridge Street Mall, Ballarat Central	H7622-0488
Former Scott Butcher site	25–27 Bridge Street Mall, Ballarat Central	H7622-0489
29–33 Bridge Mall Site (Allotments 6 and 7 of Section C)	29–33 Bridge Street Mall, Ballarat Central	H7622-0490
Former Patterson Butcher and Grocer site	35–45 Bridge Street Mall, Ballarat Central	H7622-0491
Former Drury and Wrights' Ironmonger Archaeological site	47 Bridge Street Mall, Ballarat Central	H7622-0492
Former Ballarat Star Office site	53 Bridge Street Mall, Ballarat Central	H7622-0493
Former Fountain Head Hotel site	57–59 Bridge Street Mall, Ballarat Central	H7622-0494
63–65 Bridge Mall Site (Allotment 18 and 19 of Section C)	63–65 Bridge Street Mall, Ballarat Central	H7622-0495
Former Robinson and Wayne Apothecary Hall site	67–69 Bridge Street Mall, Ballarat Central	H7622-0496
Former Colonial Bank of Australasia site	71–73 Bridge Street Mall, Ballarat Central	H7622-0497
Former London Tavern, Mining and Commercial site	42–54 Bridge Mall, Ballarat Central	H7622-0558
Former Nicholls Nursey and Seedman site	68–70 Bridge Street Mall, Ballarat Central	H7622-0559

6.1.2 Block 2 – Bridge Street and Bakery Hill, Ballarat

Background

Block 2 is bounded by Curtis Street to the north, Humffray Street to the east, Eastwood Street to the south and Peel Street to the west. Prior to the commencement of the project, there were no Heritage Inventory sites listed in this area.

The Bakery Hill Sawn Timber Water Supply Pipe was discovered during Central Highland Water sewerage upgrade works. The site runs laterally across Peel Street South and was discovered approximately 2 metres below the surface. The site was listed on the Heritage Inventory for: its archaeological values associated with the early mining of the Ballarat Flat goldfield and the Yarrowee River; its potential to contain archaeological evidence of early 1850s sludge and water management in the Ballarat goldfields; its potential to contain artefacts within associated deposits; and its potential to contain evidence of constructions methods and the operation of early water management systems in Ballarat and Ballarat East. The key plans used to identify sites in Block 2 were the 1857 *Revised plan of blocks E, F & H, Main Street, Ballaarat* (SLV, see Figure 12) and *Revised Plan of Blocks I, G, and N, Bakery Hill, Ballaarat*, located at PROV.

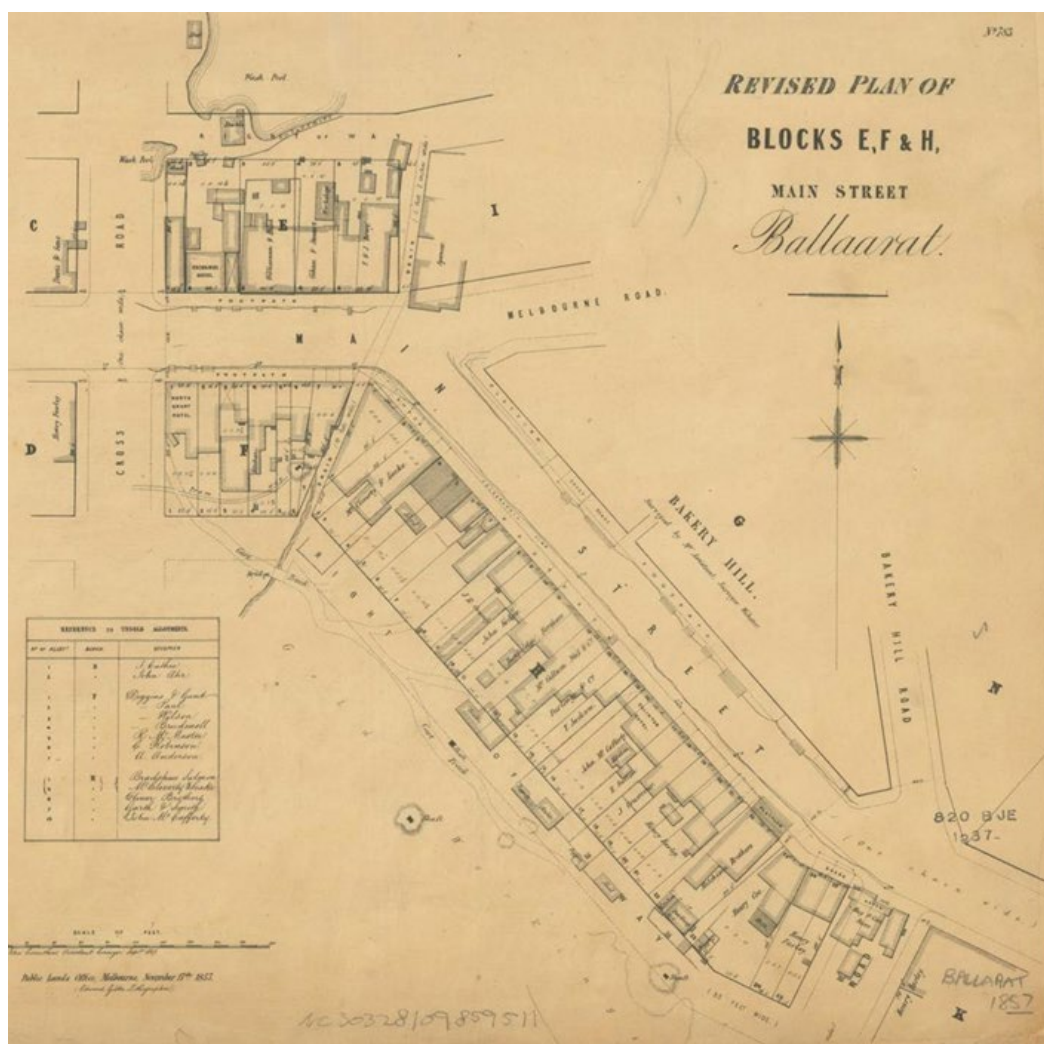


Figure 12: 1857, *Revised plan of blocks E, F & H, Main Street, Ballaarat*. Source: SLV.

Heritage Inventory additions

Prior to the commencement of the project, there were no Heritage Inventory sites listed in this area. There is one Heritage Inventory site that abuts the western extent of the block – the Bakery Hill Sawn Timber Water Supply Pipe site (H7622-0462). There is one Victorian Heritage Register listing: St Pauls Anglican Church (H0401), to the east of the block extent.

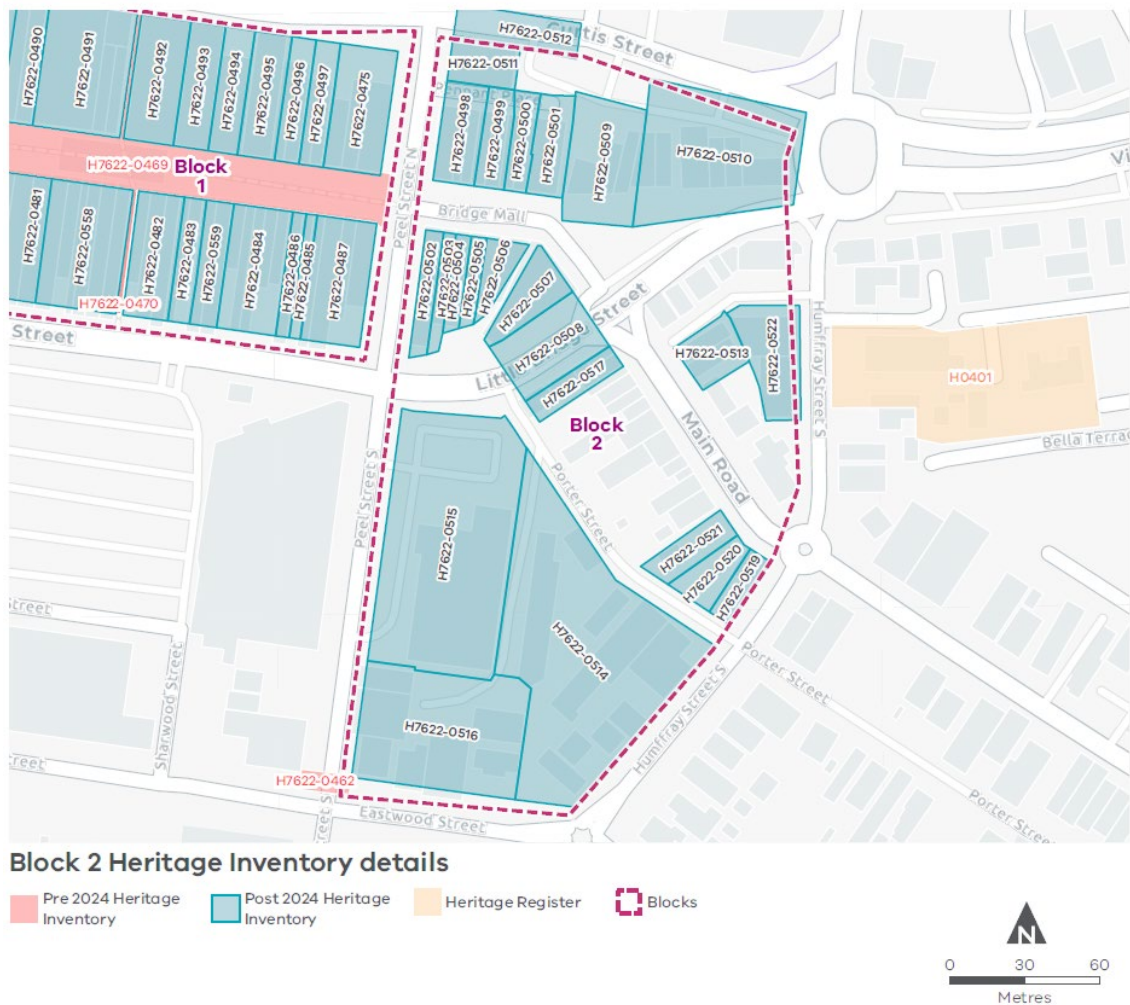


Figure 13: Plan of Block 2 showing previously listed Heritage Inventory sites in pink and Heritage Inventory sites listed as part of the Ballarat Management Plan research in blue.

It was determined that the listing of new Heritage Inventory sites would be based on historic property and allotment details, including the 1857 *Revised plan of blocks E, F & H, Main Street, Ballaarat* (SLV) and the 1859 *Revised Plan of Blocks I, G, and N, Bakery Hill, Ballaarat* (PROV). These plans detail the structures that have been built within each allotment and the details of the occupier. The availability of this data enabled this early phase of Ballarat's history to be easily researched and identified.

In addition to the 1857–59 Ballaarat Plans, relevant online newspapers articles, photographs and secondary sources were utilised to complete a background history. The 1870–1875 *Panorama of Ballarat taken from the Town Hall tower* (SLNSW) was used for the identification of a second phase in occupation and the 1926–1936 *Ballarat Sewerage Authority Plan No. 53* (available through Central Highlands Water) was used to mark the final occupation phase likely to contain historical archaeological values.

The DEM for Block 2 suggests that there has been a large change in ground level in the southern part of the block, with the mid-nineteenth century level likely to be located 2 metres or more beneath the current land surface. Sites H7622-0514 and H7622-0516 have the potential to be the most intact. The north-western corner of the block (including site H7622-0511) is also likely to contain deposits buried at significant depth. Preservation is less strongly indicated in the eastern and north-eastern parts of the block.

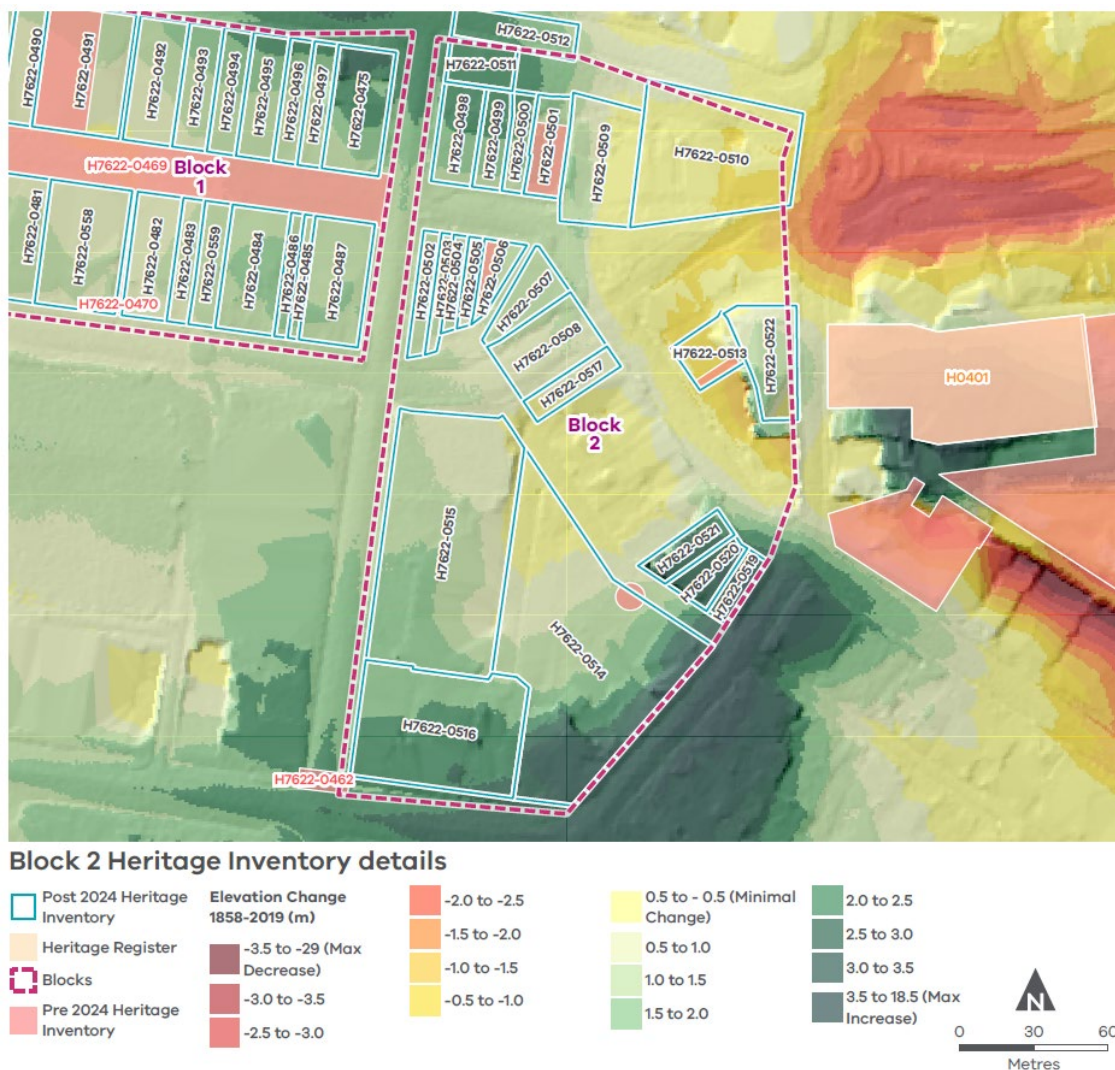


Figure 14: Plan showing the Digital Elevation Modelling indicates that Block 2 has a significant change in ground level in the southern part, with the mid-nineteenth century level possibly 2 metres or more below the current surface, while the southern sites and north-western corner may have well-preserved deposits, unlike the eastern and north-eastern areas.

Twenty-four historical archaeological sites were added to the Heritage Inventory in Block 2 (see Table 3).

Table 3: Block 2 – Heritage Inventory additions

Site Name	Address	HI ID
Former Exchange Hotel site	83 & 85 Bridge Mall, Bakery Hill	H7622-0498
Former British Mart site	87 & 89 Bridge Mall, Bakery Hill	H7622-0499
Former Edinburgh Boot and Shoe Emporium site	91–93 Bridge Mall, Bakery Hill	H7622-0500
Former Earl of Zetland Hotel site	95 Bridge Mall, Bakery Hill	H7622-0501
Former North Grant Hotel site	3 Peel Street, Bakery Hill	H7622-0502
Former Stewart and Doig Tinsmiths site	94–96 Bridge Mall, Bakery Hill	H7622-0503
Former Gibbing’s Stables site	94–96 Bridge Mall, Bakery Hill	H7622-0504
98 Bridge Mall (Allotment 4, Section F) site	98 Bridge Mall, Bakery Hill	H7622-0505
100 & 104 Bridge Mall (Allotments 5, 6, and 7. Section F) site	100 & 104 Bridge Mall, Bakery Hill	H7622-0506
Former Stone Department Store site	2–4 Main Road, Bakery Hill	H7622-0507
Former Oliver Brothers Watchmakers and Smith & Garth Bootmakers site	Little Bridge Street, Bakery Hill	H7622-0508
Former Times Hotel and Clarke Bros Grocer site	101 Bridge Mall, Ballarat	H7622-0509
Former Section I Commercial and Residential Precinct	101 Bridge Mall, Ballarat	H7622-0510
Former Peel Street Residence site	4–6 Peel Street, Bakery Hill	H7622-0511
Former Curtis Street Produce Merchants site	Curtis Street, Bakery Hill	H7622-0512
Former John Alloo’s Chinese Restaurant site.	13 Main Road, Bakery Hill and 15–19 Main Road, Bakery Hill	H7622-0513
Former Timber Yard site	102 Humffray Street South, Ballarat Central	H7622-0514
Peel Street South Commercial Precinct	25–23 Peel Street South, Ballarat Central	H7622-0515
Former City of Limerick Hotel site and Commercial/ Residential site.	27–31 Peel Street South and 35-33 Eastwood Street, Ballarat Central	H7622-0516
Former Grundy Tobacconist site	20 Main Road, Bakery Hill; 112 Little Bridge Street and 110 Little Bridge Street, Bakery Hill	H7622-0517
Former Commercial and Residential site	50 Main Road, Bakery Hill	H7622-0519
Former Coe Confectioner and Bakery site	48 Main Road, Bakery Hill	H7622-0520
Former Mitchison Brothers Auctioneer site.	46 Main Road, Bakery Hill	H7622-0521
Bakery Hill Commercial and Residential site	8 Humffray Street, Bakery Hill and 10 Humffray Street South, Bakery Hill	H7622-0522

6.1.3 Blocks 3 and 4 – The Entertainment Precinct

Background

Blocks 3 and 4 are located along Main Road in Golden Point. The blocks are broadly delineated by Little Dodds Street to the east and the Llanberris Athletics Reserve to the west.

These blocks are located within historic 'Red Hill', which was originally selected as the 'Entertainment Precinct' as there was a law that forbade hotels within half a mile of sold land (Bate 1978: 45). In 1854 there were as many as 18 hotels in the area, but also a number of theatres and a circus. The population of Ballarat at the time was dominantly male miners, needing entertainment and a drink in the evening (Bate 1978).

Another aspect of the 'Entertainment Precinct' was the red-light district, which was situated along Esmond Street (now York Street). During the evenings, men were expected to treat the few women in Ballarat to food and drink, or they could make a payment to the sex workers of Esmond Street (Bate 1978).

Arcade Street was a right-of-way located between Allotments 33 and 35, Section Q on Main Road, and proceeded to York Street along what is now known as Little Dodds Street. Arcade Street was not a formal right-of-way but extended from Main Road to Esmond Street. The homes were predominantly owned by women, but there were some businesses that operated within the right-of-way. Esmond and Arcade streets were the predominant red-light districts of Ballarat throughout the 1850s and 1860s. Their proximity to the 'Entertainment Precinct' meant that miners who were unsuccessful in wooing 'respectable ladies' could make an "outright payment to the Esmond Street professionals" (Bate 1978: 104)

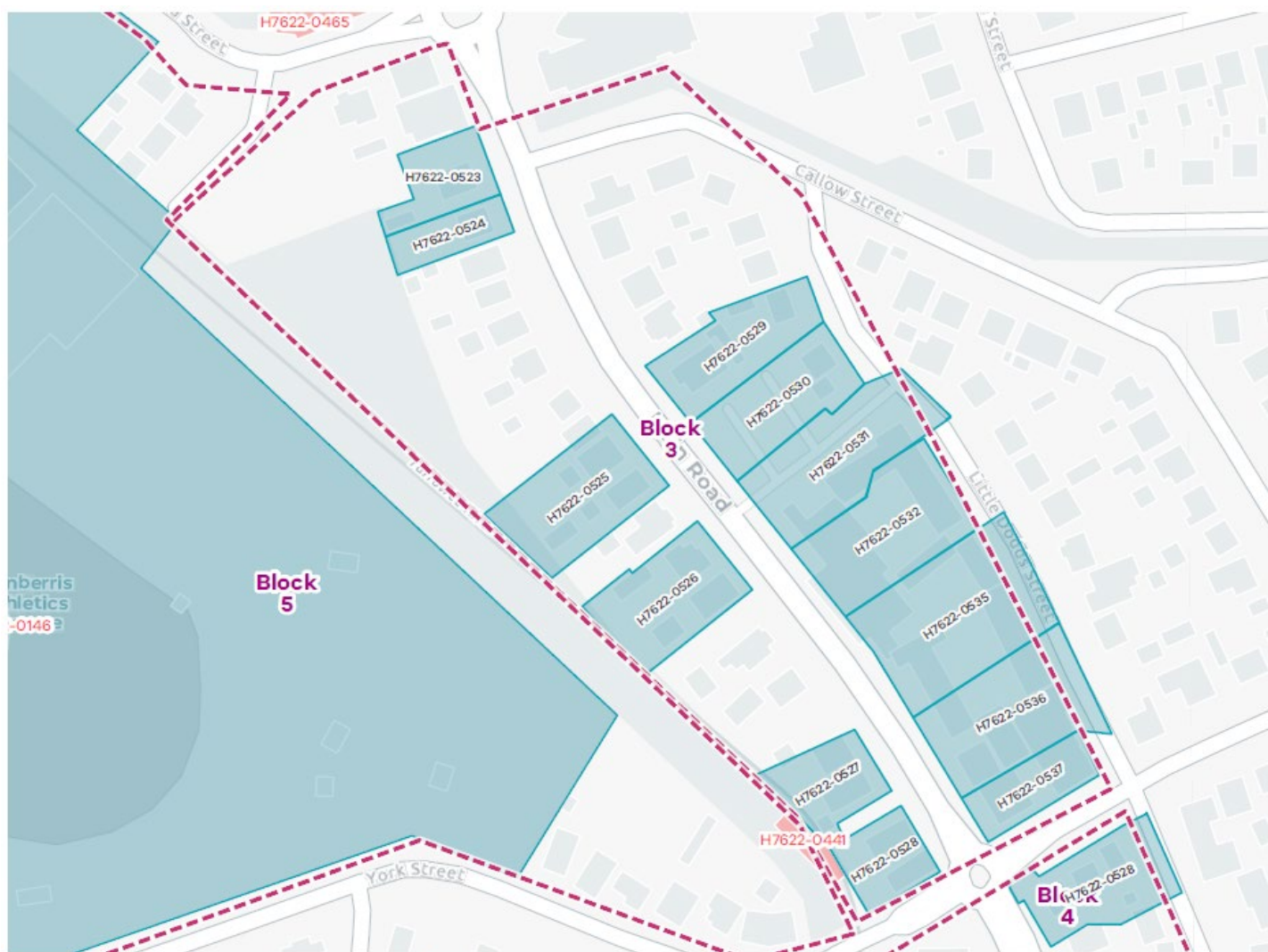
During the 1860s there was social change across Ballarat which correlated with the change in the nature of gold mining in the Ballarat goldfield. More families and residential areas were established, so there was less demand for hotels, restaurants and theatres. There is a change in the publicans in the Red Hill Entertainment Precinct, from 'gentlemen' to women and families of Chinese ethnicity. The businesses remained successful until the 1880s, which saw the complete decline of the precinct.

There is limited context for what happened to many of the substantial structures, the majority of hotels were deconstructed, and materials were repurposed. The area did not immediately turn residential, as there is evidence of the Town Mission occupying allotments, as well as Chinese merchants establishing businesses.

Pre-existing Heritage Inventory listings

Prior to the commencement of the project, there were two Heritage Inventory sites listed in the area of Blocks 3 and 4:

- York and Main Street Channel and Artefact Scatter (H7622-0441)
- York Street to Brogden Court Historical Precinct (H7622-0443)



Block 3 Heritage Inventory details

■ Pre 2024 Heritage Inventory
 ■ Post 2024 Heritage Inventory
 ■ Heritage Register
 Blocks

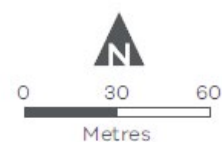


Figure 15: Plan of Block 3 showing previously listed Heritage Inventory sites in pink and Heritage Inventory sites listed as part of the Ballarat Archaeology Management Plan research in blue.



Block 4 Heritage Inventory details

■ Pre 2024 Heritage Inventory
 ■ Post 2024 Heritage Inventory
 ■ Heritage Register
 □ Blocks



Figure 16: Plan of Block 4 showing previously listed Heritage Inventory sites in pink and Heritage Inventory sites listed as part of the Ballarat Archaeology Management Plan research in blue.

The pre-2024 Heritage Inventory sites were listed and excavated in 2008 after unexpected finds during Central Highland Water works along the Canadian Creek Channel (see Biosis Research 2008). Artefacts and structures were discovered at a depth of 3 metres and interpreted as a refuse deposit. Notably, H7622-0441 contained Chinese ceramic vessels that likely dated to the 1850s, and a timber structure was found approximately 20 metres east of the artefacts at a depth of 4–4.5 metres. Given the proximity of these sites to areas of known Chinese occupation, there is opportunity to reinterpret this artefact assemblage, in addition to ascertaining the depth of the pre-1858 landscape of the area.

Heritage Inventory additions

The DEM for Block 3 suggests that there has been a large change in ground level across the block. Sites in the northwest and southern portion of the site have the potential to be the most intact. Whereas with Block 4, the modelling indicates that this section of Main Road has been filled with a significant amount of fill radiating out, potentially capping sites at over 2.5 metres in some sections, in particular along the eastern extent of the block.



Block 3 Heritage Inventory details

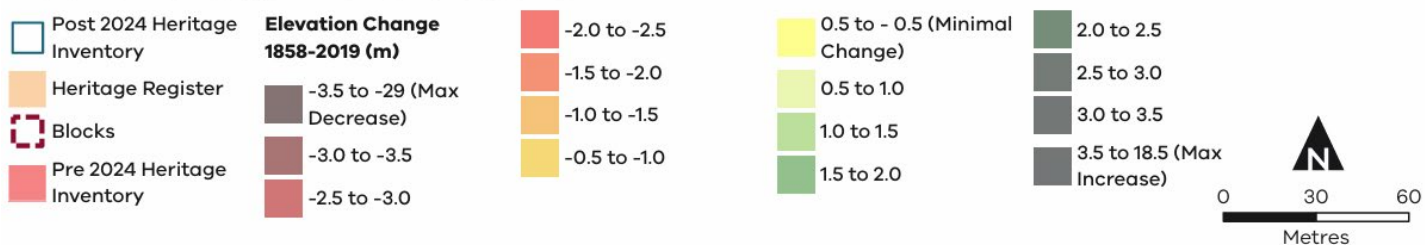
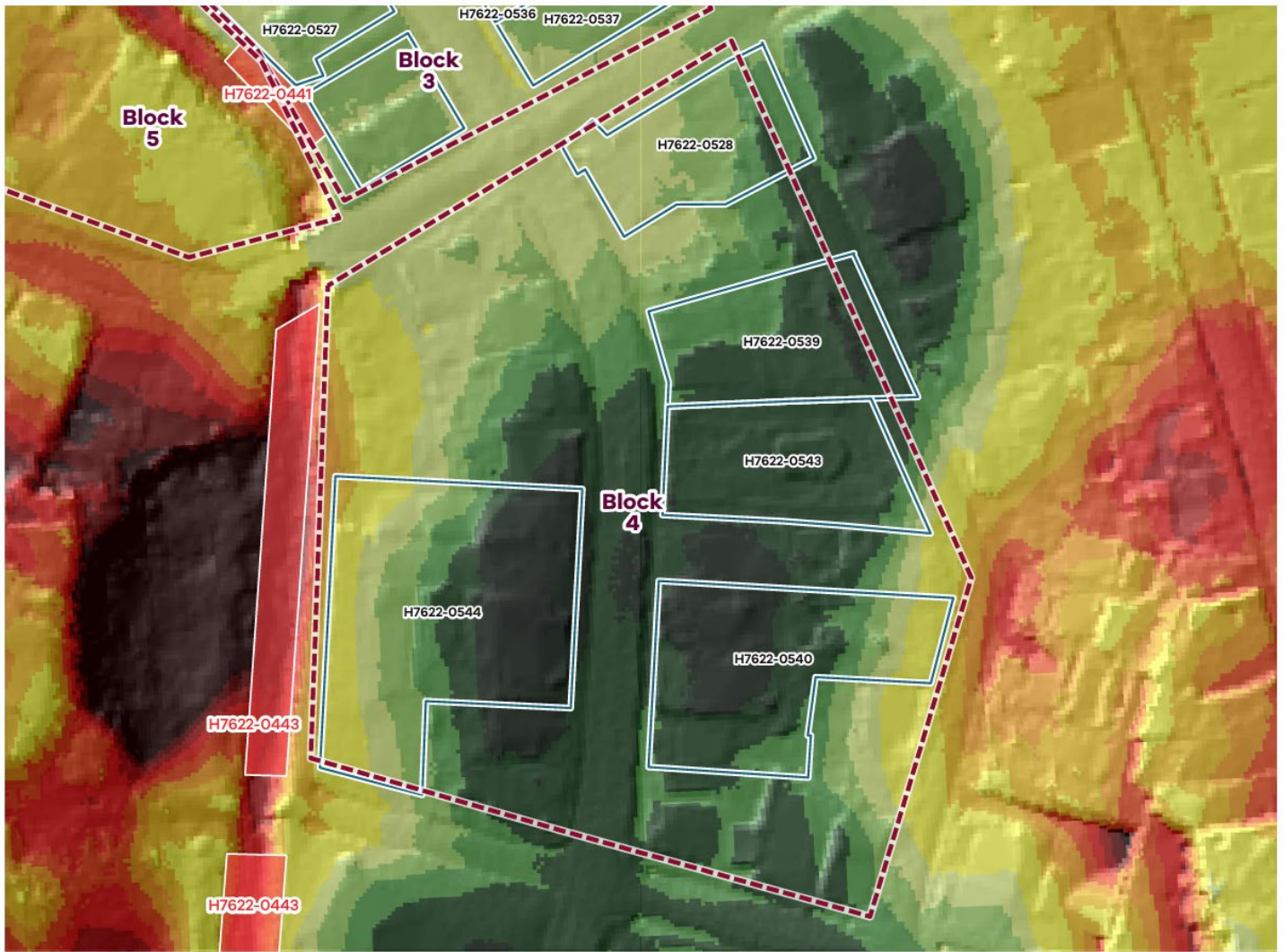


Figure 17: Plan showing the Digital Elevation Modelling indicates that Block 3 has a significant change in ground level throughout the area, with the northwest and southern sites having the greatest potential for intact deposits.



Block 4 Heritage Inventory details

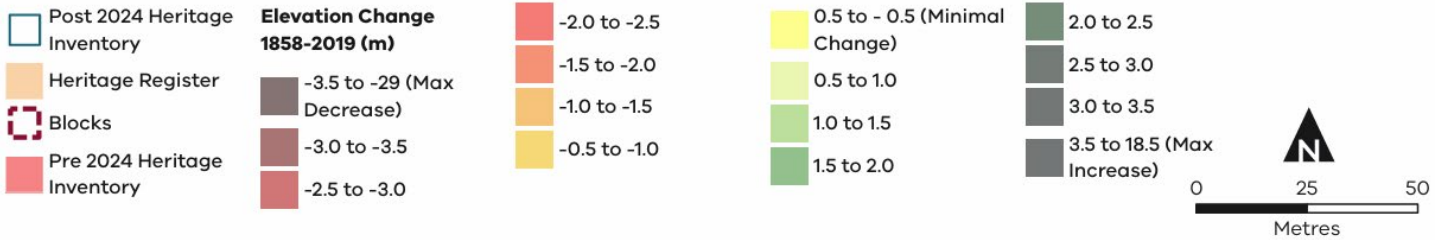


Figure 18: Plan showing the Digital Elevation Modelling for Block 4 suggests that a substantial amount of fill has been added along Main Road, particularly in the eastern section, potentially burying sites under more than 2.5 metres of fill.

In total, nineteen historical archaeological sites were added to the Heritage Inventory in Blocks 3 and 4 (see Table 4).

Table 4: Blocks 3 and 4 - Heritage Inventory additions

Site name	Address	HI ID
Former Great Britain Hotel site	206 Main Road Golden Point, Ballarat	H7622-0523
Former Cornwall Arms Hotel site	208 Main Road Golden Point, Ballarat	H7622-0524
Former Charles Napier Hotel site	222 Main Road Golden Point, Ballarat & 224 Main Road Golden Point, Ballarat & 220 Main Road Golden Point, Ballarat	H7622-0525
Former United State Hotel and Victoria Theatre site	228 Main Road Golden Point, Ballarat & 230 Main Road Golden Point, Ballarat	H7622-0526
Former Rising Sun Hotel site	240 Main Road Golden Point, Ballarat & 238 Main Road Golden Point, Ballarat	H7622-0527
242 and 244 Main Road site (Section R Allotments 42, 43, 44 and 45)	244 Main Road Golden Point, Ballarat & 242 Main Road Golden Point, Ballarat	H7622-0528
Former Section Q Commercial and Residential site	213 Main Road Golden Point, Ballarat	H7622-0529
Former Cleve Brothers Wholesale Merchant and Former Metropolitan Hotel site	221 Main Road Golden Point, Ballarat	H7622-0530
Former Washington Hotel and Circus site	221 Main Road Golden Point, Ballarat	H7622-0531
Former St Nicholas Hotel site	221 Main Road Golden Point, Ballarat	H7622-0532
Former Arcade Street Archaeological site	221 Main Road Golden Point, Ballarat	H7622-0535
Former Adelphi Hotel site	221 Main Road Golden Point, Ballarat	H7622-0536
Former Esmond Street Commercial and Residential site	233 Main Road Golden Point, Ballarat	H7622-0537
Former Red Hill School and Former Red Hill Bakery site	301 Main Road Golden Point, Ballarat & 2/301 Main Road Golden Point, Ballarat & 303 Main Road Golden Point, Ballarat & 1/301 Main Road Golden Point, Ballarat & 3/301 Main Road Golden Point, Ballarat & 4/301 Main Road Golden Point, Ballarat	H7622-0538
Former Red Hill Hotel site	305 Main Road Golden Point, Ballarat & 307 Main Road Golden Point, Ballarat	H7622-0539
Former Victorian Hotel Site and Mining Precinct	317 Main Road Golden Point, Ballarat	H7622-0540
Former Section S Allotment 9, 10, 11, 12 and 13	Apex Park Main Road, Ballarat	H7622-0543
Former 'Section T' Commercial Precinct	310–312 Main Road Golden Point, Ballarat	H7622-0544

6.1.4 Block 5 – The Golden Point Chinese Camp

Background

Block 5 is located in Golden Point, and much of the study area forms part of the Llanberris Reserve. This part of Ballarat is of high historical and archaeological significance because the Chinese Village was established here in 1856. The site location has a small existing Heritage Inventory listing for the Gold Discovery Monument, which has been left as a standalone Heritage Inventory site following this project (see Figure 19 for the location).

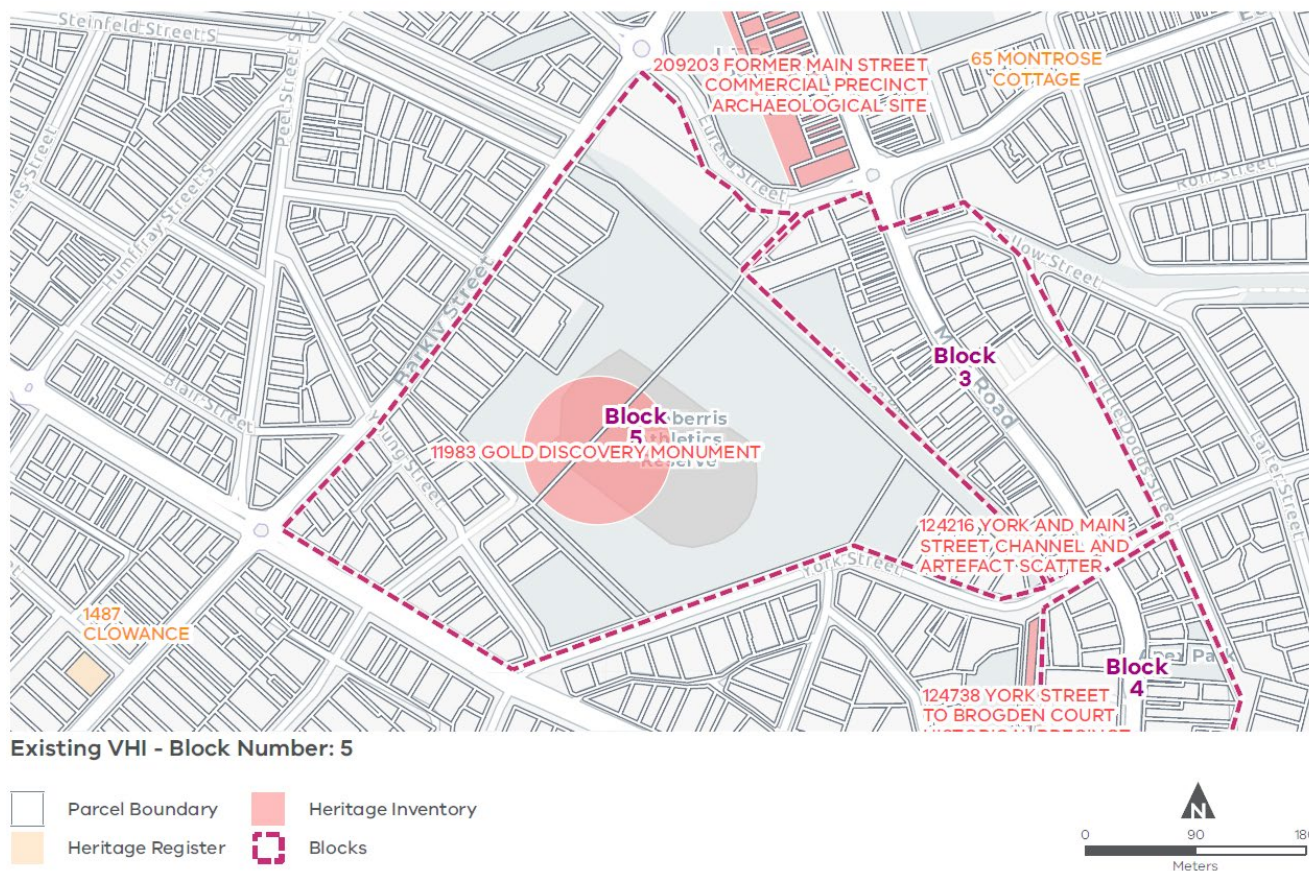


Figure 19: Location map showing Block 5 with existing Heritage Inventory site (Gold Discovery Monument) listed on site.

In 1857 the Golden Point Chinese Village was considered so disorderly and unsanitary that W Foster (Chinese Protector) gave the inhabitants seven days' notice to realign their huts and other buildings (Bate 1978; see also VPRS 1189/P0000 at PROV, Chinese Protector to Chief Secretary, 10 April 1859 and Chinese Protectorate Beechworth Reply to circular Letter 25 November 1857). Figure 20 shows part of the encampment as it was in 1857, prior to the realignment of the site structures.

The Golden Point Chinese Village was one of the largest settlements of its type established under the protectorate system and was the largest camp in the Ballarat Gold Field District. The village was established in Golden Point in 1856, after the original camp was relocated from the central Ballarat East and West Townships (The Star, 28 April 1858).



Figure 20: 1857 watercolour showing the Golden Point Chinese Village prior to realignment.
Source: Australian Centre for Gold Rush Collections.

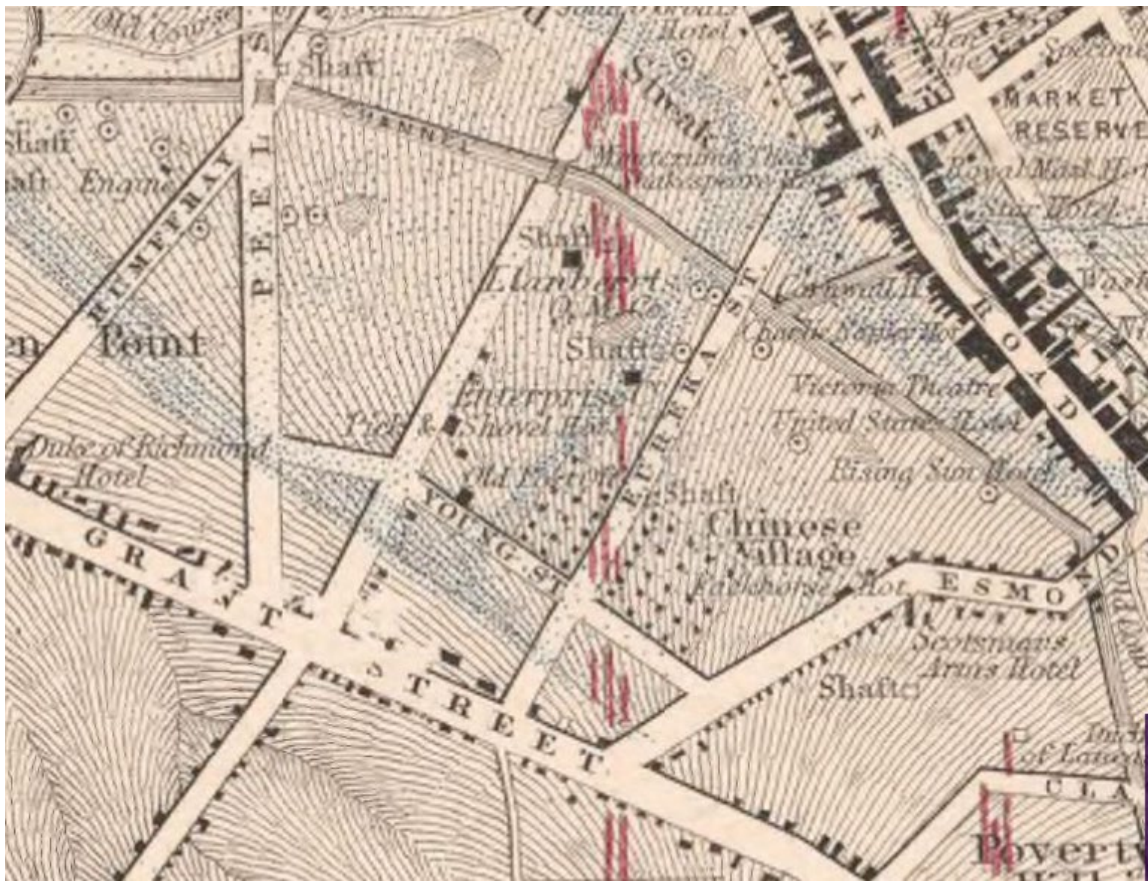


Figure 21: 1861 Ballarat gold field No.1. Source: NLA.

The 1861 *Ballaarat gold field No.1* plan (see Figure 21, above) shows the Chinese Village, aligned on Eureka and Young Streets but does not name individual camp features. Other key features such as the Llanberris Mine and a large number of hotels are listed.

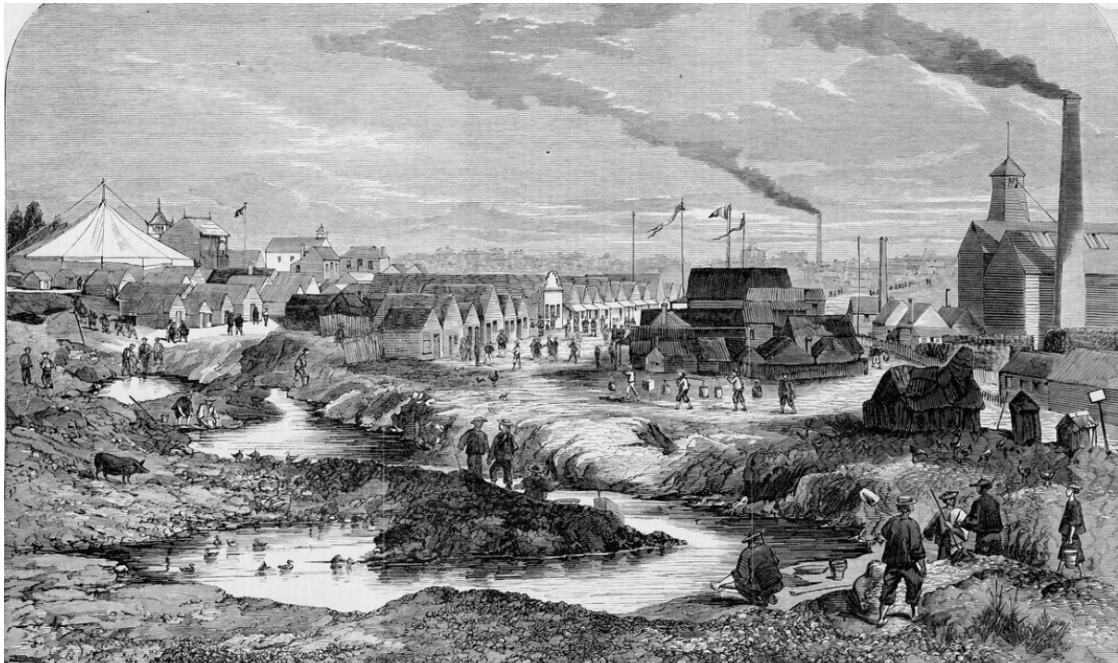


Figure 22: Chinese Quarter, Ballarat, published in the *Illustrated Australian News* 1868. Source: SLV.

A wood engraving of the Chinese Quarter (see Figure 22, above) depicts the settlement in proximity to gold workings, and the Llanberris Mine No. 1. It depicts a vibrant community hub with tightly packed buildings aligned on main streets. A

large entertainment tent is located on the hill to the west, next to what may be the Joss House. Miners in distinctive Chinese attire are depicted in the foreground.

An 1870 newspaper article described the camp as:

The principal street, which runs parallel with the Main Road [contained] hotels, gambling houses, and shops of various kinds. There is also another street which runs at right angles with the Main Road, and cuts the camp, into two parts. Here also the erections are slightly more civilised-looking, and even a little ornamental, for at the head of the street, overlooking the camp stands, on one side, the old Joss-house -- now used as a clubroom -- and on the other, the new temple erected for the worship of the Divine Joss.

(The Ballarat Courier, 28 June 1870: 2)



Figure 23: 1870–1875 Panorama of Ballarat taken from the Town Hall tower, showing the Golden Point Chinese Village.
Source: SLNSW.

Another report, a few days later, repeats these details but also provides other information:

One glance at the unsightly mass of buildings which comprise the same is sufficient to enable one to judge of what a closer inspection would reveal. Huddled together in one incongruous mass, the huts and hovels of the Chinese present a scene of extreme misery. The principal street, which runs parallel with the main road, a distance of some 300 or 400 yards, contains the better class of the buildings, which are occupied as hotels, gambling-houses, and shops of various kinds. There is also another street, which runs at right angles with the main road, and cuts the camps into two parts. Here, also, the erections are slightly more civilised looking, and even a little ornamental; for at the head of the street, overlooking the camp, stands on one side the old Joss-house (now used as a club-room), and on the other, the new temple erected for the worship of the divine Joss. With these exceptions, the thoroughfares are extremely narrow – in many cases barely sufficient for two men to pass through at one time. The houses are, for the most part, small – many of them mere hovels – and filthy to the very last degree. They are composed of wood, canvas, and pieces of tin; in a large number of instances the three materials mentioned being used in the construction of the exterior. Some of the residents, however, are more cleanly in their habits, and in cases where a Chinaman has married a European wife, the interior of their dwelling presents quite a contrast to those surrounding. Several have young families growing up, and it is amusing to notice how much care and attention a Chinese father bestows on his male offspring compared with what he accords to the females of his family. In one instance we observed a venerable specimen of the race living alone in a house with his little half-caste boy, and apparently devoting a good portion of his time to amusing him after a fashion. A large number of the houses are crowded almost to suffocation, frequently two and sometimes three Chinamen sleeping in a room 4 feet x 6 feet, without ventilation, and almost equally devoid of light. Ingenuity they possess to a large degree, but observe little, if any regularity in their habits, sleeping when they can and eating when they can. The Chinese population of the district numbers about 1500, of whom 266 are storekeepers, 550 miners, 120 hawkers, 250 gamblers, 5 publicans, 15 butchers, 100 thieves, 15 brothel-keepers, 150 gardeners, and 30 children. The vices of the Chinese are many and have exerted an extremely demoralising effect on the surrounding district. The first appearance the camp presents after dark is one of the utmost quiet. The streets are ill-lighted; few, if any, of the windows give out any light from the front, and scarce a human being is to be seen. In company, however, with sergeant Larner, the "chief terror of evil-doers in the East," we entered one of the many gambling-houses, and quite a change met our gaze. The table was crowded with Chinamen eagerly staking their money in a game of "Fantan," while the "banker" and "counter," in the best of Chinese, declared the results of each venture. The lottery shops, too, were thronged with speculating Mongolians, who stood listening

with the greatest interest to the owner of the lottery, who kept repeating in musical tones the names of the successful ticket-holders, while at the same time he posted them in Chinese characters on a huge board. Proceeding onwards, we visited in succession the majority of the opium shops and houses in which the young girls are most frequently to be found. The first we entered was an opium establishment with a long dark and narrow passage, on each side of which were miniature rooms, each fitted with a sort of wooden coach, containing a pillow and a small blanket. Reclining on these in twos and threes were tawny Pagans all more or less under the influence of opium. A word from our companion was sufficient to secure us from molestation, and as we opened each bunk the fumes of the opium were all but suffocating. In several of the compartments was a small stove, in which charcoal is burned and the heat mingling with the smell of the opium rendered the atmosphere even in the passage quite unbearable. Passing on, we entered a hovel remarkable alike for its filthy aspect as for its dingy appearance.

Stretched on a bed in one of the apartments, we found two females, whose united ages could scarcely amount to thirty years, and who appeared to be just recovering from the influence of opium smoking. Both could boast of no inconsiderable personal attractions, and although vice was beginning to mark their otherwise pleasant features with plainly legible lines, yet one could scarce conceive, as we were afterwards informed was the case, that each had completed a training of at least two years in the company of the Chinese. In the outer room were seated three ugly Mongolians, who seemed to be especially anxious lest their victims should be taken from their custody. In a few other houses similar scenes met our gaze; but we shall simply refer to one which shows how even mere children become demoralised. The case we refer to was that of a girl scarce thirteen years of age, who, we were informed, had been cohabiting more or less with the Chinese for the past twelve months. Living in the very midst of vice, and practising it herself to the full extent, her extremely delicate frame and childish expression seemed but ill fitted for such scenes and the unnatural pink of her cheeks indicated but too plainly how short her career would be. Such are a few of the pictures which life in the camp presents.

(Sydney Morning Herald, 4 July 1870: 3)



Figure 24: Ward, HC (1875) Ballarat Mines. Source: SLV.

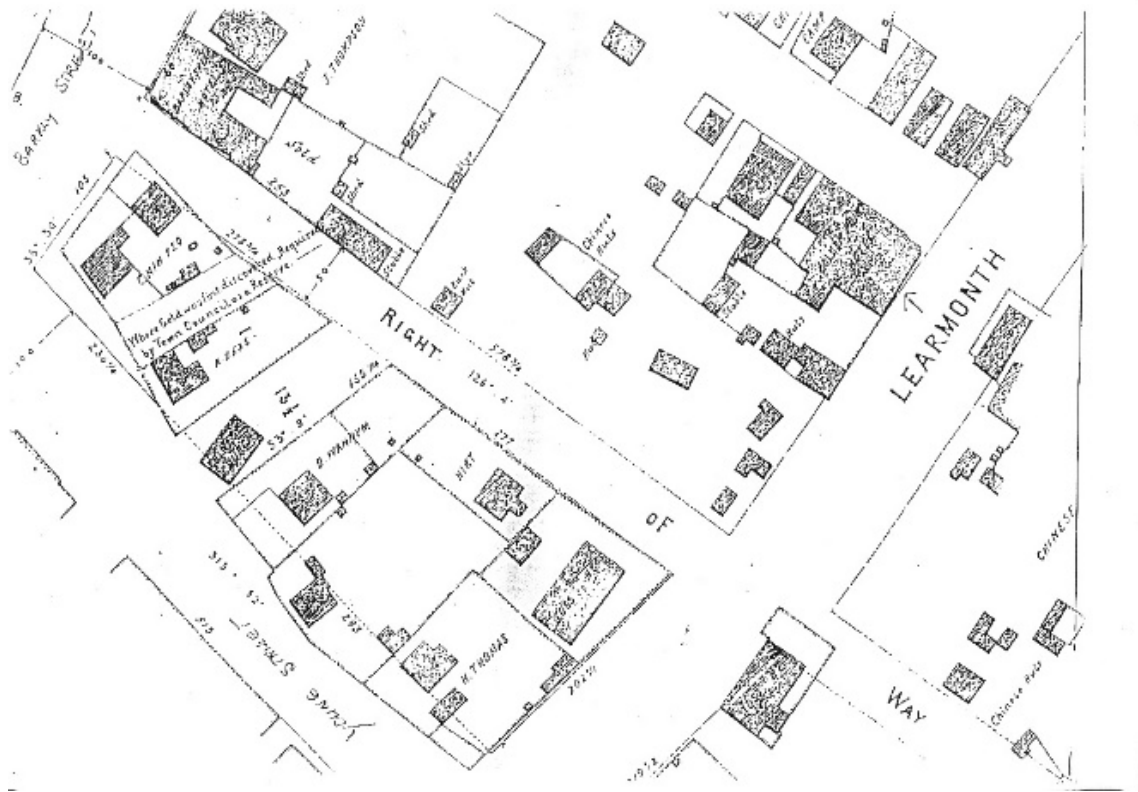


Figure 25: Date unknown, plan showing the southwestern part of the Golden Point Chinese Village.
Source: Australian Centre for Gold Rush Collections.

This Mining Lease plan (below) dated to 1883 shows the extent of the Chinese Village at the time. This plan provides the name of occupants and recorded three Joss Houses within the village.



Figure 26: 1883 Plan of 86A 1R 37½P Applied for on Lease Under the Gold Mining Leases Regulations. Source: SLV.

The last resident of the camp, Billy Butterfly, died in 1910 and it is likely that the operation of the village did not continue for long after this time. The 1930s aerial image of the site (see Figure 27, below) shows that most of the area had been cleared of structures by that time, although some buildings still remained in the western and southwestern parts of the site.



Figure 27: 1938 Aerial image. Source: Ballarat Gold Mine.

The 1936 Sewerage Plan (see Figure 28, below) does not show many features in the centre of the reserve, although some houses and structures are recorded along the western and southwestern parts of the site (facing Barkly and Young Streets).

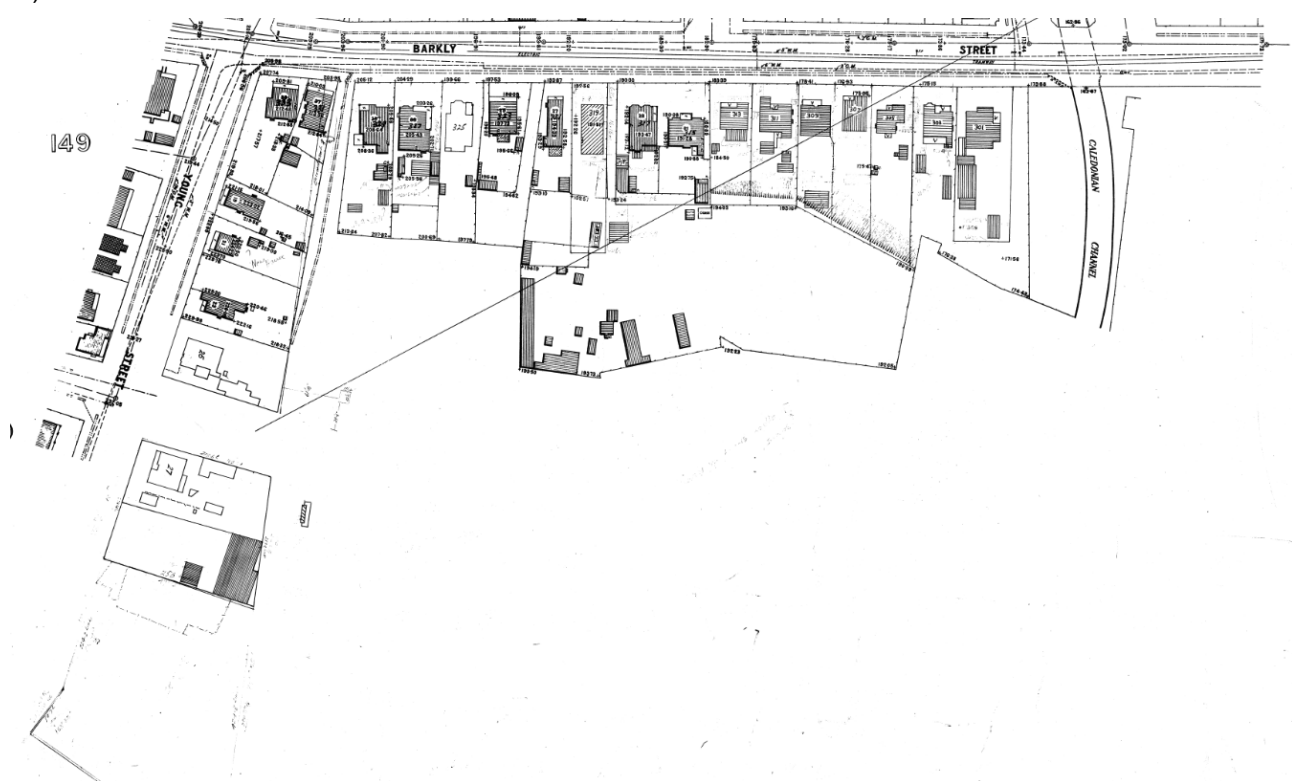


Figure 28: 1936 Ballarat Sewerage Authority Plan No. 151. Source: Central Highlands Water.

Heritage Inventory addition

One site (H7622-0541) was listed in Block 5. A single site with a large extent was chosen to represent the Chinese Village in totality, rather than a number of smaller individual sites. In order to establish the site's location and extent, a range of sources, including the 1868 *Chinese Quarter* lithograph (SLV), the 1870–1875 *Panorama of Ballarat taken from the Town Hall tower* image (SLNSW) and the 1883 Mining Lease (SLV) plan were assessed. It is likely that archaeological remains associated with the construction, use and abandonment of the camp may survive beyond the area designated by the site record.

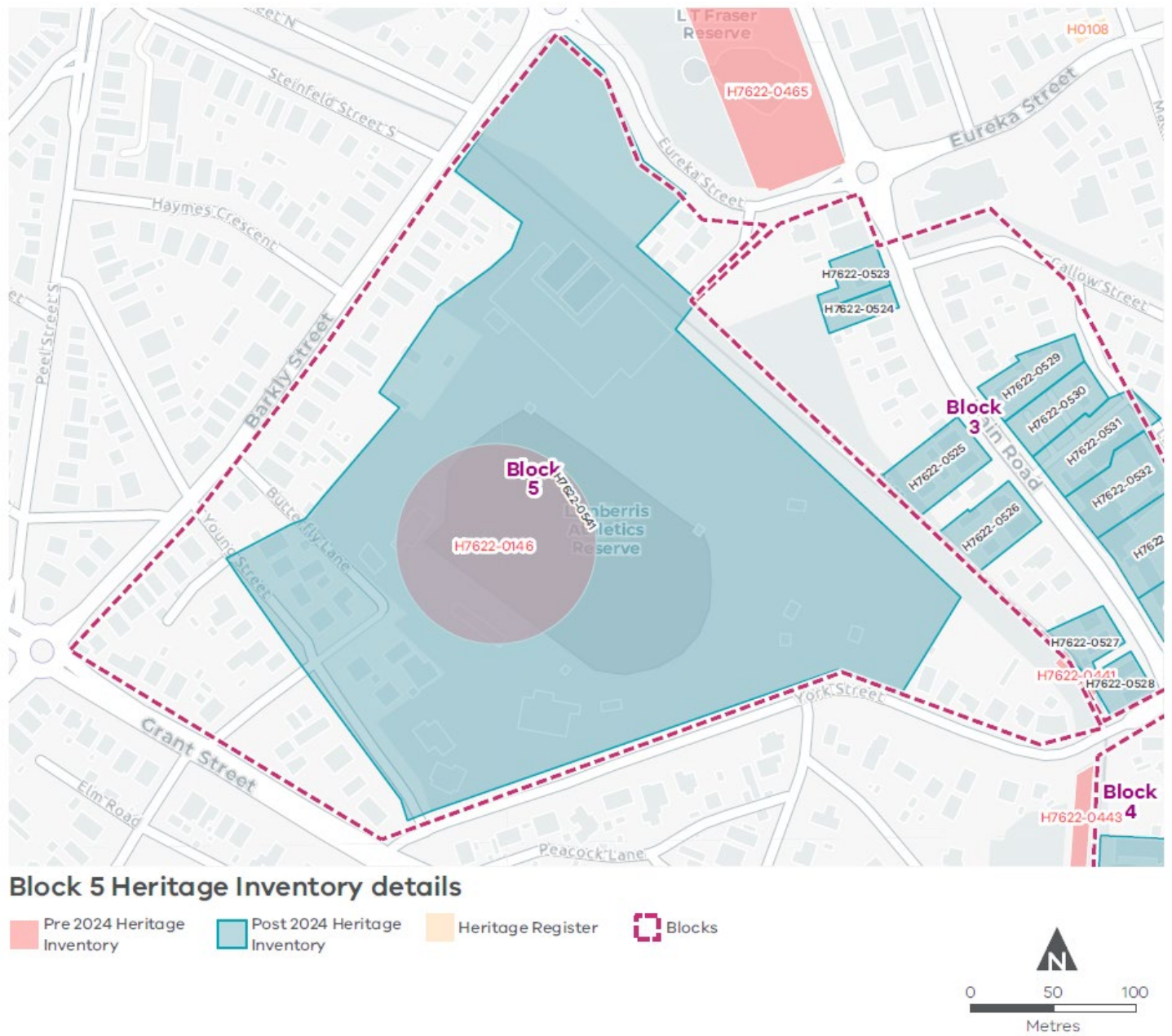


Figure 29: Plan of Block 5 showing previously listed Heritage Inventory sites in pink and Heritage Inventory site listed as part of the Ballarat Archaeology Management Plan research in blue.

The DEM for the Former Golden Point Chinese Village site indicates that there has been a significant raising of ground level since the gold rush period (potentially as much as 2 metres or more) in the central, northern and eastern parts of the site. Conversely, there may have been some removal of historic ground surfaces in the southernmost parts of the site.

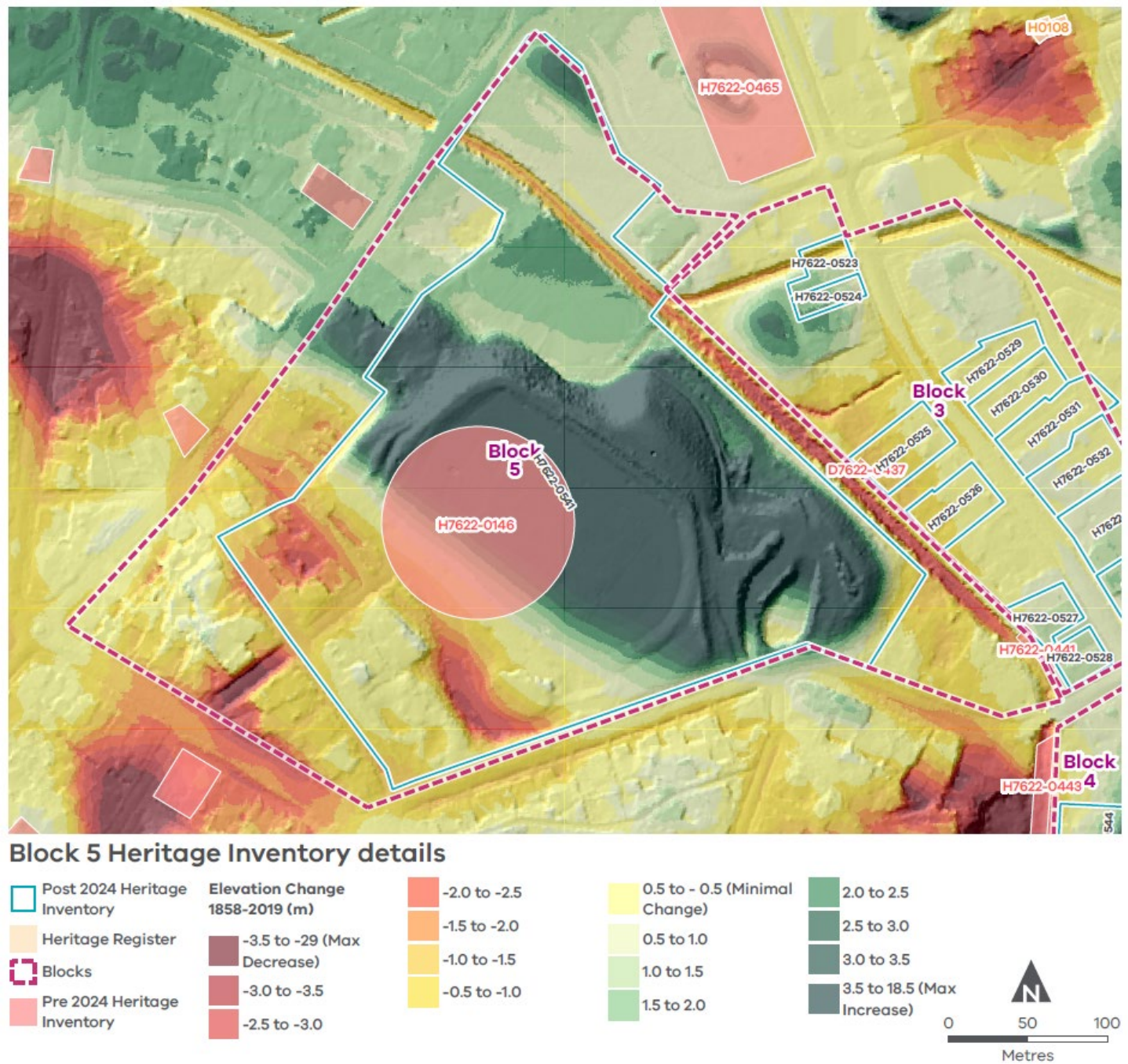


Figure 30: Plan showing the Digital Elevation Modelling indicates that Block 5 (Former Golden Point Chinese Village) site shows a significant increase in ground level (up to 2 metres or more) in the central, northern, and eastern areas, while the southern parts may have experienced removal of historic surfaces.

Table 5: Block 5 – Heritage Inventory addition

Site name	Address	HI ID
Former Golden Point Chinese Village site	Llanberris Reserve and Surrounds Golden Point (Ballarat)	H7622-0541

6.1.5 Block 6 – Grenville, Peel and Mair Street East Residential Area

Background

Block 6 is located along parts of Mair Street East and is bounded by Grenville Street to the west and Peel Street N to the east. The Ballarat Railway Complex (Heritage Register place H0902) embankment is directly north of the block. Prior to the commencement of the project, there were no Heritage Inventory sites listed in this designated area.



Figure 31: Plan of Block 6 showing Victorian Heritage Register places in yellow and Heritage Inventory site listed as part of the Ballarat Archaeology Management Plan research in blue.

The area of Block 6 was formerly part of the Gravel Pit alluvial workings and is located in a low-lying part of Ballarat, along the original alignment of the Yarrowee River. The 'new chum digger' writing in 1852 provided a description of the Gravel Pit diggings, later referenced by Withers (1887: 49):

...Ballarat was also a mere collection of tents, and a few slightly more substantial dwellings, and all was on the eastern side of the Yarrowee, save a few diggers' tents to the west and the Camp group on the edge of the table land. I found some of our shipmates employed making a dam across the Gnarr Creek, near where the buried culvert now winds round beneath the hill on which the locomotive engine-sheds are. On the slope from what is now Hill Street to what is now the artificially raised Mair Street, our old ship's "Doctor" had his shed and stoves and what not, where, as Camp cook, he prepared the liberal meals required by the healthy digestions of the people of all grades at the Camp...

The locations and extents of the new Heritage Inventory sites were informed by the details included in the 1857 Town lots, Peel and Mair streets, and Ballarat East plans. Other relevant information was sourced from newspaper articles, photographs and secondary sources. Newspaper reports from 1859 and 1862 refer to an old cottage in Mair Street East that required removal (The Star, 6 October 1859 and 4 June 1862). The historic sources indicate a mid-nineteenth century streetscape defined by a mix of small shopfronts and cottages.

The 1870–1875 *Panorama of Ballarat taken from the Town Hall tower* (SLNSW) image shows that the character of the block had continued to evolve and change in the years immediately following the gold rush. The area was rezoned in the 1970s and many buildings were demolished soon afterwards. The three Block 6 sites provide an important addition to this management plan because they provide representation of a residential precinct away from the Main Street area in Ballarat East.

The DEM (see Figure 32, below) indicates that ground level increases of 2–2.5 metres are likely to have taken place across this area, and that the level of Mair Street East was almost certainly raised. In the early 1860s, the newspaper *The Star* reported on the very poor condition of Mair Street East noting that:

...from the Yarrowee Creek to Peel Street, where the inhabitants have to go knee deep in mud...

(*The Star*, 18 July 1861: 4)

As well as:

Mair Street East still being in a state of crab holes and ditches...

(*The Star*, 1 October 1860: 2)



Figure 32: Plan showing the Digital Elevation Modelling indicates that across Block 6 ground levels likely increased by 2–2.5 metres, with Mair Street East almost certainly being raised.

Heritage Inventory additions

Three historical archaeological sites were added to the Heritage Inventory in Block 6 (see Table 6, below). Larger extents were provided to three key precincts in absence of the details of occupants.

Table 6: Block 6 Heritage Inventory additions

Site name	Address	HI ID
Former Mair Street East Commercial and Residential site	27 Mair Street E, 39 Mair Street E, 31–35 Mair Street E and 39–43 Mair Street E, Ballarat Central	H7622-0555
Former Sir William Wallace Hotel site	44 Mair Street East, Ballarat Central	H7622-0556
Former Mair Street East Residential site	1 Mair Street East, 3 Mair Street East, 7 Mair Street East, 9–11 Mair Street East, 13–15 Mair Street East, 17–19 Mair Street East, 23–25 Mair Street East, Ballarat Central	H7622-0557

6.1.6 Blocks 7, 8 and 9 – Ballarat West

Background

Blocks 7, 8 and 9 are in the area known historically as Ballarat West. Block 7 is bounded by Dana Street to the north, Armstrong Street S to the east, Doveton Street S to the west and Eyre Street to the south.

Block 8 is bounded by Mair Street East to the north, Midland Highway to the east, Dawson Street N to the west and Sturt Street to the south.

Block 9 is bounded by Mair Street East to the north, Armstrong Street N to the east, the Midland Highway to the west and Sturt Street to the south. The two Heritage Inventory sites recorded in Block 9 are both located at the southern extent of the block, south of McKenzie Street.

Today, this part of Ballarat contains a number of churches (including the Former Congregational Church and Hall, and the St Andrews Uniting Church) but the historical record suggests that these blocks formerly had a strong industrial and commercial character.

The area contained the township reserve surveyed by William Urquhart in 1852 (see Figure 33). In 1880, Urquhart wrote of the survey that:

Ballarat was the first gold field town surveyed by me in Victoria, and was always my favourite; commanding a fine position; a bracing fine climate equal to any in the colony; about 1.400 feet above sea level, which rich lands on all sides, in some places second to none in Victoria

(‘Urquhart to George Perry, town clerk, City of Ballarat, 1880’ in Bate 1978: 5)

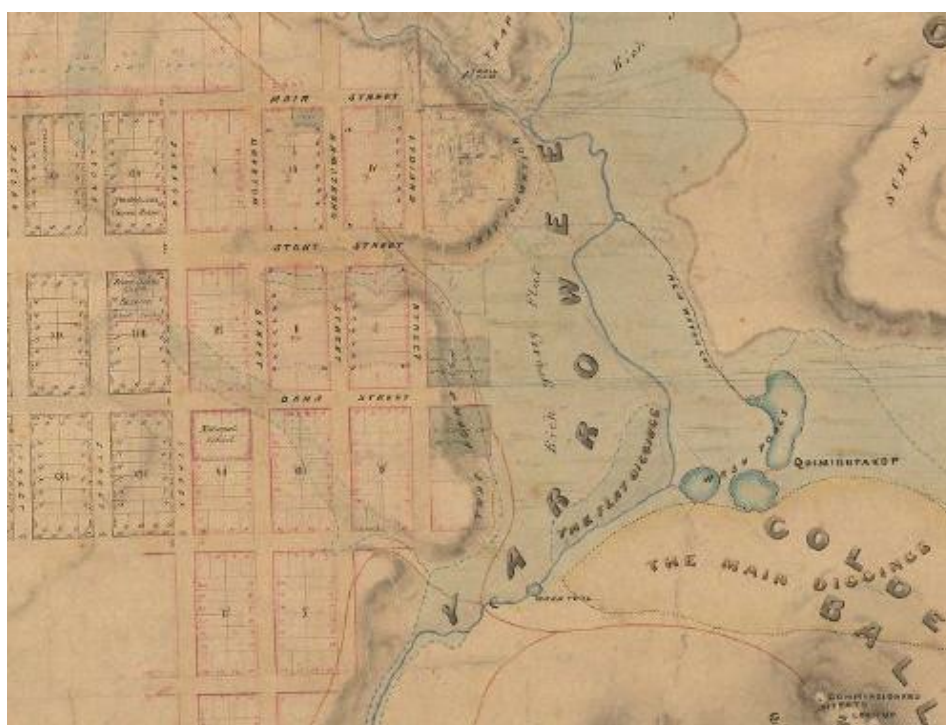


Figure 33: 1852, Urquhart's Survey of Ballarat Township Reserve. Source: PROV.

Ballarat West (known as Urquhart's grid) was established on the basalt plateau, away from alluvial diggings. Ballarat West (now known as Ballarat Central) was constituted in 1855 and had the first Council elected by January 1856 (Withers 1887). Ballarat East and West contrasted each other in many ways, particularly in the 1850s. Ballarat West was predominantly industrial, as there was space and stable ground for machinery and factories (Bate 1978). Armstrong Street contained multiple iron foundries serving the needs of coach-builders, miners and agriculturalists (Bradby 2023). Government and institutional offices and buildings were located in Ballarat West, including the Government Camp on Lydiard Street, the post office, three banks, the Ballarat Mechanics' Institute on Sturt Street, the courthouse and gaol. Dawson Street was reserved for churches, and the hospital was located on Drummond Street North (Bate 1978).

A series of flood and fire events across Ballarat in the decade from 1859 led to phases of rebuilding and relocation. The commercial centre moved from Main Road to Sturt Street.

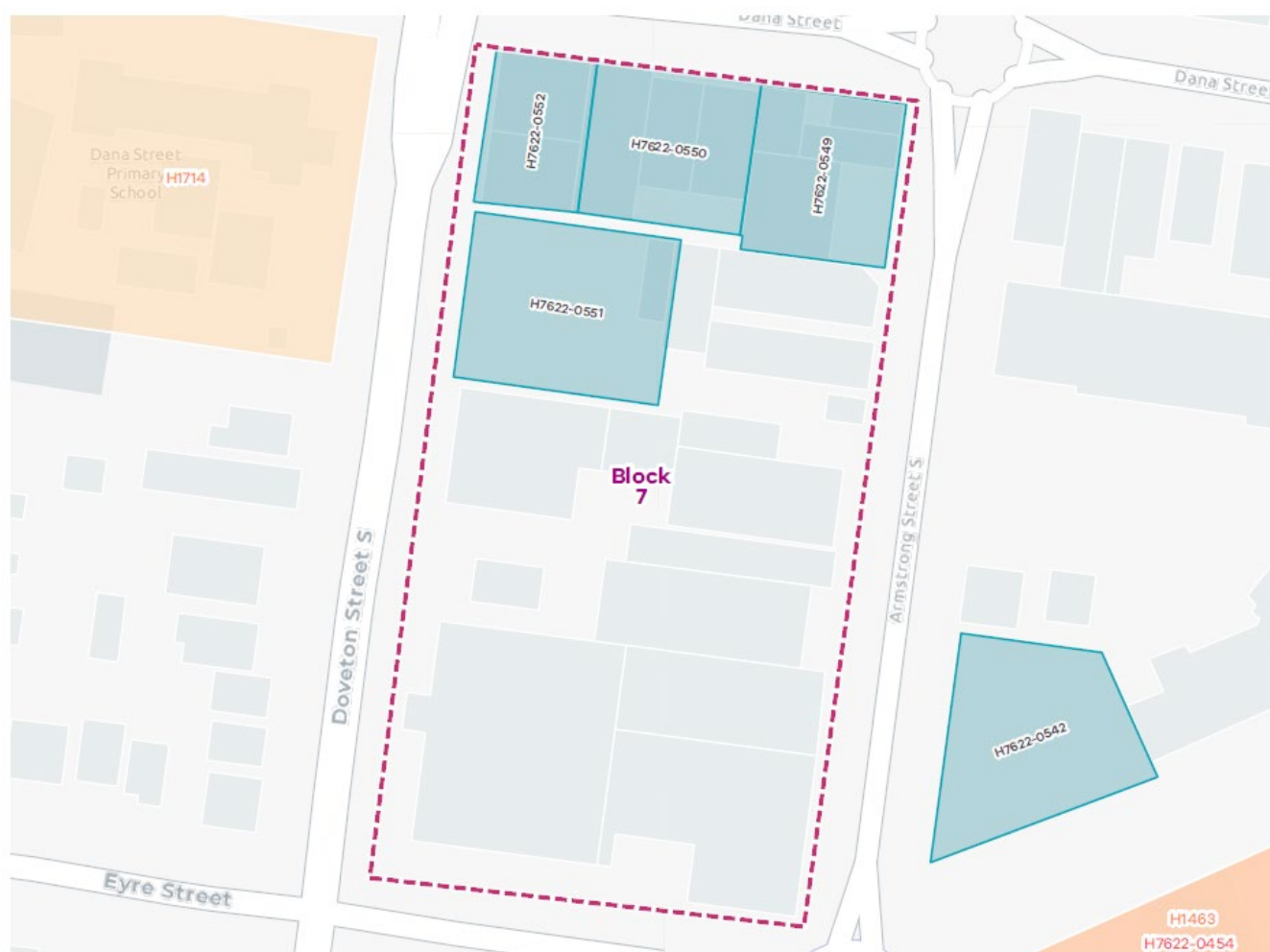
The wreckage was cleared away and rebuilding began. But many of the storekeepers did not resume business in Main Road. They abandoned their business sites and moved up the plateau to Sturt Street, Armstrong and Lydiard Streets.

(Spielvogel and Ballarat Historical Society 2004 Vol. 1: 48)

As the benefits of goldmining continued to flow into the town throughout the nineteenth century, as surface mining gave way to quartz and deep lead mining, it was in Ballarat West that civic opulence found its fullest expression.

Heritage Inventory additions

It was challenging to determine precise site location and extent details for Blocks 7, 8 and 9 because there is an absence of available or digitised records for individual allotments in Ballarat West. Prominent sites and features were identified primarily through the 1870–1875 *Panorama of Ballarat taken from the Town Hall tower* image (SLNSW), and through reference to a 1926 Airspy aerial image (SLV) and the Ballarat Sewerage Authority plans. In future, a review of the PROV put-away plans series and the Ballarat Rate and Valuation books may identify other sites that should be assessed for inclusion in the Heritage Inventory.



Block 7 Heritage Inventory details

Pre 2024 Heritage Inventory Post 2024 Heritage Inventory Heritage Register Blocks



Figure 34: Plan of Block 7 showing Victorian Heritage Register places in yellow and Heritage Inventory sites listed as part of the Ballarat Archaeology Management Plan research in blue.



Block 8 Heritage Inventory details

■ Pre 2024 Heritage Inventory
 ■ Post 2024 Heritage Inventory
 ■ Heritage Register
 ■ Blocks



Figure 35: Plan of Block 8 showing Victorian Heritage Register places in yellow and Heritage Inventory sites listed as part of the Ballarat Archaeology Management Plan research in blue.



Block 9 Heritage Inventory details

■ Pre 2024 Heritage Inventory
 ■ Post 2024 Heritage Inventory
 ■ Heritage Register
 □ Blocks

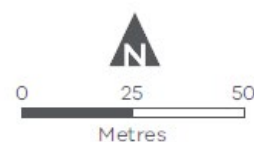


Figure 36: Plan of Block 9 showing Victorian Heritage Register places in yellow and Heritage Inventory sites listed as part of the Ballarat Archaeology Management Plan research in blue.

The DEMs for Blocks 7, 8 and 9 suggest that the area on the basalt plateau, away from the lower lying land to the east does not contain the same degree of ground-level alteration that is attested elsewhere in Ballarat (see Figure 37). The raising of ground levels may occur in parts of these blocks, including in the area where sites have been recorded in the northern part of Block 7, and on the eastern side of Block 8. A reduction in the mid-nineteenth century ground level is likely across much of Block 9.

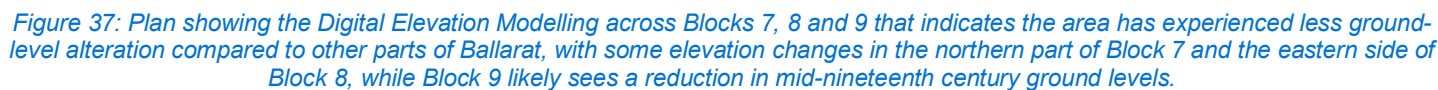


Table 7: Blocks 7, 8 and 9 Heritage Inventory additions

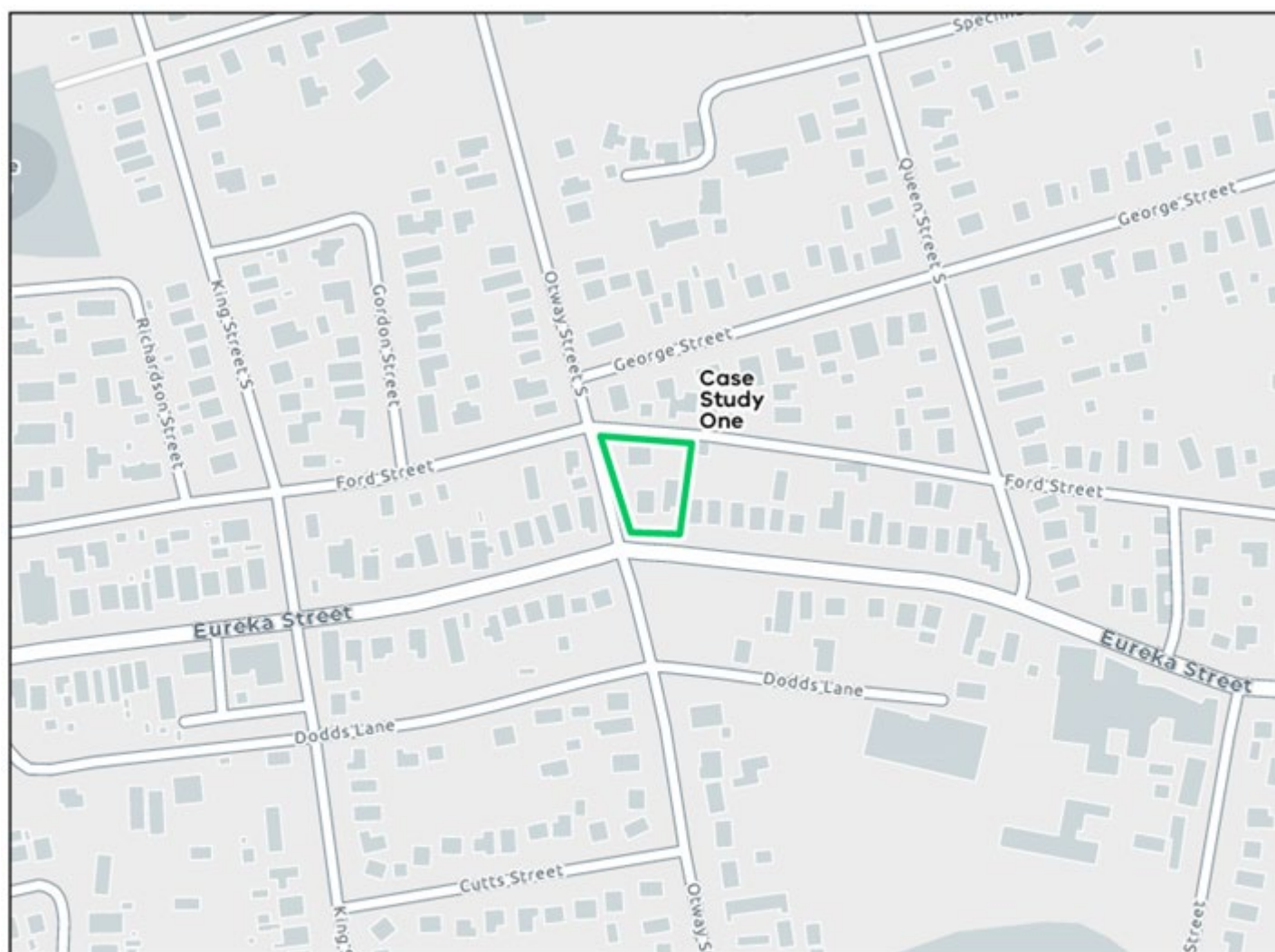
Site name	Address	HI ID
Former Grain, Wool and Auction Store	411 Mair Street and 401 Mair Street, Ballarat Central	H7622-0545
Former Diggins Tattersalls Hotel site	5B Doveton Street N, 3 Doveton Street N, 5B Doveton Street N, 5 Doveton Street N, Ballarat Central	H7622-0546
Former Livery Stables and Commercial Premises	13 Doveton Street N, 9- 11 Doveton Street N, 6 Dawson Street N, Ballarat Central	H7622-0547
Former ‘Robert Harper Depot’, ‘Burkes British Hotel’ and the ‘public vaccination office’ archaeological site.	22 Doveton Street N, 23 Doveton Street N, 25 Doveton Street N and 20 Dawson Street N, Ballarat Central	H7622-0548
Former Edinburgh Castle Hotel and Armstrong Street Commercial Premises site	301 Dana Street, 104 Armstrong Street South, 102 Armstrong Street South, 106 Armstrong Street South, Ballarat Central	H7622-0549
Former J Murphy’s Red Gate Mariner’s Store site	307a and 305 Dana Street, Ballarat Central.	H7622-0550
Former Dobsons Timber Yard and Residence site	107 and 113 Doveton Street South, Ballarat Central	H7622-0551
Former Magill & Coghlan Brewery site	309 Dana Street South, Ballarat Central	H7622-0552
Former Criterion House site	302–306 Sturt Street, Ballarat Central	H7622-0553
Former Lester’s Hotel site	308, 310, and 312 Sturt Street, Ballarat Central	H7622-0554

6.1.7 Former Eureka Hotel Site – Case Study 1

Background

The Former Eureka Hotel Site (H7622-518) was listed as one of two sites outside the nine study blocks.

The site is bounded by Ford Street to the north, some residential properties to the east, Otway Street South to the West and Eureka Street to the south. The site is the probable location of the Bentley's Eureka Hotel. The site has associations with the Eureka Historic Precinct, which is included in the Victorian Heritage Register (H1874). The riot and burning of Bentley's Hotel were key events that precipitated the events at the Eureka Stockade on 3 December 1854.



Case Study One

 Case Studies

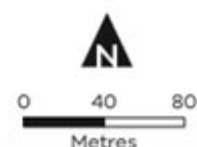


Figure 38: Plan showing Case Study 1 – Former Eureka Hotel Site which was listed in the Heritage Inventory as part of the Ballarat Archaeology Management Plan research, in green.

The Eureka Hotel was established in 1853 and was the largest Hotel on the Ballarat diggings. The licensee, James Bentley, resided at the hotel with his wife, Catherine, and staff. On the 17th of October 1854, after Bentley, and his employees Farrell and Hance, had been tried and acquitted for the murder of James Scobie, a group of 3000 miners rioted and burnt down the hotel. Few belongings were recovered from the ruins. Bentley, Farrell and Hance were convicted of the manslaughter of James Scobie on the 18th of November 1854.

Withers (1887: 83) describes the hotel as being of 'very bad fame', but it was popular due to its location on Eureka Street. A compensation claim made by Bentley for the destruction of the hotel, outbuildings and stock (The Star, 9 June 1858) resulted in the creation of a detailed site plan (see Figure 39).

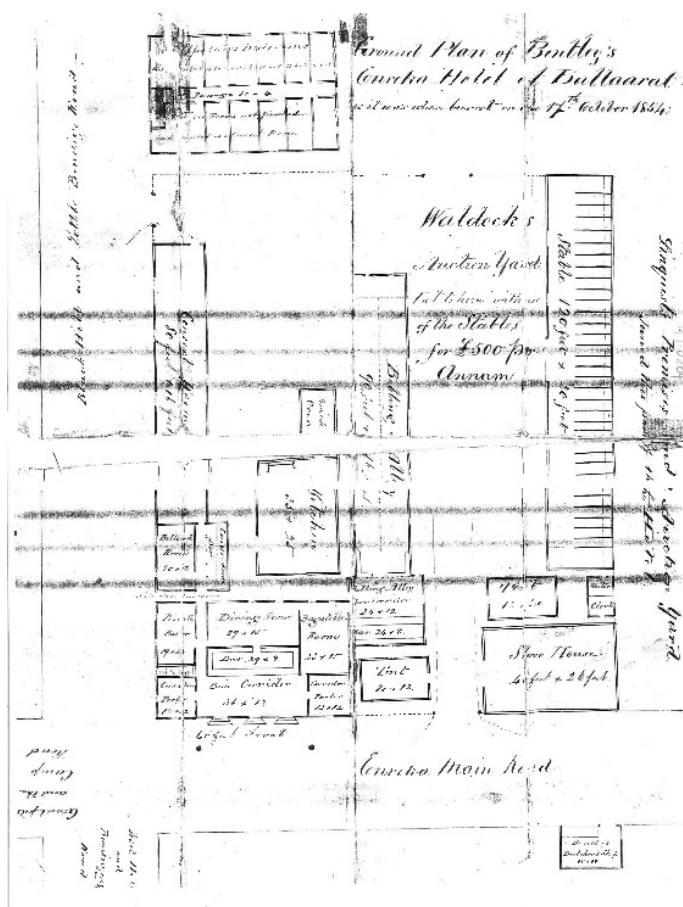


Figure 39: 1858, Ground Plan of Bentley's Eureka Hotel at Ballarat. Source: Australian Centre for Gold Rush Collections.

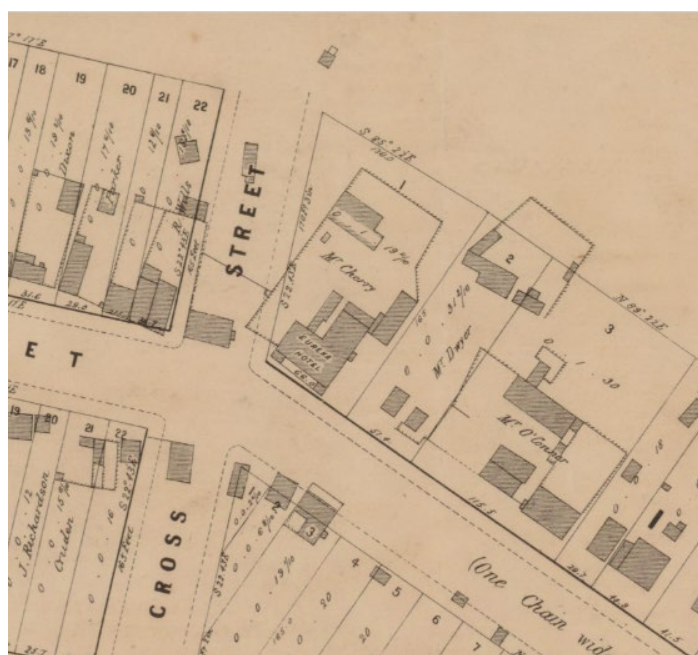
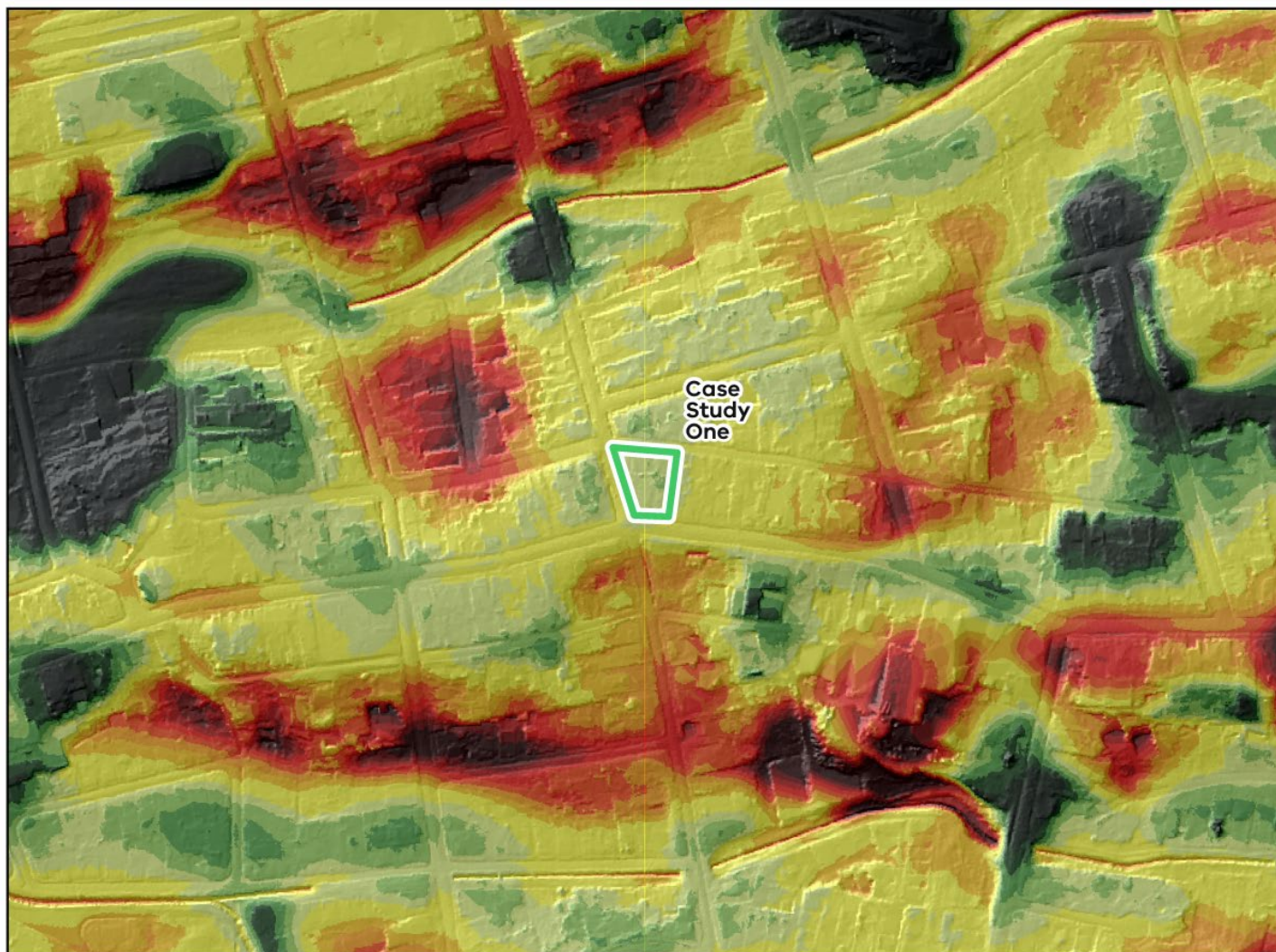


Figure 40: 1859, Plan showing allotments in Eureka Street, Ballarat East. Source: SLV.

The details of land sales have not been identified, however Henry Cherry was known to reopen the Eureka Hotel by 1856 (The Star, 13 June 1857). The location of the site is confirmed through its location and georeferencing on the 1859 'Plan showing allotments in Eureka Street, Ballarat East', Figure 40 (Department of Crown Lands and Survey Victoria).

In 1893 the Eureka Hotel licence was rejected and set to close (The Ballarat Star, 19 January 1893). It is unknown what happened to the land after this time. The site currently contains residential allotments, but the DEM shows there is archaeological potential across the site.



Case Study One

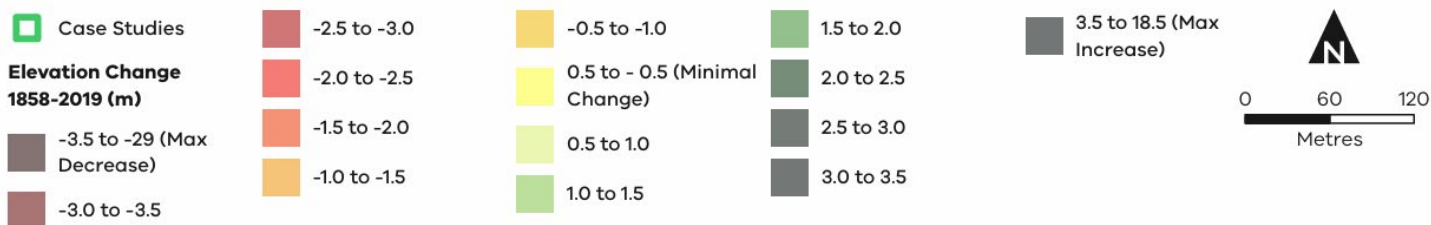


Figure 41: Plan showing the Digital Elevation Modelling of the Former Eureka Hotel Site area (Case Study 1), which indicates there is archaeological potential across the site.

Table 8: Heritage Inventory addition details for Former Eureka Hotel Site

Site name	Address	HI ID
Former Eureka Hotel Site	31 Otway Street, Ballarat East 3350, 301 Eureka Street, 301a Eureka Street, 20 Ford Street, 303 Eureka Street, Ballarat East	H7622-0518

6.1.8 Former Welsh Church Complex – Case Study 2

Background

The Former Welsh Church Complex was chosen as the second of two sites located outside the nine core study blocks.

The site is outside the study area, as it represented the presence of a minority group, and was a place of religious worship established shortly after the gold rush. The United Welsh Protestant Church was a church of bricks within a reserve at the corner of Lydiard and Armstrong streets (Withers 1887). A timber structure constructed in 1858 fronted Armstrong Street for the use of Welsh Protestants of all denominations (Withers 1887). A brick/stone church was completed in 1860 in the centre of the site (Tyler 2010), and interestingly prison labour was utilised throughout the 1860s to complete fencing and landscape works (The Star, 1 November 1862 and 11 November 1863). The site was south of the Tulloch (later Ballarat) Brewery and the MB John Brass Foundry, and was eventually sold and demolished by the neighbouring businesses (The Argus, 3 June 1936). The site currently comprises an asphalted carpark, so it is possible early deposits relating to the Welsh Church survive across the site.

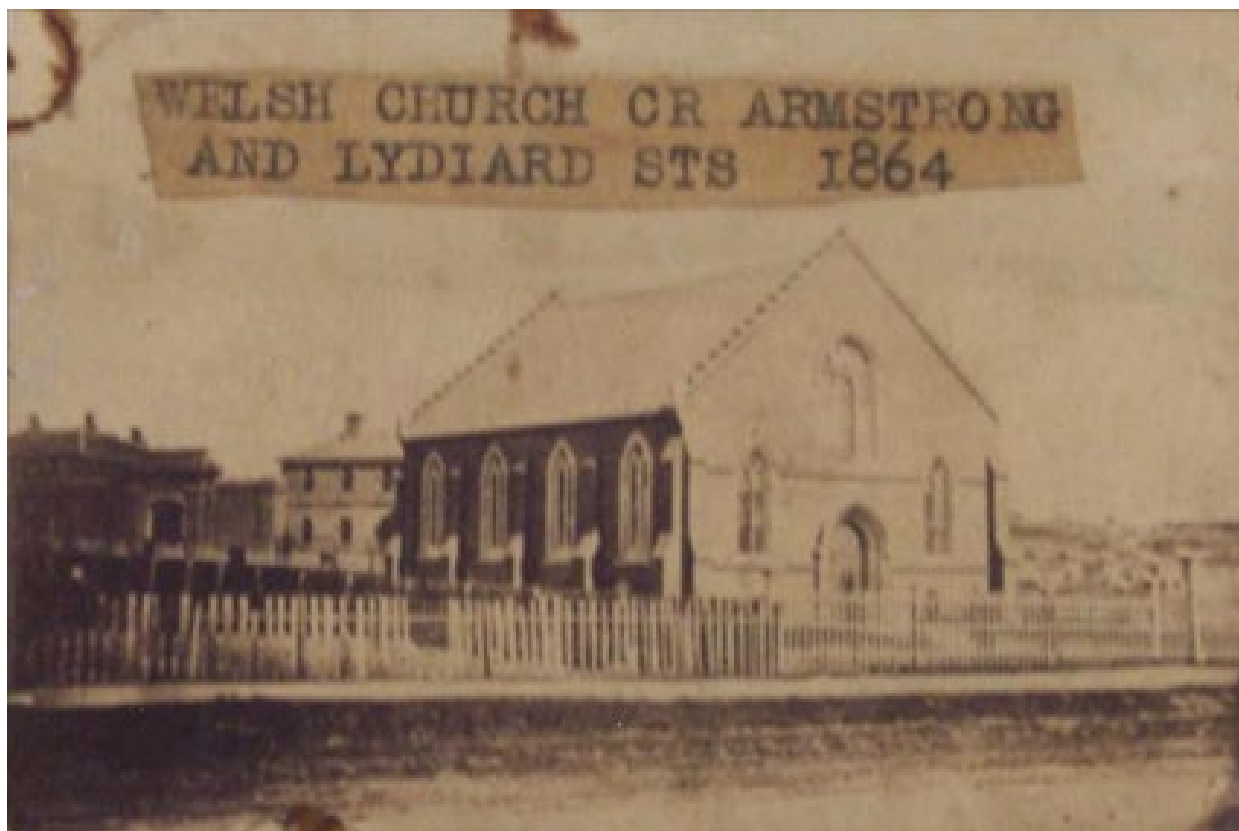


Figure 42: 1864, Carte de Visite – Welsh Church Cr. Armstrong and Lydiard Sts. Source: Ballarat Historical Society.

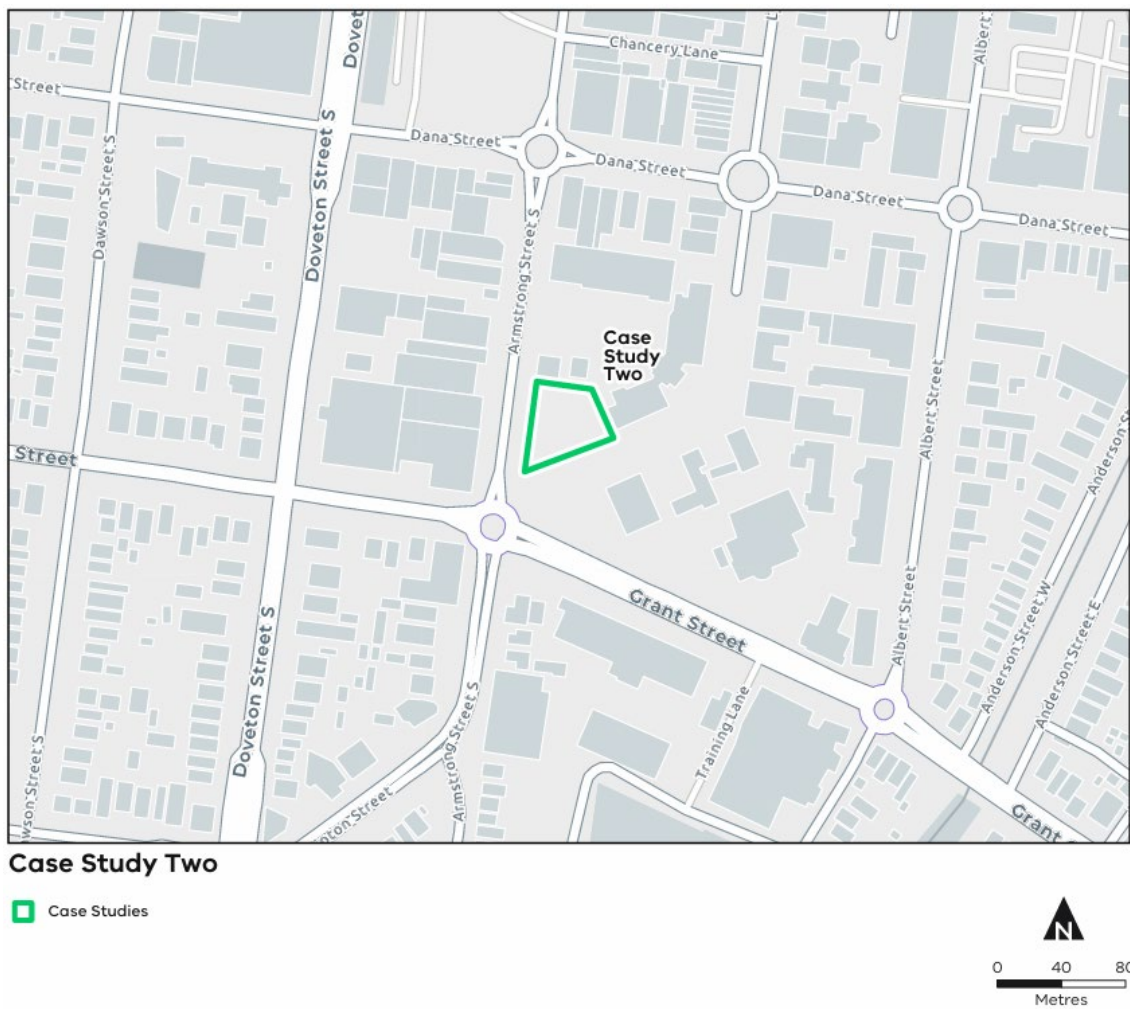


Figure 43: Plan showing Case Study 2 – Former Welsh Church Complex which was listed in the Heritage Inventory as part of the Ballarat Archaeology Management Plan research, in green.

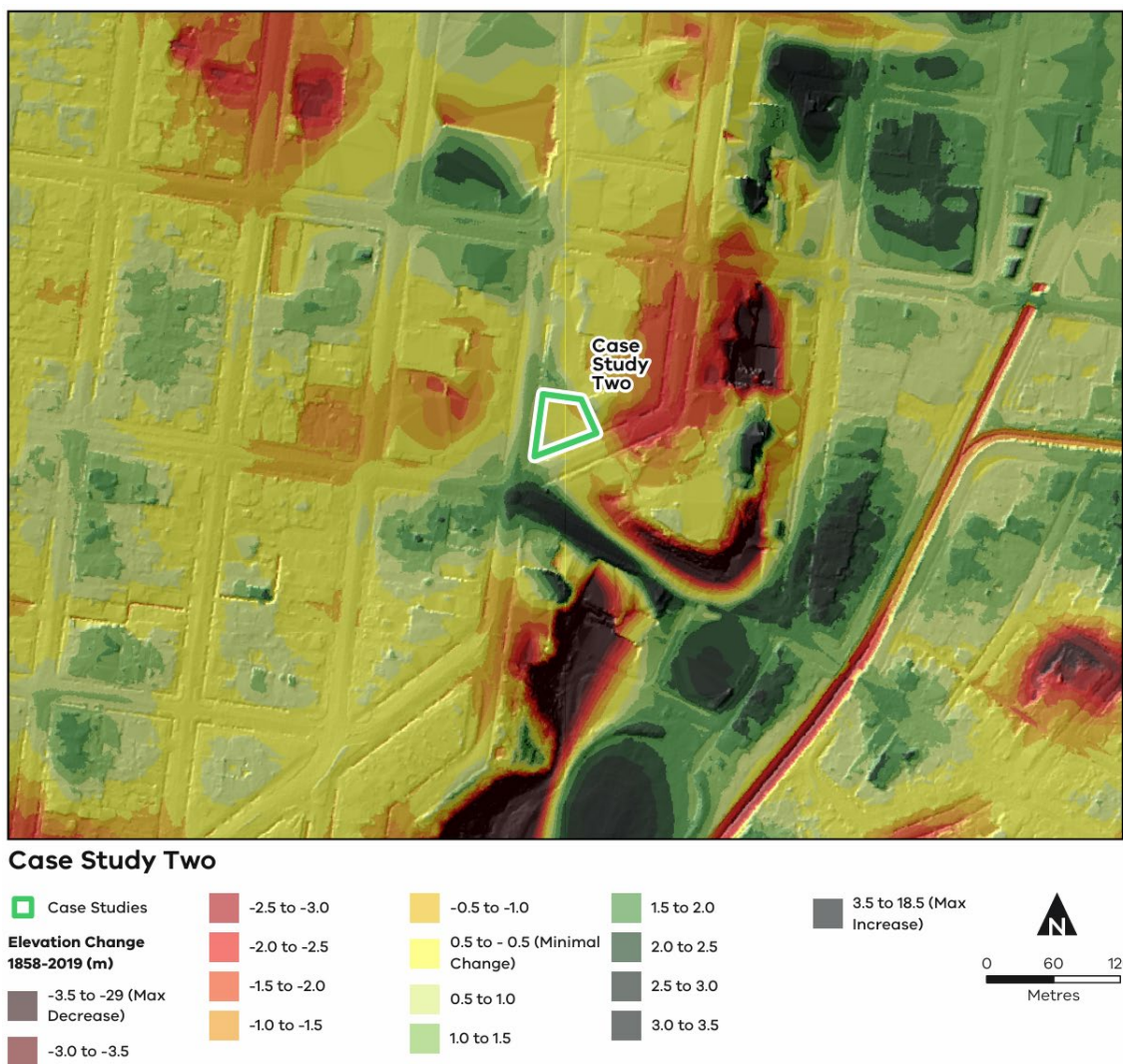


Figure 44: Plan showing the Digital Elevation Modelling of the Former Welsh Church Complex area (Case Study 2), which indicates there is archaeological potential across the site.

Table 9: Heritage Inventory addition details for Former Welsh Church Complex

Site name	Address	HI ID
Former Welsh Church Complex	107 Lydiard Street S, Ballarat Central	H7622-0542

6.2 Bendigo

Another aspect of this project was to scope out an Archaeological Management Plan of Bendigo. Bendigo has been subject to similar studies, evaluating sludge and landscape transformation. The City of Greater Bendigo and Heritage Victoria have also previously conducted an archaeological predictive study of Bendigo (DIG International 2007).

For context, gold was discovered across Victoria in a series of rushes from 1851 to 1852. The Bendigo (Sandhurst) Rush began in April 1852 (Annear 1999). As the Bendigo diggings were originally part of the Mount Alexander goldfield between 1852 and 1854, Bryce Ross attempted to include the names of businesses within the Diggings Directory (Annear 1999). At first the directory was ephemeral, noting the colour of flags and localities as opposed to addresses (Annear 1999); once Bendigo was surveyed, the township developed rapidly in brick and stone using the grid system (Kelly 1860). The town was described as being 'aristocratic' in appearance, with houses on one side of Main Street opening to Rosalind Park (Bate 1978: 101).



Figure 45: 1857, Pall Mall, Sandhurst. Source: Bendigo Art Gallery.

As is the case with Ballarat, a wealth of historical maps and plans, field survey notebooks, secondary sources and newspaper resources exist which will facilitate the development of an archaeological management plan. The examination of the Department of Crown Lands and Survey records has provided information about notable landscape changes. These plans give detailed information regarding the size, layout and purpose of each of the building blocks, with some of these still remaining. These can be analysed in association with the Township, Parish, County and Agricultural Allotment Plan Registers. It is the buildings not extant today that provide potential for an archaeological landscape beneath Bendigo.

The main resources identified for the detailed Bendigo study include:

- 1854 Plan of the Township of Sandhurst – Portion C (PROV)
- 1857 Plan of Sandhurst (SLNSW)
- Bendigo Sewerage Authority Plans (Coliban Water)

6.2.1 Archaeological condition and disturbance

Bendigo Creek ran through the centre of Sandhurst town, and much like the Yarrowee it caused constant sludge-related inundation. Pompeii references were common across goldfields regions:

THE ETERNAL SLUDGE. When will there be a remedy for this crying evil? When will the time arrive when people can with safety purchase land, and be free from the sludge inundation? Let those who have never seen a sea of mud, take the trouble to walk as far as Croom's Hotel, White Hills, then cast their eyes across the flat, in the direction of the Cemetery, and they will be well repaid for their trouble. In some cases whole allotments are covered with from two to four feet deep, the tops of paling fences being scarcely discernible; therefore, it is high time some steps were taken, else the consequences will gradually increase till at last we shall hear of whole villages being buried, and in after years, like the ruins of Pompeii, mementos be found, showing such had really existed...

(Bendigo Advertiser, 16 May 1859)

William Kelly describes the landscape of the City of Sandhurst as:

The township, or as I must now properly call it, the city of Sandhurst, is situated along Bendigo Creek, with its heart and lungs, as I may call Pall Mall and Market-square, seated on a level tract, backed by an amphitheatre of swelling rises, and the most picturesquely confronted by a fine bold range of hills, on which is the government camp, the barracks and the public offices are irregularly but pleasantly distributed. At the time of my visit [1853] there was not a brick or stone building in the town that I can call to mind, and it was a service of danger to venture out after dark, from the number of deep old digging holes that were yawning in and around the principal streets and thoroughfares. The roads, too, were in a lamentable condition; and the serpentine rivulet, which flowed through the city, was so choked with its different windings with sludge and refuse, that a heavy fall of rain would convert the whole space into a lake. Although I have remarked there were no substantial edifices in Sandhurst in the early part of 1855, there were shops, and stores, and warehouses under canvas, which for extent, management, internal arrangement, and the value of their splendid assortments, would have taken rank in any city of superior establishments...

(Kelly 1860: 187)

6.2.2 Digital Mapping and Digital Elevation Modelling

In Dr. Greg Hil's thesis, *Rethinking Disturbance: Characterising the Outcomes of Cultural Landscape Change as Artificial Ground for Archaeologists* (La Trobe 2022), the focus is on identifying the natural landscape within the Victorian Goldfields, specifically around Bendigo. One of the crucial geospatial datasets used in this assessment is a DEM and LiDAR (Light Detection and Ranging) to identify natural landscape features. The DEM serves as a foundational dataset for analysing the topography and surface conditions of the Bendigo Valley. It allows researchers like Dr. Hil to study natural and anthropogenic landscape features in detail, such as mine tailings and artificial ground formations identified in earlier surveys by Lynette Peterson (1996).

By using the DEM derived from LiDAR data, researchers can visualize and analyse the landscape morphology, understand elevation variations, and discern subtle landscape features that may be crucial for understanding cultural landscape changes, environmental impacts of mining activities, and other geomorphological processes in the region.

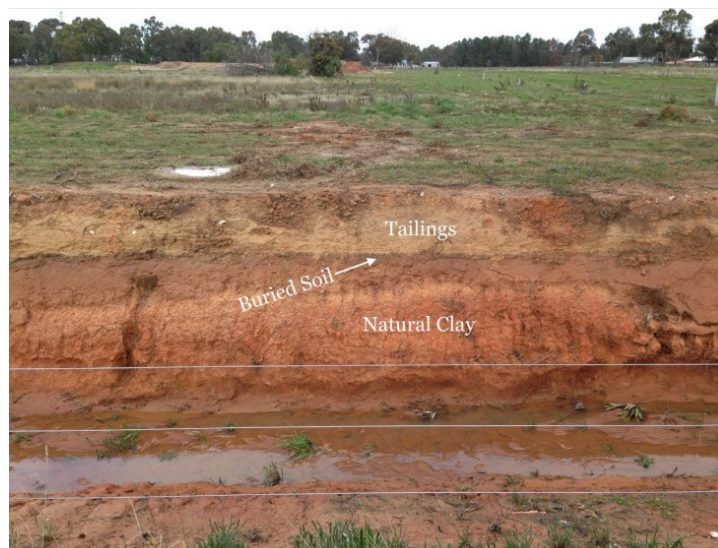


Figure 48: A drainage ditch cut through the Epsom development area showing mining waste overlying natural soils and clay. Source: Hil 2022.

6.3 Mount Alexander Shire Townships

The project had the opportunity to identify potential sites at risk in smaller goldfields centres such as Gowar, Chewton, Vaughan and Fryerstown. As a result, seven sites were added to the Heritage Inventory, and one site extent was amended.

The Mount Alexander goldfield was established after the rush in July 1851, and is renowned as one of the world's richest alluvial goldfields (Bannear 1993). The North Central Goldfield Project (Bannear 1993) assessed historic mine sites in the Castlemaine, Fryers Creek and Maldon areas throughout 1990s and, as a result, industrial mining heritage across the Mount Alexander goldfields are well represented on the Heritage Inventory and in the Victorian Heritage Register. There is a gap of residential and commercial archaeological sites having formal protection under the Act.

As a result of population growth across regional townships, regional councils are working hard to manage housing requirements and growth. Heritage Victoria provided advice for the Mount Alexander Shire Council on the Chewton, Campbells Creek and Fryerstown Housing Strategy, recommending that a historical archaeological study is completed for areas projecting change.

Unlike the townships of Ballarat, Bendigo and Castlemaine, small goldfields towns and hamlets saw populations explode in places like Vaughan and Fryerstown, boom in the 1850s, and rapidly decline by 1860s. As an example, Vaughan had a population of 3000 in 1853 comprising diggers, families and merchants. Vaughan was large enough for the opening of the Bank of Victoria in 1855. By 1861, the population of Vaughan had declined to a population of 169, and as mining in the area declined, the population in 1891 was recorded as 24 inhabitants in 13 dwellings (Jacobs et al. 2004).

Much like Ballarat and Bendigo, there are historic plans available through the Surveyor General's Office. Many early plans of these smaller townships are digitised. The plans identified through this study are detailed in the table below. A full list of references can be found in the site cards. Gaps in the historical records in these remote areas include plans and maps post-dating 1870 and images of nineteenth century photographs. There is a large amount of undigitised material available through the State Library of Victoria and the Public Records Office of Victoria that should be catalogued and assessed. An example of undigitised records includes VPRS16163 Historic Mine and Infrastructure Plans, which have detailed plans for all goldfields.

A key recommendation of this project is that a similar study should be conducted in townships experiencing an influx of development, where there are likely to be archaeological sites relating to the 1850s Mount Alexander goldfields.

Table 10: List of resources identified for Heritage Inventory sites within Mount Alexander Shire.

Date	Title	Permalink	Institution
1855	<i>DIST64; CASTLEMAINE - CHEWTON FOREST CREEK ROAD - BUILDING LOTS; TEMPLETON JOHN</i>	https://prov.vic.gov.au/archive/B414FBA8-F840-11E9-AE98-890F831E1EA7?image=1	Public Records Office of Victoria
1856	<i>Hamlet of Vaughan, at the junction of the Loddon & Fryers Creek in the Parish of Fryers, County of Talbot</i>	http://handle.slv.vic.gov.au/10381/97611	State Library of Victoria
1857	<i>Building lots on the Bald Hill, Parish of Fryers Building lots at Chapel Hill & Murdering Flat, Parish of Fryers; Building lots at Church Flat, Parish of Fryers</i>	http://handle.slv.vic.gov.au/10381/141071	State Library of Victoria
1859	<i>Survey Plan of Maldon, Muckleford and Tarrengower</i>	Not available online	Landata

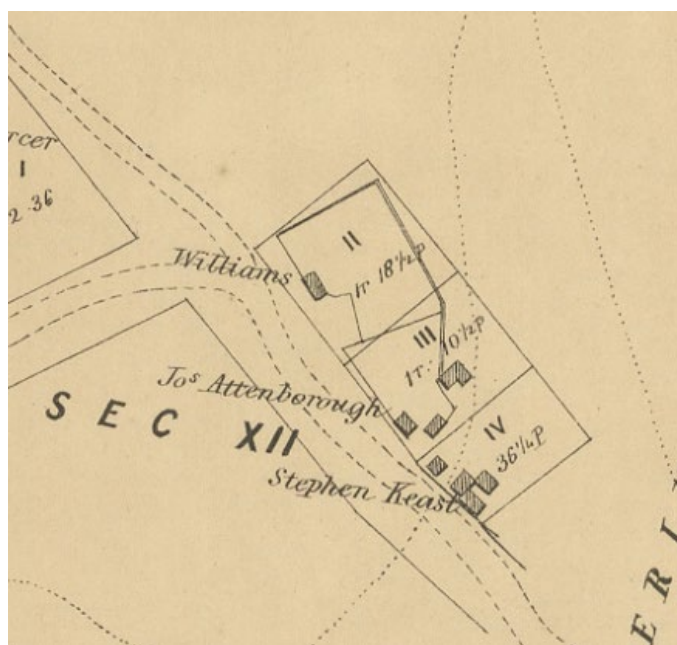
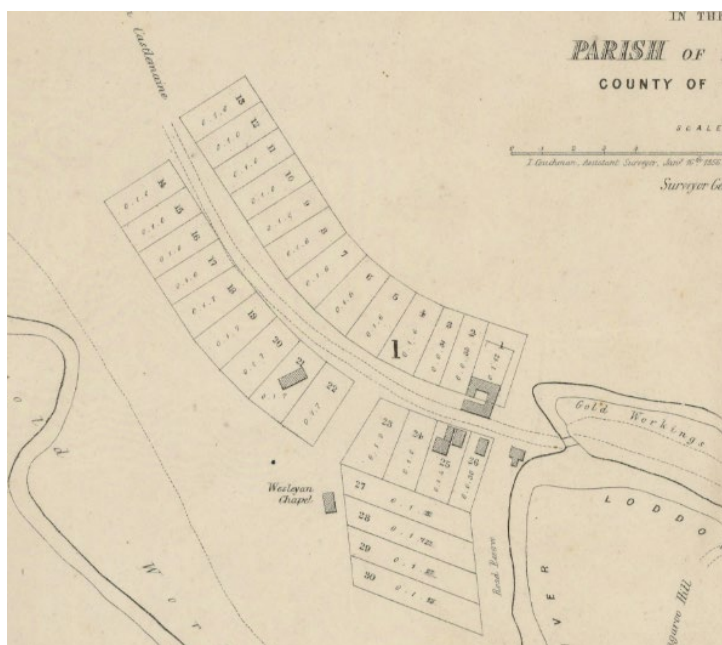


Figure 49: 1856, Hamlet of Vaughan, at the junction of the Loddon & Fryers Creek in the Parish of Fryers, County of Talbot. Source: SLV.

Figure 50: 1857, Detail view of Murdering Flat – Building lots at Chapel Hill & Murdering Flat, Parish of Fryers. Source: SLV.

Table 11: Mount Alexander Shire Heritage Inventory addition and amendment information.

Site Name	Address	HI ID
Former Gowar Township Archaeological site	655 Castlemaine-Maldon Road, Muckleford & Castlemaine- Maldon Road, Gowar	H7723-1273
Former Gowar State School No. 1149 Archaeological site	Maldon Historic Reserve, Gowar	H7723-1274
Murdering Flat Ruin Archaeological site	430 Campbells Creek-Fryers Road, Fryerstown	H7723-1275
Chapel Hill Terraced Ruin site	58 Coles Road, Fryerstown	H7723-1276
Chapel Hill Stone Ruin site	31 Break Neck Road, Yapeen	H7723-1277
Steeles Gully Hut Ruin site	72 Steele Street & 7 Henry Street, Chewton	H7723-1278
Vaughan School No. 1985 site	15a Bourgoyne Street, Vaughan	H7723-1270
Ball And Welch Ruins site (Amended)	Ball And Welch Lane, Vaughan	H7723-1180

7 Communications and Public Engagement Program

One of the key components of this project was the development and implementation of a Communications and Public Engagement Program. The program ensured that key stakeholders and the broader community were given a detailed understanding of the project's aims and outcomes, particularly in cases where the properties of owners were added to the Heritage Inventory. The communications and engagement program also ensured that the project was explained and promoted in various forums, including online platforms.

The Communications and Public Engagement Program consisted of five key elements:

1. **Notifications to Owners:** Letters were sent to all site owners informing them of the listing of sites in the Heritage Inventory. The letters contained information about the project, the listing process, and site disturbance requirements under the Act (Consents). The Local Government Authorities also received notifications about all listed sites in their jurisdiction.
2. **Public Information Sessions:** Heritage Victoria's archaeologists presented two public information sessions in the Ballarat Town Hall to inform the general public about the project. Owners of newly listed Heritage Inventory sites were invited to attend these sessions. Other meetings were held with other interest groups.
3. **Key Stakeholder Presentations:** Presentations were also given to key stakeholder groups including the City of Ballarat's Heritage Advisory Committee, the Archaeology Advisory Committee, Heritage Victoria's World Heritage working group, the City of Ballarat's Statutory and Strategic Planning teams, and the Heritage Council of Victoria.
4. **Online Platforms:** Project details and updates were published on the City of Ballarat's *MySay* page and on Heritage Victoria's website.
5. **Engagement with the Wadawurrung Corporation:** Heritage Victoria wrote to the Director and the General Manager of the Wadawurrung corporation, inviting them to attend one of the information sessions, and offering to meet to discuss any aspect of the project scope and findings.

Note: It is a requirement of the Act (see section 118) that owners must be notified when an archaeological site is added to the Heritage Inventory. Letters were sent to the owners of all sites listed as a result of this project.

Table 12: Engagement and promotion details

Engagement and promotion event	Date
Australian Centre for Gold Rush Collections	21 January 2024
City of Ballarat – Heritage team	30 January 2024
Heritage Victoria – World Heritage bid working group	18 April 2024
City of Ballarat – Heritage Advisory Committee	5 April 2024
Community information sessions	3 May 2024 and 13 June 2024
Archaeology Advisory Committee	14 December 2023 and 14 May 2024
Heritage Council of Victoria	6 June 2024
City of Ballarat – Statutory and Strategic Planning teams	13 June 2024
Ballarat Mechanics Institute ‘Twilight Talks’	6 November 2024

8 Key project findings

The project has successfully drawn together a number of different sources of information (including historical records, recent research and the results of archaeological site assessments) to demonstrate that there are many areas in the central goldfields that are likely to contain extensive, well-preserved and highly significant historical archaeological remains. The main focus of the study has been on parts of Ballarat, but the process of site burial and preservation (often at significant depth) is like to occur in other historic mining townships. The project has demonstrated that the lower-lying area of East Ballarat, which was extensively worked for alluvial gold, was most affected by mining sludge inundation and is most likely to contain deep and well-preserved archaeological remains.

For the first time (and following on from Greg Hil's extensive and innovative research) this project has demonstrated the degree to which nineteenth century Ballarat was afflicted by mining-related waves of inundation and burial that resulted in significant changes to the city's landscape and levels. Ironically, it is this environmental hardship that is likely to have resulted in the preservation of some of the city's archaeology in remarkable condition.

In Ballarat, nine city blocks and two case study areas were assessed in detail and a total of 90 new archaeological sites were added to the Heritage Inventory. Eight other sites were listed in the townships of Gowar, Fryerstown, Yapeen, Chewton and Vaughan. The new sites have been mapped, relevant site owners have been notified, and the location of the Heritage Inventory sites can be seen on the Victorian Government mapping platform at <https://mapshare.vic.gov.au/vicplan/>.

The listing of the sites will facilitate the successful management of these places, in accordance with the requirements of the Act. It is likely that if works are proposed that may affect archaeological remains at any of the sites, a program of archaeological investigation, recording, reporting and artefact management will be required.

9 Recommendations

A key recommendation is that the number of areas assessed for Heritage Inventory sites is expanded, particularly in Bendigo. A separate study focussing on Bendigo, drawing together historical source material and an assessment of current site conditions, would lead to the identification of a large number of currently unlisted sites.

The preliminary work conducted in smaller goldfields towns like Vaughan, Chewton, Gowar and Fryerstown has demonstrated that these centres also contain significant sites that warrant assessment. The scope of the current study has only allowed the targeted assessment of key areas of the historic city of Ballarat, and additional work is still required across the city. It may be possible to obtain partial or collaborative funding for new Goldfields Archaeology Management Plans from the Heritage Council of Victoria, local government or other sources.

It is likely that the completion of this study and the listing of a large number of sites on the Heritage Inventory will lead to an increase in the number of archaeological investigations being undertaken, particularly in Ballarat. It will be interesting to see if the findings from excavations accord with the site assessments that have been based on historical research, the predictive mapping of fill layers and the consideration of current site condition. As these projects eventuate and as the community is given the opportunity to see and appreciate a new dimension of the history and archaeology of the goldfields, the value of this study will be recognised.

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These lists contain references made within this report. For individual site references please see Section 12 of the relevant Heritage Victoria site card for the Heritage Inventory site.

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10.8 Useful websites

Trove

<https://trove.nla.gov.au/>

Victorian Collections

<https://victoriancollections.net.au/>

Australian Centre for Gold Rush Collections

<https://www.sovereignhill.com.au/experiences/australian-centre-for-gold-rush-collections/collections/>

Ballarat Historical Society Collection

<http://www.ballarathistoricalsociety.com/collection/index.htm>

Ballarat Mechanics' Institute

Image collection: <https://ballaratmi.org.au/research/ballaarat-mechanics-institute-image-collection/>

11 Appendices

11.1 Ballarat Historical Elevation Change Modelling (1858 to 2019)

Technical Report

Ballarat Historical Elevation Change Modelling (1858 to 2019)

Technical Report

Dr Greg Hil

This technical report accompanies the results of historical elevation change modelling conducted across Ballarat for Heritage Victoria in 2024. The model provides an indicative prediction of archaeological potential by comparing recorded ground surface heights from the late-1850s to modern day elevation data. Specifically, computer mapping software was used to volumetrically compare a Digital Elevation Model (DEM) produced from 1858 elevation data to 2019 LiDAR (see Hil et al. 2023 for details on the methodology). Locations where ground surface heights are modelled to have increased significantly have higher predicted archaeological potential because those areas are less likely to have been disturbed by more recent earthmoving activities such as urban development. Deeply buried archaeological materials have a physical buffer that can protect them against high impact activities. Additionally, it stands to reason that areas that have increased in elevation have a greater amount of earth or fill that are capable of containing archaeological materials.

Ballarat's ground surfaces are known to have been transformed by earthmoving activities during the nineteenth and early twentieth centuries. In addition to the mobilisation of vast quantities of earth and rock by miners during the gold rush, local historians have also described numerous other large-scale changes to ground surface heights across the city. For example, during the 1860s parts of Main Road were deliberately raised more than three metres as a defence against flood waters and liquid mining waste (see Bate 1978; Lawrence & Davies 2019; Withers 1887). Those changes are joined by other large scale infrastructure projects such as the construction of the railway bridge and the excavation of Ballarat's storm drains and sludge channels. In the later years of the rush, city planners again reshaped the landscape through their clean-up of mining areas, through the infilling of gold workings and the consolidation of voluminous stacks of mining waste materials.

Historical changes to Ballarat's ground surfaces were modelled by comparing historical elevation data from 1858 to data from 2019. This is an approach has also been applied to Melbourne's CBD as part of PhD research from La Trobe University (see Hil et al. 2021). **Figure 51** provides an example of the elevation change modelling from Ballarat East. Areas shown in green represent areas of likely elevation increase, whereas orange and red reflect areas of elevation reduction. The darker the shade of green the greater the amount of predicted elevation increase, with the darkest shades of red representing the greatest amount of predicted elevation reduction. Yellow locations are areas that were within 500 mm (plus or minus) of 1858 levels by 2019. **Figure 52** shows how historical maps can be combined with the elevation change modelling to identify areas of increased archaeological potential.

It is important to state that the model's findings are *indicative* and are considered alongside other sources of historical evidence when an area's archaeological potential is evaluated.

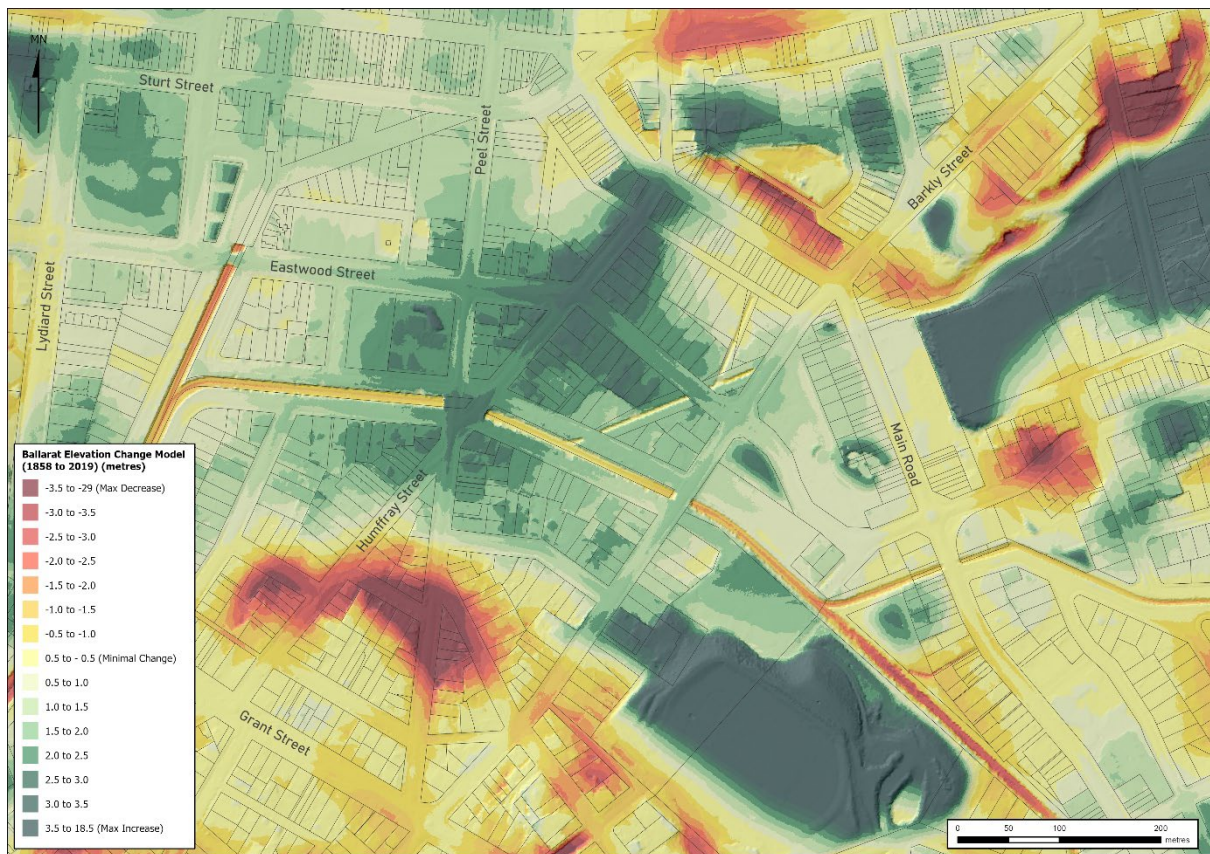


Figure 51. Digital Elevation Model of Difference (DoD) Ballarat 1858 to 2019.



Figure 52. The elevation modelling over an 1857 map of Bridge Mall. Here, puddling machines and the *Times Office* are in locations predicted to have increased in elevation by at least 1.5 metres since 1858.

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