

## BROOKS TERRACE, KANAHOOKA (DAPTO), NSW, AUSTRALIA

*Residential Development within the Ruins of the Former Dapto Smelter*

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**Abstract.** This paper will showcase the redevelopment of a local heritage site into a contemporary residential compound located on the outskirts of the small town of Dapto on the South Coast of New South Wales, south of Sydney. The redevelopment of the former Dapto Smelter site, now known as Brooks Terrace, Kanahooka, successfully amalgamates the extant built heritage elements of the site and provides comprehensive interpretation of the recently excavated archaeological evidence. This sustainable development will assist cultural heritage conservation of the Dapto area by preserving the industrial landscape and maintaining a link with the forebears of the present community. The ‘out of the stereotype’ Brooks Terrace development will contribute to regional growth by preserving the local population as well as attracting the new.

### 1. Introduction

In the Australian State of New South Wales (NSW) archaeological relics are defined to include objects of State and local heritage significance. While both levels of archaeology are identified and recorded, the practice has been to focus on the relics of State heritage significance for in-situ conservation and interpretation. The following presentation portrays the redevelopment of a site of local heritage significance into a contemporary residential compound which sympathetically integrates the majority of the extant heritage elements.

The subject site is located in the outskirts of a small town of Dapto in the Illawarra region of the NSW South Coast, 110km south of Sydney (Figure 1). The Australian Census of 2006 recorded that Dapto, together with its suburb of Kanahooka, has a population close to 15,500 (Australian Bureau of Statistics 2006). Brooks Terrace Kanahooka comprises approximately 7 hectares of land which formerly housed the Smelting Company of Australia plant—a nineteenth-century complex representative of the first large-scale treatment works for the smelting of sulphide ores in Australia. The Illawarra region has a long history of heavy industry which has influenced the settlement pattern, people and culture of the region. As the first

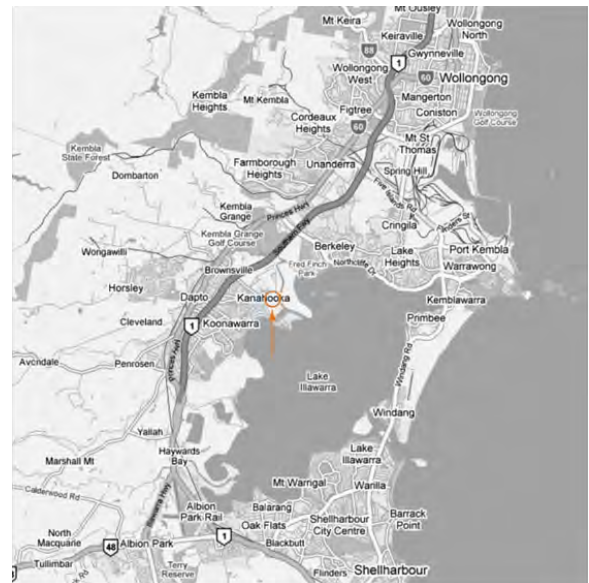


Figure 1. Map showing the location of the site circled in orange. (UBD 2008)

large industrial plant in the region, it provides an important and interpretable link to where and how those industries begun.

The site today is bounded by a creek to the east and Kanahooka Road to the west. Immediately to the northwest of the site is a housing development, occupying the western part of the original smelter property. The site's south boundary adjoins small, semi-rural properties with assorted residential and farm buildings (Figure 2).



Figure 2. Aerial photograph of the Brooks Terrace development site which occupies the eastern portion of the former Dapto smelter site. The approximate boundary of the site is outlined in red. During the 1990s the land to the northwest was redeveloped for the residential purposes. (Google Map, 2011)

## 2. Description of the Development

The detailed design of the proposed development drew from the site condition and was formulated to maintain the primary heritage items in positions where they are visible and can be interpreted through signage and other media. It responded to the Conservation Management Plan's policies which aimed for the retention of the site's heritage fabric and terraced topography.

The first development proposal for the site comprising 137 small integrated residential lots was submitted in 2006. After the initial review of the proposal by the local council and the (then) NSW Heritage Office, the density of the proposed residential subdivision was significantly reduced to fit the low- to medium-scale development. Consequently, the road layout also had to be amended so as to provide better interpretation of the site's heritage items proposed for retention, and to assist in the interpretation of the former usage of the site. In 2008 a new development application was submitted, proposing a construction of 87 residential lots, including one larger lot to contain a graded and sealed stock pile of slag and contaminated material from the site, and construction of public roads and reserves.

Following the completion of site remediation works accompanied by archaeological investigation in 2010, the density of the already reduced lot numbers was further reduced due to the constraints imposed by the increased size of the slag heap. As a result, the final development plan had to be amended to include a total of 81 residential lots (Figure 3).

## 3. Historical Overview

Dapto was first settled around 1815 for agriculture, with the dairy industry becoming the primary activity in the nineteenth century. The area remained sparsely settled until the smelter plant was constructed in 1895 on the Kanahooka plateau, overlooking nearby Lake Illawarra (Figure 4). The smelting works were prosperous for the first couple of years, employing up to 500 men at the peak of production (Lloyd 2005). However, due to the changes in ownership and ore supply, as well as the decision taken in 1898 by the government of the day to construct a harbour at neighbouring Port Kembla and not at the Illawarra Lake where the plant was located, the Dapto works closed in 1905 (South Coast Times 1905). The transfer of the Dapto Smelting Works to Port Kembla began in February 1906 and most of it was completed within the next year and a half. Gradually the remaining machinery was removed over the next decade, with the railway line lifted and two of the stacks dismantled in 1921. After another 60 years of use of the land for dairying, in the 1990s the western half of the land was redeveloped as a residential subdivision while the eastern half underwent a site remediation program—which included the removal of the top 150mm of the contaminated soil from the localised areas, leaving a number of extant structural remains intact (Godden Mackay Logan 2008).

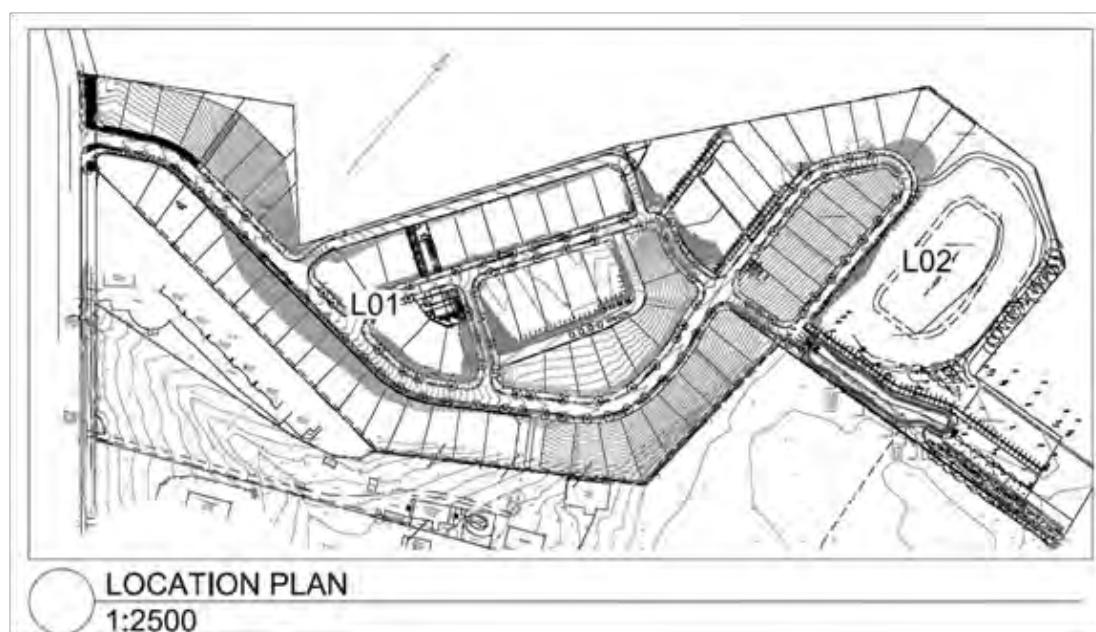


Figure 3. Updated Subdivision Plan showing the arrangement of 81 residential lots, including the large slag heap along the east boundary of the site (Taylor Brammer L00/A 27 May 2010).



Figure 4. The Dapto Smelter site in the 1890s, viewed from the south. The manager's cottage can be seen on the extreme left. The railway embankment can be seen with one set of tracks running up to the top bench (now Forest Grove) and the lower tracks running down to the smelting floors. The buildings in the centre background adjacent to the ore bins and the buildings on the right form part of the sulphuric acid plant. (O'Malley 1950)



Figure 5. Brick remains of the two smelter towers featuring three arches and a platform that formed the foundations for the upper structure of the towers. This heritage element will be conserved and interpreted as part of the new development. (Godden Mackay Logan 2008)

The site today features 26 heritage elements comprising massive retaining stone walls, remnants of chimney stacks, flues and towers, a brick masonry saltwater reservoir, numerous stone and brick masonry engine and machine beds, a slag heap, and a saltwater channel that was providing water for the operation of the smelter (Figure 5). Described in its Statement of Significance as ‘a romantic ruin’, this industrial landscape will be conserved, maintained and protected as part of the new development (Godden Mackay Logan 2003).

#### 4. Archaeological Investigation

Among a number of tasks required to be undertaken prior to finalising the subdivision plan of the site was the one of detailed archaeological investigation. The program of archaeological monitoring and salvage excavation was undertaken at the site between April and May 2010 by a small team of archaeologists and environmental scientists. It was carried out in conjunction with additional site remediation works, required to comply with current environmental regulations. The scope of archaeological excavation was determined by the previous assessment of the site’s potential to contain archaeological resources, identifying several areas mainly in the vicinity of the extant heritage elements.

The objective of the investigation was to determine the extent and integrity of the potential archaeological resources, so as to undertake detailed recording as part of a mitigative strategy, gather sufficient information to address the archaeological research framework, and to inform conservation and interpretation of the site.

The investigation of the designated excavation areas, some of which were significantly extended due to identification of a number of unexpected archaeological remains, provided extensive evidence of the former works. The evidence included footprints and associated elements of plants and ancillary structures. The exposed structural remains, consisting of footings, post pads and floors, formed part of the former acid chamber, the pyrite burners building, the crushing and screening plant, the metalliferous refinery and the pump house. Also identified was the entire footprint of the engine house, as well as the full extent of the nickel refinery wall. In addition, a number of individual elements, such as chimney stacks, flues and drains, engine and machine beds, fragmented timber ore bins and the saltwater pipeline, were also identified within various operations areas.

In addition to the discovery of structural remains, a small number of artefacts were retrieved from across the site, ranging from architectural and

industrial to domestic and personal items. All of the remains have been assessed as being of local significance which is consistent with the overall heritage significance of the site. The complex series of exposed remains confirmed the assumed layout of the smelter and provided additional information regarding its operations, thus contributing to the better understanding of the industrial nature of the site. The investigation, however, did not provide any evidence of the pre-smelter use of the site, nor its use for dairying after the smelter’s demise.

After the completion of archaeological investigation works, the majority of identified remains had to be removed due to the high level of contamination. However, the information they provided offered additional value to the interpretation of the site’s history and significance.

#### 5. Heritage Items and Spatial Design

As an open housing estate, the subdivided and redeveloped site will ensure that the heritage fabric can be accessible and utilised by the future residents. The principal change at the site will be its redevelopment from a remnant open industrial landscape to a residential precinct.

The surviving industrial features will be retained through a combination of public and private ownership. Heritage items will be physically stabilised in their surroundings that will be landscaped to minimise recurrent maintenance. The interpretation media will be specifically selected to provide for low maintenance and high audience accessibility. The proposed roads and laneways follow historic road and rail routes through the site and are located in relation to the retaining walls, so that the existing terracing and the remnant industrial landforms are maintained. These roads have been further detailed, so that they pass by most of the heritage items, allowing for public viewing. The roads are named after the relevant walls and other items that they connect (Brooks Terrace, Wall Lane, The Arches, Nickel Lane and Saltwater Circuit). They will also provide the recommended heritage curtilage (Figure 6).



*Figure 6. The eastern face of the sandstone Nickel Refinery wall will be visible from Nickel Lane, which will run parallel with the wall along its full length. This will also provide the recommended heritage curtilage. (Godden Mackay Logan 2080)*

Heritage items in different locations will be linked visually and materially by the use of common fencing, gravel beds and interpretive signage. The slag heap that is left in situ will be appropriately sealed with 200mm thick clay capping and covered with grass. The full containment of this feature in its original location contributes to environmental protection of the site, ensuring that the Brooks Terrace development's sustainability balances preservation of environmental and cultural assets.

## 5 Interpretation

Apart from enhancing the visual appeal of the development, the preserved heritage items will maintain a very important role of telling the region's story without losing the essential authenticity and cultural meaning. The interpretation initiatives have been designed with the intention that the public can access and view the heritage items from the public areas and roadways. It is envisaged that there will be generally four groups of people within the community that will constitute the future audience for the site. They are identified as future residents and their visitors, and various local and external heritage and educational groups.

The interpretive signs and key map will guide visitors around the site past each of the significant items, and will include information about their role in the smelting process, as well as relevant information about the broader history of the site and its influence on the community and the region.

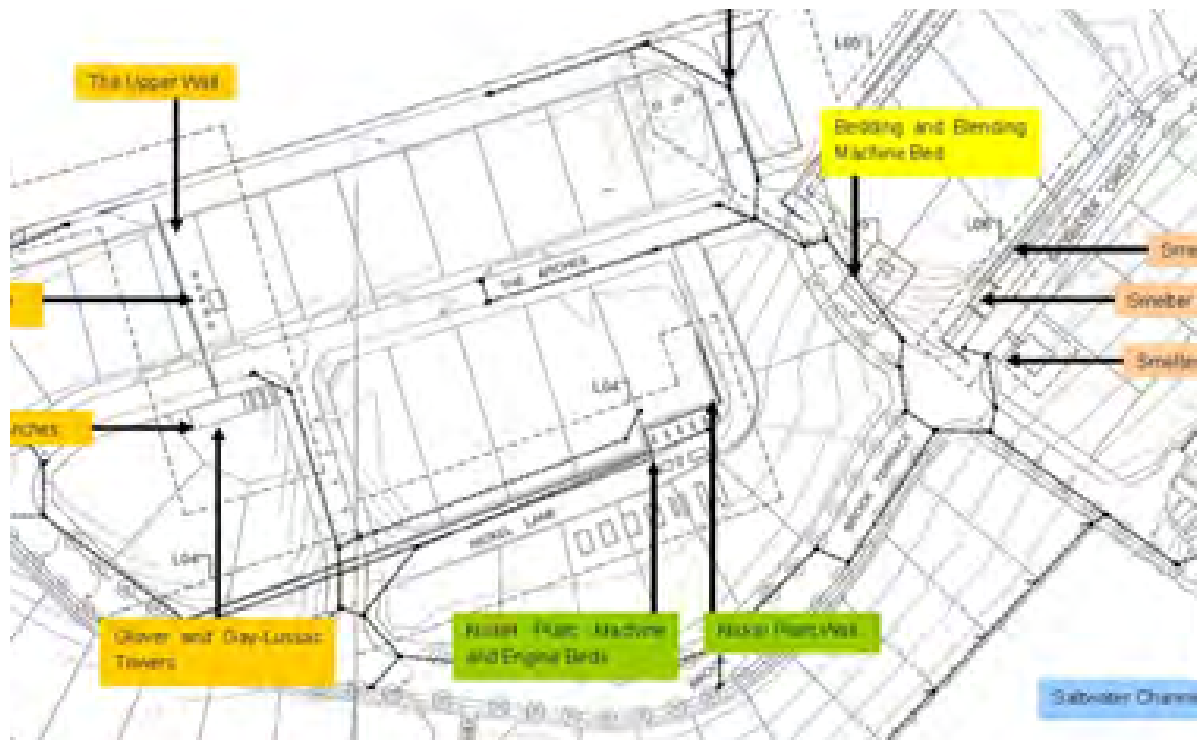


Figure 7. Location of interpretation signage within the new development focusing on the significant items. (Godden Mackay Logan 2010)

The primary location on the estate for visitors to get an introduction to the site is the Arches and Brick Flue Reserve situated at the southwest end of the former smelter complex. The long underground flue that runs between the upper wall and the Arches Park will delineate the reserve, whereas the arched footings of the towers will be the centerpiece and focal point of the Park (Godden Mackay Logan 2010).

The next stop includes the Saltwater reservoir located further north which will be partially preserved and under private ownership and care. The southwest corner of the reservoir will be preserved and filled in with bluestone so that it forms part of a perimeter fence around the lot. The preserved machine and engine beds situated in the northwest portion of the complex will be mainly part of private properties, such as the Smelter plant engine bed, which will be shared by two private properties and fenced off for viewing.

The distinctive slag heap will be a symbol of functionality and by-product of the former smelter, whereas the nearby Saltwater channel at the far northeast end of the complex will be representative of the role that Mullet Creek and saltwater had in the overall production of the Dapto Smelter.

Another dominant feature of the site includes the north-south running Nickel refinery wall, which

provides evidence of the scale of the former buildings on the site. Nickel refinery machine and engine beds will be interpreted in the road surface of Nickel Lane and will add to the memorable experience for visitors driving or walking on the site.

These in situ preserved industrial features will be evocative for the local community members and attractive for the outsiders.

The amalgamation of what seem to be two completely opposite contexts of the site (ie the reminiscence of the noisy and toil-ridden industrial environment with the modern and serene landscaped habitat) will result in a preservation of the important aspect of the Illawarra region's history.

## 6. Conclusions

Until recently the site was in private ownership, offering restricted access and opportunities for the wider public to see and appreciate the site and its significance. The new development provides an opportunity to lift the profile of the area and enhance understanding of the site's significance within the minds of the community. Spatial planning of the Brooks Terrace development links up with environmental protection and recognition of cultural values in the broader Illawarra region. The Brooks Terrace development represents a fusion of the local

heritage and natural resource with contemporary living. The preservation of natural, heritage and landscape assets of the site will have a positive impact on the quality of life, not only of the future residents but of the local community in general. Once completed, the Brooks Terrace will remain as the landmark development in the area which will promote regional growth by preserving the local population as well as attracting the new.

The Brook's Terrace residential estate at Kanahooka is demonstrative of a sustainable development balancing environmental, heritage, aesthetic and economic components of the project.

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