

PROGRESS REPORT
ON
ARCHAEOLOGICAL
INVESTIGATIONS,
CADIA HILL GOLD MINE
AND
THE RIDGEWAY PROJECT,
CADIA,
N.S.W.

Progress Report 2. 2001-2002.

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EDWARD HIGGINBOTHAM
& ASSOCIATES PTY LTD.

Archaeology • History • & Heritage

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For
Cadia Holdings Pty Ltd.

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1 INTRODUCTION.

1.1 Background.

This report was commissioned by Cadia Holdings Pty Limited on 17 July 2002. It is the second progress report on the archaeological monitoring of works at Cadia and the Ridgeway Project. The first progress report was prepared in 2000.

Edward Higginbotham & Associates Pty Ltd. 2001. Progress Report on archaeological investigations, Cadia Hill Gold Mine and the Ridgeway Project, Cadia, NSW. 1996-2000. Cadia Holdings Pty Limited.

The archaeological remains of historical mining and settlement at Cadia were the subject of a conservation plan in 1995, as part of the Environmental Impact Statement.¹

Edward Higginbotham & Associates Pty Ltd was commissioned in December 1996 to provide archaeological and heritage services for the mining project. Due to the large number of construction projects requiring archaeological investigation, an application was made to the Heritage Office of NSW for an excavation permit to cover all works on the Mining Lease, which required archaeological or archival recording and / or archaeological monitoring. This permit was approved on 21 October 1997 and has substantially reduced the number of occasions on which matters needed to be referred to the Heritage Office for approval.

Where disturbance of archaeological remains could not be avoided, excavation permits have been obtained in order to complete archaeological investigation prior to construction.

Since January 2001, a number of archaeological investigations have been undertaken and several reports have been completed. These include:

¹ Godden Mackay, Cadia Mining Project, Final Conservation Plan. Newcrest Mining Limited. 1995. Volumes 1-6.

Edward Higginbotham & Associates Pty Ltd. 2001. Historical and archaeological evidence for mining activity on the route of the proposed underground conveyor, Cadia Ridgeway Project (MLA 103), 'Tunbridge Wells', Four Mile Creek Road, near Orange, NSW. Ridgeway Project.

Edward Higginbotham & Associates Pty Ltd. 2001. Archival recording of Waringa Homestead, Cadia Hill Gold Mine, near Orange, N.S.W. Cadia Holdings Pty Limited.

Edward Higginbotham & Associates Pty Ltd. 2001. Archaeological assessment of proposed development, site of Smelter No. 1, Old Cadia Road, Cadia, NSW. Cadia Holdings Pty Limited.

Edward Higginbotham & Associates Pty Ltd. 2001. Report on the archaeological excavation of Tynan's Slaughterhouse, Old Cadia Road, Cadia, NSW. Cadia Holdings Pty Limited.

Edward Higginbotham & Associates Pty Ltd. 2001. Report on the archaeological excavation of Smelter No. 1, Old Cadia Road, Cadia, NSW. Volumes 1 and 2. Cadia Holdings Pty Limited.

Edward Higginbotham & Associates Pty Ltd. 2002. Report on the excavation of the Cadia Cemetery, Cadia Road, Cadia, NSW, 1997-1998. Volumes 1 to 5. Cadia Holdings Pty Limited.

The following report was not listed in the first progress report:

Edward Higginbotham & Associates Pty Ltd. 1998. Historical and archaeological assessment of the Cadia Ridgeway Project on 'Tunbridge Wells', Four Mile Creek Road, Near Orange, N.S.W. Resource Strategies Pty Ltd.

1.2 Brief.

The purpose of this report is to identify historical archaeological sites within the study area, to assess their archaeological significance and to make recommendations for their management and conservation prior to and during the proposed development.

1.3 Location of site.

The Cadia Gold Mine and the Ridgeway Project are located in the Cadia or Cadiangullong Valley, approximately 25 kilometres south of Orange and straddles the boundary between Blayney and Cabonne Shire Councils (Figure 1.1).

1.4 Study methodology and limitations.

Only those construction projects which required archaeological investigation and recording are described in this report.

The report does not include site survey for Aboriginal remains. Where appropriate, this should be completed as an independent study.

1.5 Author identification.

This report was prepared by Dr. Edward Higginbotham.

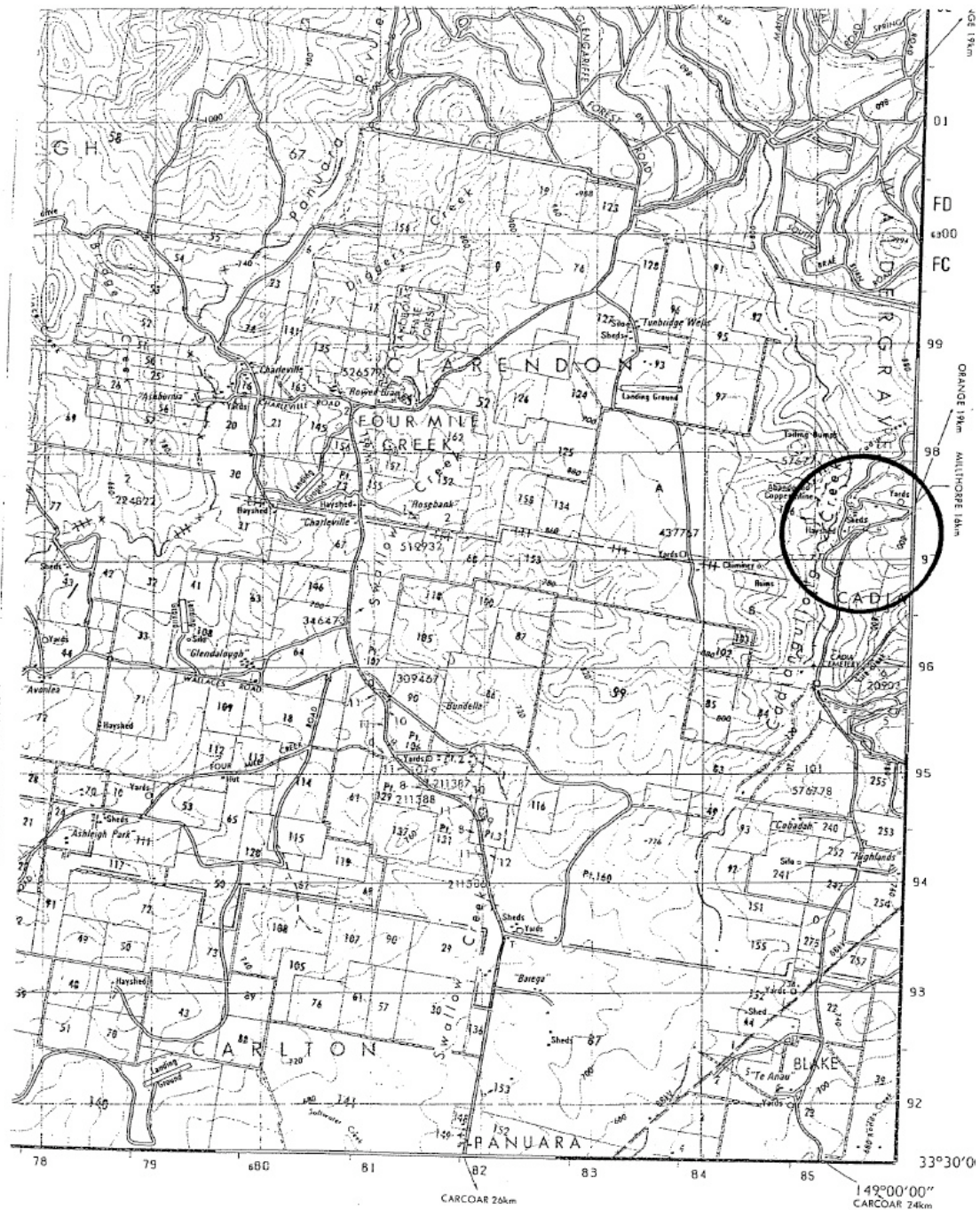


Figure 1.1 Location plan of Cadia Hill Gold Mine and the Ridgeway Project.

2 HISTORICAL BACKGROUND.

2.1 The development of mining at Cadia.

The earliest discovery of copper traces at Cadia has been attributed to the Geological Surveyor for NSW, Samuel Stutchbury, who located copper traces near Oakey or Cadiangullong Creek on 18 July 1851. This discovery coincided with the discovery of gold in NSW. His report was published in the *Votes and Proceedings of the Legislative Council*, for 1851, thus alerting potential investors to the deposit. At that time, however, the discovery of gold in the same area attracted the bulk of popular interest.

When land near the future Cadia was advertised for sale in the *Sydney Morning Herald* on 2 May 1851, the presence of some copper traces on the land was noted in the advertisement. This land was later purchased as Portion 41, Parish of Waldegrave on 28 July 1859 by William Tom, George Hawke, Richard Lane and Edward Nicholls as trustees for the Canoblas Copper Mining Company.

Portions in the two parishes in which copper traces were found, the Parishes of Waldegrave and Clarendon, County of Bathurst, were taken up by various groups of investors, mainly from pastoral, mercantile or professional backgrounds. Portion 162 of the Parish of Waldegrave, was taken up by J S Rodd, and the two Portions to the north, Numbers 83 and 87 were taken up by Saul Samuel, R J Want and Thomas Icely. Further east, Portion 41 of Waldegrave was taken over by the Trustees of the Canoblas Copper Mining Company. Portions 147, 148 and 149 of the Parish of Clarendon, where the Cadiangullong Copper Company operated from the 1860s and where the Cornish Engine House was later built, were taken up by William Lawson, Thomas Icely, William Jones and J S Rodd. These Portions were originally advertised for sale on 22 May 1855 and were bought by J S Rodd on behalf of the four partners.

There were three areas of mining at Cadia; East Cadia, Little Cadia and West Cadia. The earliest mining operations appear to have been at East Cadia, which was situated on the eastern side of the creek in the Parish of Waldegrave. Portions 83, 86, 87 and 27, 29 and 30 of the Parish of Waldegrave, were taken up by a consortium consisting of William Lawson, Thomas Icely, William Jones and J S Rodd.

The second of the mining areas was known as Little Cadia. The Canoblas Mine (later known as the Cadia Extended Copper Mine) was located on Portions 28, 37 and 38 of the Parish of Waldegrave. Portions 37 and 38 had been purchased by Saul Samuel and J S Rodd on 16 July 1856, whilst Portion 28 had been purchased on 19 May 1859. It is believed to have been on these portions that Stutchbury found evidence of copper in July 1851. In December 1861, the *Western Examiner* newspaper of Orange noted that there was a large quantity of ore at "this extensive mine" and that a smelter was being erected.² Ore was carried out of the area for export, but it was soon overshadowed by the much larger Cadia Copper Mine. Mining at Little Cadia had ceased by the time the North and South Section Mines were in operation at West Cadia, the latter being the third area of mining activity.

At East Cadia, mining concentrated upon Portions 83 and 87 of the Parish of Waldegrave.³ On 15 July 1861, John Savery Rodd, Saul Samuel, Randolph John Want, and Thomas Icely leased to Robert Archibald Alison Morehead & Matthew Young, Sydney, esquires, who were the Australian representatives of the Scottish-Australian Mining Company, the three portions numbered 87, 83 and 162 in the Parish of Waldegrave for 21 years from 1 July 1861 for copper mining purposes. The royalty was to be one-twelfth of all copper ore raised, dressed and ready for the furnace, or alternately one twelfth of this once refined. Work on mining was to commence before October 1861 and was to be undertaken continuously with a minimum of 6 able bodied miners. If the mines had to stop due to a "Strike of Workmen or such rise of Wages as shall in the opinion of the lessees... render it desirable temporarily to suspend the working of the mines on the said land in order to import labour", the lessees were to pay a weekly rent of £25. The land let consisted of Portions 87, 83 and 162, excepting a part in the north-west corner of Portion 87 measuring 23 chains along the north boundary of the grant, 20 chains on the east and then a line back to Cadiangullong Creek and then northwards along creek.⁴

The Scottish-Australian Mining Company commenced their Oakey Creek Copper Mine at East Cadia, which was later renamed the Cadiangullong Copper Mine in 1863.⁵ Captain Josiah Holman was reported to have arrived to take over the operation of this mine in March 1862. On 13 May 1864, the Cadiangullong Copper

² *Western Examiner*, 14 Dec 1861

³ Plan of the Cadia Properties 1881

⁴ RPA 2120 in SRNSW 10/26437

⁵ B A French, 'Cadia', April 2000, p. 46

Mining Company sold their working mine and their land to Morehead and Young, as the Australian representatives of the Scottish-Australian Mining Company.

By 1868, the East Cadia Mine was driven down as far as 23 fathoms according to Joshua Holman, the mining captain, until waterlogging of the workings prevented any further ore being removed. Up to that time it was claimed that 1,300 tons of copper ore had been extracted from that mine.⁶

The third area of mining was located on the opposite or western side of Cadiangullong Creek in the Parish of Clarendon. Portions 147, 148 and 149 were purchased by William Lawson, Thomas Icely, William Jones and John Savery Rodd in April 1852, but sold to the Scottish-Australian Mining Company in May 1864, along with all their other holdings. A new company, the Cadiangullong Consolidated Copper Mining Company, was formed to mine the West Cadia property.⁷ It has been claimed by Margaret Morris that these portions were subjected to exploration for minerals before 1861.⁸

The West Cadia mines were divided into the North and South Sections. The North Section was sited upon Portion 148 of the Parish of Clarendon and the South Section was on Portion 149. In his 1868 report to the Manager of the Company, Holman described the North Section as having a 12 HP portable engine, which was on Trevena's engine shaft, which was 40 fathoms deep with an adit 19 fathoms deep. At 12 fathoms below the adit, Trevena's shaft was extended west of the shaft on Northey's lode. As well as Trevena's shaft, there were shafts named after Rodd, Hall, Gundry, Samuel, John as well as Icely's. On the South Section was erected the Cornish condensing engine with a 25 inch cylinder and a ten ton boiler, with pumping, winding, stone-breaking, crusher and jiggling machinery. This is the extant Cornish engine house.

The Scottish-Australian Mining Company erected the Cornish beam engine and engine house in 1865, which was operational by 1868. Nearby were a smithy with two forges, a large carpenter's shop and engine-fitting shop, with a large lathe, powder magazines and mining office. Phillips' engine shaft was also in this section and went down 32 fathoms. It was connected to Lawson and Want's shafts.

⁶ C Pratten, 'A History of the Cadia Mines', typescript, p. 4.

⁷ B A French, 'Cadia', April 2000, p. 46

⁸ C Pratten, 'A History of the Cadia Mines', typescript, p. 4.

In 1866, after large parts of the land surrounding the mine were closed to miners and woodcutters by a pastoral lease, Holman arranged for the preparation of a petition calling for the declaration of a Common around the mine, so that fuel could be gathered for the mine. This successfully created a Common, which operated for some years until revocation, where fuel for the mines could be gathered. Woodcutters were able to obtain their livelihood and the mines continued to operate.

Excavation of mine shafts at Cadia appears to have been based upon Cornish mine techniques with manual labour being used to work the mines. Miners concentrated on the richest lodes. At some stage by 1868, explosives were being used as Holman noted the existence of a powder magazine.

Despite the investment in mines and plant, equipment and a smelter at Cadia, the Scottish-Australian Company was losing money by 1868, when the price of copper on overseas markets fell. For the rest of the nineteenth century, the Cadia mine opened and closed with the rise and fall in copper prices. Holman reported various attempts to locate payable gold on the company's land. When production was slow, workers left the district seeking employment elsewhere. Sometimes, it was at other mines owned by the company, such as Icely.

The early smelters appear to have been built on the reverberatory principle, which could utilise timber as fuel and was simpler to build and operate. In the furnace, finely ground ore well mixed with the flux was heated for up to 24 hours until the copper matte could be extracted. This was then further refined in a more sophisticated reverberatory furnace. The technology had been developed in Wales and was widely applied in copper mines across Australia. Thus, at Cadia, as in many copper mining settlements, there was an ethnic divide amongst the workforce. Many of the miners were Cornishmen, whilst the smelter staff were often Welsh.

Low copper prices as well as a decline in ore quality caused the cessation of production in 1868. In mid 1868, the mortgagee ordered the sale of the Cadiangullong Copper Mines, but there were no bids and the property remained in the hands of the company. Research by Brian French suggests that the years 1863-67 were a peak period of copper mining activity.⁹

⁹ B A French, 'Cadia', April 2000, p. 27

In May 1870, the *Australian Town and Country Journal* reported on the Cadiangullong Mine. By this time, the journalist noted that there were 13 shafts and that almost a mile of tunnel had been dug out in various directions through the ore body. The reporter described the ore smelting process. The smelters were then reducing some ore for the Woods Flat Mine, some 32 miles to the south-west. Boys were employed to pick over the rock and separate the ore from the rock. The best ore went straight to the furnace, whilst the lesser grades were crushed and jigged. This stone was first broken by Appleton's stone breaker into smaller pieces. It was then reduced to smaller size between Cornish cast-iron rollers. Once crushed sufficiently fine, it passed through the eight jigging machines in eight slabbed pits which separated the components by gravity with the ore sands being skimmed off by boys.

Between 1872 and 1877 copper mining was again active at Cadia.¹⁰ About 1877, there was again a spurt in production. The school records show that bricks and timber were being gathered for a new works for the Cadia Mining Company. Carne noted in the 1899 edition of his book on copper mining that a substantial stone engine and pumping house was erected at this time. Carne also noted that about 48 tons of ore was obtained in 1882 and some tributing was done in 1883, but it is not known from which mine this ore was obtained. However, from 1880 onwards, Holman occupied the mine as yearly tenant of the company and continued to work it under a royalty arrangement with the company. As well as smelting some ore, his men sought gold in the vicinity.¹¹

French noted that from 1887 until 1890, there was another burst of mining activity at Cadia.¹² In the late 1880s and during the 1890s, copper mining revived at Cadia and Carne reported that about 2,500 tons of ore of 16% copper was dug out under Holman's direction. Between 1887 and 1899, Carne also claimed that a total of 4,000 to 5,000 tons had been dug from the eastern side of the creek opposite the Iron Duke tunnel and been treated at the Cadia smelters. However, in the Mining Department's Annual Report, he was sceptical of the accuracy of this figure. The Annual Report of the Mines Department of 1889 noted that new machinery worth £1,750 had been installed by the Scottish-Australian Company at Cadia and that £8,000 had been spent on buildings. This expenditure was probably used to build Smelter No. 2, located beside Cadiangullong Creek on the north western side of the Village. A total of 50

¹⁰ B A French, 'Cadia', April 2000, p. 27

¹¹ B A French, 'Cadia', April 2000, p. 48

¹² B A French, 'Cadia', April 2000, p. 27

tons of ore was dug that year. In 1890, total copper ore raised at Cadia totalled 300 tons, but by 1891, it was believed that copper production had ceased at Cadia.

In the 1890s, copper mining revived, so that Carne was able to report in his 1908 edition of several new shafts, which had been opened at Cadia. When he visited the site in February 1908, he reported that the Iron Duke lode on the western side of the creek in Portions 83, 86, 87 was open and was being "extensively" worked. On the eastern side, the East Cadia Section was being worked along with Chilcott's Shaft. A fourth furnace had been brought into operation.

By 1908, a new 60 ton blast furnace was being built at Cadia for the Cadia Extended Mining and Smelting Company, which was operating on the site of the 1859 Canoblas Copper Mine. The company does not appear to have had much success.

A new venture to mine at Cadia was under way by 1904. The Cadia Gold Syndicate had been formed to work the area for gold. By late 1904, the Scottish-Australian Mining Company was again working small copper deposits. By 1905, the Cadia Copper Mining and Smelting Syndicate had taken a lease on the Cadia mine from the Scottish-Australian Company and was working it by June 1905 with 8 men, and had 86 in employment by the year's end. A furnace was to be built. By the time of Carne's visit in 1908, there were four reverberatory furnaces in operation. He reported that 200 men were employed at the copper mines, including miners, smelter staff plus wood cutters and carters.

Copper mining soon declined again. By late 1908, the Scottish-Australian Company had given up the lease and, according to the Mines Annual Reports there was no further copper mining until 1913. However, French has identified the period 1909 until 1916 as another peak of copper mining.¹³

Some gold was also being won locally. The Cadia Hill Gold Mining Company was reported to be working a very large low grade deposit south-east of Cadia in 1908. Isolated nuggets were also found in the locality.

A new blast furnace was erected in 1912 after some years of depressed mining activity. In 1913, there were 250 men at work in Cadia and over 19,000 tons of ore was treated. Gold and silver were also obtained from this ore as well as copper. Work

¹³ B A French, 'Cadia', April 2000, p. 27

continued spasmodically for the next few years. In 1916 a peak of 25,000 tons of ore was treated. Copper mining operations closed down in 1917.

The presence of a large body of iron ore at the Iron Duke on Portions 147 Parish of Clarendon and Portions 83 and 87 of the Parish of Waldegrave had been widely known since 1901 at least when Jaquet described them as the most extensive deposit in the state. William Sandford Ltd, the builders of the steelworks at Lithgow had taken a lease from the Cadia Copper Mining Company to mine the ore on the Iron Duke lode, but had not used it. G & C Hoskins, who took over the Sandford Works, made arrangements to mine the Cadia iron ore. A lease for £1,000 per annum with a royalty of 6 d per ton was signed with the Cadia Copper Mining Company. Work on a rail line from Spring Hill to Cadia commenced.

From 1918 onwards, G & C Hoskins Ltd, the Lithgow iron working company, mined iron ore from the Iron Duke deposit and shipped it out via aerial tramway and railway to their works at Lithgow. By 1919, there were 130 men employed on the mine. On 10 March 1921, an accident with explosives killed nine men in the Iron Duke Mine.

When the Lithgow furnaces of G & C Hoskins closed down in 1927, the company shifted its smelting operations to Port Kembla. Production of iron ore from the Iron Duke fell. A total of 180,108 tons of ore, mostly from Cadia, was used at Lithgow in 1927. But, in 1928, only 84,206 tons was mined at Cadia and a mere 874 tons in 1929. The mines closed.

During the 1930s, there were schemes to recover gold from the Cadia district, most of which did not come to fruition. However, A T Mylecharane was able to successfully win gold from the Iron Duke in the late 1930s. This operation was bought by Cadia Gold Mine Pty Ltd, which installed a stamp battery, bins, amalgamating tables and classifiers.

The Cadia iron ore mines re-opened during World War II to make up the shortfall in shipments of South Australian ore for Port Kembla. From about 1941 until August 1945, ore from Cadia fed the furnaces at Port Kembla. Australian Iron and Steel Ltd refurbished the old railway line from Spring Hill and began to excavate ore from the Iron Duke from August 1941 onwards. A new incline was built to replace the aerial ropeway, which was no longer functioning. The quarrying of the ore continued until 29 August 1945, after which the rails were removed.

During the 1930s and the 1940s, a Mr Tinnock dug small quantities of gold or copper ore. In 1952, the plant of the Cadia Gold Mines Ltd was dismantled and removed.

2.2 The development of Cadia Village.

From the time when mining operations had commenced in the late 1850s, miners had come to the area to work. A village had developed at Cadia near the creek. There were stores, a hotel, churches, and, from fairly early on, a school, plus numerous huts occupied by miners. Since all the land was owned by the company with no freeholds for sale, miners leased a plot of land for their residences. Those who were keen to possess their own freeholds took up land nearby as Conditional Purchases after 1862, whilst others occupied land along nearby creeks such as Diggers Creek under Miner's Rights. A school opened at Cadia in December 1865 and its fortunes mirrored that of the mine and its township.

In January 1864, W Dyer, Inspector of Schools, when reporting on the likely number of pupils for the proposed school, estimated that the district population within four miles of the village numbered 600 people, of which there were about 90 between 5 and 14 years of age. A description of Cadia Village was provided in the *Sydney Mail* in September 1865. He described a scatter of huts on both sides of the creek. A rough row of stores was in the town and he noted the existence of a butcher, baker, shoemaker and tailor. He estimated that there were about 220 men, boys and girls employed at that time. Bailliere's *NSW Gazetteer* of 1866 described Cadia as a private town. Whilst there was no hospital, there was "a resident medical man" (presumably Blood), and that the bulk of the miners paid a weekly subscription for medical assistance. All properties were on land leased from the company with no formal leases and no freehold land. There was one pub, four general stores, a post office and "other shops usually found in small towns". The population was estimated at 600.

In his 1868 report to the company, Holman noted that there was a manager's house of 30 feet by 60 feet plus over 60 huts, all of them built of slabs, some with shingled roofs, but mostly of bark. There were two hotels and three stores, a government school on one acre and a chapel, "the foregoing forming the building of an irregular township".

About 1877, the population rose again after work had been suspended for some time. A school report claimed that there were about 100 children of school age in the school district.

Due to the slump in both copper and gold between 1908 and 1913, the population of the village recorded at the 1911 Census was only 153 persons. The improvement in the copper market meant renewed mining activity at Cadia. A new hotel was built and shops and other businesses commenced operating.¹⁴

By 1912, the town had a magistrate, post office, school, billiard saloon, boarding house, hotel, hairdresser, mercer, public hall, two stores and a Government Savings Bank agency. The village revived again with the development of iron ore mining once copper mining finished in 1917. Once iron ore mining commenced, the village continued to house some of the workforce, though a sizeable number of workmen lived elsewhere, such as Orange. In addition to the usual array of miner's dwellings, the school continued to operate. There was a hotel, two stores, a hall and a boarding house. The presence of the railway line was a boon to the township. It is not known if the trains ever carried passengers, but they did bring goods into the township. There were 300 people in the village by 1925, and there were three boarding houses plus three stores and a butcher.

Despite the cessation of iron ore mining in the late 1920s, a village survived at Cadia. According to various informants cited by Brian French, the village site was abandoned and some of the buildings were burned. Better buildings were dismantled for re-erection elsewhere.¹⁵ The post office continued to operate as did the school. One store, one boarding house and a hairdresser managed to function throughout the 1930s according to Moore's almanac.

During the Second World War, when the Iron Duke lode was again being dug for steel production, a camp was built for the employees above Rodds (now Cadia) Creek. By 1943, it had fifty tents with boarded floors and sides. There were two dwellings for married men, a mess building, kitchen and bath-change house. This was removed once the work finished in 1945.

¹⁴ B A French, 'Cadia', April 2000, p. 52

¹⁵ B A French, 'Cadia', April 2000, p. 22

3 SITE SURVEY.

3.1 Introduction.

Only a limited number of projects at Cadia required monitoring or recording during the period from January 2001 to June 2002. These include:

1. Assessment of the area of the Northern Waste Dump.
2. Assessment of mining trolley car.

3.2 Northern Waste Dump.

The proposed extent and location of the North Waste Dump is identified in Figure 3.1. The 1995 Conservation Plan identified a number of “diggings” on the west side of Cadia Hill (Inventory M01), but it is also clear that the extent of the works associated with the dump will also have an impact on Cadia Village (Inventory V01).¹⁶

Site survey was completed on 20 March 2002, in the company of John Watson, Environmental Team, and revealed a number of miscellaneous heritage items within the area of the main dump. These were located along the banks of Hoares Creek, namely:

1. Trench or beginnings of an adit to sample ores on the north bank of Hoares Creek (approx E 13720 metres and N 22370 metres on the mine grid).
2. Small quarry for stone extraction, on north bank of Hoares Creek, possibly for construction of Smelter No. 1 or similar masonry structures. If it is a quarry for the smelter, it would be dated to the 1860s. There is little evidence of blasting or benching for removal of stone (approx E 13800 metres N 22425 metres on the mine grid).
3. A small timber structure or shelter is located at a fork in Hoares Creek, on its south bank. The shelter is constructed from saplings and planks, nailed together and now in a ruinous state. The nails are wire nails with a bullet head and are relatively recent, approximately 1960s (approx E 14260 metres N22800 metres on the mine grid).

¹⁶ Godden Mackay, Cadia Mining Project, Final Conservation Plan. Newcrest Mining Limited. 1995. Volumes 1-6.

4. Adjacent and upstream of the small shelter, on the southern fork of the creek is an embankment forming a dam across the creek. The embankment has been breached and no longer retains any water. The dam may be associated with the shelter and could also be relatively recent (approx E 14260 metres N22800 metres on the mine grid).

None of the above items are of heritage significance and do not meet the criteria for assessment of significance. They have been photographed and described above.

The westernmost extension of the works associated with the Waste Dump will have an impact on the Cadia Village Site. These areas have already been planned and included in the assessment report on the Village Site.¹⁷ Remains of the Village Site are located as far east as E 13450 metres on the mine grid in this area.

3.3 Mining trolley car.

3.3.1 Background.

The trolley car was located next to a shed, which is near the present Ridgeway Offices on the Old Cadia Road. In the 1995 Conservation Plan, the map reference for the item is approximately 98030N and 99700E. The item (Inventory 21) was recorded as a “Skip Car”, but its dating and development phase in relation to the mines at Cadia was not known. It was speculated that the “skip car” was associated with Pacific Copper.

In the 1995 Conservation Plan, the “skip car” was described as:

“A riveted metal skip with an intact chassis. A side tipping function is clearly apparent. The skip is clearly different to those remnants found near the bridge crossing of Cadiangullong Creek. It is possible that it is a c1942 vintage side tipping skip but it appears more modern and not as rusted as one would expect. It may have been brought to the site as part of the Pacific Copper works.”

It was further noted that:

¹⁷ Edward Higginbotham & Associates Pty Ltd. Historical and archaeological assessment of Cadia Village in advance of the proposed mining of Cadia Quarry, Cadia, NSW. Cadia Holdings Pty Limited. 2000.

“Pacific Copper put down its first drill on “E” Bench in March 1968 sinking about 40 holes. Late in 1968 drilling near Cadiangullong Creek a fault discovered by Sir Harold Raggatt in the 1920s was struck. This turned out to have spectacular gold values. A shaft was then proposed, the cost of which was to be paid for by the gold. It is possible that this truck was brought in for these works.”

The 1995 Conservation Plan recommended that more research was required.

There are remnants of another skip at the base of the former Iron Duke Incline or Skipway (Inventory R16 and R22). This latter skip has a V shaped body.

3.3.2 Photographic research.

Research was undertaken of all relevant historical photographic evidence. Comparisons were made with the skips and wagons used on the Iron Duke and at the West Cadia Copper Mine. These may be divided between wagons used on:

1. The benches of the Iron Duke.
2. The two line skipway down the Iron Duke.
3. The two line skipway up to the railway siding.
4. The flying fox up to the railway siding.
5. The West Cadia Mine tramway to Smelter No. 3.

Similar chassis types were used on the West Cadia Mine tramway and on the two line skipway to the railway siding. However in both cases, the skips were V shaped, as found in Inventory R16 in the 1995 Conservation Plan.

Skips with a similar rectangular shape were used on the Flying Fox, otherwise known as the aerial ropeway, but the photographs do not show any associated chassis or wagon bases associated with this type of skip, Indeed it might be concluded that the skips had no wagon bases or chassis at all.

However the identification can be confirmed by a close up photograph of the skip in one of the photographs of the Flying Fox (C103). The pattern of rivets is clearly visible. (It should be noted that riveting gave way to welding after WWII).

Since the skip appears to belong to the Flying Fox, its presence on a trolley (chassis or wagon base) could either be a later adaptation of the skip and trolley for another purpose or the skip and chassis are original. While there is no historical photographic evidence for the two used together, it is clear from the additional photographs provided (by Ann Perkins) that the chassis has a quick release mechanism to allow it to be detached from the skip, which was lifted by the flying fox cradle visible in the historical photographs. While the skip was on its chassis, it could not be tipped over. Only when it was attached to the Flying Fox was it able to be tipped to one side.

3.3.3 Findings.

The skip and its chassis or trolley are associated with the Flying Fox at the Iron Duke. The Flying Fox was constructed by Ropeways Ltd around 1918 and was used until 1928 to transport iron ore for Hoskins Eskbank Steelworks at Lithgow. The skips were fed by discharge chutes from a rock crusher at the base of the Iron Duke. It had a daily capacity of 950 tons (every 8 3/4 hours), travelling 3/4 of a mile with a total lift of 330 feet into an ore bin at the railway siding. The siding was constructed c.1915 and connected with the main line at Spring Hill. The Flying Fox was powered by electricity from a power house constructed adjacent to the rail siding.

The skip and its chassis demonstrate that the skips could have been used on tramways at the mines as well as on the Flying Fox.

During 2002, the trolley car was moved to the new Ridgeway Office Buildings on Old Cadia Road. It is now conserved in front of the buildings.

3.4 Plans.

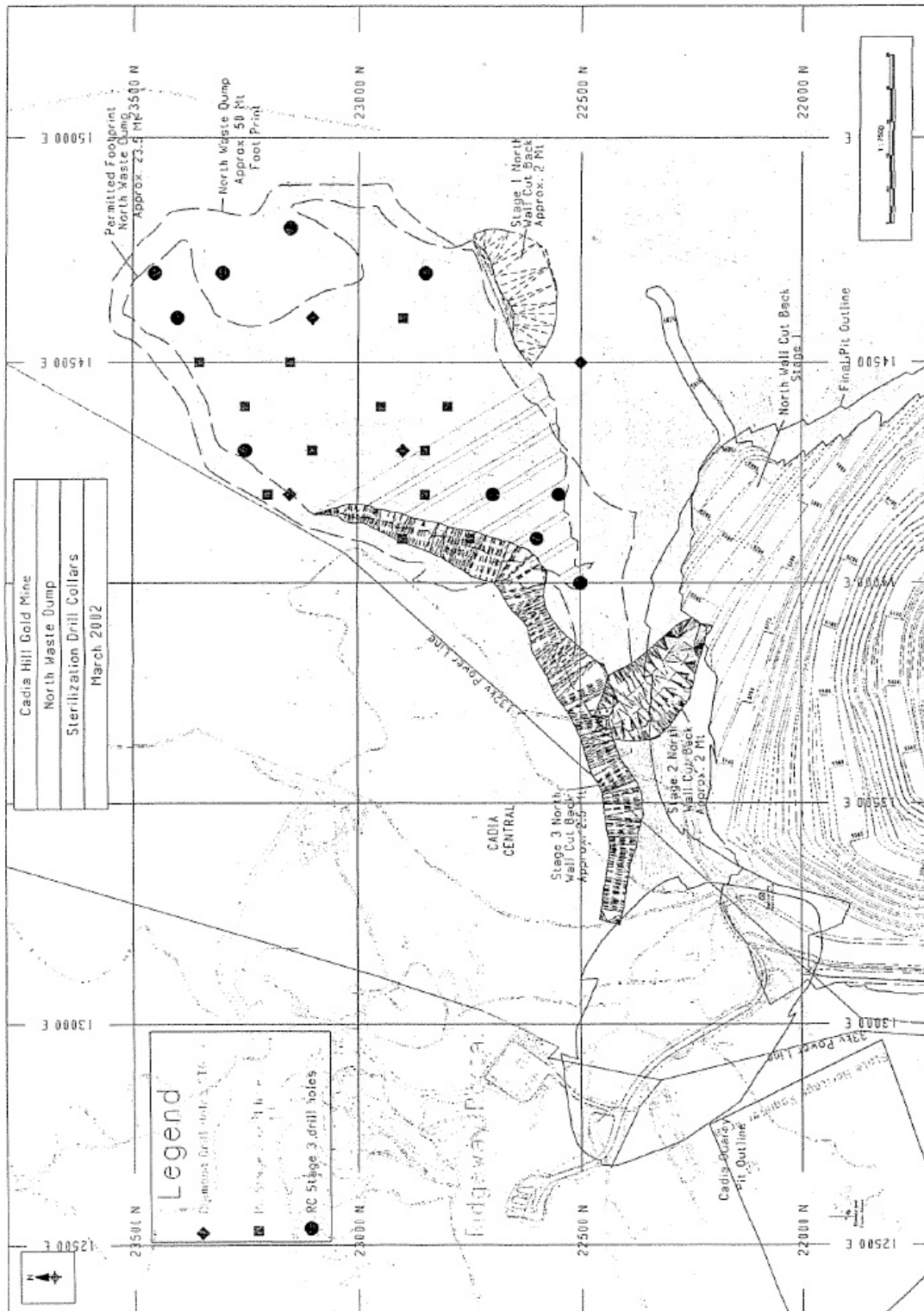


Figure 3.1. Site plan of proposed Northern Waste Dump, showing location of site recorded during site survey.

3.5 Photographs of sites, Northern Waste Dump.



Plate 3.1. Trench or adit (Item 1).

Plate 3.2. Small Quarry (Item 2).



Plate 3.3. Small Quarry (Item 2).

Plate 3.4. Shelter (Item 3).



Plate 3.5. Dam (Item 4).

3.6 Photographs of Trolley Car.

The following photographs were provided by Ann Perkins, Environmental Team, Ridgeway Project.



Plate 3.6. End view of trolley car (photograph by Ann Perkins, Ridgeway Project).



Plate 3.7. End view of trolley car (photograph by Ann Perkins, Ridgeway Project).

Plate 3.8. Side view of trolley car (photograph by Ann Perkins, Ridgeway Project).



Plate 3.9. Side view of trolley car (photograph by Ann Perkins, Ridgeway Project).
Plate 3.10. Top view of trolley car (photograph by Ann Perkins, Ridgeway Project).

3.7 Selection of historical photographs of Flying Fox, showing trolley cars or skips.



Plate 3.11. Flying Fox and skips (French Collection C21).



Plate 3.12. Flying Fox, lower terminus, showing skip in right foreground (blurred part of photograph) (French Collection C.69).

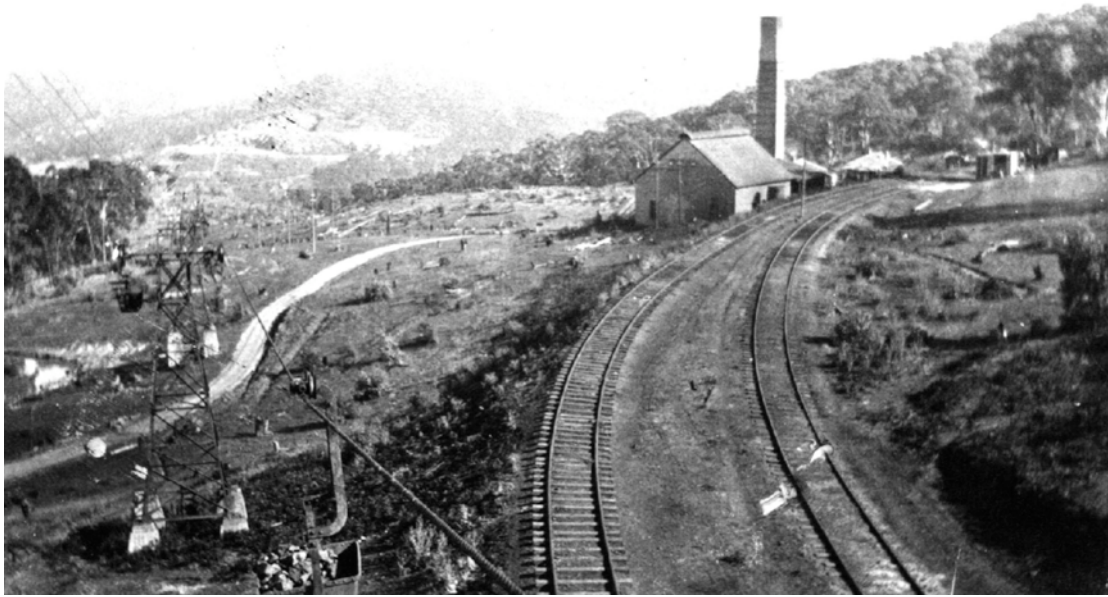


Plate 3.12. Flying Fox, with close up of skip at left foreground (French Collection C103).



Plate 3.12. Flying Fox and skips (French Collection C170).

4 CONCLUSIONS.

The two projects described in this report require no further archaeological investigation, with the exception of items associated with Cadia Village. Cadia Village and its investigation is subject to a separate excavation permit application.