

ITEM 2 INTERIM HERITAGE ORDER - FORMER CORRIMAL COKE WORKS SITE

On 3 April 2018, Council resolved to prepare a draft Planning Proposal to enable a residential development on the former Corrimal Coke Works at 27 Railway Street, Corrimal. The Council resolution and subsequent Gateway determination required the completion of a number of supporting studies, including assessing the heritage significance of the site prior to public exhibition of the draft Planning Proposal.

On 8 May 2019, a Complying Development Certificate (CDC) was issued by a private certifier to the developer of the site, for demolition of the majority of structures on the site.

On 20 May 2019, Council placed an Interim Heritage Order (IHO) under the NSW Heritage Act 1977 over the site to provide temporary protection to the structures earmarked for demolition. The IHO was issued by staff under delegation to allow time to assess the heritage significance of the site and progress a heritage listing as per the 2018 Council resolution. The IHO will expire on the 20 November 2019, six months after the date of gazettal. Once the IHO expires, the proponent is able to act upon the CDC for demolition of all structures.

Council has now received additional studies and reports relating to the heritage significance of the site, however there are still outstanding heritage issues to be addressed. It is recommended that Council resolve to extend an amended IHO for a further six months over a reduced area, whilst the Planning Proposal process is progressed, which will include a recommendation for heritage listing part of the Corrimal Coke Works site. The amendment IHO will enable the building with low significance to be demolished under the approved CDC without further involvement from Council.

RECOMMENDATION

- 1 The Interim Heritage Order over the Corrimal Coke Works site be extended for an additional six months, over a reduced area (Figure 3), excluding the coke conveyor and Brickies shed. The alignment of the tramway be identified as archaeological significance.
- 2 Council reaffirms its resolution of 3 April 2018 to prepare a draft Planning Proposal that will involve the heritage listing of part of the former Corrimal Coke Works site as per the proposed curtilage map in Figure 3.
- 3 The draft Statement of Significance as detailed in the draft State Heritage Inventory Form (Attachment 2) be endorsed.
- 4 The Heritage Council be requested to make a recommendation to the Minister for Energy and Environment under Section 32(2) of the NSW Heritage Act 1977 to include the Corrimal Coke Works site on the State Heritage Register.

REPORT AUTHORISATIONS

Report of: David Fitzgibbon, Manager City Strategy (Acting)
Authorised by: Chris Stewart, Director Planning and Environment - Future City and Neighbourhoods (Acting)

ATTACHMENTS

- 1 Interim Heritage Order Gazettal and Map
- 2 Draft State Heritage Inventory Form
- 3 Corrimal Coke Works - Condition of Screenhouse

BACKGROUND

Site's Background

The former Corrimal Coke Works site is located at 27 Railway Street, Corrimal known as Lot 1 DP795791, Lot 5 DP 749492, Lot 126 DP 598190 and Lot 11 DP749492. The subject site is approximately 18.2 hectares in area. The land is currently zoned IN3 Heavy Industrial, RE2 Private Recreation and SP2 Infrastructure. The site contains numerous structures associated with the operation of the former Coke Works, including the powerhouse, coke ovens, brick and steel stacks and administration buildings.

The Coke Works operated for over 100 years and was the longest continuously operated Coke Works in NSW. The Coke Works was a key component in the establishment of Corrimal as a suburb and ensured the economic health of the locality as a continuous employer of local families. The Coke Works ceased operation on 1 April, 2014, as it was no longer financially viable. Since the closure of the Coke Works in 2014, the site has become a vacant and some of the structures have fallen into disrepair.

Draft Planning Proposal

On 4 October 2017, a request was lodged for the former Corrimal Coke Works seeking the preparation of a draft Planning Proposal to rezone the site and change the planning controls to permit residential development of some 730 dwellings. The request was supported by a number of studies, including a Historic Heritage Assessment prepared by Biosis (dated August 2017). The report indicated that the site had potential State heritage significance. However, no heritage curtilage was proposed for the site. Additional information was requested to adequately assess the potential state heritage significance and archaeological potential of the site.

On 3 April 2018, Council resolved to prepare a draft Planning Proposal for a residential redevelopment of the site and to seek a conditional Gateway Determination. The 2018 resolution contained the following recommendations in relation to heritage -

- 2 *The draft Planning Proposal is to be referred to the NSW Heritage Council for comments in relation to –*
 - a *The Archaeological significance of the site and the potential requirements and implications of archaeological impacts from future development under Section 140 of the NSW Heritage Act 1977.*
 - b *The potential for the site to be listed on the State Heritage Register (in light of the finding of State Significance in the Biosis Report).*

On 20 August 2018, the then NSW Department of Planning & Environment issued Gateway Determination for the draft Planning Proposal which required a range of additional heritage documents to be prepared by the proponent prior to public exhibition. These documents included -

- 1 Aboriginal cultural heritage assessment
- 2 Conservation management plan that provides for the long-term conservation of significant coke work heritage components

The Gateway Determination also required consultation with the NSW Heritage Council, and demonstration of compliance with Ministerial Directions in relation to the potential state significance of the site. Following the Gateway Determination, Council staff liaised with the proponent regarding the additional heritage information required to satisfy the Council resolution and the Gateway determination.

This report only considers the heritage aspects of the site and not other issues.

Proposal for Demolition

On 15 May 2019, prior to submission of the additional heritage information required under the Gateway determination, the proponent obtained a Complying Development Certificate (CDC) determined on 8 May 2019 for the demolition of all structures on the site. The certificate indicates that the proponent had applied for the CDC on 2 April 2019.

Upon receipt of the CDC, Council officers advised the proponent that it did not support the progression of any demolition works prior to further consideration of the Planning Proposal, including a heritage listing for part of the site in accordance with Council's 2018 resolution. Council officers also suggested that the CDC could be amended to only apply to low significant structures.

On 20 May 2019, an Interim Heritage Order (IHO) was gazetted to prevent demolition of any structure on the site without formal consent from Council (Attachment 1). The IHO has effect for six months after the date of gazettal, unless extended under Council's delegation. The IHO lapses on 20 November 2019.

Council has received legal advice that an IHO temporarily prevents the proposed works under the CDC, rather than extinguishing the approval. This means that if an IHO is removed or lapses the CDC can be acted upon immediately. This approval pathway would avoid any requirements for archival recording, retention of significant fabric, management of significant archaeology under the NSW Heritage Act 1977, or the ability to enforce interpretation requirements through the broader development process.

Council officers also wrote to the (then) NSW Department of Planning & Environment highlighting the problem with the wording of the Exempt and Complying Development (Code) SEPP that enables a CDC for demolition to be issued despite Council having resolved to prepare a Planning Proposal to heritage list a site. The Code SEPP indicates that a CDC cannot be issued once a draft Local Environmental Plan (rather than a draft Planning Proposal) has been prepared. Historically, Council resolved to prepare and exhibit draft LEP, however in 2008 this process was changed to prepare and exhibit a draft Planning Proposal. Draft LEPs are now the legal instrument prepared by the NSW Parliamentary Counsel's Office at the end of the Planning Proposal process. The wording of the Code SEPP has not reflected this change. In practice, the exhibition of a draft Planning Proposal is regarded as sufficient to preclude a CDC being issued.

On 14 August 2019, the proponent informed Council of damage to the "Coke Screenhouse" building caused by severe winds. Council officers supported the removal of loose sheeting to ensure the site was made safe. The removal of the panels revealed that some of the underlying structural metal beams were rusted through and potentially unsafe (Attachment 3).

Additional Information and Assessment of Heritage Significance

On 23 May 2019, the following additional information was received (after CDC was issued) -

- 1 Aboriginal Cultural Heritage Assessment prepared by Kelleher Nightingale Consulting, dated May 2019
- 2 Conservation Management Strategy, prepared by Urbis, dated May 2019
- 3 Heritage Interpretation Strategy prepared by Urbis, dated May 2019

After review of the above documents, Council officers requested further additional heritage information regarding the proposed heritage curtilage for the site, clarification regarding the potential State Heritage Significance, assessment of the historical archaeological value of the site and visual impact analysis to key structures on the site.

The proponent provided further additional information on 31 July 2019 which included -

- 1 an updated Conservation Management Strategy prepared by Urbis updated 30 July 2019
- 2 Peer Review: Conservation Management Strategy prepared by Weir Phillips dated July 2019
- 3 a Structural Assessment of Existing Structures prepared by BG&E dated June 2019

The historic archaeological potential of the site has yet to be addressed by the proponent as per the 2018 Council resolution.

The Conservation Management Strategy (CMS), prepared by Urbis (2019) recommended that areas assessed to be of high heritage significance as shown on Figure 1 be included on the Wollongong Local Environmental Plan 2009 as items of Local Heritage Significance. The CMS proposed a curtilage that captured areas of high significance only. In October 2019, following discussion with Council officers, the curtilage area was expanded to also include structures with moderate significance (Figure 2). The proponent also recently offered to amend their CDC approval to apply to items of low heritage significance and the quench towers (moderate significance).



Figure 1 Corrimal Coke Works Heritage Significance Map - Urbis 2019



Figure 2 Proponents proposed heritage curtilage – Elton 2019

PROPOSAL

The draft Planning Proposal, as reported to Council and subject to Gateway Approval did not include a heritage curtilage as the extent and nature of significance had not at that stage been adequately assessed. On 10 October 2019, the proponent provided an amended curtilage that captures elements of “moderate” significance as assessed by Urbis (2019) following discussion with Council officers (Figure 2).

Within this area, the proponents are seeking approval to remove the coke conveyor (which extends above the coke batteries) and the quench towers. No objection is raised to the removal of the coke conveyor which is of low significance. The quench towers are of moderate significance and their potential removal should be assessed via a Development Application process.

The proponent’s proposed curtilage does not include significant view corridors to and from structures of high significance to Railway Street and the railway line. Areas of archaeological potential associated with the former Corrimall Colliery railway alignment are also not captured. It is noted that archaeological potential of the site has not yet to be assessed.

The proposed curtilage is intended to ensure that the significance heritage values of the site are appropriately managed throughout the future development process. It is not intended to prevent the potential demolition of some of these components through a Development Application process but allows for a level of control over the management of this process, including the ability to manage archaeological significance under the NSW Heritage Act 1977, as well as requiring for interpretation and potential adaptive re-use of significant materials and key features.

The proposed heritage curtilage is shown in Figure 3 and captures elements of the site assessed as moderate and high heritage significance by Urbis (2019) as well as capturing likely areas of archaeological potential relating to the former tramway (although this has not yet been properly assessed). This curtilage could be progressed as a Local Heritage Item on Schedule 5 of the Wollongong LEP 2009 as part of the Planning Proposal process.

Council officers are of the view that the site has State Heritage Significance and should be recommended by the NSW Heritage Council to the Minister for Energy and Environment under Section 32(2) of the NSW Heritage Act 1977 for inclusion on the item on the State Heritage Register.

As the historic archaeological potential of the site is yet to be assessed, this could also lead to further State or Local Heritage Significance on the site.

On 19 August 2018, advice from the NSW Heritage Council on the significance of the site was sought. Council has not received advice from the NSW Heritage Council on the potential state heritage significance of the site.



Figure 3 Wollongong City Council Proposed Heritage Curtilage

Options

In terms of the Interim Heritage Order, Council has the following options:

- 1 Allow the existing IHO to lapse. This will enable the existing complying development certificate (CDC) for demolition to be acted on. The majority of structures could be demolished without further Council involvement or archival recording.
- 2 Extend the existing IHO (Attachment 1) for a further six (6) months and re-resolve to prepare a draft Planning Proposal. This would satisfy the requirement of the IHO and provide additional time to consider the heritage significance of the site and other issues associated with the Planning Proposal. It is noted that demolition could still occur via a Development Application process.
- 3 Extend the existing IHO for a further six months but over a reduced area and only apply to items of high or moderate significance (Figure 3). This option is recommended. This would enable:
 - a The proponent to demolish items of low significance under the approved CDC.
 - b Council to consider the heritage significance of the moderate and high significance items. It is noted that approval to demolish these items could occur through a Development Application process.

The amended IHO would indicate that the Brickies Shed and coke conveyor could be demolished which are of low significance but extends into the proposed curtilage area (between the two coke oven batteries).

The amended IHO could also nominate the former tramway as being of potential archaeological significance, which would enable the low significance structures to be demolished, but no excavating earthworks until the archaeological reports are finished.

It is further recommended that Council endorse the Statement of Significance of the site as detailed within the draft State Heritage Inventory Form in Attachment 2.

It is also recommended that Council resolve to prepare a request to the NSW Heritage Council to recommend to the Minister for Energy and Environment to include the site on the NSW State Heritage Register.

This is considered to satisfy the requirements under the Council's delegation to make Interim Heritage Order under the NSW Heritage Act 1977.

PLANNING AND POLICY IMPACT

The listing of structures as Heritage Items under the Wollongong Local Environmental Plan 2009 and the inclusion to the State Heritage Register does not necessarily preclude the demolition of buildings, but it does ensure that development that would impact on those Heritage Items does not occur without development consent, including an appropriate assessment of the impact on heritage significance.

This report contributes to the delivery of Wollongong 2022 objective "Community awareness and appreciation of heritage is increased" under the Community Goal "We value and protect our environment".

This report also contributes to the delivery of the Wollongong Heritage Strategy 2015-2017 in particular "Strategy 2 Maintain an up to date list of Heritage Items" and "Strategy 6 Identify and manage key heritage precincts and streetscapes".

CONCLUSION

On 3 April 2018, Council resolved to progress a heritage listing on Schedule 5 of the Wollongong Local Environmental Plan 2009 for the Corrimal Coke Works as part of the Planning Proposal subject to the preparation of additional heritage studies for the site. A proposed heritage curtilage for the site has now been recommended by Council's Heritage Officers based on the assessment of heritage significance of the site in both the Biosis (2017) and Urbis (2019) reports. However, it is noted that as the

archaeological significance of the site has not yet been addressed, additional heritage values may be identified.

An extension of the existing IHO over a reduced area is required to ensure the protection of the site and structures whilst the Planning Proposal is being progressed.

In order to extend the IHO for the site, Council is required to comply with the conditions of Ministerial Orders Schedule 2, Part 5. Therefore, it is recommended that the Council re-resolve to progress a Local Heritage listing for the former Corrimal Coke Works site on Schedule 5 of the Wollongong Local Environmental Plan 2009 as part of the Planning Proposal process with the proposed heritage curtilage and request the site be recommended for inclusion to the State Heritage Register for its State Heritage values.

Council Notices

COUNCIL NOTICES

WOLLONGONG CITY COUNCIL

HERITAGE ACT 1977

Interim Heritage Order No 2

Under section 25 of the *Heritage Act 1977* Wollongong City Council does by this order:

- i. make an Interim Heritage order to cover the item of environmental heritage specified or described in Schedule "A"; and
- ii. declare that the Interim Heritage Order shall apply to the curtilage or site of such item, being the land described in Schedule "B".

This Interim Heritage Order will lapse after six months from the date it is made unless the local Council has passed a resolution before that date; and:

1. in the case of an item which, in the Council's opinion, is of local significance, the resolution seeks to place the item on the heritage schedule of a local environmental plan with appropriate provisions for protecting and managing the item; or
2. in the case of an item which, in the Council's opinion, is of State heritage significance, the resolution requests the Heritage Council to make a recommendation to the Minister for Heritage under section 32(2) of the Heritage Act to include the item on the State Heritage Register.

Dated at Wollongong, 16 May 2018

Mr CHRIS STEWART, Manager, City Strategy

Schedule "A"

The property known as the "Corrimal Coke Works" Site at 27 Railway Street, Corrimal on land described in Schedule B.

Schedule "B"

That part of the land known as Lot 1 DP 795791 and Lot 126 DP 598190 which is shown edged heavy red with red hatching on the plan catalogued Interim Heritage Order Curtilage Map – Corrimal Coke Works, in the office of the Council of the City of Wollongong.

(n2019-1202)



Wollongong City Council

SHI number
5063156
Study number
42

Item name: Corrimal Coke Works

Location: Railway Street Corrimal 2518

Wollongong City

Address: Railway Street

Planning: Illawarra & Macarthur

Suburb/nearest town: Corrimal 2518

Local govt area: Wollongong City

Parish:

State: NSW

County:

Other/former names:

Area/group/complex:

Group ID:

Aboriginal area:

Curtilage/boundary:

Item type: Built

Group: Mining and Mineral Processin **Category:** Coke Oven

Owner: Private - Corporate

Admin codes:

Code 2:

Code 3:

Current use: Residential Subdivision

Former uses: Coke Works

Assessed significance: Local

Endorsed significance: State

Statement of significance: The Corrimal Coke Works operated over 100 years (1912 - 2014) and is arguably the longest continuously operated coke works in the world. The Coke Works Site is a visual reminder of the role of coke-making has played in the coal and steel industries both locally and within the region. The Coke Works were a key component in the establishment of Corrimal as a suburb and ensured the economic health of the locality as a continuous employer of local families. The Corrimal Coke Works are socially significant to the individuals who built and operated the facility and their descendants. As the oldest continually used coke works in the world, the Corrimal Coke Works represent a unique continuation of use over time and have the potential to yield information pertaining to the development of coke-making. As an industrial site type, coke works are becoming uncommon, rare and endangered aspects of what was once a major component of the Illawarra's, NSW's and Australia's industrial past. Whilst the Corrimal Coke Works are no longer fully intact, it is one of only two examples of its type in NSW and is therefore of high representative value. The coke ovens in particular are important in demonstrating the principal characteristics of a now underrepresented industry of local and state significance. (Biosis, 2017)

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Historical notes (Abridged from Biosis Heritage Assessment 2017):

of provenance: Between 1875 and 1925 there were a number of coke works making coke for the Illawarra region due to the close proximity of good quality coal. By 1907, Wollongong was the centre of the state coke industry, with 453 ovens producing 83 per cent of the state's total coke output. A significant factor in the expansion of the industry within the Illawarra was the founding of the Electrolytic Refining and Smelting Co (ERS) at Port Kembla in 1908. The Corrimal Coke Works was one of the numerous batteries that sprang up in association with collieries throughout the Illawarra in response to developing steel manufacture demands from both local and overseas markets.

The Project Area was purchased by the Corrimal Coal Company in 1911. Initially, the first purchase was of the northeastern portion of the current Project Area. The land was described as commencing over the eastern side of the main south coast road at the south-west corner of land of Mr Anderson and containing portions 39, 40, 41, 42, 43 and 44.

The first reports of a new coke works at Corrimal appeared in 1910 with the South Coast Times reporting: "Much satisfaction is expressed locally at the commencement of the erection of about thirty ovens for the manufacture of coke by the Corrimal-Balgownie Coal Co. This project has been rumoured for the last couple of years. It will probably be nine months or so before the ovens will be ready for firing. Corrimal is likely yet to justify the prophecy that is to be the largest town, probably excepting Port Kembla, south of Sydney."

In addition to the reports of the Corrimal coke works, excerpts of the construction manager, George Davidson's diary provide information about the construction of the coke works:

"Excavations – There has been a considerable delay on account of wet weather which has made it impossible to continue with horse and drays, and it has been considered best to lay down the road and take out the remainder of the hot deck (next to ovens). The crossing and points have been put in, the laying of the road was started during the week and five chains of sleepers and rails are now ready for ballasting."

The coke works opened in 1912 with much fan fair and the South Coast Times reported on the event in great detail:

On Thursday at the invitation of Messrs. G. S. Yuille and Co, Ltd. there was a gathering at the new ovens, situated adjoining the Corrimal railway station, which are to treat the small coal from the Corrimal-Balgownie Colliery. A special train brought a party, from Sydney numbering about 80 and there was a considerable local representation, including several of the Council of North Illawarra and the president of the Bulli Shire (Mr. J. S. Kirfcton). The party were shown over the plant by the constructing engineer Mr George Davidson and Mr Walter Evans (the manager), and afterwards reassembled in a marquee erected by Sergeant's Ltd. wherein was provided a tip-top lunch, the only liquor at which was champagne. Mr Yuille Scott, a director, presided here the toast for the occasion was given by Mr. Frank Young, the Mayor of North Illawarra, who expressed the goodwill of the Council and of the public generally towards an (enterprise which I would give employment and commended the enterprise of the company; he was confident that the company would find that the workers of Illawarra were a reasonable people and that they would have no troubles of that kind, notwithstanding that there was some stir over the position of general secretary. (The chairman said that the company were indebted to Mr. J. McMeekan for his assistance in the designin1 of the ovens and he acknowledged the ability with which the constructing engineer, Mr. Davidson, had carried the designs out. Mr. McMeekan who responded to calls, said he feared the anticipations of the Mayor of North Illawarra as to the employment these works would afford would not be fulfilled, inasmuch as the aim of eliminating as far as possible the human factor in operations had been carried out. That was the first question I which had to be considered in the designing of a works in these times and he was certain finality had not been reached, and that after Mr. Evans had been in charge some time he would be able to make further reductions. Mr. McMeekan said that 'Messrs. Yuille and Co. had left nothing undone, no matter what the cost which had been suggested to make the works perfect, and they had here one of the most up to date works in Australia. Mr. Davidson, who also spoke in response, acknowledged the compliments which had been paid him, and said it had given him a great amount of pleasure to 'be associated with this undertaking) in connection with Messrs. Yuille and Co. From beginning to end there has not been a discordant note. Mr. Evans was also called and briefly replied. The speakers agreed in pronouncing the plant second to none in the Commonwealth. There were several other speakers, but the company were inclined rather to be festive than serious and the speaking was in that spirit. The plant, which was described in the 'South Coast Times' recently,

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will be producing coke in 'about a fortnight. The most outstanding feature is the utilization of the waste gases in producing electrical, power which will operate the machinery and also supply current the mine, which will do the same there. It is ' expected that in time the whole of the power required at the mine will be generated here. The advance made in the efficiency of plants is illustrated by the contrast of the Unanderra plant with this. At Unanderra 100 ovens had a capacity of about 670 tons a week. Here 40 ovens employing but half the labour will make 650 tons.

The majority of the buildings and coke work machinery were confined to the northern portion of the Project Area. The initial configuration of the coke works consisted of 40 non-recovery beehive type coke ovens (C1 battery), brick combustion stack, powerhouse, timber coal bunkers and maintenance buildings (see Plate 7 and Plate 8). Coal was supplied to the coke works from the Corrimal-Balgownie Colliery via the private rail line constructed in 1889. Coal was loaded into the coke works from a small railway siding adjacent to the C1 battery.

The construction of the coke works led to a reconfiguration of the sidings associated with the Corrimal Colliery, including the installation of two dead-end sidings serving the coke loading wharves laid in a northerly direction. A further three dead-end sidings for wagon standing were installed to the west of the C1 coke battery. On the southern side of the yard, two other sidings left the main collier branch in an easterly direction passing over a steeply inclined embankment to the coal bins serving the crushers at the coke works. A conveyor system carried the coal through a tunnel beneath the branch to the coke works. A two-road engine shed at Unanderra was dismantled and taken to Corrimal for recreation on a site immediately west of the coke works standage sidings. On the southern side of the engine shed, was the weighbridge and its loop siding; a point at the western end of the latter send a short connection in a north-eastern direction to pass beneath the engine lifting gallows, also a dead-end spur to the workshops situated against the northern side of the engine shed.

In 1916 the southern portion of the Project Area was purchased by G. S Yulli and Company Ltd. The portion of land now encompassed the rest of Mr Andersons grant and part of portion 97 originally granted to William Underwood and also part of portion 96 originally granted to Joseph Underwood. The configuration of the land occupied by the Corrimal coke works doubled with this purchase and the modern boundaries of the Project Area are formed.

The C1 battery was extended to the north in 1930 adding ten more ovens. The battery which now contained 50 ovens were all of the 'Thomas' type 30 foot long, six foot seven and a half inches wide and six foot six inches high. The burning periods for the ovens were seventy-two and ninety-six hours with charges of 12 and 14 tonnes respectively. These ovens, which are still present at the site, had an arched roof and were rectangular in shape and doors at each end facilitate the discharge of the coke through the ovens. Each oven was connected to an underground flue system which enhanced coking efficiency.

In 1916 the Corrimal Coke Works apart from the Broken Hill Proprietary Steel Works and Hoskins Wongawilli Coke Works were the only coke works in NSW at which all the steam power required was obtained by burning the waste gases generated in the coke ovens under the boilers. Sufficient amounts of electricity were produced to provide for the coke works the Corrimal Colliery and the North Illawarra Municipality. On Friday 17 July 1925 the electricity generated by the Corrimal powerhouse powered 400 street lamps in the Northern Illawarra Municipality. At this time the maximum capacity of the coke works was 950 tonnes of coke per week. In 1932 the powerhouse was upgraded with a 1,000 KW turbo alternator unit and a steam boiler was installed. A 1948 aerial shows the configuration of the railway sidings, engine sheds and coke works during this period.

In 1947 four of the Illawarra municipal areas combined to form the city of Greater Wollongong. In 1948 the new City Council purchased the companies' electricity franchise for a fee of £30,000. Coal continued to be transported to the coke works along the private railway line which crossed the Princes Highway near the intersection of Tarrawanna Road and Cross Street. During this time a coke worker was employed to stop the traffic when a train loaded with coal destined for the coke works was due to cross the road.

By the late '50s construction began on a new oven battery (C2) with 32 ovens of similar type and size to C1 battery but with a larger capacity, during this time the old timber bunkers were replaced by steel hoppers. Each steel hopper stored 250 tonnes of pulverized coal from Corrimal-Balgownie Collier which fed the coke ovens.

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The coal was charged into the coke ovens by an electrically driven canister running on rails along the top of the battery. An electrically operated ram pushed the hot coke out of the ovens onto the hearth for quenching with water. Once the coke had cooled by hand-held hoses it was transferred to a scraper conveyor with rubber belt to take it to the screening and sizing plant. Two steel surge hoppers, each 40-tonne capacity were divided to hold the three sizes of metallurgical coke.

In 1960 the continuing growth of the plant demanded more power to supply it. A new 2,000 KM 6,600 V geared turbo-alternator set was installed in an enlarged powerhouse, together with new and more modern switchgear. In order to provide steam for the generating plant, two coal-fired fire-tube boilers were installed. By 1962 the second battery (C2) was completed and operational. The location of the C2 battery, revised layout of the powerhouse and configuration of the coke works can be clearly seen in a 1966 plan.

The coke works and colliery was purchased by Australian Iron and Steel as a package in 1964. The change in ownership also meant that coal would be delivered by road and so the rail line was discontinued. The powerhouse equipment was put up for sale in 1967 and in 1968 the boilers and stacks were removed. In 1969 the ownership of the coke works changed again when Bellambi Coal Company purchased the works and began sourcing the coal from its South Bulli Mine. During the 1970s the Bellambi Coal Company spent two million installing pollution reduction equipment. Smokeless charging plants were installed on each battery in 1977, the electrically operated cars running on rails laid on top of the oven batteries charged each oven with small coal through charge holes situated in the dome of each oven. The holes were then sealed with cast-iron removable lids. At the start of the cokeing cycle, the coal was quickly ignited by residual heat in the oven brickwork from the previous charge. The heat in the ovens was retained as they were never left empty for long.

The Bellambi Coal Company was taken over by Australian Coal and Coke Pty Ltd in 1980. From 1982 the works plant was upgraded and activities progressively automated. Another change in ownership occurred just four years later when in 1984 ICC purchased the works to add to its operation at Coalcliff. Kembla Coal and Coke with the combined tonnages from Coalcliff and Corrimal was the largest producer of foundry coke in Australia. Corrimal Colliery closed in 1985 and Corrimal Coke Works continued to be supplied by local mines. The C1 north brick stack was replaced with a metal one in 1985. In 1985 the Corrimal colliery closed, however coal for the coke works was still sourced from local mines.

ICC Holding Pty Ltd (a private company) purchased ICC in 1996 becoming the only independently owned producer of coke in Australia. The surrounding area had changed substantially since the coke works construction and this high number of homes and schools made environmental improvements to operations a top priority of the ICC. Enhancements in the design of a new flue and stack and additions of a baghouse on the charge car for clean air charging and a new quench tower canopy was evident at end of the 1990s. The most visible enhancements were the oven hoods, uptakes and ductwork to capture oven pushing emissions which were installed in 1999. In late 2013 it was announced that the Corrimal Coke Works was to close permanently by April 2014. The closure was attributed to the negative market conditions, with an excess of coke worldwide and substantially reduced demand the ICC as a small private company could no longer keep the business viable.⁶¹ At the time of its closure, the Corrimal Coke Works had provided the Illawarra with a continuous source of permanent employment for over 100 years and was the oldest coke-making facility to be in continuous operation in the world.

Industrial processes at the Corrimal Coke Works:

The Corrimal Coke Works represent a range of industrial processes which relied on certain technologies to be implemented. Coal was delivered to Corrimal Coke Works via rail from the Corrimal colliery directly into the coal bunker. The coal was then transferred via an underground conveyor, crushed and before being stored in the fine coal bin and discharged into the charge cars.

The Corrimal Coke Works consists of two batteries of rectangular beehive coke ovens. Rectangular beehive coke ovens were one of three types of coke oven utilised in New South Wales, the other two being the true beehive and by-product ovens. The rectangular ovens were a modification of the old Belgian type and were evolved primarily to compensate for unskilled labour and higher costs. As the name suggests these ovens were of a

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rectangular shape, whilst they were built to a variety of patterns the main difference to the other types of coke oven was the flue arrangement which meant that heat was applied to the charge and mechanical discharge of coke. The Corrimal coke ovens were fitted with side and bottom flues which allowed for a more general distribution of heat. This also enabled the waste gases to be used in the heating of steam boilers for power production. Corrimal was the first coke works in New South Wales designed to recover the waste heat leading the coke ovens to generate power.

In the 1970s the Corrimal Coke Works implements smokeless oven charging which consisted of charging of coke ovens with coal charge in which coal is poured into each chamber of the coke oven in two stages: firstly coal charge is loaded into the oven chamber through extreme holes and charging gases liberated during said operation are discharged simultaneously, the loaded coal charge is held within the oven, after which the latter is replenished to capacity with coal charge through central holes, charging of the oven which is next in terms of the charging schedule and replenishing of the preceding one being effected simultaneously.

Once the burning period within the oven was completed the coke (or charge) was transferred from the oven with the use of a ram car which discharges coke from the oven. The coke is then quenched immediately; this is a process where water is used to terminate the combustion as rapidly as possible. If quenching is undertaken then the coke continues to burn itself away with a resultant loss in the form of ash. Quenching was originally undertaken through spraying water on the coke by hand. In the 1930s mechanised quenching was implemented where the ram car discharged the coke into hot cars which transferred the coke to a quenching facility at the southern portion of the coke batteries. Following quenching, the coke is then transferred for storage and then removed from the facility for distribution.

Themes: **National theme**
3. Economy

State theme
Industry

Local theme
Making coke

Designer:

Builder: Corrimal Coal Company

Year started: 1911

Year completed: 1912

Circa: No

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Physical description: Description of structures on the site as of September 2019

Coal Bunker and Former Rail lines

The coal bunker bin is constructed in from timber rail sleepers with a corrugated iron roof. The present coal bunker is located on the site of an earlier rail siding depot which would have formed part of the c.1889 tramway which connected Corrimal colliery with the coke works and the main rail line. Coal would have arrived at the coal bunker before being transferred to the fine coal bins prior to loading into the charge cars. Coal and coke were transferred originally into and out of the coke works via a series of rail sidings and engine sheds (now the location of the maintenance building). Isolated sections of rail sidings were observed to the rear of the settling ponds and may be present beneath the present-day road surfaces and deposits.

Coal Bins and Screening Plant, cross over belt.

After coal arrived at the facility, it was loaded into the coal bins are situated either side of the two metal quench towers and are joined by a crossover belt which would have carried coal between the C1 and C2 batteries for distribution. The building adjoining C1 battery contained a coal grinding and screening plant where coal was ground into fine coal for storage in the bins.

Coke oven batteries

The coal once in the bins was distributed into charge cars which ran on rails above both of the two coke batteries, referred to as C1 (eastern battery) and C2 (western battery). An overview of the primary components of the modern configuration of the coke batteries is a composite of several phases of maintenance and upgrades that spans the life of the coke works. The majority of the ovens show evidence of deterioration caused by heat and impact associated with the ram and overhead charge cars in the form of slumping and damaged brickwork. The brick housings show evidence of replacement over time; however, the battery charge top remains in good repair. Oven crowns are visible within the cavity beneath the charge car track, a design allowing the free carriage of the car and periodic assessment of the crown brickwork.

The elimination of waste heat has also undergone periodic remodelling over the life of operations. Originally, shared square brick chimneys vented heat and combusted gases following circulation through the internal flues. Later the chimneys were replaced with a flue system that vented the waste heat via three metal combustion stacks (constructed c. 1985). Oven hoods, uptakes and ductwork which capture emissions constructed in 1999 are prominent features of the site. Below ground flues fed waste heat through pipes on the western side of each battery to a pair of metal stacks erected on the northern end of both C1 and C2 batteries with a further stack to the south of C2 battery.

Quench towers, car tracks, ram and coke feeder

Following being charged in the ovens the hot coke was transferred was pushed by a ram-car from one site into a hot car which then transferred the coke to the quench towers. The quench towers were fully mechanised and fed from water pumped from the dam constructed in the southern portion of the Project Area. Any excess water was piped to two settling ponds constructed to the north of the towers. A conveyor which would have carried coke from the quench car to the coke loader is located to the west of the coke batteries. During the 1930s hand quenching was replaced by a powered quench rail car and this process was aided by the introduction of an electrically-powered ram car which operated on tracks between C1 and C2. Only the tracks between the batteries and some components of the ram and coke feeder remain beneath the quenching towers. The tracks, which may date to 1975, remain in good condition.

Powerhouse

The powerhouse originally consisted of boilers which ran off the waste gas generated by the coke ovens. The power house consists of a heavily upgraded building which comprises brick and later corrugated iron additions. The original brick chimney dating to 1912 is present along with the western elevation of an earlier brick building which has been incorporated into the existing structures. The powerhouse was constructed c1912 when the coke works first started producing coke. By 1925 the powerhouse supplied the northern Illawarra districts and lit up

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over 400 street lamps. The powerhouse and machinery was enlarged in 1960 but then closed in 1968 and the boilers and chimney removed.

Coke loader and crossover belt

To the north of the C1 and C2 coke batteries is the coke loading terminal where quenched coke and transferred via the coal belt from the quenching facilities.

Office and Outbuildings

A series of modern brick and fibro office buildings all appearing to date from the 1960s are present on the western portion of the project area. These buildings appear to have functioned as administrative buildings and workshops. The main office was located in the northern portion of the site near the main entrance onto Railway Street. The maintenance building appears to be sited within the location of the engine sheds associated with the 1880s tramway.

Physical condition level: Poor

Physical condition:

Archaeological potential level: Not assessed

Archaeological potential Detail: Subject to Archaeological Assessment Report

Modification dates:

Recommended management:

Management: Management category

Management name

Further comments: Subject to Planning Proposal for Residential Development

Criteria a): [Historical significance] The Corrimal Coke Works was in operation from construction in 1912 until closure in 2014. It operated in close association with Corrimal Colliery, a significant coal mine in the local area. The Project Area contained the elements of the 1890 tramway which linked the colliery to the south coast rail line. This tramline formed a vital component in the supply and operation of the colliery and later coke works. The coke works are a visual reminder of the part that coke-making has played in the local coal and steel industries, which are highly important to the development of the Illawarra and historically significant industries at state and national levels. This significance must be measured against the unique continuation of the use and modification of the battery into the recent past. The Project Area satisfies this criterion at local and state levels. (Biosis, 2017)

Criteria b): [Historical association significance] The Corrimal Coke Works has a limited continued connection or special association with the life or works of a group of persons of importance in the cultural or natural history of NSW or the Illawarra. The Corrimal Coke Works employed approximately 50 workers which were slowly reduced as technological advancements were made towards the closure. The Project Area does not satisfy this criterion at a local or state level. (Biosis, 2017)

Criteria c): [Aesthetic/Technical significance] The Corrimal Coke Works is a landmark within the suburb of Corrimal, although the majority of the facility is not visible to the public. The stacks and chimneys associated with expelling excess heat from the coke ovens, the quenching process and the powerhouse are important landmarks within the Corrimal area which serve as reminders of the industrial history of the Illawarra and as identifying features of the area. With the exception of the brick powerhouse chimney (constructed in 1912) the remaining stacks were constructed between the 1960s and present and are therefore modern features. The powerhouse chimney and coke oven battery C1 represent good aesthetic value on a local level, however, the powerhouse chimney is the only publicly viewable structure. It is considered the powerhouse chimney and C1 coke oven battery satisfy this criterion at a local level. (Biosis, 2017; WCC, 2019)

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- Criteria d):** The Corrimal Coke Works played a key part in the establishment of the suburb of Corrimal and the economic health of the locality. Many families were for many generations dependent on the work provided by the coke works. The coke works are of social significance to those who built and worked the facility and their descendants. They are significant to historians and researchers of the social history of the Illawarra. The Project Area satisfies this criterion at a local level. (Biosis, 2017)
- [Social/Cultural significance]**
- Criteria e):** The Corrimal Coke Works were established at a time of advancement and modernisation in the design and construction of coke making when many oven batteries were developed in NSW. The facilities at Corrimal were at the forefront of this modernisation and this is evidenced by the continued productivity of the site over 100 years. Later modifications and enhancements form part of the research potential and the significance of the site is enhanced by the unique continuation of the use and modification of the battery into the recent past. The Project Area may contain archaeological remains associated with the c. 1889 tramway which connected the Corrimal Colliery to the south coast railway and the coke works. These archaeological remains have the potential to answer research questions pertaining to the construction, operation and decommissioning of the tramway which would contribute to the understanding of the development of Corrimal colliery and mining in the Illawarra. The Project Area satisfies this criterion at a local level. (Biosis, 2017)
- [Research significance]**
- Criteria f):** The Corrimal Coke Works are considered to be a rare piece of industrial history within the region and state. Almost all coke oven batteries in the Illawarra have been removed and their heritage value reduced to that presented by archaeological evidence. Intact historic coke ovens in NSW, and indeed in Australia, are very rare. Corrimal is one of the only existing remaining from the formative period of Australia's industrial history. However, this significance must be measured against the alterations which the site has experienced over time and the level of deterioration the site has experienced since its closure. In its present condition, the Project Area does not represent an intact, operational example of a coke works and many elements do not relate to the early configuration of the facility. Nevertheless, the Project Area does represent a unique continuation of the use and modification of the battery into the recent past. With the decommissioning of both the Corrimal and Coalcliff coke works only Australian iron & Steel Cokeworks at Port Kembla remains operational in NSW. As an industrial site type coke works are becoming uncommon, rare and endangered aspects of what was once a major component of the Illawarra's, NSW's and Australia's industrial past. The Project Area satisfies this criterion at local and state level. (Biosis, 2017)
- [Rarity]**
- Criteria g):** Whilst the Corrimal Coke Works are no longer intact, it is one of only two examples of its type in NSW and is therefore of high representative value. The ovens are important in demonstrating the principal characteristics of a now underrepresented industry of local and state significance. The Corrimal Coke Works battery satisfies this criterion at local and state level. (Biosis, 2017)
- [Representative]**

Intactness/Integrity:

References:	Author	Title	Year
	OHM Consultants	Strategic Management Plan for Historical Coal Mining Sites in	2006
	Biosis	Corrimal Cokeworks, Corrimal NSW Historical Heritage Asse	2017

Studies:	Author	Title	Number	Year
	Robert Irving	20th Century Architecture in Wollongong	42	2001

Parcels:	Parcel code	Lot number	Section number	Plan code	Plan number
	LOT	126		DP	598190
	LOT	5		DP	749492
	LOT	1		DP	795791

Latitude:

Longitude:

Location validity:

Spatial accuracy:

Map name:

Map scale:

AMG zone:

Easting:

Northing:

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Listing: Name

Title
Potential Heritage Item

Number

ListingDate

Data entry: Data first entered: 05/08/2015

Data updated: 15/10/2019

Status:

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Item name: Corrimal Coke Works

Location: Railway Street Corrimal 2518

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Image:



Caption: Corrimal Coke Works

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Image by: Wollongong City Council

Image date: 06/08/2015

Image number:

Image url: <http://www.environment.nsw.gov.au/maritimeheritageapp/resources/Heritage/shi/WebAP/P/3455e05279771d746dc80369324963ee8b1.JPG>

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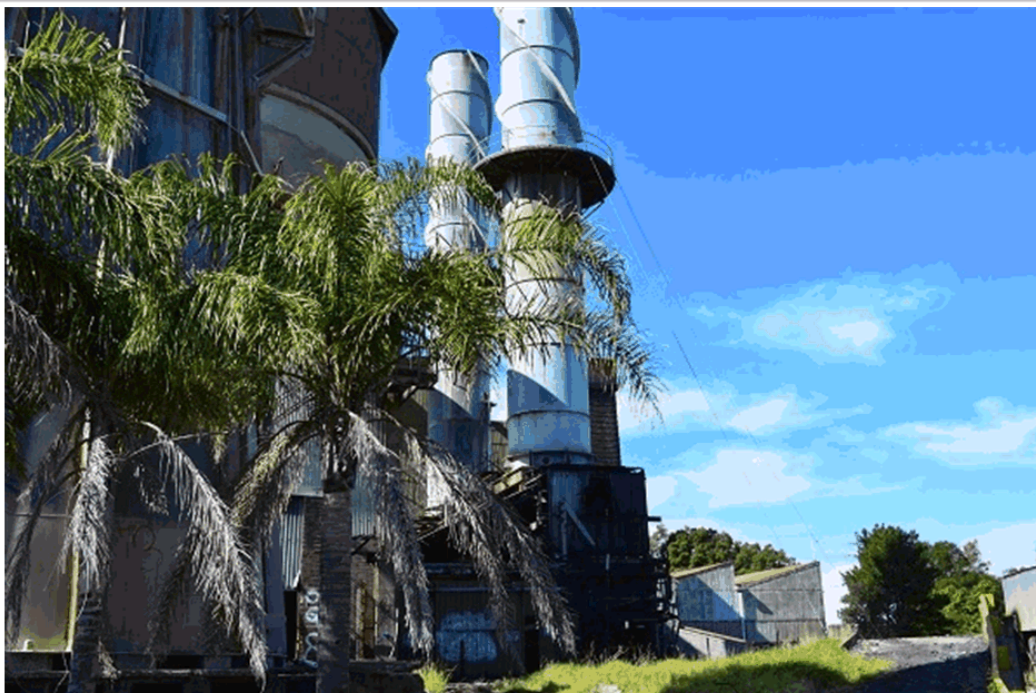
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Corrimal Coke Works – Condition of Screenhouse

