BURWOOD LGA – AUSGRID SUBSTATIONS (SECTION 170)

HERITAGE ASSESSMENT FOR LOCAL LISTING IN BURWOOD LEP 2012

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Introduction

This Heritage Assessment has been prepared to provide Council with an understanding of the heritage significance of seven (7) Ausgrid electrical substations located across the Burwood LGA and the necessary information to proceed with a Planning Proposal to list all 7 substations in Schedule 5 of the *Burwood Local Environmental Plan 2012* (Burwood LEP 2012) as a group heritage item.

All seven (7) of the substations are currently listed on the Ausgrid Section 170 (Heritage Act 1977) register. All State agencies are required to maintain a register of assets which hold heritage significance.

Section 170 of the *NSW Heritage Act, 1977*, requires that all State Agencies establish and keep a register entitled "Heritage and Conservation Register" (S170 Register). By inclusion on the S170 Register, it is best practice that there is an accompanying heritage inventory sheets which is usually available to the public on the relevant stage agency website or the Heritage NSW website.

Clause 22 of the *Heritage Regulation 2012* prescribes the following classes of items to be on a S170 Register:

(a) items that are listed as heritage items under an environmental planning instrument made under the Environmental Planning and Assessment Act 1979,

(b) items that are subject to an interim heritage order,

(c) items that are listed on the State Heritage Register,

(d) items identified by the government instrumentality concerned as having State heritage significance.

Ausgrid have undertaken a review of their S170 heritage and conservation register and have identified properties that do not fall under any of the classes from Clause 22 of the Heritage Regulation 2012 above.

On 22 December 2021, Council received correspondence from Ausgrid advising that they were intending on removing seven (7) electricity substations of varying ages and styles from their S.170 Register. The primary reason why these substations were to be removed was **not** because they do not have heritage significance, but rather because Council has not included the substations as items of local heritage significance in the Burwood LEP 2012.

Once the substations are removed from the S.170 Register, as they are not listed in Schedule 5 of the Burwood LEP 2012 or on the State Heritage register, there would be no heritage protection over these sites.

Council, at its meeting on 26 April 2022 considered a report on a comprehensive review of the Burwood LEP 2012. As part of this report, it was recommended that Council's Heritage Advisor undertake a review of the substations, and where appropriate make recommendations for heritage listing under Schedule 5 of Burwood LEP 2012.

In response to Ausgrid's correspondence, Council staff have undertaken a review of the potential heritage significance of these electricity substations and, based on the information available, found that all seven (7) of these fulfil the criteria for local heritage listing in Schedule 5 of the Burwood LEP 2012.

This report includes that assessment.

Scope

This report conducts a heritage significance assessment on the built heritage of the seven (7) Ausgrid electrical substations within the Burwood LGA. The scope does not extend to an Aboriginal or archaeological assessment.

Author

This report was prepared by Gavin Patton (Heritage Advisor, Burwood Council) and reviewed by Rita Vella (Manager City Planning).

Methodology

This review has been prepared in accordance with the heritage significance assessment guidelines published by Heritage NSW in 2001 and Investigated Heritage Significance (2021). It is also consistent with the relevant principles and guidelines of the Australian ICOMOs Charter for Places of Cultural Significance 2013 (the Burra Charter).

An independent external heritage consultant was not engaged for this assessment due to these sites having previously been recognised as holding heritage significance under the Section 170 Ausgrid Register.

Limitations

None of the sites internal areas were accessible for the purposes of a site inspection. The report does not include any Aboriginal or archaeological assessment.

This assessment has excluded two substations within the Burwood LGA (38 Russell Street, Strathfield (Lot 1 DP324188) & Belmore Street (Lot1 DP316438) as they were previously identified as not meeting the threshold for listing on the former Energy Australia Heritage and Conservation Register Review Project, conducted by FuturePast and Energy Australia in 2008

The Substations

The following descriptions and history notes have been extracted from the existing Inventory Sheets on the State Heritage Inventory (SHI).

Table 1 – Ausgrid Electrical Substations within Burwood LGA

Substation No and Address	Construction Date	Images
No.48 – Cheltenham Road. 1A Princes Street	c.1925	
Description: The Cheltenham Road substation is a single storey building set back from the street behind a contemporary low brick wall and entrance gate. It is constructed in the Interwar Art Deco style, with elements including a stepped roofline and front fence, parapets, asymmetrical façade with a vertical emphasis, and a relief brick Art Deco motif on the façade and entrance gate. A Modernist style cantilevered awning covers the plant entrance. The Cheltenham Road substation is constructed in face brick, with a cantilevered concrete awning over the main plant door. The main plant and personnel doors are of steel construction. **History:** The Cheltenham Road substation is a purpose designed and built distribution substation. Land for the building was compulsorily acquired in 1920. The Art Deco style of the substation coupled with its early asset number suggests this is likely to be a rebuilt substation which replaced an earlier style of substation (probably Stripped Classical or Mission style). The equipment in the present substation was commissioned in 1946.		

No. 241 – 12 Iceton Street	1928	

Description: The Iceton Street substation is a single storey building set back from the street behind a low brick wall. The tuck pointed face brick is contrasted with a cement rendered lintel, identification plaque and projecting cornice. There is a personnel door to the left and a blank window to the right of a central plant access door. Brickwork around the main door is bull-nosed. The style is Interwar Stripped Classical, features of which are a symmetrical façade and parapet roof. Decorative elements include corbelled brickwork below the architrave, and soldier courses above the door and window.

The Iceton Street substation is constructed in load-bearing face brick. The main plant door is a steel roller-shutter.

History: The Iceton Street substation is a purpose designed and built structure dating from 1928. A cement render plaque above the plant door reads "ELECTRICITY DEPARTMENT SUBSTATION No 241". This item is typical of the substations built by the Municipal Council of Sydney in the 1920s and 1930s during the rapid expansion fo the electricity network.

No. 250 – 32 Wallace Street	1927	

Description: The Wallace Street substation is a tuck-pointed brick building set back from the street behind a low brick wall. It is built in the Interwar Georgian Revival style with elements including a symmetrical façade, gabled parapet, arched facade gutter-openings and arched central window. Decorative elements include parapet dentils, a cement rendered cornice and pilasters at the main plant entrance. The plant entry doors are timber panelled. There are two fully louvered timber doors on either side of the main entrance.

The Wallace Street substation is constructed in face brick, with cement rendered pilasters, cornice, and parapet coping. The window opening arch is a triple course of brickwork.

The site retains its original timber door and fanlight, which are often lost on other substations in this style.

History: The Wallace Street substation is a purpose designed and built structure constructed in 1927. An identity plaque reads, "ELECTRICITY DEPARTMENT SUBSTATION No. 250". The substation is typical of those built by the Municipal Council of Sydney in the 1920s during the rapid roll-out of electricity to Sydney's suburbs.

No.294 – 25A Angel Road	1930	

Description: The Angel Road substation is a double height building set back from the street behind a low brick wall. It has a symmetrical façade designed in a mixture of the Interwar Georgian Revival and Mediterranean styles. The main feature of the façade is the central arched plant access doorway. Stylistic elements include a curved ceramic tile parapet with a corbelled brick cornice, and tuck-pointed brickwork. Decorative elements include two circular metal wall plaques and a metal name plate. There is a personnel door to the side of the arch.

The Angel Road substation is constructed in face brick with bull-nosed brick edging to the arch and the jams of the personnel entrance. The parapet is capped with ceramic tiles.

History: The Angel Road substation is a purpose designed and built structure completed 1930. A metal name plaque reads, "M.C. of S. ELECTRICITY DEPT. SUBSTATION No. 294". The substation is typical of those built by the Municipal Council of Sydney in the 1920s during the rapid roll-out of electricity to Sydney's suburbs.

No. 308 – 2B Cooper Street	c.1929	

Description: A single storey purpose built brick substation constructed circa 1929. The front façade has a large arched central doorway lined with bullnosed bricks. Double metal doors provide access and are designed to resemble panelled timber doors. An arched timber fanlight window is located above the doors. The structure is roofed with terracotta tiles.

History: A purpose built electricity substation constructed by the Municipal Council of Sydney circa 1929. It is typical of substations constructed by the MCS throughout suburban Sydney during the roll-out of electricity to the suburbs in the 1920s and 1930s.

No.313 – 4 Badminton Road	1930	

Description: The Badminton Road substation is a double height building set back from the street behind a low brick wall. It has a symmetrical façade designed in a mixture of the Interwar Georgian Revival and Mediterranean styles. The main feature of the façade is the central arched original entrance panelled door with top lights over. Stylistic elements include curved ceramic tile parapets with corbelled brick cornices, and tuck-pointed brickwork. Decorative elements include two circular metal wall plaques and a metal name plate. There is a personnel door to the left of the arch, and a blank window panel with straight-coursed bricks to the right.

The Badminton Road substation is constructed in face brick with bullnosed brick edging to the arch. The parapets are capped with ceramic tile. It retains the original entrance doors and top lights over.

History: The Badminton Road substation is a purpose designed and built structure completed 1930. A metal name plaque reads, "M.C. of S. ELECTRICITY DEPT. SUBSTATION No. 313". The substation is typical of those built by the Municipal Council of Sydney in the 1920s during the rapid roll-out of electricity to Sydney's suburbs.

No.319 – Liverpool Road. 5 Burwood Road	1930	

Description: The Liverpool Road substation is a double height building with a symmetrical façade and designed in a mixture of the Interwar Georgian Revival, and Mediterranean styles. Two large arched plant access doorways are located on the street façade. Stylistic elements include a colored ceramic tiled parapet with a corbelled brick cornice, and tuck-pointed brickwork.

The Liverpool Road substation is constructed in a dark face-brick. Elongated bull-nosed bricks form the two arched entrances. The parapet is capped with ceramic tiles.

History: The Liverpool Road substation is a purpose designed and built structure dating from 1930. A metal name plaque reads, "M.C. of S. ELECTRICITY DEPT. SUBSTATION No. 319". It is typical of the substations built throughout Sydney during the 1920s and 1930s by the Municipal Council of Sydney.

Historical Context

Pre-Contact

The following Pre-Contact history has been extracted from the Burwood Council website.

The story of Burwood commences with the original owners of our island nation – the Aboriginal people. Long before the convict history and early European settlers, Aboriginals lived in harmony with nature. Archaeological evidence suggests that Aboriginal people occupied the area in and around Sydney at least 11,000 years ago and they may well have been there much longer.

The Aboriginals in Sydney belonged to two tribes; the 'Kuringal' or 'Eora' tribe who were coastal dwellers, and the 'Dharug' tribe who lived further inland to the foothills of the Great Dividing Range. Within these two tribes were specific clans or extended family groups.

The Aboriginals who lived in our neighbourhood, were known as the Wangal people. The Aboriginal leader Bennelong was a member of the Wangal clan.

Although the Wangal travelled about to trade and search for food, their territory was the land on the southern bank of the Parramatta River. Their boundaries extended to the west of Iron Cove to as far as Homebush Bay, with a southern boundary along the watershed between Cooks River and Sydney Harbour

The British First Lieutenant William Bradley writes in his journal about seeing a number of Wangal people along the banks of the river around Mortlake in 1788. When his exploration party stopped for breakfast on the opposite bank, a group of seven Wangals came over in canoes to meet them. "They left their spears in the canoes and came to us" wrote Lieutenant Bradley. When the Europeans had left, the Wangal people used the Europeans' fire to cook mussels they had gathered from surrounding rocks.

European invasion forced the retreat of the Wangal into alien territory, depriving them both of their source of food and spiritual connection with their country.

Development of Burwood

The following historical information has been extracted from the Heritage Impact Statement for 15 Appian Way by John Oultram in September 2021 – with Burwood Council edits. All references are contained in the original document.

The land which now includes The Appian Way, is sited within that part of Sydney granted to William Faithful in 1808. Faithful (1774-1847) was a private in the New South Wales Corps who had arrived in the penal colony in 1792. When discharged in 1799 he became the estate manager for Captain Foveaux. The new road to Liverpool (the Hume Highway) was put through Faithful's grant in 1815. At that time the 200 acres to the north of the road was purchased by Alexander Riley, and the land to the south of the road was regranted to Simeon Lord.

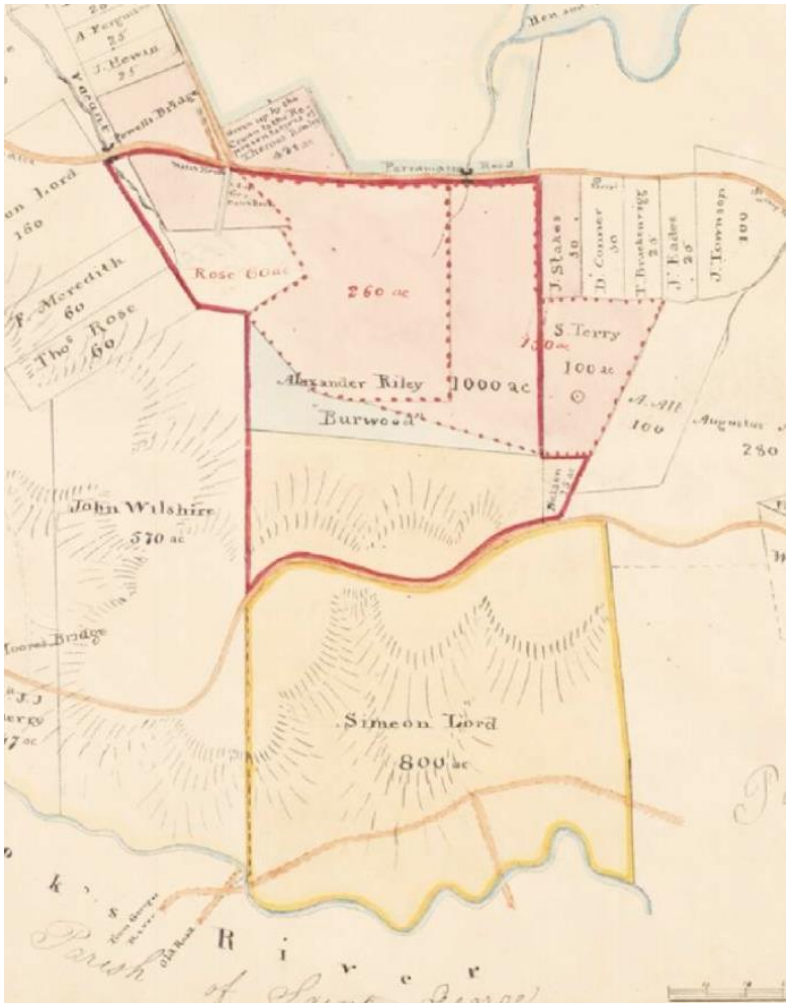

Figure 1 - This sketch survey was drawn in 1840 to show the various exchanges of land at Burwood. It recorded Faithfull's grant in yellow tint showing where Simeon Lord acquired the area south of Liverpool Road, and the area to its north now being Riley's Burwood. SLNSW

Riley (1778–1833) had arrived in Sydney in 1804 and was one of the first of the free settlers with capital to migrate to the colony. By 1809 he had settled on his grant beyond Liverpool named Raby and developed a pastoral industry there based on wool. Riley had purchased the late Captain Thomas Rowley' Burwood estate, then comprising 750 acres, in 1812. At Burwood, Riley erected around 1812 a bungalow near the Parramatta Road boundary of his estate. The bungalow (demolished in1937) and its timbered setting were depicted in the well-known painting by Joseph Lycett published in London in 1825. This vast estate with its extensive tree cover developed into something of a resort for Sydney's bushrangers in the mid-1820s, striking at travellers on the main roads to Liverpool and Parramatta and then retreating into the bush to evade capture.

Figure 2 - Joseph Lycett's painting of Riley's Burwood Villa, published in London in 1825. NLA

Following Riley's death in 1833, Rowley's children successfully claimed entitlement to the aforementioned 750 acres. That estate was divided then between Thomas Rowley (junior), John Rowley, John Lucas (the husband of Mary Rowley), and Henry Sparrow Briggs (the husband of Eliza Rowley), while the 200 acres formerly of Faithful's grant was shared equally between them.

Over the 1830s and 1840s small areas of Burwood were released for sale by the Rowley descendants. These sales were mainly along the arterial roads leading to Liverpool and Parramatta and the purchasers in many instances were involved in trade associated with the road, such as coaching inns and other licensed premises. The bulk of the Rowleys' Burwood was subdivided in 1854 with the release of the Burwood Estate and Cheltenham Estate.

These land releases were made in anticipation of the opening of the railway station at Burwood, which opened in September 1855 on the line between Sydney and Parramatta; with Burwood being one of four (Newtown, Ashfield, and Homebush) immediate stations at the time of the opening. Prior to the development of the suburban network of railways (and tramways) the population of Sydney was largely confined to the city and surrounding villages.

The population in the city rose markedly in the 1850s owing to the Gold Rush and migration; between 1851 and 1856 the population in the city wards increased by twenty per cent while the number of new houses completed over the same period was twelve per cent.[2]

The railway provided the means for people to live in suburbs and commute to the city to work.

The allotments in these Burwood land releases were large at between four to 10 acres and intended more for farmlets or subsistence farming. Re-subdivision of these blocks into suburban allotments commenced soon after: in 1858 in the area beside the railway station.[3]

One outcome of this closer settlement was the incorporation of the district as Burwood Council in 1874 after some five years of debate.

Around the railway station and along Burwood Road a commercial and civic nexus soon developed. Being private land releases no reserves were made for civic services and these developed where they could. The site for St Paul's Anglican Church for example was purchased by the parish in 1872. The local public school, opened in 1871 after a false start in 1858, was located some distance to the west. A local post office opened in 1861, Burwood Park was acquired in 1878, etc.

Electrical Systems in Sydney and Substation Development

The 2008 FuturePast Heritage Consulting P/L review of the Energy Australia S.170 register (FuturePast Report) includes a comprehensive and detailed account of the establishment and expansion of the electricity supply network in Sydney, Newcastle and beyond. The following overview of the history has been extracted directly from that report.

The history of electricity supply in Sydney and NSW generally is rooted in the actions of local government, either operating singly or coming together with other municipalities to create regional authorities known as 'county councils. The earliest efforts in electricity supply were those of individual councils such as Sydney and Newcastle seeking to supply street lighting and, later, private light and power, to their central areas. This was often in competition with gas, which was in general supplied by private companies which operated local monopolies. Demand quickly grew in all areas where electricity became available and the local enterprises progressively expanded to supply areas outside their initial administrative boundaries. This expansion and desire for cooperative enterprises across local government boundaries led to the creation of the 'county council' system.

The power to establish county councils came with the introduction of the Local Government Act 1919. While county councils could be formed to deal with a range of issues, including noxious weed management or town planning, the vast majority were for the provision of utility services. This was primarily electricity supply but in some cases included water supply and sewerage.

Larcombe, in his history of NSW local government, notes that the takeover of local council functions by county councils were sometimes controversial and resisted, although this seems to have been more an aspect of rural councils than urban councils. Some councils chose to provide electricity services on their own, such as Redfern Municipal Council and Bankstown Municipal Council. These smaller entities were however progressively purchased by or amalgamated with larger authorities, as happened with less populous county councils from the mid-20th century. These amalgamations of smaller electricity authorities were mainly to do with efficiency and economics, with larger systems able to both better manage load and have access to better bulk supply rates for power. Similarly, private commercial electricity enterprises were progressively acquired by government. By the 1990s, the county council system was all but defunct and the remaining larger county councils concerned with electricity supply were transformed into corporatised utility enterprises.

At the same time, competition was introduced into electricity supply and private electricity enterprises re-entered the Sydney region.

Administratively, EnergyAustralia developed out of the following principal entities:

- Municipal Council of Sydney / Sydney County Council
- Balmain Electric Light and Power Supply Corporation Ltd
- St George County Council
- Mackellar County Council
- Brisbane Waters County Council
- Shortland County Council / Orion Energy

Electricity was originally supplied in the central Sydney area by the Municipal Council of Sydney (MCS). While limited one-off electrical installations had been used for special events or to supply power to individual sites in the city in the 19th century, it was not until 1904 that the MCS began producing and distributing electric light and power. The first power station was built at Pyrmont and commenced operation in 1904. That power station was decommissioned in 1961 and is now the site of the Powerhouse Museum.

This supply was supplemented with power purchased from the Railway Commissioners power station at White Bay and later with a second Council-operated power station at Bunnerong.

The MCS supplied electricity to retail customers around the inner city, Inner West (including Burwood) and Lower North Shore and provided bulk power to outer western and northern suburbs such as Penrith, Hornsby and Manly. As was typical for early electricity providers, the MCS was a vertically integrated business, responsible for all aspects of the electricity network, including generation, transmission, distribution and retailing of electricity. In addition, the MCS and, subsequently, the Sydney County Council, were retailers of household electrical appliances.

The MCS initially competed against a number of private electric supply companies, most of which were acquired by 1914. These included the Empire Electric Light Company, the Strand Electric Light Company, the Imperial Arcade Electric Light Company and the Oxford St Electric Light Company, the Redfern Electric Light Company and the Palace Electric Light Company.

These were mainly small-scale private operations supplying power principally to commercial and industrial customers.

In all cases, the MCS acquired the customers and the goodwill only; the assets were disposed of by the companies, which were contractually obligated to not allow the assets to be reused for electricity supply purposes within the MCS's area of operations. The sole surviving asset from this period of private power generation appears to be the former Redfern Municipal Power Station, which has been converted into office space and is in private hands.

The exception to these acquisitions was the private Electric Light and Power Supply Corporation (ELPSC), which was based in Balmain, operated the Balmain Power Station and supplied electricity to some inner city Sydney suburbs.

The MCS Electricity Department was recast as the Sydney County Council (SCC) in 1935, with broad responsibility for electricity supply across the Sydney region. There was a rapid expansion in the electricity distribution network throughout this period, with 40-50 substations constructed annually.

The substations tended to be of the prevailing architectural style of the day and many examples built during a given period are practically identical in both interior and exterior design. Smaller regional providers, such as the Bankstown Municipal Council electricity undertaking and the Sutherland Shire Council undertaking were progressively taken over by the SCC following a major review of the electricity supply systems in the greater Sydney area.

The St George, Mackellar and Brisbane Water County Councils were amalgamated under the SCC banner in 1980. The scale of the SCC operation consistently made it the largest local authority in Australia throughout the second half of the 20th century.

In 1991 the SCC was reconstituted as a statutory authority and became Sydney Electricity. Sydney Electricity was ultimately merged with the Hunter regional electricity authority Orion Energy (previously known as Shortland Electricity) and corporatised to become EnergyAustralia in 1996.

In March 2011, TRUenergy acquired the EnergyAustralia retail customer base and the electricity network business formerly known as EnergyAustralia was renamed Ausgrid.

Substation Context

Electricity distribution substations were generally built as modest 1 or 2 storey buildings, with Zone Substations considerably larger in scale. These were often supplemented with pole or outdoor substations. Pole substations consist of one or more transformers mounted on one or more electricity poles. In urban areas, these type of substations were often used as temporary measures during periods of rapid expansion of the distribution network. In rural areas the pole substation was generally the norm. Some continue in use to the present day though generally enclosed metal kiosk substations are preferred, particularly as they tend to be less visually intrusive and are easier to maintain. Outdoor substations are generally open air compounds of transformers and other electrical switching equipment contained in a fenced or brick-walled compound, generally unroofed. These are also still in use, but tend to be located within industrial areas.

Early on, MCS substations were constructed mainly by the City Building Constructor, using day labour, but many substations were tendered out to private construction firms. The details as to who constructed the substations for the other electricity authorities dealt with in this report are not recorded, but it likely involved a combination of construction by private contractors and employees of the undertakings. Substations for large industrial sites were often built by the industrial enterprise on its own land, then leased back to the electricity provider at a nominal rent for 20 or more years. Most substations were built of brick, although occasionally corrugated metal was used. It is not uncommon to find brick distribution substations within commercial and residential areas throughout Sydney and Newcastle.

In the early 1930s, there was an extensive program of reroofing many Sydney area substations which had been built with timber roofs, due to fire risk. While the new roofing material is not specified, it is likely this included new metal roof trusses and corrugated metal or asbestos roof sheeting. Similarly, doors and windows in substations were regularly modified; this continues to the present day. Modifications often included replacing timber windows with vents to improve internal ventilation, blocking of windows with masonry to

address noise issues and the addition of security screens. Windows were also blocked up where there was a potential danger to the public from a blast, in the event of a transformer explosion. Timber doors were often replaced with metal doors or roller doors, for security and access reasons. The situation differed somewhat in the Hunter Valley, where electricity arrived in some areas much later than Sydney. In many cases, the early infrastructure was housed in corrugated metal sheds or were pole transformers, which were progressively upgraded and replaced with brick buildings in the mid-20th century. Due to the ephemeral nature of the construction materials used in the Hunter region, no examples of the earliest types of substations survive. The replacement of substation building components continues into the present, with an active program of replacing asbestos roofs (with corrugated metal), installing fire rated doors and improving ventilation.

The style and nature of substation construction became progressively more standardised as the electricity network expanded. While the earliest substations tended to be large, well ornamented public buildings, as they became more commonplace, substations became smaller and simpler. This reflected several things, including the need for cost-effective construction methods, the reduction in size of electrical equipment and the speed with which substations needed to be constructed to keep pace with demand. While early substations were often purpose-designed and built for a specific location, by the late 1920s the trend was for standardised designs built to a similar size and generally designed to fit on a standard suburban subdivision block, typically 100-200 m^2 . Designs did keep pace with architectural trends and it is possible to identify a number of different and distinct architectural styles of substations. One-off designed substations did continue to be built well into the mid-20th century thought these tended to be restricted to what the SCC referred to as “high class” suburbs in Sydney’s east. The number of substations constructed in the Sydney region exploded from the late 1920s, with dozens of substations being constructed in any one year to cope with expanding demand. This means that, while in the early years of network construction many substations had unique characteristics and were sited in response to a particular need, from the late 1920s standardised designs were generally used and expansion was based on a need to establish and expand the electricity grid rather than in response to localised or site-specific issues. In a heritage management sense, this means that in many instances substations are essentially identical within their temporal and stylistic groupings.

By the 1950s the trend towards architecturally designed and detailed substations was exhausted. From that point on, the freestanding metal kiosk-style substation was progressively introduced, while buildings, where they were constructed, tended towards strictly functional unadorned brick enclosures. Substation design was also influenced by the general changes in Australian building construction in the mid-20th century. The trend towards larger steel and concrete buildings saw “chamber”–style substations incorporated directly within new buildings. In such circumstances the electricity provider had little or no input into the architectural style of the substation chamber, merely supplying technical requirements which influenced the location and size of the substation within the new building. This trend also saw smaller older-style substations demolished in some areas and replaced with new chamber substations incorporated into a new development. This style of construction is commonplace today, particularly in high density urban areas.

Energy Australia’s older substations range from very finely detailed to very plain and functional. The early government-run electrical authorities were aware of the need to make substations in residential areas attractive and in keeping with the surroundings, and an architect joined the substation design area of Sydney County Council in 1936. By contrast, the modern trend is to make substations essentially invisible, through incorporating them into

larger buildings, placing them wholly underground or within anonymous small steel boxes which tend to be ignored in urban environments.

The exception to this continues to be the zone substations and high voltage switchyards, which continue to require large buildings or areas of land to house equipment. Historically, better quality buildings tended to be reserved for what the MCS referred to as “high class” suburbs (e.g. Woollahra and Mosman) while middle- and working-class suburbs generally received much simpler, functional buildings. Designs tended to be reused, sometimes with only minimal variation. There are also marked stylistic differences between substations constructed by government as opposed to those constructed by the ELPSC throughout the first half of the 20th century. The ELPSC substations tend to be functionalist brick boxes with only the slightest degree of architectural detailing or ornamentation, whereas the substations constructed by municipalities, while often reusing the same underlying design with minor variation, tend to be more finely detailed and in many instances are designed to match the architecture of the surrounding area. This may reflect the different nature of the competing priorities of a private as opposed to a government enterprise.

Existing Heritage Context

This assessment has excluded two substations within the Burwood LGA (38 Russell Street, Strathfield & Belmore Road Nr Burwood Road) as they were previously identified as not meeting the threshold for listing on the former Energy Australia Heritage and Conservation Register Review Project, conducted by FuturePast and Energy Australia in 2008

At present, seven of the substations are listed as items of local significance on the Ausgrid Section 170 Heritage Register.

Two substations are located within existing Heritage Conservation Areas:

- 32 Wallace Street – *Wallace and Brady HCA (C20 BLEP 2012)*
- 4 Badminton Road – *Badminton Road to Culdees Road HCA (C2 BLEP 2012)*

Section 170 of the NSW Heritage Act 1977 requires that all State Agencies establish and keep a register entitled “Heritage and conservation Register” (S.170 Register). By inclusion on the S.170 Register it is best practice that there is an accompanying heritage inventory sheet which is usually available to the public on the relevant State agency website or the Heritage NSW website.

Clause 22 of the Heritage Regulation 2012 prescribes the following classes of items are to be included on a S.170 Register:

a) Items that are listed as heritage items under an environmental planning instrument made under the Environmental Planning and Assessment Act 1979,
b) Items that are subject to an interim heritage order,
c) Items that are listed on the State Heritage Register,
d) Items identified by the government instrumentality concerned as having State heritage significance.

As the substations do not meet points a to c and do NOT have ‘State’ heritage significance, Ausgrid is obliged to remove them from the Section 170 Register.

This would mean that most of the substations would have no heritage protection or acknowledgement.

It is noted that many Councils across NSW have acted in the past 12 months to include their substations on their LEP.

Heritage Assessment – Grouped Item

Table 2 – Grouped Item Heritage Assessment

NSW Heritage Criteria	Assessment
Historical ▪ important in the course, or pattern, of Burwood's cultural or natural history	The seven electricity substation buildings which have been included in this assessment are historically significant as examples of the critical electricity infrastructure built by the Municipal Council of Sydney/Sydney County Council during the rapid expansion of the suburban electricity network into the Burwood LGA in the 1920s and 1930s. The substations therefore meet the threshold for Historical Significance.
Associative • has strong or special association with the life or works of a person, or group of persons, of importance in Burwood's cultural or natural history	This assessment has not uncovered any evidence to suggest that the substations are connected to or have strong links with groups or people of importance in relation to Burwood LGA. The substations **would not** meet the threshold for listing under this criterion.
Aesthetic or Technical • important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in Burwood	All seven substations included in this assessment have a high degree of intactness in their structure and mostly their setting. Five of the seven substations are similarly designed in a mixture of the Interwar Georgian Revival and Mediterranean styles. The other substations (Cheltenham Road) is in the Art Deco design, while Iceton Street is in Stripped Classical design. The substations provide a different architectural style in their locations, mostly nestled within bungalow or other Federation dwellings The substations meet the threshold for aesthetic significance.
Social ▪ strong or special association with a particular community or cultural group in Burwood (social, cultural or spiritual reasons)	The grouped substations are not associated with any particular community or social group within the Burwood LGA. Therefore the substations **do not** meet the threshold for Social significance.
Research Potential • potential to yield information that will contribute to an understanding of Burwood's cultural or natural history	The likelihood of the substation sites giving rise to any unexpected findings or additional research information not readily available elsewhere is low. The substations **do not** meet the threshold for Research Potential.
Rarity	

NSW Heritage Criteria	Assessment
▪ possesses uncommon, rare or endangered aspects of Burwood's cultural or natural history	Of the seven substations, only two, Cheltenham Road (designed in Art Deco Style) and Iceton Street (designed in Stripped Classical), meet this criterion.
Representative ▪ important in demonstrating the principal characteristics of a class of Burwood's cultural or natural places, or cultural or natural environments	All seven substations are representative examples of the electricity infrastructure constructed as part of the very fast expansion of delivering electricity to residents of Burwood in the 1920s and 1930s. Therefore, the substations are considered to have met the threshold for representative significance.

Statement of Significance

The electrical substations included in this assessment all demonstrate historical, aesthetic and representative heritage significance.

They meet historical significance due to their ability to demonstrate the fast growing demand for electricity in the Sydney and wider regions during the first half of the 20th Century. They demonstrate how local distribution of electricity was organised at that time and the similarity in design of a new building typology across Burwood and the broader Sydney area.

They meet aesthetic significance due to their unique design as a building typology – infrastructure nestled within residential dwellings. The substations in Burwood LGA (which form part of this report) are all generally intact. The majority (5) are designed in the Interwar Georgian Revival with Mediterranean influences. These present attractive one storey and double height small buildings, with fanlights, arches and Spanish profile terracotta roof tiles.

Two substations, Cheltenham Road (Art Deco) and Iceton Street (Stripped Classical) also meet the Rarity criterion as being the only substations built in their respective styles in the Burwood LGA.

Finally, the seven substations all meet the threshold as Representative examples of the electricity substation typology of the first half of the 20th Century, in design and location.

Summary Significance Matrix

Substation No. & Address	Historical	Associative	Aesthetic or Technical	Social	Research Potential	Rarity	Representative
No.48 – Cheltenham Road. 1A Princes Street	✓	✗	✓	✗	✗	✓	✓
No. 241 – 12 Iceton Street	✓	✗	✓	✗	✗	✓	✓
No. 250 – 32 Wallace Street	✓	✗	✓	✗	✗	✗	✓
No.294 – 25A Angel Road	✓	✗	✓	✗	✗	✗	✓
No. 308 – 2B Cooper Street	✓	✗	✓	✗	✗	✗	✓
No.313 – 4 Badminton Road	✓	✗	✓	✗	✗	✗	✓
No.319 – Liverpool Road. 5 Burwood Road	✓	✗	✓	✗	✗	✗	✓

Conclusion and Recommendations

This assessment has determined that all seven substations which have been included in this review meet the threshold for *at least* three of the NSW Heritage Council's heritage significance criteria. Given the substations are all one building typology, it is prudent that Council lists these as a group listing (rather than individual listings).

It is recommended that the following substations be included in Schedule 5 of the *Burwood Local Environmental Plan 2012* as a grouped heritage item. The Inventory Sheet will include descriptions of each substation (as included above) and identify that the heritage curtilage applies to each allotment.

- *Substation No.48* – Cheltenham Road/1A Princes Street, Burwood. DP449839 Lot 1
- *Substation No. 241* – 12 Iceton Street, Burwood. DP607950 Lot 13
- *Substation No. 250* – 32 Wallace Street, Croydon. DP319038 Lot 1
- *Substation No.294* – 25A Angel Road, Strathfield. DP325573 Lot 1
- *Substation No. 308* – 2B Cooper Street, Strathfield. DP324150 Lot 1
- *Substation No.313* – 4 Badminton Road, Croydon. DP324990 Lot 1
- *Substation No.319* – Liverpool Road/5 Burwood Road, Enfield. DP574784 Lot 1