

Register of Significant Twentieth Century Architecture

RSTCA No: R017

Name of Place: Canberra City Garbage Incinerator

Other/Former Names:

Address/Location: Westbourne Woods, Bentham Street Yarralumla ACT 2600

Block 2 Section 119 of Yarralumla

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| Listing Status: | Registered | Other Heritage Listings: | RNE, National Trust |
| Date of Listing: | 1984 | Level of Significance: | Territory |
| Citation Revision No: | 3 | Category: | Industrial |
| Citation Revision Date: | September 2004 | Style: | Inter-War Functionalist |

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|----------------------|--------|----------------------|--------------------------|
| Date of Design: | 1938 | Designer: | EM Nicholls |
| Construction Period: | 1939 | Client/Owner/Lessee: | Royal Canberra Golf Club |
| Date of Additions: | c1970s | Builder: | W Simmie & Co |

Statement of Significance

The incinerator is of exceptional interest as one of the distinctive industrial buildings designed in the 1930s for the Reverberatory Incinerator and Engineering Company, particularly those by Eric Nicholls. Nicholls was a first-rate architect who learned directly from Walter and Marion Griffin and contributed much to the design of buildings for which Griffin is known.

The incinerator is of architectural significance as a good example of the Inter-War Functionalist style, which displays key indicators of the style - asymmetrical massing, simple geometric shapes, roof concealed by a parapet, and a radical, progressive image. It is the best Canberra example of an industrial building in that style. Because of its architectural significance, and as an unusual industrial building, the incinerator is a valuable educational resource for designers.

Description

The concept of the Canberra City Garbage Incinerator at Yarralumla, designed by Eric Milton Nicholls and completed in 1939, is of an elegantly-patterned light-toned brick cube with 10 metre sides. A freestanding brick chimney stack 18 metres high rises beside it, linked by an open verandah with a flat concrete roof on brick piers. Projections and recesses at the sides break the wall surfaces into vertically-proportioned panels, with elaborate decorative geometric patterning above the two side doorways. 1 Part of the building was the sewerage dump pan delivery Room. The design of the c1925 brick sewer vent immediately adjacent to the incinerator may have influenced Nicholls to design the proportions of the brick walls of the incinerator the way he did. The vent has a square shaft 6 m high with a projecting vertically-proportioned panel on each of the four face brick walls and another panel on each face of the plinth. 5

The building is a reinforced concrete and load-bearing brick-walled structure. There is a terracotta-tiled timber-framed pyramid-shaped roof over the main block, concealed by parapets. A straight ramp leads to the delivery floor level from which the garbage was emptied over a tipping baulk into a hopper. The four steel hinged lids of the hopper were winched open by pulleys attached to a transverse steel truss. At the lower trimmers floor level the garbage was directed through a double shute into the furnace. From the incinerator furnace (later demolished) below the hopper the residue was emptied down to a residue chamber then into a quenching chamber, both under the furnace room floor. Space was allowed in the furnace room for a second reverberatory incinerator

unit, but it was not installed. The ash was taken out of the quenching chamber through steel doors and spread in the surrounding grounds. The incineration procedure was so efficient it left only 10 per cent residue. 2 A wire mesh enclosure has been erected on the centre of the verandah but this is probably original, as it houses a very old boiler.

The former sewerage dump pan delivery room is located under the concrete slab of the ramp. A circular pit into which pans were tipped emptied sewerage through a detritus chamber into the sewer completed about fifteen years before the incinerator was erected. There is a yard on the south-east side of the room, enclosed by wire mesh over a brick wall with gates. Foul air from the room was fan-extracted through a duct which begins in the north-east wall of the incinerator. Air from the garbage hopper was extracted by the same fan through another duct on the inside face of the hopper.

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Condition and Integrity

The incinerator building, now within the Royal Canberra Golf Course in the Westbourne Woods arboretum, is used as a storage facility for the club's greenkeeper. Measured drawings in 1987 revealed the reverberatory incinerator unit had been removed, but probably at the same time brick walls and a roller shutter had been added at the north-west end of the verandah. The north-west wall of the former pan delivery room has been demolished. A sheeted stud wall over a wide roller-shuttered doorway and a hinged door have been added under the edge of the concrete slab on the north-west side of the pan delivery room.4 An inspection in 2003 revealed the chambers under the back firing floor had been filled with rubble and the floor openings concreted over. Although the structural condition of the building was poor and the roof rafters had decayed, some recent repairs to downpipes were evident.

Background/History

The site for the Canberra City Garbage Incinerator was chosen in the late 1930s just within Canberra's then western boundary beside the Outfall Sewer completed in 1924 to take Canberra's sewerage to be treated at Weston Creek. Canberra's designer, Walter Burley Griffin, who had put forward a sewerage scheme using septic tanks rather than the main outfall sewer, declined an invitation in 1920 to become a member of the Federal Capital Advisory Committee and so had no further association with the city.

Griffin and his wife Marion Mahony Griffin had an office in Melbourne, and Marion later wrote about Eric Milton Nicholls, at the beginning of his nineteenth year in 1921: "As a blond youth just out of Manual Training School he dropped into the office looking for a jobI thought he could be useful to Mr GriffinHe was. Nicholls was an exquisite draftsman." As well as attending evening classes at Melbourne and Swinburne Technical Colleges and the National Art Gallery, Nicholls had completed his four-year Articles to Haddon & Henderson Architects and Engineers. Walter Burley Griffin was about twenty-five years Nicholls' senior and could well have represented for the younger man a father image (especially as Nicholls' father had died two years earlier). 5

The acceptance by Nicholls of his nine-year associateship (which led to partnership) in the Griffins' practice in 1923 marked the beginning of his professional life as an architect. From 1921 to 1925 the Griffins brought to realization a dream first envisioned on their arrival in Sydney: Castlegrag. So involved were the Griffins with their new venture that they settled permanently in Castlegrag in 1925 on Walter's return from America. All three architects had made various trips between Melbourne and Sydney in these years, but after 1925 Eric Nicholls now had the major responsibility for the Melbourne office and was left very much to his own devices. During the nine years of his Associateship, Nicholls worked on the Capitol Theatre, Langi Flats, a factory, four residences and was site architect for Leonard House, an office building for Nissan Leonard-Kanevsky. 5

The Langi Flats (1925), the Williams house (1927), both at Toorak, and the Barracchi house project (1927) at Fairfield, although usually attributed to Griffin, were undertaken by Nicholls for the partnership. While still in his twenties, Nicholls had developed an assurance which made his house designs barely distinguishable from Griffin's. Griffin's preoccupation with Castlecrag made the partnership relationship somewhat tenuous and Nicholls carried out most of his work independently. The Methodist Sunday School at Kew (and its furniture), the remodelling of Lucas' house, and a number of other houses in Melbourne were entirely his own work although often mistakenly ascribed to Griffin. 6

An effective working relationship between the partners was restored in 1929 when Nisson Leonard-Kanevsky established the Reverberatory Incinerator and Engineering Company (RIECo) and sought designs for housing his municipal incinerators in aesthetically acceptable buildings. The incinerator commissions were the main reasons for the restoration of the working partnership and made possible, according to Eric Nicholls, the survival of the practice during the lean years of the Depression. The Reverberatory Refuse Incinerator was a 1925 Australian patent by the engineer J. Boadle which achieved a much higher efficiency than its imported competitors by preheating and partly drying the refuse while it moved down a sloping, vibrating grate in the combustion chamber which itself was designed to reflect ('reverberate') heat on to the incoming refuse. The gravitation of the raw refuse from storage hoppers down to the combustion chamber, the ash pit, and the ash delivery hoppers required truck access on at least two levels, presenting problems of siting and the design of site works, at which Griffin was most adept. 6

Between 1931 and 1932 Marion Mahony Griffin was back in America, and Nicholls and his wife moved to Castlecrag. The Griffin-Nicholls partnership was responsible for a succession of municipal incinerators: Essendon, Victoria, and Pymble, New South Wales (both 1930); Waratah, New South Wales (1931); Randwick and Glebe, New South Wales (1933); Willoughby, New South Wales (1934); Thebarton, South Australia (1935); Brunswick, Victoria; Ipswich, Queensland; Leichhardt and Pymont, New South Wales; and Hindmarsh, South Australia (all 1936). After Griffin's departure for India in 1935, Nicholls carried on alone with the design of incinerators at Hindmarsh and, after Griffin's death, at Canberra, in 1938. The retention of Griffin's name in the partnership after his death led to the irony of his name appearing on the plans for the Canberra incinerator, the only building in the national capital with which his name is associated. The designs for the incinerators vary widely and there is no doubt that Nicholls contributed to the conception of most. 6

When Griffin had died in 1937, the mantle of RIECo architect merely passed on to Eric Nicholls. The incinerator at Canberra was one of the first to be designed by Nicholls in his new capacity, and he produced a design that was dramatically different from any of the earlier examples. When Griffin designed an incinerator, he sought to express the diagonal flow of the reverberatory process, albeit in a variety of ways. At Canberra, however, Nicholls altered the direction of the furnace hoppers so they sloped inwards rather than outwards. In this way, the incineration machinery could be neatly contained within a single rectilinear volume - perhaps an indication that the young architect was being swayed by the influence of the International style. 6

Nicholls was evidently pleased with his reinterpretation of the incinerator type, and he repeated the form in subsequent RIECo commissions. Over the next few years he provided designs for incinerators in four States. While none of them was ever built, surviving drawings indicate that they were clearly variations on the theme of the modernist brick cube that Nicholls had developed at Canberra. 5

Eric Nicholls practised under the Griffin-Nicholls name, with Marion's permission, for a few more years after Griffin's death in 1937, then under his own name until 1958, when he brought in his son and last partner, practising as Nicholls Elliot and Nicholls. The Griffins' main concerns for, and the spiritual impulse of, the Castlecrag community were carried forward by Eric Nicholls. In 1948 he became general secretary of the Anthroposophical Society in Australia (which Marion had joined in 1930, Walter a year later and Nicholls and his wife joined in 1934) and undertook and achieved a pioneering role in establishing the first Rudolf Steiner School in Australia, which now has campuses at Middlecove and Castlecrag. Anthroposophy was the major and lasting aspect of the Griffins' partnership that affected the Nicholls throughout their lives. 5

In the late 1930s, the Department of the Interior at Canberra realised the young city's population was increasing to the point where the dumping of garbage was no longer a satisfactory practice. At

that time, mechanical incineration was still a popular alternative, and the Department called tenders for a plant in May 1938. A site selected for the incinerator was within Westbourne Woods, an arboretum established by Thomas Weston between 1913 and the 1920s just within Canberra's western boundary as a 'proving ground' for trees being considered for planting in the city. 2 REICo offered two tenders, each with the additional option of construction in either face brick or common brick. In September that year, REICo were informed that they had been successful; the contract was signed the following month, and construction began soon after. One incinerator unit was installed in the north-west side of the furnace room, and space was allowed on the south-east side for a second unit. The incinerator equipment was given a three-day test in April 1939, although the building itself was not completed until June. 5

A Sewerage Dump Pan Delivery Room was included on the north-east side of the building, allowing night soil pans to be delivered and emptied through a detritus chamber into the sewer. The room was located at the level of the firing floor under the concrete slab of the delivery ramp. 8

The incinerator operated successfully for a decade, and as late as 1948 the Department of the Interior was even considering the installation of a second furnace unit. It was later decided, however, that this would not be economically feasible. Within a few years the incinerator was being used only for the disposal of government classified waste, while the bulk of the city's garbage was being taken elsewhere. 5 In 1959 the incinerator was decommissioned. 11

In the early 1960s, it was proposed to dam the Molonglo River to create the lake that Griffin had envisioned some fifty years earlier. This huge project would submerge much of the low-lying land around the river, which at that time included the grounds of the Royal Canberra Golf Club. The golf course had to be relocated, which was done by simply moving it further south so that it occupied the government-owned land around Westbourne Woods. The building - by then completely abandoned - was left intact, although the incinerator unit had been removed, as the new golf course was laid out around it. 5 The golf club purchased the incinerator building for £100 as the government was considering demolishing it. 11 Located beside the 10th fairway, the building became used as a storeroom for the club's maintenance equipment.

Analysis against the Criteria specified in Schedule 2 of the Land (Planning and Environment) Act 1991

(i) a place which demonstrates a high degree of technical and/or creative achievement, by showing qualities of innovation or departure or representing a new achievement of its time

(ii) a place which exhibits outstanding design or aesthetic qualities valued by the community or a cultural group

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(iii) a place which demonstrates a distinctive way of life, taste, tradition, religion, land use, custom, process, design or function which is no longer practised, is in danger or being lost, or is of exceptional interest

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(iv) a place which is highly valued by the community or a cultural group for reasons of strong or special religious, spiritual, cultural, educational or social associations

(v) a place which is the only known or only comparatively intact example of its type

(vi) a place which is a notable example of a class of natural or cultural places or landscapes and which demonstrates the principal characteristics of that class

(vii) a place which has strong or special associations with person, group, event, development or cultural phase which played a significant part in local or national history

(xi) a place which demonstrates a likelihood of providing information which will contribute significantly to a wider understanding of natural or cultural history, by virtue of its use as a research site, teaching site, type locality or benchmark site

Because of its architectural significance, and as an unusual industrial building, the incinerator is a valuable educational resource for designers.

References

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2. T. Aslanides and J. Stewart, *Canberra and the Australian Capital Territory, A Heritage Field Guide*, Kangaroo Press, 1988, p 133.
3. Richard Apperly, Robert Irving, Peter Reynolds, *Identifying Australian Architecture - Styles and Terms from 1788 to the Present*. Angus and Robertson, 1989, p 186.
4. Glenn Warburton, *Yarralumla Incinerator*, entry in Marion Mahony Griffin Measured Drawing Competition, 1987, conducted by the RAI(ACT) for the ACT Heritage Committee.
5. Jeff Turnbull & Peter Y. Navaretti (Editors) *The Griffins in Australia and India, The complete works and projects of Walter Burley Griffin and Marion Mahony Griffin*, The Miegunyah Press, 1998, p 88-95, (by Marie Nicholls) p 432-5 (#3806-01 *Canberra Incinerator, ACT* by Simon Reeves).
6. Peter Harrison *Walter Burley Griffin Landscape Architect*, National Library of Australia, 1995, p 84-6.
7. J. R. Conner, *A Guide to Canberra Buildings*, Angus and Robertson in association with the RAI(ACT), 1970, p 43.
8. Department of Works & Housing undated drawings M 8129-31 *Yarralumla Canberra ACT Garbage Incinerator* micro-filmed in Australian Archives.
9. K.J.Dalgarno & A.E.Minty *Canberra's Engineering Heritage, Ch. 5 Water*, IEA, 1983, pp114-8.
10. Australian Heritage Commission, *Canberra City Garbage Incinerator Place Details 13336*, Register of the National Estate, 2003.
11. Scott Hannaford *Monument to Burley Griffin* quoting Michael Waring, Royal Canberra Golf Course Superintendent in *The Chronicle* January 11, 2000.

Other Information Sources