Australian Capital Territory

Heritage (Decision about Registration for Canberra's Garbage Incinerator, Yarralumla) Notice 2011*

Notifiable Instrument NI 2011 -495

made under the

***Heritage Act 2004* section 42 Notice of Decision about Registration**

1. **Revocation**
   This instrument replaces NI 2011-106
2. **Name of instrument**
   This instrument is the Heritage (Decision about Registration for Canberra's Garbage Incinerator, Yarralumla) Notice 2011 -
3. **Registration details of the place**
   Registration details of the place are at Attachment A: Register entry for Canberra's Garbage Incinerator, Yarralumla.
4. **Reason for decision**
   The ACT Heritage Council has decided that Canberra's Garbage Incinerator, Yarralumla meets one or more of the heritage significance criteria at s 10 of the *Heritage Act 2004*. The register entry is at Attachment A.
5. **Date of Registration**
   25 August 2011

Jennifer O'Connell
Acting Secretary
ACT Heritage Council
25 August 2011

*Name amended under Legislation Act, s 60

ACT Heritage Council	**AUSTRALIAN CAPITAL TERRITORY** **HERITAGE REGISTER** **(Registration Details)** **Place No:**

For the purposes of s. 41 of the *Heritage Act 2004*, an entry to the heritage register has been prepared by the ACT Heritage Council for the following place:

Canberra's Garbage Incinerator, Dunrossil Drive, Yarralumla

(Part) Block 2 Section 119 Yarralumla, Canberra Central

DATE OF REGISTRATION

Notified: 25 August 2011 Notifiable Instrument: 2011-495

Copies of the Register Entry are available for inspection at the ACT Heritage Unit. For further information please contact:

The Secretary
ACT Heritage Council
GPO Box 158, Canberra, ACT 2601

Telephone: 13 22 81 Facsimile: (02) 6207 2229

IDENTIFICATION OF THE PLACE

Canberra's Garbage Incinerator, Dunrossil Drive, Yarralumla
(Part) Block 2 Section 119 Yarralumla, Canberra Central

n.b: see also separate Registrations –

- *Westbourne Woods*
- *Canberra Main Outfall Sewer*

STATEMENT OF HERITAGE SIGNIFICANCE

This statement refers to the Heritage Significance of the place as required in s12(d) of the *Heritage Act 2004*.

Canberra's Garbage Incinerator at Yarralumla is of heritage significance as important evidence of a distinctive process no longer practiced, as a rare example of its kind, as a notable example of a kind of place which demonstrates the main characteristics of that kind, for its high degree of creative achievement by showing an exceptionally fine level of application of an existing technique, for special association with a person in local history, and for its likelihood of providing information that will contribute significantly to a better understanding of the cultural history of the ACT.

The incinerator is important as evidence of the process of waste disposal using incineration techniques in the first half of the twentieth century. This was a common practice across Australian cities in response to concerns about health and hygiene associated with other means of waste disposal, and is the only incinerator constructed in the ACT.

As the only incinerator constructed in the ACT Canberra's Garbage Incinerator is a rare example of this kind of place, as well as being a notable example of this kind of place. Thirteen REICO incinerators incorporating designs of Griffin-Nicholls were constructed in Australia. Seven remain extant, with only two in original condition – in Canberra and at Hindmarsh, South Australia. Further, Canberra's Garbage Incinerator is a notable example and demonstrates the main characteristics of a REICO designed incinerator incorporating architectural plans of the Griffin and Nicholls partnership. Characteristics include the four levels for gravitational down-flow, its tall brick chimney and elegant pattern and detail to the façade.

The incinerator demonstrates a creative achievement through the partnership of REICO and Griffin-Nicholls in providing a solution to the unsightly industrial structures, through aesthetically acceptable housing design.

The incinerator has a special association with Walter Burley Griffin as the only building in the ACT with which he is associated.

It is of further significance for its likelihood to provide information which will contribute to a better understanding of the technology and use of incineration as a means of waste disposal in the first half of the twentieth century.

Other related registrations

Canberra's Garbage Incinerator is located in Westbourne Woods. The broader Westbourne Woods forms a separate citation in the ACT Heritage Register.

One ventilation shaft (feature #22) of Canberra's Main Outfall Sewer is also located in Westbourne Woods. Canberra's Main Outfall Sewer forms a separate citation in the ACT Heritage Register.

FEATURES INTRINSIC TO THE HERITAGE SIGNIFICANCE OF THE PLACE

The attributes listed below are assessed as features intrinsic to the heritage significance of the place:

- the Incinerator and its immediate surrounds; including
  - the building's four levels;
  - tall brick chimney;
  - elegant patterning and detail of architecture; and
  - the ramp on the north east side of the building, accessing the delivery floor.

APPLICABLE HERITAGE GUIDELINES

The Heritage Guidelines adopted under s27 of the *Heritage Act* 2004 are applicable to the conservation of the Westbourne Woods Incinerator, Yarralumla.

The guiding conservation objective is that the Westbourne Woods Incinerator, Yarralumla, shall be conserved and appropriately managed in a manner respecting its heritage significance and the features intrinsic to that heritage significance, and consistent with a sympathetic and viable use or uses. Any works that have a potential impact on significant fabric (and / or other heritage values) shall be guided by a professionally documented assessment and conservation policy relevant to that area or component (i.e. a Statement of Heritage Effects – SHE).

REASON FOR PROVISIONAL REGISTRATION

Westbourne Woods incinerator, Yarralumla has been assessed against the heritage significance criteria and been found to have heritage significance when assessed against six criteria under the ACT Heritage Act.

ASSESSMENT AGAINST THE HERITAGE SIGNIFICANCE CRITERIA

Pursuant to s.10 of the *Heritage Act 2004,* a place or object has heritage significance if it satisfies one or more of the following criteria. Significance has been determined by research as accessed in the references below. Future research may alter the findings of this assessment.

(a) it demonstrates a high degree of technical or creative achievement (or both), by showing qualities of innovation, discovery, invention or an exceptionally fine level of application of existing techniques or approaches;

Canberra's Garbage Incinerator demonstrates a high degree of creative achievement by showing qualities of an exceptionally fine level of application of an existing technique.

The Reverberatory Refuse Incinerators developed by REICO demonstrate an innovation in the disposal of garbage. This is demonstrated through being the first Australian design of its type, and its ability to achieve a much higher efficiency than its imported competitors by deflecting or reverberating the hot gases of consumption over the material to be consumed, ensuring a

pollutant-free emission and leaving a low amount of incinerated residue which amounted to less than ten per cent of the original waste material.

The partnership of REICO with Griffin-Nicholls provided an exceptionally fine level of application to the existing technique of reverbatory incineration through the provision of aesthetically acceptable buildings in which to house the incinerator.

The architectural quality of design for a functional building at the time of the first use of this technology in 1925 demonstrates a high degree of achievement.

This creative achievement is evident through the high level of integrity and intactness of Canberra's Garbage Incinerator.

Canberra's Garbage Incinerator meets this criterion.

(b) it exhibits outstanding design or aesthetic qualities valued by the community or a cultural group;

Canberra's Garbage Incinerator exhibits outstanding design and aesthetic qualities as the technology firm REICO sought to provide aesthetically pleasing and acceptable buildings in which to house its garbage incinerators in cities across Australia. For this purpose, Leonard-Kanevsky of REICO sold his incinerator technology as a package with the architectural building designs of Griffin and Nicholls' firm.

The attractive appearance of the buildings was unlike the type of structure popularly associated with an industrial undertaking such as the destruction of garbage. Griffin saw the designs as 'the replacement of industrial eyesores with public amenities'.

The incinerator is included in walking tours of Westbourne Woods led by naturalist and horticultural groups. However, the incinerator is not likely to be well known or valued by the broad ACT community or a cultural group, as it is located on private land of the Royal Canberra Golf Club and is mostly inaccessible and not visible to the broad public.

There is insufficient evidence to suggest that Canberra's Garbage Incinerator is valued by the community or a cultural group.

Canberra's Garbage Incinerator does not meet this criterion.

(c) it is important as evidence of a distinctive way of life, taste, tradition, religion, land use, custom, process, design or function that is no longer practised, is in danger of being lost or is of exceptional interest;

Canberra's Garbage Incinerator is important as evidence of a distinctive process which is no longer practiced.

It forms a distinctive component of waste disposal mechanisms in the first half of the twentieth century, in response to community and government concerns about health and hygiene aspects of other means of waste disposal at the time.

Canberra's Garbage Incinerator was used for garbage and sewage disposal from 1939 when it first came into operation, and later for destroying classified waste from government offices. It ceased operation in 1959, and incineration is no longer commonly practiced in Australia as a means of waste disposal.

The Incinerator is important as evidence of this process as the only example in the ACT of a purpose built structure designed for waste disposal by incineration methods, and one of only 13

constructed in Australia. Of these, seven remain intact, though only two remain in original condition – Canberra and at Hindmarsh in South Australia.

Canberra's Garbage Incinerator meets this criterion.

(d) it is highly valued by the community or a cultural group for reasons of strong or special religious, spiritual, cultural, educational or social associations;

Canberra's Garbage Incinerator does not meet this criterion.

(e) it is significant to the ACT because of its importance as part of local Aboriginal tradition

not applicable.

(f) it is a rare or unique example of its kind, or is rare or unique in its comparative intactness

Canberra's Garbage Incinerator is a rare surviving example in Australia and the only example of its kind in the ACT of waste disposal by means of incineration.

It is one of only two remaining incinerators built by RIECO in Australia which still retain most of their original internal workings. The other is at Hindmarsh in South Australia. An additional five incinerators built by the partnership of REICO and Griffin-Nicholls remain at various locations in Australia, though these have been modified.

Canberra's Garbage Incinerator meets this criterion.

(g) it is a notable example of a kind of place or object and demonstrates the main characteristics of that kind

Canberra's Garbage Incinerator is a notable example of waste disposal by means of incineration, and demonstrates the main characteristics of this kind of place.

The incinerator is a REICO/Griffin-Nicholls garbage incinerator, and is notable as the only one of this kind which was ever constructed in the ACT, and one of only 13 constructed in Australia.

The main characteristics of this kind of place are demonstrated in the high level of integrity of the place, including the aesthetic and architectural qualities of the building and elegant patterning to the facade, the existing truck ramp, a tall brick chimney, and the evidence of a downward flow of garbage demonstrated in the combination of a delivery floor, trimmer's floor, firing floor and a basement for residue.

Canberra's Garbage Incinerator meets this criterion.

(h) it has strong or special associations with a person, group, event, development or cultural phase in local or national history

Canberra's Garbage Incinerator has a special association with a person in local ACT history.

It is associated with Walter Burley Griffin, who prepared the original design for the city of Canberra and soon after came to Australia with his wife Marion Mahony-Griffin to help implement his design.

The incinerator technology firm REICO engaged the partnership firm of Eric Milton Nicholls and Walter Burley Griffin to prepare architectural plans in which to house their incinerators.

Though it is thought that Nicholls designed Canberra's Garbage Incinerator, he worked closely with Griffin and learned Griffin's style. The Incinerator shows the influence of Walter Burley Griffin and the Prairie School style of architecture, developed in the United States of America.

The retention of Griffin's name in the partnership after his death led to the irony of his name appearing on the plans for Canberra's Garbage Incinerator, the only building in the National Capital with which his name is associated.

Canberra's Garbage Incinerator meets this criterion.

(i) it is significant for understanding the evolution of natural landscapes, including significant geological features, landforms, biota or natural processes

not applicable.

(j) it has provided, or is likely to provide, information that will contribute significantly to a wider understanding of the natural or cultural history of the ACT because of its use or potential use as a research site or object, teaching site or object, type locality or benchmark site

Canberra's Garbage Incinerator is likely to provide information that will contribute significantly to a wider understanding of the cultural history of the ACT because of its potential use as a research site from which to better understand the now outmoded industrial process of incineration.

Canberra's Garbage Incinerator meets this criterion.

(k) for a place—it exhibits unusual richness, diversity or significant transitions of flora, fauna or natural landscapes and their elements

not applicable.

(l) for a place—it is a significant ecological community, habitat or locality for any of the following:
- **(i) the life cycle of native species;**
- **(ii) rare, threatened or uncommon species;**
- **(iii) species at the limits of their natural range;**
- **(iv) distinct occurrences of species.**

Not applicable.

The place is assessed as not being significant in relation to the following criteria: b, d, e, i, k, and l.

SUMMARY OF THE PLACE
HISTORY AND PHYSICAL DESCRIPTION

HISTORY

Contextual

During the 1920s Municipal Councils across Australia were becoming increasingly concerned both with the shortage of suitable wastelands within their boundaries for the tipping of garbage and household refuse, and also the growing public protest about the health danger of Council tips. Local authorities gradually came to see the value of incineration as a means of disposing of garbage. At that time the

popular methods of disposing of garbage were by dumping at sea or by burial to reclaim waste lands. Both these methods left much to be desired from a hygienic point of view.

At Essendon in Victoria there was much debate over several years as to what should be done about treating their garbage. Residents protested strongly about the offensive smells from the tip which was cited as the breeding ground of rats, flies and disease (Navaretti, 1981, 15).

The inception of incineration as a means of household refuse disposal was developed in Australia by overseas firms just after the turn of the century. It was seen as an improvement to offensive open dumps or the use of the southern Pacific Ocean. The option of incineration was well accepted by 1929.

An Australian design, the Reverberatory Refuse incinerator, 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. An optional extra was a bitumen boiler. 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 (Harrison, 1995, 85).

The gravitation of the Reverberatory incinerator presented problems of siting and the design of site works (Harrison, 1995, 85).

Early incinerators were built by the Reverberatory Incinerator Company (RIC). These were invented by an Australian engineer, John Boadle, who lived in Essendon, Victoria. Together with the RIC, Boadle financed and built a prototype furnace for the municipality of Sandringham, Victoria in 1925. The incinerator was patented in Australia and built with local materials where practical, a practice which was to continue.

During the mid 1920s, RIC was acquired by Nisson Leonard-Kanevsky, who was a prominent businessman in Melbourne at that time. Leonard-Kanevsky was successful in persuading municipal aldermen that the incinerators designed by his company, renamed the Reverberatory Incinerator and Engineering Company (RIECO), were an essential part of waste disposal (Johnson, 1977, 118).

There were preconceived ideas that incinerators were unsightly structures, with their tall chimney belching out smoke and fumes which RIECO had to overcome. As a result, RIECO sought designs for housing his municipal incinerators in aesthetically acceptable buildings.

Leonard-Kanevsky had known Walter Burley Griffin for some time, having previously commissioned him to design several buildings, including Leonard House in Melbourne. 'Griffin collaborated with him on the incinerators, a move that was to benefit the architectural practice of Griffin during the Depression and at a time when his architectural abilities were being criticized within the profession' (Freeman Collett and Partners, 1992: 9).

Leonard-Kanevsky presented to Councils a package: once the Council had accepted the method of refuse disposal they then automatically selected Griffin's firm as architects (Freeman Collett and Partners, 1992: 10).

The architectural design was a persuasion which was always part of the proposed package which Leonard-Kanevsky would place before a town council to convince them to accept the Australian designs. The designs of all incinerators within Australia are of two architectural types: one is a series of buildings with gable or hip roofs and the other a number of pure and monumental block buildings, with suppressed roofs and parapet walls (Markham, 1988, 31). The Westbourne Woods Incinerator is the latter type.

In 1937 Griffin wrote:

> *'The final test of modernism is the replacement of industrial eyesores with public amenities. During the seven years of depression whilst industrial growth had stopped… (I) fortunately found*

> *a field in which the architect could allay the suspicious fears and political animosities sufficiently to enable a dozen municipal authorities to determine upon sites within their own boundaries for replacing dumps and other insanitary and uneconomic methods of disposal of public waste matter with quick incineration in monumental buildings. It has been intended that these buildings also awaken an aversion to the fundamentally uneconomic conditions of industrial ugliness'* (Freeman Collett and Partners, 1992: 10).

The functional characteristics of the buildings are relatively simple, using an in-line, vertical 'top gravity feed' process. The buildings have similar sections and plans, depending on the size and number of incinerator cells. Delivery is at the top level where trucks dump garbage into a large hopper. Often a trimmer's or attendant's floor is immediately below. The furnace room, the actual incinerator, is at the next floor. In the first few buildings the residue was raked out of the furnace but in later plants a lower level, called the residue pit, was added. At this level, the residue clinkers dropped into a small carrier which sat on tracks leading to the dumping area (Johnson, 1977 118).

High temperatures (up to 2000 degrees Fahrenheit) ensured that the smoke and fumes, as well as the 'green gases' rising from the drying refuse, were thoroughly consumed and rid of their noxious qualities in the furnace prior to their discharge as a film of clear vapor from the chimney. This pollutant-free emission was achieved by deflecting or reverberating the hot gases of consumption over the material to be consumed and under the reverberatory arch.

Complete combustion of the mixed gases took place during their passage into the second chamber (Navaretti, 1981, 16).

The size of the buildings varied enormously. The average, typical one-furnace building, exemplified by the Thebarton plant in South Australia, was about 40 feet (12m) by 20 feet (6m) with the stack rising about 62 feet (19m) above the furnace floor. The structural material for the buildings was concrete or brick-bearing for concrete slabs. Infill or facing was stone, brick or stucco (Johnson, 1977, 118).

The actual form of these buildings was largely dictated by their function and the plant to be housed. Some were located on a slope or embankment, with a delivery point on the highest side to take advantage of gravitational forces. Others were located on relatively flat sites, relying on a constructed ramp to allow them to function properly. The Westbourne Woods Incinerator is of the latter type.

Up to 1938, when the Westbourne Woods Incinerator was constructed, 16 incinerators had been constructed by RIC and RIECO, in NSW, Victoria, South Australia and Queensland.

The incinerator at Canberra was the last to be constructed by RIECO and designed by the firm of W.B. Griffin and E.M. Nicholls, Architects.

A later incinerator, not designed by the Griffin and Nicholls partnership, was built at Newcastle.

A number of these incinerators have been demolished, including those at Kuring-gai, Waratah, Randwick, Brunswick, Pyrmont and Leichhardt. Others are used for various purposes, including as libraries, offices and theatres. Only the Hindmarsh (SA) and Canberra incinerators have not been altered from their original state.

The Griffin-Nicholls partnership

In 1929, Nisson Leonard-Kanevsky established the Reverberatory Incinerator and Engineering Company (REICO) and sought designs for housing his municipal incinerators in aesthetically acceptable buildings. The incinerator buildings were designed by the partnership of W.B. Griffin and E.M. Nicholls, Architects, of Sydney.

Although the plans for the incinerator in Canberra have both Griffin's and Nicholls' names on them, the evidence strongly indicates that Nicholls alone designed this, the last of the incinerators designed under the partnership name.

Walter Burley Griffin first came to Australia from the United States of America in 1913, following his award of first prize in an international competition for the design of the city of Canberra. He returned in 1914 with his wife, Marion Mahony Griffin, to take up the position of Federal Capital Director of Design and Construction in the new Federal Capital. The Griffins were both architects and had worked for Frank Lloyd Wright in the USA. They were associated with what became known as the Prairie School of architecture. Griffin's contract with the Commonwealth was for a three year period. In spite of disagreements with government officials and planners and alterations to his original plan, he was appointed for a second term which expired in 1919.

In 1920, when his position as Federal Capital Director was abolished and the Federal Capital Advisory Committee (FCAC) was formed, Griffin declined to become a member of the Committee and so had no further association with the city (Charlton, 1984, 59). He set out to create the Castlecrag community in Sydney's northern suburbs, although he did not move there himself until 1924. One reason for delaying his move was his Melbourne practice (Harrison, 1995, 63).

Griffin's federal office was in Melbourne. He had a private office nearby which was managed by his wife and two of his colleagues. When these two left the practice, their successors were Eric Milton Nicholls and Henry Pynor. Nicholls (1902-1966) completed his architectural articles before commencing work in Griffin's Melbourne office in 1920. He entered into an associate agreement with Griffin in 1923 (Harrison, 1995, 51,67).

When the Griffins left Melbourne for Castlecrag in 1924, Nicholls was left in charge of the Melbourne office. While still in his twenties, he 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 Langi Flats (1925) and the Williams house (1928), both at Toorak, and the Barrachi house project (1927) at Fairfield, although usually attributed to Griffin, were undertaken by Nicholls for the partnership. The Methodist Sunday School at Kew (and its furniture), the remodeling of Lucas' house, and a number of other houses in Melbourne were entirely his own work, although often mistakenly ascribed to Griffin.

An effective working relationship between the partners was restored in 1929 when they began designing buildings to house incinerators for the Reverberatory Incinerator and Engineering Company (RIECO).

Nicholls and his wife, Mollie, left Melbourne and shared a house with the Griffins at Castlecrag for a time in 1929. Nicholls spent long periods of time in Sydney until 1932 when he and his family became permanent residents at Castlecrag. Five Sydney houses other than those at Castlecrag, were built by the partnership in the 1930s (Harrison, 1995, 84).

The incinerator commissions for Leonard-Kanevsky were the main reasons for the restoration of the working partnership and made possible, according to Nicholls, the survival of the practice during the lean years of depression. Leonard-Kanevsky had first approached Griffin for a loan to finance the building of an office block. This was designed by Griffin and opened as Leonard House in 1924.

Leonard-Kanevsky was an aggressive entrepreneur who was keen to make a financial success of the RIECO at a time when the economy was at its lowest levels. He was successful in persuading municipal aldermen that the RIECO incinerators were an essential part of waste disposal. He also persuaded them that the incinerators would be a civic embellishment in Griffin's elegant structures (Harrison, 1995, 85).

The partnership was responsible for a succession of municipal incinerators at Essendon, Victoria and Kuring-gai, NSW (both 1930); Waratah, NSW (1931), Randwick and Glebe, NSW (1933); Willoughby, NSW (1934); Brunswick, Victoria; Ipswich, Queensland; Leichhardt and Pyrmont, NSW; and Hindmarsh,

SA (all 1936). The designs for the incinerators vary widely and there is no doubt that Nicholls contributed to the conception of most.

It is clear, however, that Griffin exerted himself on the Willoughby incinerator, located close to Castlecrag, as well as on the largest of them all, the Sydney Municipal Council incinerator at Pyrmont.

The Willoughby building, in local sandstone with a top hamper in painted stucco, carries panels of his geometric modelling and the building cascades down the hillside in a series of steps (Harrison, 1995, 86). It is classified by the National Trust of Australia (NSW) and was restored and converted to a restaurant called 'The Incinerator' in 1980. Since 1988, it has been used as offices.

There was some controversy in 1936 over the site for one of the Sydney incinerators which had originally been intended for a site at Moore Park. The massive new incinerator proposed for the parkland site caused a public protest, following which the alternative site at Pyrmont was selected. This did not enhance Griffin's reputation and he also faced some financial difficulties, including being heavily in debt for lands which he had acquired under mortgage on the Castlecrag peninsula, most of which were lost to the mortgagors.

In 1935, Griffin left for India to undertake a commission for the University of Lucknow. Griffin was entranced by India and Marion joined him there in 1936. Although it was Nicholls' wife, Mollie, whose perspective rendering of the library at the Indian University had helped to impress the authorities there, Nicholls and his wife could not be persuaded to neglect the Sydney practice to go to Lucknow (Harrison, 1995, 88).

Griffin died in 1937 after contracting peritonitis while still in Lucknow (Van Zanten, 1970, 7). It seems unlikely that Griffin could have known of the proposal for the Canberra Incinerator before he left Australia and he died over a year before tenders for the project were called (Murphy, 1982, 8). It is accepted that Nicholls carried on alone with the design of the incinerator at Thebarton, SA (1936) 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 (Harrison, 1995, 85-86).

Marion Mahony Griffin left a collection of Walter Burley Griffin's plans, photographs and papers with one of Griffin's Australian partners in 1938 when she returned to Chicago from Australia after Griffin's death. These came to be in Nicholls' custody and were given to the National Library and are known as the E.M. Nicholls collection. However, they were returned to Nicholls' daughter and son and are now held by them.

Canberra's Garbage Incinerator

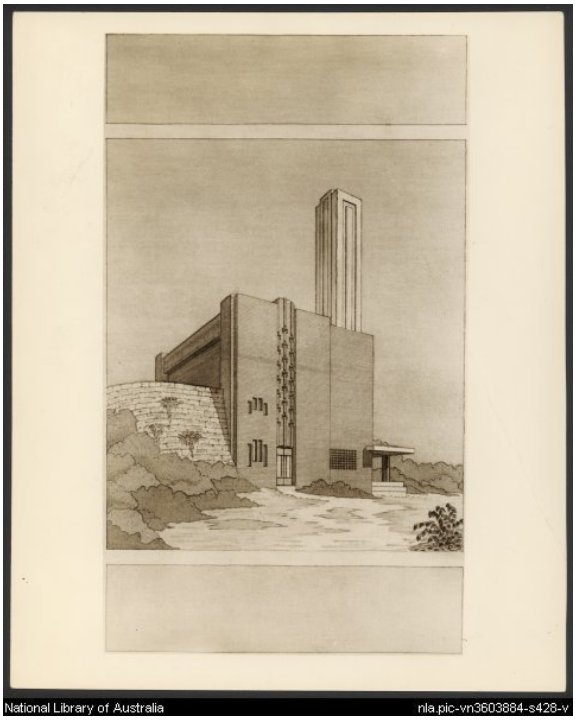
Tenders for the supply and erection of a garbage incinerator at Canberra were called for on 28 May 1938. In September 1938 Treasury provided £10,000 to cover the cost of the tender submitted by RIECO and minor site works to be carried out by the Commonwealth (Murphy, 1982, 8).

While some sources indicate that the Canberra incinerator was used as the garbage disposal centre for Canberra from 1941 (NCDC, 1984, 143), it actually commenced operations in 1939 (Murphy, 1982, 7). The normal procedure was for the RIECO to run the incinerators for a time before operation was taken over by the government authorities. In Canberra, testing was carried out in April 1939 and the Incinerator was in operation by May of that year (Murphy, 1982, 8).

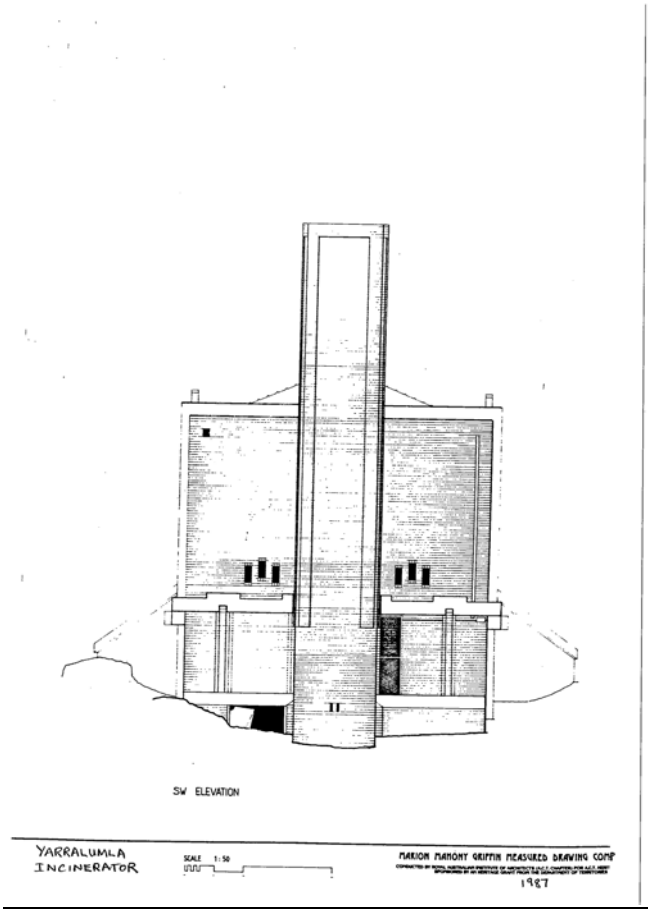
The incinerator burned general waste in the 1940s and classified waste in the 1950s.

As the city grew, the Incinerator's capacity became inadequate and other means of garbage disposal were used. Its use was then limited to destroying classified waste from government offices. It ceased operation and was decommissioned in 1959 and became a storeroom for the Department of the Interior

(NCDC, 1984, 143). The Royal Canberra Golf Course was laid out around Westbourne Woods in 1960 and the Incinerator was used as the Club's store for a time. It is no longer used for this purpose.



Exterior perspective view of incinerator, [Canberra Incinerator, Westbourne Woods, Australian Capital Territory] 1938
National Library of Australia. nla.pic-vn3603884-s428



Measured drawing of the Yarralumla Incinerator
Source: Marion Mahoney Griffin Measured Drawing Competition 1987.

Details of incinerators built

Date	Location	Building designer	Status
1926	Sandringham (Melbourne), Victoria	Boadle (pre-RIECo)	demolished
1927	Box Hill (Melbourne), Victoria	Boadle (pre-RIECo)	extant
1928	Geelong, Victoria	Boadle (pre-RIECo)	extant
1929	Bexley (Sydney), NSW	Boadle (pre-RIECo)	demolished
1930	Kuring-Gai, NSW	Griffin and Nicholls	demolished
1930	Essendon (Melbourne), Victoria	Griffin and Nicholls	extant
1931	Waratah (Newcastle), NSW	Griffin and Nicholls	demolished
1932	Randwick (Sydney), NSW	Griffin and Nicholls	demolished
1933	Glebe (Sydney), NSW	Griffin and Nicholls	extant
1934	Willoughby (Sydney), NSW	Griffin and Nicholls	extant
1935	Pyrmont (Sydney), NSW	Griffin and Nicholls	demolished
1936	Leichhardt (Sydney), NSW	Griffin and Nicholls	demolished
1936	Hindmarsh (Adelaide), SA	Griffin and Nicholls	extant
1936	Brunswick (Melbourne),Victoria	Griffin and Nicholls	demolished
1936	Ipswich, Queensland	Griffin and Nicholls	extant
1937	Thebarton (Adelaide), SA	Griffin and Nicholls	extant

1938	Newcastle, NSW	Newcastle City Eng	demolished
1938	Canberra, ACT	Griffin and Nicholls	extant

Source: Navaratti, n.d, webpage

DESCRIPTION

The incinerator in Westbourne Woods is located next to the tenth fairway of the Royal Canberra Golf Course, a short distance from the Clubhouse of the Royal Canberra Golf Club. It is known as the Canberra Incinerator to distinguish it from other incinerators designed by Walter Burley Griffin and Eric Milton Nicholls in Melbourne, Sydney, Ipswich (Queensland) and Adelaide.

The designs of the incinerators across Australia varied in form and decorative style but always relied on a downward flow of garbage from trucks into hoppers above a furnace, with the residue removed as clinkers from below (Charlton, 1984, 59). As well as being designed as highly efficient destructors, the incinerators had a low amount of incinerated residue which amounted to less than ten per cent of the original waste material (NCDC, 1988, 142).

The Westbourne Woods Incinerator is a reinforced concrete structure with load bearing brick walls, concrete flat roof and terracotta tiling. The concept is of an elegantly patterned brick cube (Charlton, 1984, 59). A tall brick chimney rises beside it, linked by a concrete verandah which has been closed in with bricks. A metal roll-a-door has been installed as a later addition at the front of this verandah. Projections and recesses at the sides, including fenestrations, break the wall surfaces into vertically proportioned panels. Doorways have concrete lintels and there is some decorative geometric patterning above them. The doors are made of steel.

The builders were W. Simmien & Company and building commenced in 1938. The bricks used are all from the nearby Canberra Brickworks and their various tones of brown enhance the aesthetic qualities of the building. They were known as 'Canberra cream'. Small bricks, called briquettes, were used for the geometric patterning above the doors. The bricks used for the outer wall of verandah adjoining the chimney stack appear to have been laid relatively recently and are of inferior quality to those used in the main part of the construction. Sections of the concrete render on the exterior of the building are in need of repair, particularly above the entrance doorway at the top level.

The incinerator has three levels: delivery floor level, trimmer's floor level and firing floor level. It also has a 'basement' where a residue chamber and quenching chamber (still existing) were installed. Garbage trucks approached the incinerator via a ramp which was built by the Department of the Interior. They entered the delivery floor level through a wide double-doorway with steel roller shutters (an early model of the current metal roll-a door). Garbage was dumped into the hopper. The hopper has sloping metal covers which would have been opened to receive the garbage and then closed. The garbage would then move down the sloping surface via gravity to the next (trimmer's) level. A trimmer is a fireman who pushes garbage into the furnace and ensures it is burning properly. The trimmer's level of the incinerator is approached from the firing floor by a steep concrete stairway. It includes a mess room, the main area where the trimmer accessed the garbage hopper and a division which contains a washroom, a shower room and a toilet room. The original fittings remain in these rooms.

The garbage moved into the furnace on the firing floor level. There was a front part of this floor where the furnace could be accessed and a back part where the furnace was located. An inspection revealed that the furnace had been removed, although a temperature regulator is still in existence on this floor. A tool rest is shown on this floor in the plans for the building. The tools would have been used by the trimmers to move the garbage along. The plan also shows a storage chamber for glass and metal, although this no longer exists.

The burnt garbage was then dropped into the residue chamber as clinkers. These were then moved into the quenching chamber for cooling, and taken away. The residue clinkers may have dropped into a small

carrier which sat on tracks leading to the dumping area, as this was a common feature in the later plants (Johnson, 1977, 118).

It could have been used as road ballast, or as fertiliser for garden plantations or land fill, as it was for other similar incinerators (Navaretti, 1981, 16).

There was a sewage dump at the side of the incinerator which included a delivery dock, a pan cleansing room and sewage dump, a pump and a washing tank. There is a duct from the sewage dump to the furnace installed just below the ceiling of the firing floor, which would have moved the waste into the furnace.

The building was used as a storage facility for the Royal Canberra Golf Club green keeper for a time after the course was laid out in 1960. It has recently been cleaned out and there are one or two items of machinery left on the firing floor level. The delivery floor and the trimmer's floor have not been altered from their original state, although they are deteriorating with age. There are large tins sitting at the rear of the verandah and a small petrol pump has been installed there. These detract from the building's appeal as does a small metal garden shed which has been placed at the front of the building. Other metal sheds, used as workshops, have been erected near the building. As these are not as close to the building as the garden shed, they do not detract from its appearance.

Road access to the building is via a gravel laneway from the Clubhouse through Westbourne Woods and it is located about half a kilometre from the Clubhouse. The building is surrounded by mature blue gums (Eucalyptus globulus ssp maidenii), part of the Westbourne Woods plantings.

SITE BOUNDARIES

The following GDA 94 reference points mark the four corners of Canberra's Garbage Incinerator, including its entrance ramp:

NE corner:	E689777.087 N6091536.159
SE corner:	E689794.709 N6091500.276
SW corner:	E689745.405 N6091450.419
NW corner:	E689749.888 N6091462.822

The incinerator including ramp has a boundary of 10 metres surrounding it.

REFERENCES

- Castle, P., 'A walk in the woods to a Burley Griffin design', Canberra Times, 11/1/1982
- Charlton, K., Federal Capital Architecture, Canberra 1911-1939, Canberra, 1984
- Freeman, Collett & Partners, Westbourne Woods Incinerator Conservation Plan, Canberra, ACT, 1992
- Garnett, R. & Hyndes, D., The Heritage of the Australian Capital Territory, Canberra, 1992
- Harrison, P. Walter Burley Griffin, Landscape Architect, Canberra, 1995
- Johnson, D.L., The Architecture of Walter Burley Griffin, South Melbourne, Vic., 1977
- Macklin, R., 'A forgotten incinerator', Canberra Times, 2818/1997
- Markham, M., 'The Griffin Incinerators', Transition, No. 24, Collingwood, Victoria, Autumn 1988
- Murphy, G., 'The Westbourne Woods incinerator: whose design?', Canberra Historical Journal, New Series No. 10, Canberra, September 1982
- National Capital Development Commission, Sites of Significance in the ACT, Vol. 2, Canberra, 1988
- Navaretti, P., 'Essendon Incinerator', Historic Environment, Vol. 1, No. 3, Carlton, Victoria, l981
- Navaretti, P., n.d., 'Walter Burley Griffin Society – Incinerators', http://esvc000127.wic044u.server-web.com/Lives_and_Works/a_incinerators.html, accessed 4/2/2011.
- Van Zanten, D.T., Walter Burley Griffin, Selected Designs, Illinois, USA, 1970

- Warburton, G., Yarralumla Incinerator, Marion Mahony Griffin Measured Drawing Competition, Second Prize plus a Special Prize, Canberra, ACT, 1987

SITE PLAN AND MAPS

A 10 metre boundary exists around the incinerator. This boundary reflects the height to space ratio of the structure and the immediate visual setting for it.

Boundary for Canberra's Garbage Incinerator, as indicated by solid red line marking a rectangle.

The image also shows the physical relationship of the incinerator with an element of Canberra's Main Outfall Sewer, which forms a separate entry to the ACT Heritage Register.

Images taken September 2010