

EAST PERTH POWER STATION, EAST PERTH



PLACE INFORMATION	
Place name	East Perth Power Station
Other names	
Place type	Individual building or group
HERITAGE LISTING	
inHerit ID:	3318
State Heritage Register:	8 Jan 2016
Other Listing:	Register of the National Estate Indicative Place Municipal Inventory Adopted 13 Mar 2001 Perth Draft Inventory 99-01 YES 31 Dec 1999 Classified by the National Trust Classified 10 Mar 1997 Art Deco Significant Bldg Survey Completed 30 Jun 1994
SITE LOCATION	
Street address	11 Summers St
Locality	East Perth
Survey	Lot: 600 D/P: 52123
Vol/folio	2714/297
Reserve	—

SIGNIFICANCE	
Level of significance	Exceptional
Management category	Category 1 The place should be retained and conserved. Any alterations or extensions should reinforce the significance of the place and be in accordance with a Conservation Plan if one is in place.
Statement of significance	<p>The place is rare as a large-scale thermal power station retaining its plant and equipment, constructed prior to the end of World War One, being one of only two such places in Australia and a small number in the world.</p> <p>The place is rare as a single facility retaining several generations of generators, spanning almost forty years, and contains one of the most comprehensive in situ collection of steam turbine generating units in the country.</p> <p>The place was the only government operated electricity utility supplying the metropolitan area from 1916 to 1951, and the largest power generating facility in the State until South Fremantle Power Station began operation in 1951.</p> <p>The place is a regional landmark viewed from the river, the railway and the Graham Farmer Freeway, and an eastern entry statement to the city of Perth.</p> <p>The place is a good example of a complex of utilitarian industrial structures, featuring distinctive interior spatial quality in the station turbine rooms with some Art Deco detailing.</p> <p>The place was the first State government operated public electricity utility in Australia, constructed as one of a number of State government enterprises and public utilities established under the 1911-1916 government of John Scaddan MLA.</p>

SIGNIFICANCE

Statement of significance	<p>As a major public utility, the place facilitated industrial development in Western Australia up to 1951, and was an important influence in raising living standards in the Perth metropolitan area and the south-west of the State, as well as employing a numerically significant workforce during its construction and its 65 year operational life.</p> <p>The place, as a large coal-fired thermal power station, was important in the development of the State’s coal industry, based at Collie.</p> <p>The frequency changer set is unique in Australia, and rare in a world context.</p>
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PLACE USE

Original use	Governmental: Power Station
Current use	Vacant / Unused
Other use	

CONSTRUCTION DETAILS

Construction date	1914-1981
Walls	Rendered brick
Roof	Corrugated Iron
Architectural Style	Inter-War Art Deco

CONSTRUCTION DETAILS

Physical description	<p>A collection of Inter-War Art Deco buildings making up the East Perth Power Station. The main administration building to the north, facing Summers St is a two storey rectangular art deco building. It is a rendered brick construction with strong horizontal and vertical elements. On the corner is a tall square tower with glass block windows spanning both storeys.</p> <p>An array of windows are evenly spaced around the perimeter and on the second storey windows are within a large strip of red facing brick. The large warehouse located behind the admin building is also built in the Inter-war art deco style with both a yellow and pale red stucco finish. The warehouse has several roof height variations with internal spaces up to three storeys in height. The entire perimeter is lined with large multipaned vertical windows with a range of different heights. These windows are disrupted by prominent vertical and horizontal stuccoed elements.</p> <p>To the rear of the site, towards the Graham Farmer Freeway is several old steel warehouse structures with minimal building material still intact.</p>
Condition	Fair
Integrity	Moderate
Authenticity	High

HISTORICAL INFORMATION

The East Perth site met the basic requirements for the location of a large centralised power station in the metropolitan area, in that it could be readily serviced by rail for delivery of local coal from Collie (and imported coal from NSW), it was close to an economical supply of cooling water for the condensing plant, and it was centrally located within the distribution area, which initially extended from Midland Junction to Fremantle.

In May 1912, the State government led by the newly elected Labor Premier John Scaddan reached an agreement with Perth Electric Tramways Limited for the purchase of the company's assets and business. The acquisition of Perth's privately operated tramway system, which came at a time when the Scaddan Government was embarking on a program of State 'socialism' and the establishment of a number of State owned enterprises, was ratified later in the year in the Tramways Purchase Act, 1912. In the same year the Perth City Council purchased another private enterprise, the Perth Gas Company, which supplied both gas and electricity within the city area. Fremantle Council and some smaller local authorities also operated public electricity supply utilities and in the case of Fremantle also tramway services. While the Perth City Council and the government had acted independently, the joint requirements of the utilities they had acquired and the desire to increase the scale of both operations, led to the establishment of East Perth Power Station and to the Government undertaking the supply of electricity throughout the whole of the metropolitan area.

Having acquired run-down and inadequate plant and infrastructure, the Government and the Council were faced with the immediate need to build new power stations to continue the running of their enterprises. The advice received by the Government from the British power engineering consultants Merz and McLellan was to scrap the small scale systems then in existence and replace them with a centrally located power station of sufficient size to allow the production of electricity at an economical rate. The requirements of the Government were insufficient to warrant a power station of such a size, as were those of the Perth City Council. The solution lay in the amalgamation of their joint interests, and agreement was reached whereby the Government undertook responsibility for the supply of bulk electricity to the council, who would then retail to its own customers, with the council having exclusive rights to sales to the public and other local authorities within a five-mile radius of the GPO. Under these arrangements the Western Australian Government Electricity Supply was established.

HISTORICAL INFORMATION

Construction of East Perth Power Station began in 1913, and was completed in 1916, this was known as the A Station. The station was built at an estimated cost of £320 000, with the city wide system costing approximately £538 000. Power generation began on 3 December 1916 with a single 4 MW generator. By April 1917 two further 4 MW generators had been installed, and by 1929 the station was operating with 5 generators, a total 32 MW capacity and an estimated capital value of £1 million. This expansion in generating power required additional support structures, which included two jetties (built in 1917 and the 1920s) that pumped water from the Swan River into the station to cool the steam and condense it back into re-usable water. The warmed river water was pumped back out at a location downstream that became a favoured swimming spot.

As well as supplying the tramways, railway workshops and other government instrumentalities, and the bulk sales to the Perth and Fremantle councils, the Government engaged in retail sales direct to consumers not covered by the municipal agreements. In the 1920s and 1930s it expanded the distribution system throughout the metropolitan area and beyond, eastward into the hills' districts and south of Armadale.

Demand continued to increase, and by the 1930s it was clear that another, larger, generator would be required to supplement the capacity of East Perth Power Station. A lack of government funds due to the depression years threatened the station's ability to improve its machinery to meet the rate of increasing demand for electricity. In 1935, sufficient funds were allocated to begin the construction of the new 25 MW generator. The size of the new plant was such that a new building was required. B Station was constructed to house the new generator, and to supplement A Station, which continued to operate with all the earlier generators in one turbine room. Unlike the earlier station, which was almost entirely designed and imported from Britain, B Station was designed in Perth by William H. Taylor, with only the largest equipment, such as the generator and boiler, being imported from Britain.

B Station was opened in December 1938 with two simultaneous opening ceremonies, one at East Perth Power Station, and the other at Australia House in London. The Undersecretary for Dominion Affairs, the Duke of Devonshire, officially opened the new plant by radio from London.

HISTORICAL INFORMATION

The heavy reliance on a single generator began to cause problems, especially in the post-World War Two period, as the machinery could not be turned off for repairs. Staff at East Perth Power Station reportedly slept beside the generator to ensure it did not fail. Throughout the late 1940s, powercuts were the norm in Perth, with suburbs blacked out on a rotation basis, trams used only at peak times, and businesses asked to turn off unnecessary lights.

Planning for a new power station had begun as early as 1943, but construction did not begin at South Fremantle until 1946. All metropolitan supplies were generated at East Perth Power Station until 1951, when the power station at South Fremantle came on line. The last expansion at East Perth was in 1955 when the No 7 30 MW generating unit was installed and the coal handling plant was modernised.

From the 1950s on, the East Perth station progressively assumed the function of a centralised equipment service centre for the Commission's state-wide operations which necessitated the expansion of workshop facilities. As well as the maintenance and repair services another aspect of the station's so called 'export' work was the sale of steam, transported by underground mains, to Royal Perth Hospital and the SEC gas works in Trafalgar Road.

The new power stations predominantly used oil-burning generators. When the political situation in the Middle East in the early 1970s sparked international oil price hikes, it became uneconomical for power supply to the Southwest of the State to depend so heavily on burning oil. In 1974 the almost non-operational coal-burning plants at East Perth, South Fremantle and Bunbury were pressed back into full-time service to reduce the electricity grid's dependence on oil. Increased awareness of environmental concerns meant that the thick black smoke and ash fallout from the coal burning stations was no longer acceptable, and measures were taken, including the installation of precipitators, so that by 1977 the stations were meeting emission standards. The generation of power ceased at East Perth Power Station on 24 December 1981, bringing to an end sixty five years of continuous operation.

HISTORICAL INFORMATION

Functions maintained at the East Perth site during the 1980s that were phased out during the early 1990s included the system control centre, which left almost all buildings unoccupied and in a deteriorating condition. Numerous smaller ancillary structures have been removed as well as quantities of equipment and the distinctive chimneys. A program to eliminate all asbestos insulation associated with the plant and equipment has resulted in the removal of most of the boiler house plant and piping associated with the generating plant. The station site remained a part of Western Power's operations until 2004.

Stabilisation works commenced in November 2004 and were completed in March 2006. These works included the removal of asbestos roofs and replacement with new sheeting; demolition of ancillary structures / outbuildings; repair of concrete walls; and the repair and reglazing of windows.

Research in 2004 determined that the 'A' station building was designed in England either by the engineering consultants, Merz and McLellan or the contractor Babcock and Wilcox, who supplied and constructed the steelwork for the buildings and boilers. Working drawings bear the names of both firms. The mid-1920s extensions were built using the same constructional system and by the same overseas contractors. Most of the building materials were imported including Portland cement, which was not produced locally until the early 1920s. The 1930s buildings may have been designed in Perth although this is not absolutely clear. Construction drawings for steel frame windows and sashes, and for the reinforced concrete building structure were prepared by the Structural Engineering Co of WA Ltd of Welshpool. Drawings for the plant produced by the London contractors International Combustion Ltd also show details of the building design.

HISTORICAL INFORMATION

Historic theme	Infrastructure: Development of Settlements and Services Peopling WA: Demographic Development Economy: Mining and Mineral Resources	
Associations	Babcock and Willcox Merz McLellan Structural Engineering Co of WA	Architect/Engineer Architect/Engineer Architect/Engineer
Sources	P3318 East Perth Power Station Assessment Documentation, DPLH, 2016.	

ADDITIONAL PHOTOGRAPHS



ARCHIVAL IMAGES



East Perth Power Station 1938. Courtesy SLWA image b2404120_1



Interior East Perth Power Station 1938. Courtesy SLWA image b2404120_2



View of East Perth Power Station c1922. Courtesy SLWA image b2194856_2