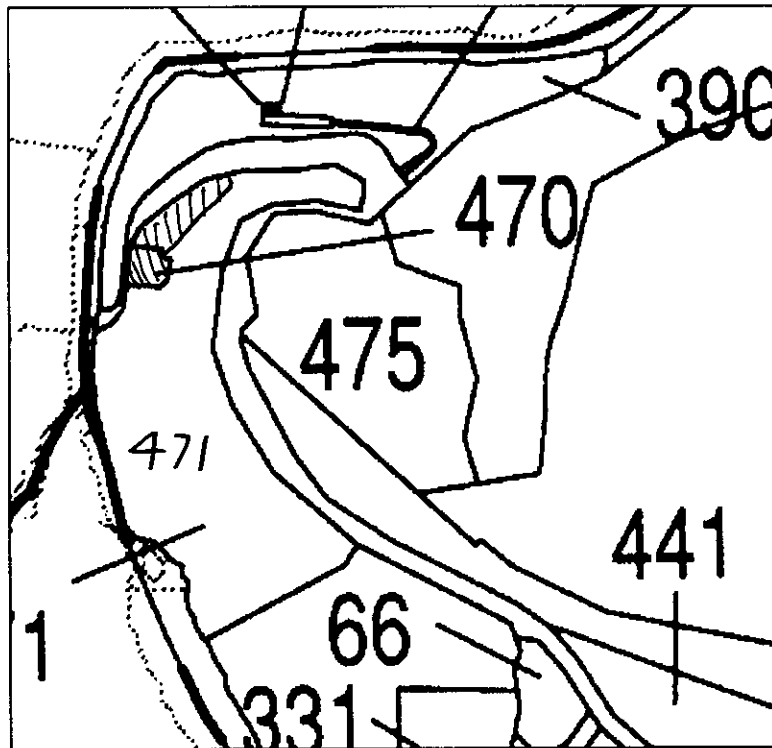


Cotter Pumping Station and Cottages

Block 470 (Pumping Station) and part of Block 471 (Cottages), Stromlo

(ACT Land Information Service 1998)



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**Prepared for the National Trust of Australia (ACT)
& ACT Heritage Council**

by
Carol Cosgrove & Peter Dowling 29/2/2000

Appendix A

Details of pumps in Cotter Pumphouse

(Reference: Dalgarno & Minty 1990)

No.	Make	Number of Stages	Type	Motor (Kw)	Speed (RPM)	Capacity (m ³ /s)	Head (m)	Date Installed
1&2	Gwynne	4	Turbine	485	1500	0.13	268	1918
3	Kelly & Lewis	5	Turbine	1120	1000	0.25	275	1935
4	Thompson	4	Volute	1120	1500	0.34	246	1942
5&6	Thompson	3	Volute	1120	1500	0.33	229	1955
7&8	Thompson	3	Volute	1044	1500	0.34	225	1963

Note:

Pumps of two or more stages are designed to pass the water through more than one rotor section in succession on the same shaft, thus increasing the pressure developed.

The design of the rotor and casing can be described as turbine (with guide blades like a turbine in the diffuser ring around the impellor) or volute (spiral form of flow in a single chamber around the impellor) depending on the type of flow produced within the casing.

Appendix B

Folklore from the Pump House

Like many other engineering projects and establishments the Cotter Pumping Station has a few interesting stories attached to it which have become a part of its folklore.

Two stories are popular:

The pumping station drew its power for the pumps from the Kingston power station which provided all the power in the early days of Canberra. As a result, there was a standing order to the pumping station that, when Parliament was in session, the condition of the pumps would not be varied without approval of the Power Station Superintendent, regardless of the state of the reservoirs. It had been found that starting or stopping of the pumps resulted in a variation of line voltage, and this caused a dimming or brightening of lights in the Houses of Parliament, to the distraction of the sitting members. It was also feared that a voltage drop caused by the pumps being switched on might cause the passenger lifts to malfunction or the lights to go off altogether. This in turn, it was believed, could trap a hurrying Member and delay him in reaching the chamber during a crucial division on which the fall or survival of the Government might rest.

On one occasion, a major burst in the pipeline from the Cotter pumping station to Stromlo reservoir, was caused by a cat belonging to the officer-in-charge of the station. During the early 1950s, in the very small hours of the morning, a longitudinal weld of the pipe, just above the pumping station, tore apart. The tear was some 1.5 metres long and 130 mm wide. Investigations revealed that the boss's cat had strayed into the station, wandered behind the switchboard, and shortened out the 11,000 volt circuit. The protective circuit breaker opened and power went off the pump. A station attendant in a panic, slammed the Larner Johnson valve shut and the water hammer did the rest of the damage. It was to the credit of the Department of Works mechanical maintenance fitters that the bust main was back in service the following day. The fate of the cat during this incident is less well known.

Cotter Pumping Station – Time Line

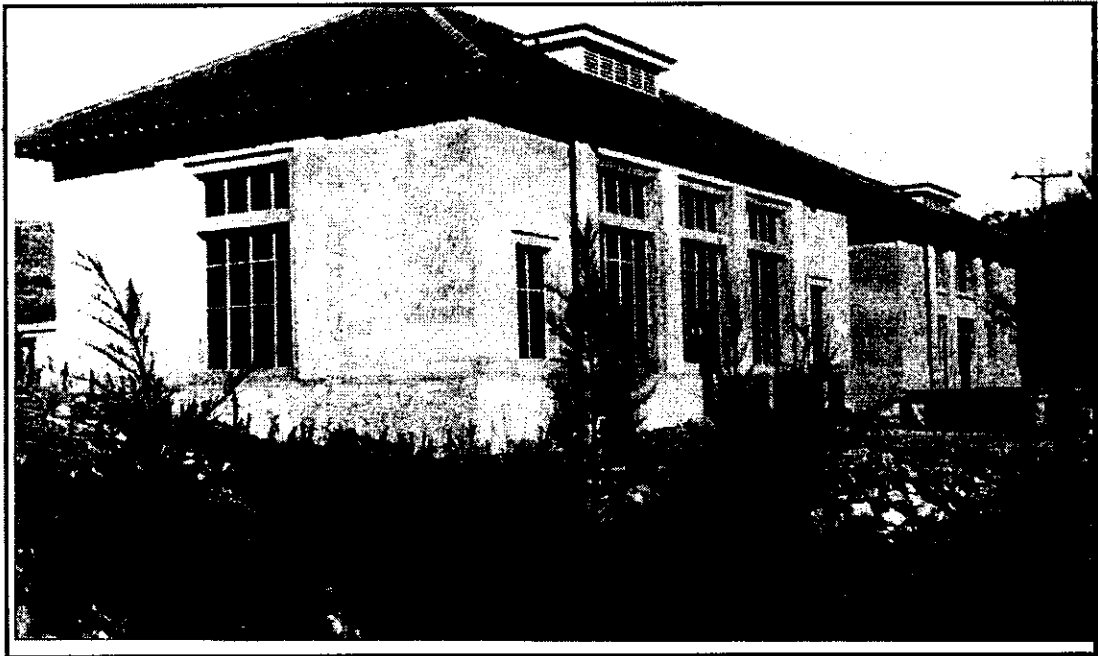
(From: *The Heritage of Cotter Dam, Pumping Station and Recreational Area*, Information Posters, Cotter Pump House, ACT)

- 1912** Work begins on Cotter Dam 12th March. Two 'Gwynne' electrical pumps (Pumps 1 & 2) ordered from Great Britain. Delivery delayed due to World War 1.
- 1914** Excavation work for the Pumping Station begins
- 1915** Work on the Pumping Station completed.
- 1918** The two 'Gwynne' pumps with 485kW and 100,000 gallons (454,600L) per hour capacity installed and commissioned. Pumped water to the Mount Stromlo reservoir which was 200m (650ft) higher than the Cotter Dam. As Canberra's population was small, the pumps only worked two to three days a month. Pump technicians from Melbourne travel to Canberra to run the pumps.
- 1920** October. Approval sought from Director of Public Works for a hydro-pumping scheme that would make use of excess water from the dam which often overflowed, to power a simple, low-flow hydraulic pump. Delayed until 1923.
- 1922** Flood damages Cotter system but does not affect the Pump Station.
- 1924** April. Hydro-pump installed in small concrete 'blockhouse' below the Pump House. Trials completed and the pump starts delivering water at the rate of 130,000 gallons (590,980L) a day. However, for every litre of water it pumped to Canberra, it took 29 litres of water to drive the turbine. Hydro-pumping scheme cost £2,902-0-3.
- 1925** May. Flood, bigger than the 1922 level, lapped the bases on number 1 & 2 pumps.
- 1926** The Pumping Station Attendant, Mr Pike, very dissatisfied with his lot as there is no sign of a house being built for him. The Chief Assistant (Mr Brownless) requested the matter be finalised and the Chief Engineer (Mr Bancroft) wrote in reply that the cost of a house would be £900. The house not built until 1927 and a cheaper, weatherboard version erected.
- 1927** Flood level reaches Hydro-pump house.
- 1927** Hydro-pump taken out of service due to mechanical problems and increased water demands for the increasing population of Canberra. Water now provided by pumps 1 & 2.
- 1927** 1st cottage next to the Pumping Station erected
- 1935** Pump no. 3 (Kelly & Lewis) installed.
- 1938** 2nd cottage next to the Pumping Station erected
- 1941** First extension to Pump House completed
- 1942** Pump no. 4 installed
- 1950s** Further cottages erected near Pumping Station for pump attendants.
- 1954- 55** Second extension to Pump House completed to accommodate pumps 5 & 6.
- 1961** Bendora Dam completed. Cotter Dam not capable of holding enough water to cope with the drought in Canberra.
- 1963** Pump House extended again to provide the last two pumps (7 & 8). These had a vertical, rather than a horizontal, axis. The electric motors were installed above the pumps on a separate floor of the extension, above all possible floods.
- 1967** Corin Dam completed.
- 1968** Bendora Gravity main commissioned. Cotter dam and Pumping Station no longer used regularly.
- 1979** Cotter River System can no longer cope with Canberra's population projections. Googong Dam developed to supply water to Canberra along with the Corin and Bendora systems.
- 1980** 'Gwynne' Pumps (1 & 2) stop operating.
- 1983** Hydro Pump to be restored.
- 1986** Restoration of hydro-pump under direction of Workshop Supervisor, Mr Norm Fleming. 'It arrived in 1,000 pieces ... with pieces missing, no plans or drawings.'
- 1990** Hydro-pump returned to Cotter and installed in the Transformer House.
- 1993** August. Pumps 1 & 2 and Larner Johnson Valves restored by six young people, participants in the Federal Government's Landcare and Environmental Action Program (LEAP Scheme), preserving some of the engineering history of the region for public viewing and educational purposes. Completed February 1994.
- 2000** Pumping Station no longer operational. Opened to public on special occasions as physical evidence of Canberra's engineering heritage.

Cotter Pumping Station c1915, just after completion.

The Pump House is in the foreground and Transformer House in background. The Pump House underwent three major extensions extending its northern (foreground) section.

(National Archives of Australia (ACT)).

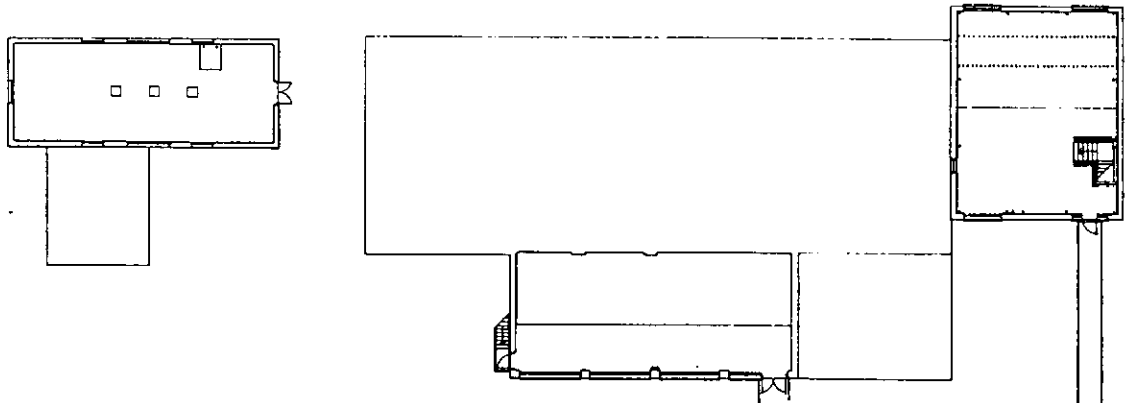


Cotter Pumping Station under construction, c1914.

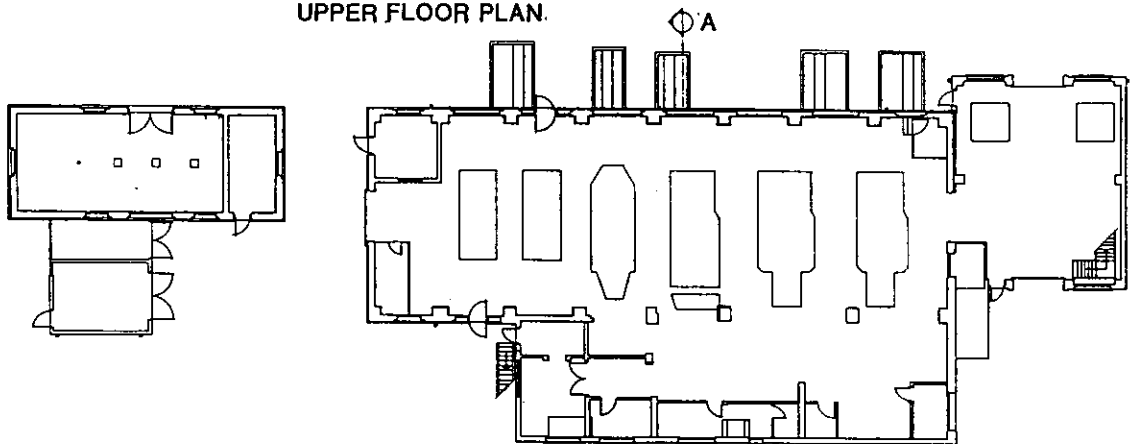
The Transformer House is in the foreground and Pump House in the background.

(Donovan 1999)





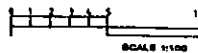
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GROUND FLOOR PLAN

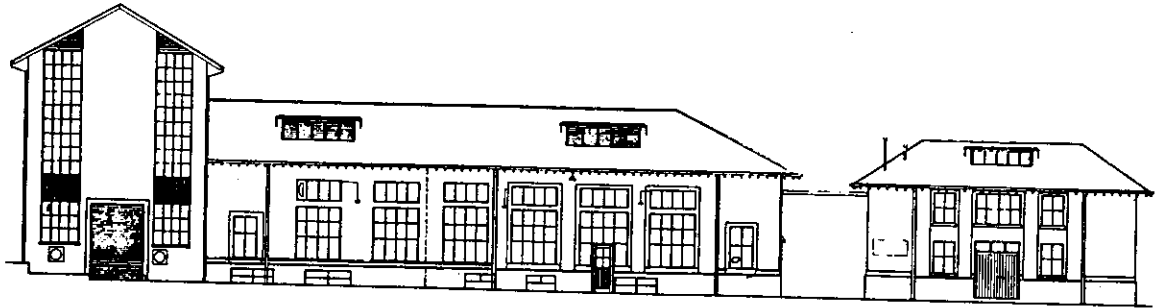
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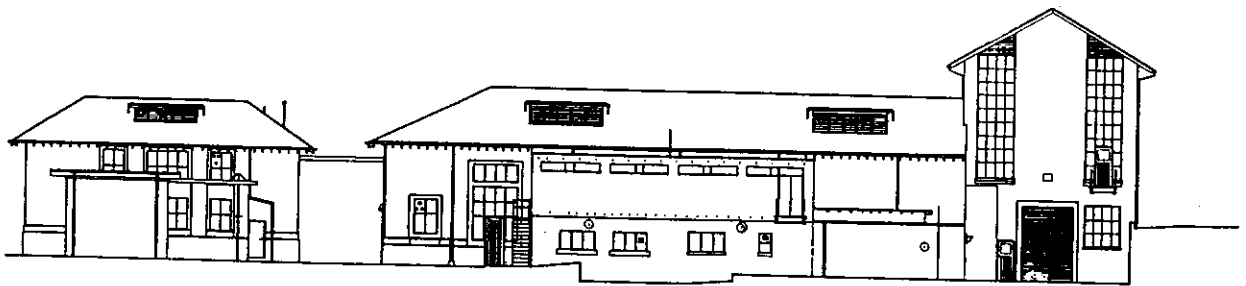


1 OF 4

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ACCEPTED BY: RUSSELL PRITZ & TIM BROW



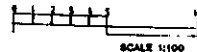
WEST ELEVATION



EAST ELEVATION

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COTTER PUMPING STATION



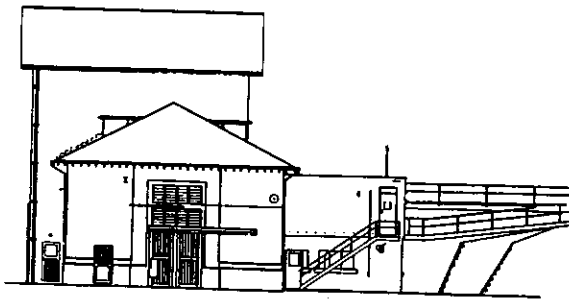
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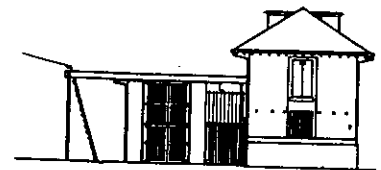
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DESIGNED BY RUSSELL PFITZ & TIM BROWN

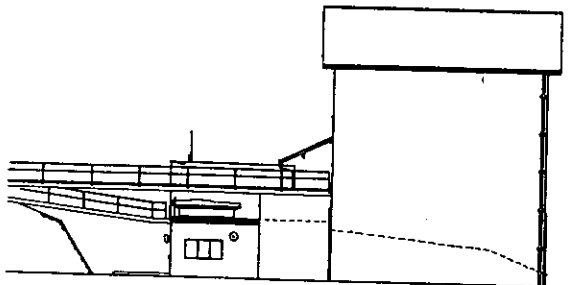
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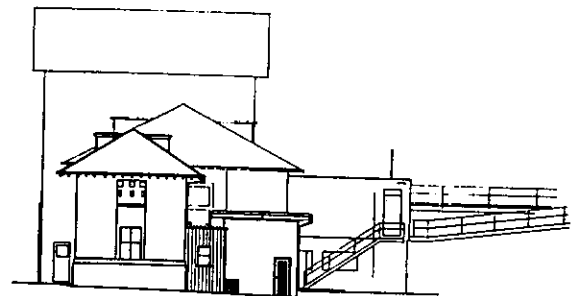
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NORTH ELEVATION



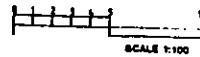
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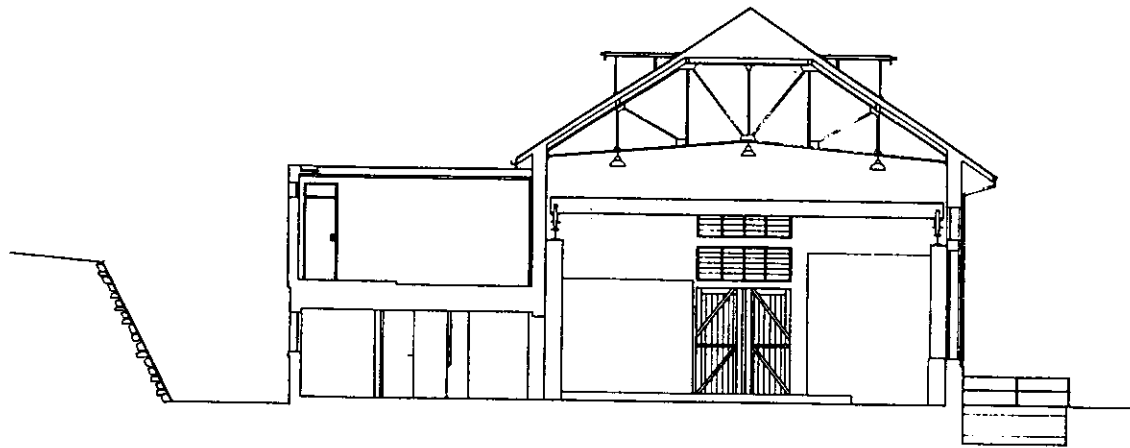
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COTTER PUMPING STATION



3 OF 4

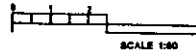
MAJOR HONOR GRANT MEASURED DRAWING COMPETITION
ACCEPTED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES
ACCEPTED BY THE ARCHITECT RUSSELL PRITZ & TIM BROW



SECTION A-A

RECEIPT NO. 13

COTTER PUMPING STATION



SCALE 1/80

4 OF 4

PARSON PROPERTY GROUP HAS AGREED TO BEING COMPETITIVELY
ACCEPTED BY: RUSSELL PFITZ & TIM BROW