

Hunter Water S170 Register

SHI No.: Name:
3630048 Grahamstown - Balickera Pumping Station

Location No address NSW 2324

Other ID nos IW ID: 48. Other ID: WSBAL.



Description:

A two storey rectangular industrial building constructed with a metal frame and clad in corrugated metal. Access is via a ramped driveway leading to a large central roller door. The building is lit with a series of large six-paned steel framed windows as well as a vertical window in the centre of the rear wall. The roof is a low pitched metal roof. Above the main entrance is the Hunter District Water Board crest and below metal lettering stating "BALICKERA PUMPING STATION 1964".

Internally the building is constructed around a central dry well containing six pumps, all of which have had their drive units replaced. A mezzanine surrounds the dry well holding the control and electrical equipment. An overhead travelling crane runs the length of the building.

Water enters the pumping station from the Grahamstown Canal, carrying water from the Williams River. Trashracks are located at the end of the Canal however these are not original. Two additional pumps are now located on an external metal gantry above the Canal entrance and the welded steel outlet pipes on the other side of the building which raise the water for gravitation to Grahamstown Dam have been increased from six to seven

Significance:

Balickera Pumping Station is the major pumping station for the Grahamstown Scheme, the last major expansion of the Hunter water supply. The massive steel framed and metal clad building is well-designed and, through continual upgrading, continues in service for its original function.

Assessed Significance: Local

Endorsed Significance: Local

Historical Notes:

Constructed: 1957-1965

After the end of World War II, the Board became preoccupied with the adequacy of their water sources. It was in March 1946 that the Board's then President, George Schroder, first raised the possibility of using the Grahamstown Moors as a possible new water source.

The Grahamstown Moors had a catchment area covering more than 78 square kilometres, and for years it had been known that a large amount of water could be impounded at the site. The local catchment however, was inadequate to cater for the demands of the region, posing a significant challenge in regards to its exploitation as a storage site.

Whilst investigations in regards to the utilisation of Grahamstown Channel as an auxiliary to the Tomago Water Supply Works were carried out from the late 1940s, and the Board obtained 2000 acres of the Grahamstown moorlands in 1948, an alternative proposition of constructing a much larger dam at Tillegra was preferred. In the early 1950s it was decided by the Engineering Experts' Committee that future investigation should concentrate on Tillegra. Following a visit to Europe to attend conferences and inspect waterworks however, and in the face of growing opposition to Tillegra Dam, Schroder was able to persuade the Board to delay the Tillegra Dam and fully exploit both the Tomago sandbeds and Grahamstown catchment area. The Board subsequently commissioned the Swedish consulting engineers Vattenbyggnadsbyran to investigate. After visiting the region early in 1953 they delivered their report in September, and with it provided their solution to the problem of the Grahamstown Moor's inadequate catchment.

The scheme proposed by Vattenbyggnadsbyran provided for fresh water to be drawn from the Williams River near Seaham and conveyed by open canals and a tunnel to a storage dam constructed on the moors. The storage was to be formed by constructing an embankment across the natural depression known as the Grahamstown Moors.

As the Williams River, at the point of extraction, was tidal the scheme put forward by the Swedish engineers outlined the necessity of constructing a weir to form a barrage between the tidal salt water and the fresh river water. Once collected, this fresh water would be conveyed by open canal for approximately 3 miles to a pumping station at Balickera (the Balickera-Grahamstown Water Pumping Station), where the water would be lifted 15 meters before gravitating towards the dam through a 1200m long tunnel cut through a high ridge between the sites. Finally, the water would feed into an outlet canal that delivered it to Grahamstown Dam. The Grahamstown Dam itself would form a large shallow storage basin with a capacity of approximately 40 000 000 000 gallons and a surface area, when full, of about 12 square miles.

Hunter Water S170 Register

In February 1955, following review, the Board's Amplification Committee broadly accepted the scheme, with construction of the Dam authorised by the Board on 5th April 1955.

Construction of the scheme commenced immediately after the official construction ceremony was performed by the then Premier, Mr J Cahill, on 30th November 1957.

Design details for the Balickera Pumping Station were sufficiently progressed to enable the commencement of excavation works in March 1959, with tenders accepted for the pumping and valving equipment by the end of 1958-59. Detailed designing of the structure and necessary pipework also commenced in 1958-59.

The bulk of excavations were completed in 1959-60, with the trimming and final works excavation for both concrete foundations and column supports still to be carried out. It was also found at this time that better stabilising work would have to be carried out due to the varying nature of the rock exposed.

Tenders were accepted for the supply of steel work and prestressed beams for the pumping station in 1960-61, with construction of the station commencing in February 1961.

In the 1962-63 Annual Report it was noted that all concrete works for the pumping station structure, as well as installation of all structural steel work and all pipe work had been completed. The installation of internal stairways, access platforms and ladders were 80% completed by the close of the 1962-63 year. The installation of the Control Room flooring was completed during December 1962, and erection of the framework of the superstructure building completed by 21st June 1963. The overhead travelling crane was installed on 29th May 1963, and construction of the Bulkhead Gate structure commenced in January 1963. All works associated with the Balickera Rising Mains were finished during this year, with the exception of the bypass pipeline and final painting, and excavations and trimming for the Balickera Trashrack structure commenced.

Electrical installations at the Pumping Station commenced on 13th January 1964, and by the end of the 1963-64 financial year, the six pumps had been installed and transformers placed in position. Minor auxiliary works commenced and completed in 1963-64 included the construction of a transformer yard, the building of an amenities block, the commissioning of the electric overhead travelling crane and the provision of fencing and roads.

Steel and concrete work on the trashrack structure at the Pumping Station was completed 16th July 1965, with painting, installation of racks and screens and minor finishing works were completed by the 22nd of December.

It was reported that in 2006-2007 the NSW Government announced upgrades to increase the transfer capacity of Balickera Water Pumping Station, with work commencing soon afterwards. The aim of the upgrades was to enable a greater capture of high flows from the Williams River, and involved the installation of new pumps and an automatic weed-screening device.

<i>Designer:</i>	Vattenbyggnadsbyran (VBB) - Swedish	<i>Builder:</i>	Hunter District Water Board
<i>Builder:</i>	Engineering Consultancy		
<i>Current Use:</i>	Water pumping station	<i>Former Uses:</i>	

Physical Condition:

Recommended Management:

- This item contributes to local character and should be conserved.
 - Original details should be maintained including doors, windows and original signage.
 - New materials should be sympathetic to the nature and character of the original building.
 - In the event of major proposed changes, prepare a Conservation Management Strategy and undertake an archival recording.
 - Wherever possible, changes should be restricted to the interior of the building.
 - Routine maintenance of existing fabric is essential.
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References:

Clem Lloyd, Patrick Troy and Shelley Schreiner 1992, For the Public Health. The Hunter District Water Board 1892-1992. Publisher: Longman Cheshire Pty Ltd, Melbourne.

Department of Public Works, Annual Reports, 1888 to 1892 and 1893-94 to 1960-61.

Glennie Jones 1967, The Movement for Newcastle's First Water Supply 1875-1885, Newcastle History Monographs No. 2. Publisher: The Council of the City of Newcastle, Newcastle.

Hunter District Water Board, Annual Reports, 1938-39 to 1987-88.

Hunter District Water Supply and Sewerage Board, Annual Reports, 1897-98 to 1937-38.

Hunter Water Board, Annual Reports, 1988-89 to 1990-91.

Hunter Water S170 Register

Hunter Water Corporation , Annual Reports, 1991-92 to 2008-09.

John W Armstrong 1967, Pipelines and People. The History of the Hunter District Water Board Newcastle, New South Wales. Publisher: The Hunter District Water Board, Newcastle.

Mal Hindley 1983, 'From Weirs, Dams and Sand', in Shaping the Hunter. Publisher: The Newcastle Division of the Institute of Engineers Australia, Newcastle.

Studies:

- 1 Futurepast Heritage Consulting Pty Ltd 2010, 'Hunter Water Conservation and Heritage Register Study'.
Reference: .
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Listings:

- 1 *Heritage Act - s.170 NSW State agency heritage register:*
Listing date: . Reference Number:
-

Data Entry: *Date First Entered:* 26/Apr/2010 *Date Updated:* 10/Sep/2010 *Status:* Partial

Hunter Water S170 Register

Images



Grahamstown - Balickera Pumping Station

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Grahamstown - Balickera Pumping Station

File: Balickera Pumping Station 2.jpg

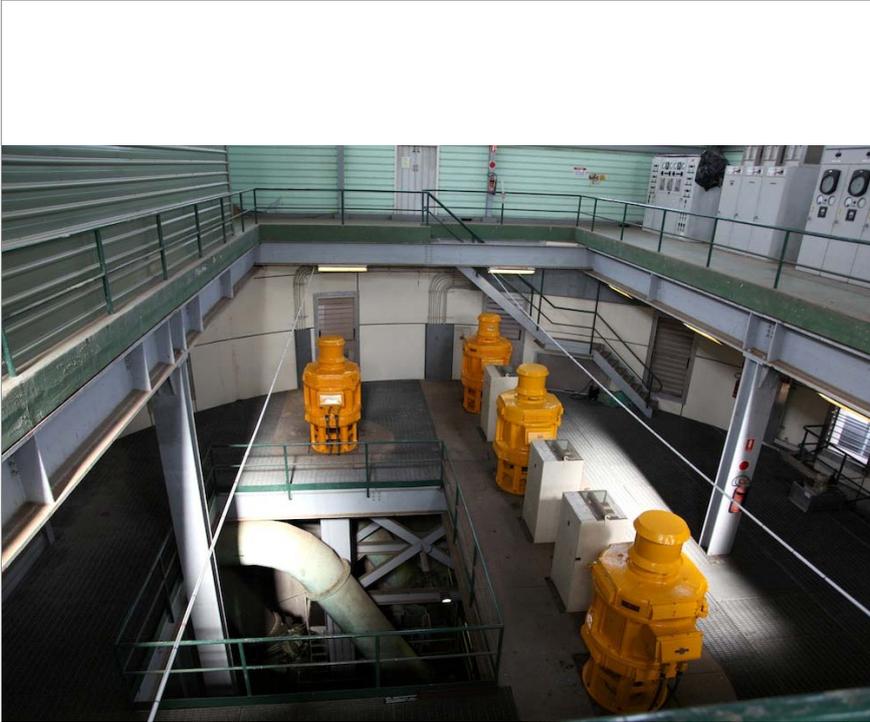
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Hunter Water S170 Register



Grahamstown - Balickera Pumping Station location (Courtesy of Google Earth)

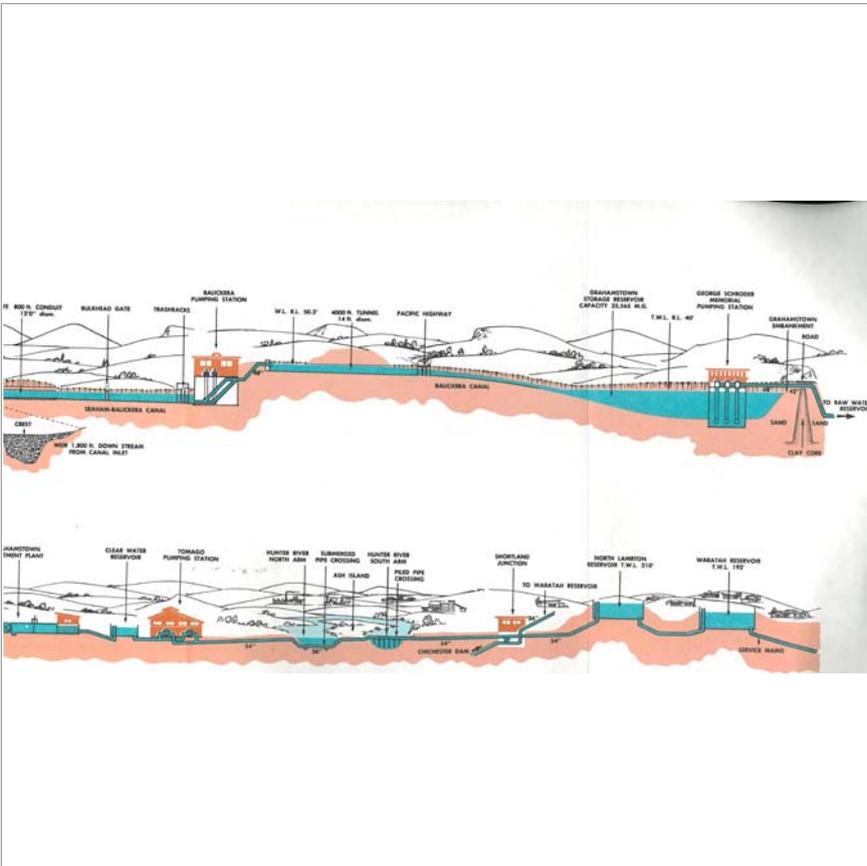
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Grahamstown Dam System Diagram

File: Grahamstown Dam System.jpg

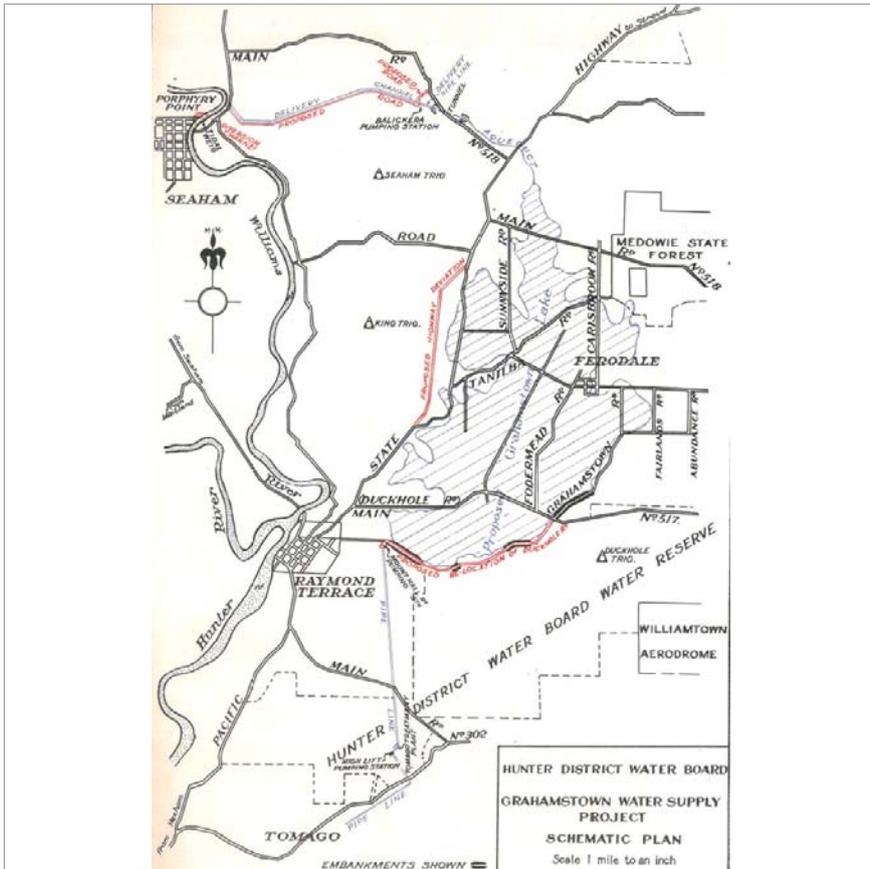
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Hunter Water S170 Register



Grahamstown Dam Plan (Courtesy of HDWB Annual Report 1954-55)

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Grahamstown - Balickera Pumping Station and Canal (Courtesy of John W. Armstrong, "Pipelines and People")

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