VOLUME 3

ILLUSTRATIONS AND MAPS

THE BOTANY ROCKDALE SEWAGE FARM

A CASE STUDY IN URBAN ARCHAEOLOGY

1991 Callaghan 3

COLLEEN A. CALLAGHAN 1991
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Fig. 1 Map 1 Early map showing poor state of sanitation in Sydney prior to the appointment of the City Commissioners in 1854. The Tank Stream north of Hunter Street was still an open stream. (Sydney Water Board Journal Vol. 6 No. 2 1956 - original in possession of the City Council)
Fig. 2 Map 2 Sydney sewerage system commenced by the City Commissioners in 1856 and continued in 1857 by reinstated City Council, showing outfalls at Blackwattle Bay, Darling Harbour, Circular Quay, Fort Macquarie (Opera House) and Woolloomooloo Bay. (F. J. J. Henry The Water Supply and Sewerage of Sydney)
Fig. 3 A rare illustration showing sewer construction in Pitt Street in the early 1850s. The view is taken looking away from the Harbour. The main sewer is in the centre, and two tributary sewers are being linked into the main sewer. The Pitt Street sewer discharged at Fort Macquarie. These sewers were constructed by private contract, and this particular section was built using a technique called 'cut and cover', although most of these city sewers were 'in tunnel'. The gentleman in the top hat and cutaway coat is most probably the city engineer, Edward Bell C.E. M.Inst.C.E. (A.Cleaver 'Beating the Sewerage Backlog' originally in the Illustrated Sydney News)
Fig. 4  City Council's sewerage system built in the 1850s, showing oviform-shaped brick sewer discharging into arched section at Hunter Street (Archives Section, Sydney Water Board)
PROPOSED AREA OF LAND
FOR SEWAGE FARM
1879
SHEA'S CREEK
COOK'S RIVER
WEBB'S GRANT
MUDY CREEK
BOTANY BAY

Old pumping station
Mill Pond
Engine Pond

Compilation map
Fig. 6 The ornately detailed exterior of the Inlet House at the Botany Sewage Farm. This building housed the screening chambers, and other associated technological mechanisms, which were used to separate solid matter from the sewage. The doorway in the front of the building was the only entrance, and access to this was via the high grassed embankment covering the southern outfall sewer which discharged directly into screening chambers. (Archives Section. Sydney Water Board)
Fig. 7 Interior of the Inlet House. In the foreground are the duplicate screening chambers and sets of screens. The sewage flowed into the chamber, and extraneous matter was separated by the screens which decreased in fineness of mesh. In the centre background is the Priestman grab. This operated on a travelling gantry - seen along the sides of the building - and was used to lift the remaining solids from the screening chambers for removal via the upturned chute seen at the left-hand side of the picture. The circular sand-basin, used for final separation of suspended sand and smaller matter was at the far end of the building, and is out of sight in this picture. (Archives Section, Sydney Water Board).
Fig. 8 Outlet House & main carrier. Sewage in the carrier was disposed by land filtration through irrigation and filtration beds, & the effluent flowed into Botany Bay & Cook's River. Inlet House on the north bank of the River is linked to the Farm via the railway bridge. Railway line & end-loading bogie wagon for transporting cattle onto Farm in middle left of picture. Treeplanting had commenced, as evidenced from white painted tree guards. (Archives Section. Sydney Water Board).
Fig. 9 Sludge being deposited into a waiting skip from a chute in the side of the Inlet House. It would be taken by locomotive transport across the wooden bridge over Cook's River to the irrigation beds, where it would be manually dug into the ground as manure. This photograph also gives some indication of the flimsy nature of the construction of the railway bridge. (Archives Section, Sydney Water Board.)
Fig. 10 Crops growing in the irrigation beds at the Botany Sewage Farm. Some idea of the magnitude of the work involved in clearing and levelling the ground for cultivation purposes, can be gained from the hilly nature of the uncleared land in the background. The raised bank in the left background is the main carrier from the Outlet House. The stakes in the vegetable beds are supporting trees, and a close row of trees has been planted as a windbreak, along the line of stakes to the right of the picture. Unfortunately the picture does not clearly delineate the ridge and furrow method of irrigation that was being used in conjunction with the system of intermittent downward filtration. Sub-soil drain would have been placed under these beds to increase the filtration rate. (Archives Section, Sydney Water Board).
Fig. 11 Cottages built for the labourers at the Sewage Farm in 1898, facing Lady Robinson's beach at Botany Bay. They have since been demolished, and the only remaining structure is the corner of the most southern cottage - far left - which stands amid natural revegetation beside General Holmes Drive. (Archives Section, Sydney Water Board).
Fig. 12 Map 5 George H. Stayton's sketch, showing the magnitude of the sewerage scheme for the Western Suburbs, and the intended outfall for the scheme on a small area of resumed land adjacent to the Botany Sewage Farm.

(Votes & Proceedings of the Legislative Assembly 1887-8 Vol. 5).
Fig. 14  Completed aqueduct for carrying the Western main sewer crossing Muddy Creek at the Rockdale Sewage Farm. It was supported on turpentine piles driven into the water-charged sand. The swampy nature of the land at the western end of the Sewage Farm is evident. The railway line from the Botany Inlet House can be seen running alongside the aqueduct. (Archives Section Sydney Water Board).
Fig. 15 View of Rockdale Sewage Farm from Marsh Street Arncliffe. The covered main carrier extends through the Farm lands toward the Botany Sewage Farm, which is in the far distance. The railway line is to the right of the main carrier. The lush crops to the left, now the location of the Kogarah Golf Course, were possibly cultivated with filtrate from the experimental biological filter. The screening chamber is in the vicinity of the clump of trees, some of which have survived. The Eve Street Wetlands are directly behind these trees. 
(Archives Section Sydney Water Board).
Fig. 15A Biological Filtration Plant, based on British system of purification of sewage by anaerobes, introduced by Scott-Moncrieff in 1892. Installed at Rockdale Sewage Farm between July 1900 - June 1901 (Archives Section, Sydney Water Board).
Fig. 16 1947 aerial photograph prior to extensions to Mascot Airport seen in foreground of picture. The site of the Botany Sewage Farm was the peninsula of land on the opposite side of Cook's River. The Inlet and Outlet Houses are discernible on either side of the River upstream from the bridge. Behind the outfall sewer at River outlet is the clump of surviving Moreton Bay Fig trees. The mill pond & engine pond from the Botany Swamps water supply system are on the far side of the River (Archives Section Sydney Water Board).
DISPOSITION OF LANDS BELONGING
TO THE FORMER BOTANY/ROCKDALE
SEWAGE FARM 1916-1947

SHEAS CREEK

KINGSFORD SMITH
AERODROME
(MASCOT)

COOK'S RIVER

NORTH BRIGHTON GOLF LINKS

BOTANY BAY

 compilation map

1 Engine Room
2 Old pumping station
3 Illawara Sewage main
4 Market gardens
5 Inlet 4 outlet houses
Fig. 18 Commencement of diversion of Cook's River for extensions to Kingsford Smith Airport. Beginning of new outlet for the River is to the left of 'April'. Inlet & Outlet Houses have gone. Toward the end of the peninsula between the sewer line and sand fill, crop marks from Sewage Farm's irrigation beds can be distinguished. Row of worker's cottages are visible at the curve in the sewer line, as are pine trees at far left of sewer line. (courtesy Civil Aviation Authority).
EXPANDED KINGSFORD SMITH AERODROME

FIG. 19 MAP

KOGARAH GOLF COURSE
BARTON PARK
MUDY CREEK

INTERNATIONAL TERMINAL
DOMESTIC TERMINAL

RUNWAY

SCALE

1:4

100m 500m

MASCOT
SYDNEY

SCALE

1:4

MILE

100m 500m 1000m
Fig. 20 Completed extensions at Kingsford Smith Airport in 1976, showing portion of Botany Bay runway & diversion of Cook's River. Botany Sewage Farm site has been subsumed by airport complex & Botany Swamp Engine Pond bisected by General Holmes Drive. Workmen's cottages are just visible to the right of new River bridge. Crop marks indicate market gardens beside Muddy Creek to left of picture. (courtesy Civil Aviation Authority).
Fig. 21 Archaeological remains of workmen's cottages at Botany-Rockdale Sewage Farm, built around 1898 at Lady Robinson's beach facing Botany Bay. Now situated on narrow strip of land between General Holmes Drive and Kingsford Smith Airport, just past Endeavour Bridge. (Personal collection. C. Callaghan).
ARCHAEOLOGICAL REMAINS
OF THE BOTANY/ROCKDALE SEWAGE FARM
ABOVE and (pass) BELOW GROUND

Fig. 22 Map

- Arncliffe Station
- International Terminal
- Barton Park
- Muddy Creek
- Kogarah Golf Course
- Domestic Terminal
- Sydneyside

Legend:
1. Possible remains of inlet
   outlet houses, 4 under
   river siphon
2. Moreton Bay figs
3. Norfolk Island pines
4. Screening chamber
5. Est. St. Wetlands
6. Workmen's cottages
7. Old pumping station
8. Boc site for drains

Scale: 1 mile = 200 feet

Compilation Map
Fig. 23 Eve Street Wetlands with suburb of Arncliffe in the distance. Relic of larger swamp lands, once a useless portion of Rockdale Sewage Farm. The Farm railway ran along the embankment at upper right. Pine trees were planted in the 1890s to improve the Sewage Farm's appearance. The building near the embankment could contain archaeological evidence of the screening chamber at the Rockdale end of the Sewage Farm, it is now owned by Rockdale Council.

(OUTLOOK Sydney Water Board).
Fig. 24 Chinese market gardens 1991, beside Muddy Creek to left of picture. Continuous occupation since 1892, on low-lying land at extreme southern perimeter of former Rockdale Sewage Farm. International Airport Terminal in distance, behind central pole. (Personal collection. C. Callaghan).
SKETCHES OF THE SOUTHERN SYDNEY SEWERAGE SYSTEM.—(By our Special Artist.)

1. INLET HOUSE, AT COOK'S RIVER, WITH VIEW ACROSS RIVER TO OUTLET HOUSE.
2. INTERIOR OF INLET HOUSE, SHOWING SCREENING APPARATUS.
3. SAND BANK, WITH INLET WELL AT END OF SEWERAGE PUMP HOUSE.
4. PUMP HOUSE, ON SEWERAGE PLANT, SHOWING OUTLET HOUSE.
5. GENERA VIEW OF PUMP HOUSE, LOOKING TOWARDS OUTLET HOUSE.
6. SCREENING PUMP HOUSE, FROM STRAINING ON THE SEWERAGE PLANT.
7. GENERAL VIEW OF PUMP HOUSE FROM DRIP HOUSE.
8. WOODED INDEPENENT HOUSE FROM RIVER TURF PLANT—PART OF MAIDALBETOWN AND ALEXANDRA BRIDGE, NEW.