Significance:

The Park section of George Street, because of the lack of major development, preserves the archaeology of a 1790s residential area. It may provide information on late eighteenth century road surfaces. The culvert under the road remains in the same position as it was in the 1790s. The road itself remains an example of late eighteenth century engineering, a product of late eighteenth century town planning.

No 11

Group of buildings.

11a--Very long structure, built by 1792.
11b--Long structure (west of 11a), by 1792.
11c--Hut-sized structure, by 1792.
11d--Small structure (east of 11c), by 1792.
11e--Long structure fronting along Bridge Street, by 1798(?), by 1804.
11f--Huge club-shaped structure (brewery), 1803/1804 comprising the malt kiln at the east end, brewing coppers etc.
11g--Medium structure along a fence line, north of 11f (near '32' on 1804 map), by 1804.
11h--Carriageway or path from George Street formed by a fence associated with 11f and the east boundary of allotment numbered ‘2’ in the 1804 map. By 1804.
11i--North and east fences associated with 11f, by 1804.

Comment:

By 1792.

The 1792 map shows two large structures, clearly not huts for convicts and two smaller ones. Striking is not only the large size of these structures but the close proximity to each other, suggesting that they had some common status or function—they were most likely government, or public, buildings. We have a good idea of what was there by 1804 (granary and brewery) but that does not explain what was there previously to explain the group of structures shown in 1792 map. It would seem that there is sufficient justification to nominate those buildings or at least one of them as being a remnant of the
structures associated with the Redoubt. They would only have been three years old and nearly all of the other public buildings of the time had been accounted for. See inventory No 1.

By 1804.

Mr Higginbotham notes that the 1804 map lists a granary and the 1803 brewery for the site. He proposes that the granary might be the weatherboarded and shingled granary for maize (140 by 40 feet) built in 1798 to cope with the booming crop yields. However, other likely areas could be the market place or the Public Store near the landing area. The ‘granary’ could very likely have been the original store in the Redoubt which by 1804 would only have been about 15 years old.

THE BREWERY

The 1804 map shows the brewery as a very long building; the club-like east end was the malt kiln, attached to the main structure. The long section was converted out of a pre-existing building, as the following contemporary accounts show. Work began during April-June 1803. Although almost everything was ready by September 1803, it was not until February/March 1804 that they had produced the first experimental batch of beer. The concern regarding the hops and even barley may be seen in every account of the brewery. Compromises were made but by February/March 1806 the government gave up on the project and the business was leased out for a period of two years.

The public works for the quarter, March 31, 1803 to June 30, 1803 simply states ‘erecting works for a public brewery’ HRNSW, Vol 5, 164.

‘Soon after the Glatton sailed, a commencement was made in erecting a public brewery at Parramatta, as being the most central and convenient situation; but as it requires some time and labour to erect the malt kiln, houses etc., no time is lost in the compleating it; and, in the meantime, I have allowed a man, who has always brewed on his own account, to purchase a part of the hops arrived by the Glatton. When this desirable work is compleated, for which purpose much barley has been sown this year’ HRNSW Vol 5, p 196 7 Aug 1803.

‘The brew-house and implements are now nearly fixed, and altho’ we are in want of a proper person to conduct that business, yet every
exertion shall be made to brew beer’ (Note: only 10 hop plants available). HRNSW Vol 5, p 220. 17 Sept 1803.

‘Respecting the utensils for brewing, and the hops sent by the Glatton and Cato, I have the pleasure in saying that the former are all fixed at Parramatta in a building appropriated for that purpose, with a kiln and every other requisite for malting barley and brewing under the same roof. 142 pounds of hops were bartered with a settler who has long brewed in small quantities’, ‘A trial has been made in which we have succeeded in making a small quantity to begin with...we shall soon carry it on in a very large scale. That which is made is very good, altho’ we have no proficient in brewing to conduct it.’, ‘It would also be a future benefit if a thousand well established hop plants could be put on board a whaler coming direct. There are now about forty thriving hop plants growing from a quantity of seed brought out by an officer in 1802...’

HRNSW Vol 5, p 317. March 1, 1804 (King to Hobart).

‘By the notice of the Gazette of the 30th September, your Lordship will observe that our brewery commenced........The malt kiln, size of the copper, brew-house, and every requisite is sufficient to brew six thousand gallons of beer weekly...’ The hops were running out and they were worried about the barley. HRNSW Vol 5, 518. Dec 20, 1804.

‘The brewery of beer at Parramatta is discontinued on the part of Government, and the buildings, brewing utensils, and cooperage rented to Thomas Rushton for the term of two years...table beer at sixpence, and strong beer at one shilling sterling per gallon....’

HRNSW Vol 6, p 22. March 1, 1806.

Macquarie period onwards.

Macquarie cleared the whole area of structures by about 1814/1815. There is circumstantial evidence that the resumptions had taken place by August 1814 (by which time Macquarie thought he had resumed Bligh’s 105 acre grant across the River). The site has been left fairly undisturbed except for the construction of the Pavilion around 1875 and the shed which replaced it, presently there. Also, a number of trenches have been dug through the area for various services (can be traced by the colour differential in the grass and slight depression along the routes.
Significance:

The site is of huge significance, being the focus of concentrated and substantial building activity from the founding years to about 1803 (when the brewery was established). The brewery is not only a ‘first’ in the technology of brewing and the beginning of local industry, it is related to a social debate of the time regarding the evils of drinking spirits and fortified wines in a hot climate and the spirits monopoly. The brewery also brought to a head the problem of growing the right sort of hops (a well documented topic). This area should be regarded as one of the most potentially important archaeological sites at Parramatta Park and seems to hold the key to the location of the Redoubt.
No 12
Convict Allotment and hut, 1790.

Comment:

Allotment numbered as '1' on the 1804 map. Formal lease: James Wright, August 11, 1804. (Higginbotham). Also clearly shown on the 1792 map. Removed by 1814/1815 for Governor Macquarie's enlargement of the Domain.

What were these huts like?

Tench described the huts he saw at Parramatta on November 16, 1790:

"The main street of the new town is already begun....It contains at present 32 houses completed, of 24 feet by 12 each, on a ground floor only, built of wattles plaistered with clay, and thatched. Each house is divided into two rooms, in one of which is a fire place and a brick chimney. These houses are designed for men only; and ten is the number of inhabitants allotted to each; but some of them now contain 12 or 14, for want of better accommodation. More are building; in a cross street stand nine houses for unmarried women: and exclusive of all these are several small huts where convict families of good character are allowed to reside...." Tench, p 195. Lath and plaster must have been a luxury because that is what the first Government House was built of.

Even by September 1800 the old huts that Governor Phillip had ordered built were still being repaired. 'Repaired the Government hutts at Parramatta and Toongabbé, originally built by Governor Phillip for the reception of convicts on their arrival, but which had been some years neglected, and were now in a state of ruin. Many indeed had fallen down'. HRNSW Vol 4, p 152.

In 1803 houses in general were still much the same as in 1790, though George Caley noted that things were just beginning to improve:

'Houses in general are nothing more than simple wretched huts, particularly the farmers. The walls are wattled, and plaistered with clay, the roof thatched, the floor frequently nothing more than the bare ground. They generally consist of two rooms, and the furniture coincides
HUNTER PRINT "1796"
BASED ON FRAME OF
HOUSE ON THE DESIGN
OF BUILT HOUSES ALONG
THE ROW IN GEORGE ST.
AS SHOWN
TOP-PLATES + TOPS OF STUDS (POSTS).
WITH TOP-PLATES

S = AS SEEN

AS SEEN IN
HUNTER
BUT
COULD NOT HAVE
BEEN
SEE BELOW

OTHER LIKE STRUCTURES DEPICTED IN HUNTER.

ABSTRACT PLAN RECONSTRUCTION

AS HAD TO BE

THE LIVING ROOM IS
JUST ABOUT THE ALWAYS ON THE FIREPLACE SIDE.
with them. But of late the building of houses has much improved, particularly in the metropolis. The walls are boarded, and painted without and plaistered within, the windows glazed, and the roofs shingled. They are mostly only of one storey’, ‘What is called weather-boarding is most preferred...The out-houses, barns, etc., of the farmers are miserable-looking sheds.....’ December 31, 1803. HRNSW Vol 5, p 294.

Significance:

Fairly undisturbed archaeological site of a late eighteenth century domestic structure and associated yard elements.

Further reading: Tench, HRNSW, HRA.

**No 13**

Convict Allotment and Hut, 1790.

Comment:


Significance: As for No 12.


**No 14**

Convict Allotment and Hut, 1790.

Comment:

A hut is shown in the ca 1792 map just to the west of the creek leading to the River via The Island (creek to the west of the George Street Gatehouse). The house has gone by 1804, most likely removed in 1803 to provide a carriage drive or path from George Street to the Brewery behind No 12 and 13. (See No 11h).
Significance: as for No 12.

Further reading: 1792 and 1804 maps.

No 15

The Creek Allotment.
(North side of George Street).
In Higginbotham "Convict allotment and hut".

Comment:

There are problems regarding the allotments from the creek (George Street Gatehouse) eastward when one compares the 1792 and 1804 maps. Hence in the Higginbotham Zoning Plan, inventory No 15, ‘Convict allotment and hut?” (question mark) because of the dilemma of whether the creek area was considered an allotment, as suggested in the 1792 map, and whether by 1804 there came to be a hut on it.

In this work No 15 will be used to represent the creek and banks on the north side of the culvert, as existing and as represented in the 1792 map (also acknowledged in the 1804 map but is confusing). The features along the creek will be dealt with later. The 1804 map has a feature that could be mistaken for the Island; the feature extends all the way to the hospital area; compare this with the 1792 map, which correctly represents the Island, and later maps of the area.

The course of the creek is a survival of pre-settlement days and under human pressure at various times beginning in 1790 when a timber culvert was built over it and it was hemmed in by residential pressure and agriculture until the mid-Macquarie period. It is clearly indicated in the 1793 Brambilla view (McCormick, plate 17). Around 1814/1815 the culvert was restructured in stone but still retained the same oblique course. The creek was also dammed further down to improve the waterholding capacity. The present state of the creek is still recognizably a legacy of the the Macquarie period.

Significance:

The creek is a well preserved natural feature with overlays of a series of developmental phases from late eighteenth century engineering and town planning developments, the landscape enhancements of the
Macquarie period to twentieth century engineering solutions.

Further reading: Varman, R.V.J.

No 16
Convict Allotment and Hut, 1790.

Comment:
No 16, in this report, is used to record the first allotment and hut east of the creek, placing the hut location just west of the George Street Gatehouse or partly under it. In the Higginbotham Plan this represents the second allotment and hut as shown in the 1804 map (but by the 1792 map, the second house would be under O'Connell Street).

Significance: as for No 12.

Further reading: see Higginbotham. Proudfoot (1971).

No 17
Convict Allotment and Hut, 1790.

The west-most hut on the south side of George Street. Indicated in both the 1792 and 1804 maps. Removed by 1814/1815 to expand Macquarie's Domain.

Significance: as for No 12.

Further reading: see Higginbotham. Proudfoot (1971).

No 18
Convict Allotment and Hut, 1790.

Hut etc., on the east side of No 17 as indicated in the 1792 and 1804 maps. The 1792 map shows this to be a wide block, making up for the
narrow block dedicated to the creek.

Significance: as for No 12.

Further reading: see Higginbotham. Proudfoot (1971).

No 19

The Creek Allotment and post-1792, pre-1804 Hut. (South side of George Street, in the Murray Garden).

In Higginbotham "Convict allotment and hut?"

Comment:

The 1792 map shows the third allotment from the west, on the south side of George Street, as vacant--a narrow allotment for the creek.

By 1804, allotment inventory No 18 had been reduced in width in favour of (taking up) the creek allotment. A hut was built on the west side of the creek, well back from the George Street frontage on this remodelled allotment. The allotment was cleared of 'improvements' by about 1814/1815 for the expansion of the Domain.

Significance: as for No 12.

Further reading: see Higginbotham. Proudfoot (1971).

No 20

Convict Allotment and Hut, 1790. (Murray Garden).

Comment:

This is the first allotment and hut on the east side of the creek allotment, south side of George Street. The hut is indicated on both the 1792 and 1804 maps. The creek angle is not very accurate in the 1804 map. Cleared from the site by 1814/1815.

Significance: as for No 12.
Further reading: see Higginbotham. Proudfoot (1971).

No 21

Convict Allotment and Hut, 1790.
(Murray Garden and/or O'Connell Street)

On the 1792 map this hut is directly across the road from inventory number 16 (first hut east of the creek on the north side of George Street). This hut is the second hut east of the creek on the south side of the road. Cleared from the site by about 1814/1815.

In the 1804 map the second lot of huts on both sides of the road are directly opposite! The second lot of huts seem to be so far eastward that they would probably be under O'Connell street.

Archaeology must determine the accuracy of these maps.

Significance: as for No 12.

Further reading: see Higginbotham. Proudfoot (1971).

No 22

Site of Hut, by 1804.

Comment:

This structure appears only on the 1804 map. The house fronts Bridge, or Pitt, Street, although set a little back from the street, roughly in line with inventory No 17 and No 23. Judging by the 1792 map, this structure would be situated in the middle of the laneway between George street and Macquarie Street. The site was cleared around 1814/1815 so that the Domain could be extended.

Significance: as for No 12.

Further reading: see Higginbotham. Proudfoot (1971).
No 23
Convict Allotment and Hut, 1790 (or slightly later).

Comment:
This allotment was situated on the south-west corner of Pitt Street and Macquarie Street. The hut faced Macquarie Street. The hut is recorded on the 1792 and 1804 maps. The site was cleared around 1814/1815 to extend the Domain.

Significance: as for No 12. The site may have been destroyed as a result of the RSL Club development.

Further reading: see Higginbotham. Proudfoot (1971).

No 24
Convict Allotment and Hut, 1790 (or slightly later).

Comment:
This is the second allotment and hut from the west termination of Macquarie Street along the north side of the road. The hut is shown on the 1792 and 1804 maps. The site was cleared around 1815/16 to extend the Domain.

Significance: as for No 12. The site was almost certainly destroyed during the RSL Club development.

Further reading: see Higginbotham. Proudfoot (1971).
No 25

Convict Allotment and Hut, 1790 (or slightly later).

Comment:

This is the third allotment and hut from the west termination of Macquarie Street along the north side of the road. The hut is shown on both the 1792 and 1804 maps. The site was cleared around 1814/1815 to extend the Park.

Significance: as for No 12. The site was almost certainly destroyed during the RSL Club/Bowling Club development.


No 26

Convict Allotment and Huts, 1790 (or slightly later).

25a—hut, 1790-1792... Replaced by 1804.
25b—small hut on the south-east corner of the allotment, by 1804.
25c—small hut on the north east corner of the allotment., by 1804.

Comment:

This is the fourth allotment from the west termination of Macquarie Street along the north side of the road. A single, centrally placed, hut shown in 1792. By 1804 two small huts are shown. The site was cleared by about 1814/1815 to extend the Domain.

Significance: as for No 12. The site was almost certainly destroyed during the RSL Club/Bowling Club development.
No 27

Convict Allotment and Hut, 1790 (or slightly later).

Comment:

Fifth allotment from the west termination of Macquarie Street along the north side of the road. The hut in 1804 is shown set back a little from the four to the west of it. The house in the 1792 map may just be a rationalization.

Comments made on No 21 apply to this one.

Significance: as for No 12. The site has almost certainly been destroyed by RSL Club/Bowling Club development, if not by the roadworks of O'Connell Street.
No 28

Watermill.

28a--Mill house, 1803/1804.
28b--Log dam, 1803/1804.
28c--Stone dam, 1805, 1806.
28d--Mill pond with emergency run-off (Feb 1805), a natural creek hollow.
28e--Mill-wright’s shed, 1803/1804. By 1806 Marsden’s cow shed.
28f--The series of ditches and upper dams (not in the Park boundary).
28g--Ancient eucalyptus tree next to the River.

Comment:

The mouth of the ‘natural hollow’ a water course which was dammed by 1804 may still be seen. Most of the natural hollow was in-filled during the 1840s but even unto very recent years the area within the Park was used as a place to dump unwanted fill. A number of drain pipes have been excavated through the area also.

WATERMILL
PHASE I, 1798 - 1801

Preparations for the first watermill began in August 1798 or shortly before. From the following references it can be seen that the first mill was constructed of timber between 1798 and early 1801. Very evidently, the work progressed slowly because of the shortage of labour. The mill was almost ready in 1801 but it was ruined by the disastrous floods of March 2 and 3. The floods destroyed all of the Hawkesbury crops and stacks, reducing the need for the mill (had it survived). The matter of the mill seems to have been dropped until Lord Hobart enquired of King regarding the progress of the water-mill. Action!! and the second phase began.

There are good reasons to suppose that the first watermill site (phase I) was actually further upstream. All modern sources acknowledge that Hunter first proposed the idea and started the work but most assume that the same site was involved. Caley in 1806 proposed the spot near
Parramatta's Most Beautiful Wind and Water-mill – 'Exciting a Riot'

Caley's map

According to Caley's account:

- The first attempt was further upstream, west side.

The Water Mill
Reconstruction Sketch

- The mill.
- The Dam of the Mill-pond; and showing the breach.
- The stone wall which was afterwards in building as a dam for the mill-pond.
- A ditch made to preserve the dam B, previous to its giving way.
- The first made ditch to bring the water to the mill-pond.
- The ditch which was afterwards made for the same purpose.
- When this ditch was cut deeper, it was carried more direct at the upper end.
- The dam which was made of wood to turn the stream of the rivulet in to the mill-pond. This was the second dam; the remaining part of the former one, which was made of earth and logs of wood, being now become the back to a part of the present one.
- The place to carry off the over-plus water.
- A perpendicular fall of water of several feet down the rocks.
- An excellent place to erect a weir, the whole being a bed of rock, and a considerable fall; and the water might be converted along the dotted line, where a mill might be erected at the end, with an over-shot water wheel.
- A farm laying waste, or uncultivated.
- The conflux of another rivulet.
- The Rev. Mr. Marsden's land.
- The shed in which the mill-wrights worked.
- My habitation.

Reproduced with permission of the Trustees of the Natural History Museum, London.
WATERMILL PARRAMATTA PARK 1803 - 1806
MAPS FROM LEFT TO RIGHT: EBSWORTH, 1887; EVANS, 1804; CALEY, 1806 (IN O. TATRAI)

NOTE. Outlines by RVJV.

NOTE. Inventory numbers imposed. RVJV.
Plan of the Township of
in New South Wales
5 814.
'K' (on his plan) to be the best for an under-shot watermill adding, 'and this was the place where Governor Hunter intended erecting one' (Tatrai, p 90). The main reason in favour of the first mill being constructed near area 'K' is that there was absolutely no mention of requiring a ditch to carry water to the mill dam. The ditches that were excavated all date more than two years after the flood of March 1801 when the first mill was ruined. The machinery was most likely adapted for the new mill.

August 1798 Work at Parramatta.
'endeavouring to prepare materials for a water-mill there'.
Collins. Vol II, p 89.

31 December 1798, works for the year ending.
'begun materials for a water-mill'.
HRNSW. Vol 3, p 524.

31 December 1799, works for the year ending.
'made cogg-wheels, etc., for the water-mill', 'cutting boards etc', 'cartage for the water-mill', 'timber to the erecting water-mill'.
HRNSW. Vol 3, pp 753, 754.

Buildings proposed by Governor Hunter, Sept 25, 1800.
'A large water mill at Parramatta; part of the water works considerably advanced, and some of the machinery prepared'.
HRNSW. Vol 4, p 154.

31 December 1800, works for the year ending.
'preparing timbers for the new water mill',
'iron work for...water mill', 'carting timber from the sawpits to the water mill'.
HRNSW Vol 4, pp 283, 284.

Governor Hunter's period of administration.
'Had the strength of the public gangs permitted their being further employed, it was intended to have erected a large water-mill at Parramatta, of which some part of the machinery and water-works were prepared'
AN INTERIM 1801 -1802...

George Caley, botanist, Sir Joseph Banks’ right hand in New South Wales sometimes provided detail on colonial matters which the Governor would rather have left unrecorded. Caley described (see below) how an oxen (later horse) mill was set up to make up for the disappointment of the watermill but resulted in yet another defeat. Whether the horse mill was set up on the first site or not is yet to be determined.

December 31, 1803. George Caley to Sir Joseph Banks.
‘The erecting of a water-mill at Parramatta was begun in the time of Gov. Hunter, and which was carried on for some time after, but by some means or other it was dropped, and one was erected for to be worked with oxen, but they not answering, horses were placed in their stead. It employed four men, and was worked by four horses; but it being so hard to work, some of the horses were soon knocked up; others were replaced, but were in the same condition in a short time, and the mill often being out of repair, it for a long time did not do more work in a week than what two men could do upon an hand-mill. At length it was stopped.

HRNSW. Vol 5, pp 294, 295.

Comment:

The accounts left in official correspondence of this phase are not very illuminating considering the scope of the work. Governor King probably made a new start on the mill as soon as he received Lord Hobart’s alarming letter enquiring about the progress of the watermill. However, Caley thought the Reverend Samuel Marsden had been promoting the project as early as April 1803.

King wrote in March 1804 that the flood-proof mill was completed and it only took from October 12, 1803 to February 23, 1804 to achieve the work. Unfortunately, within five months the two dams had failed! King heavily reinforced the dams but he admitted defeat in December 1804--there wasn’t enough water!!

WATERMILL

PHASE 2
24 February 1803. Lord Hobart to Governor King.
‘...the water-mill at Parramatta, for which a part of the machinery and water-works were prepared, have, I trust, been completed.’
HRNSW. Vol 5, p 42.

23 October 1803, Sydney Gazette, p 3.
Announced that preparations were being made to erect a watermill at Parramatta, Mr Alexander Dollis directing the works (late superintendent at Norfolk Island). Dollis left the colony in March 1804.

15 January 1804, Sydney Gazette, p 2.
‘The Water-Mill at Parramatta will shortly be completed; the wheels are finished, and the stone-work is in great forwardness. The design of constructing a spacious Granary over it will essentially add to the utility of the valuable undertaking’.

March 1, 1804.
‘Respecting the water-mill, the man who undertook it knew but little of it, and the experience of the floods in 1801 evidently shewed the impracticability of the waterways answering the purpose with safety to any building, however strong it might be. Anxious to get a water-mill constructed for Government, I procured the man who made the watermills on Norfolk Island. A durable one is now erected, of the best workmanship. The building is of stone, with two strong and well constructed dams, and the situation such as no floods can ever effect it. As only the iron of that part of the machinery that was made could be used, from its not being made true, every part was to make again, notwithstanding which it was completely finished in less than four months, being began 12th October and finished the 23rd Feb’y’.
HRNSW. Vol 5, p 321.

August 14, 1804. Governor King to Lord Hobart.
‘I have to regret that the two mill dams erected at Parramatta for supplying the water-mill have unfortunately failed owing to the lightness of the soil that they were generally formed of, which has rendered it necessary to undertake the heavy but effectual job of piling and casing the front of the dams, the largest of which will soon be compleated, and I hope in less than three months the water-mill (which is compleat and an excellent piece of workmanship) will be going.’
HRNSW. Vol 5, 425.

20 December 1804. Governor King to Lord Hobart.
‘I am sorry to say that the great labour which has been bestowed in
constructing an excellent water-mill and dam at Parramatta will not in any manner recompense the labour that has been bestowed upon it. This mill and dam has been erected on the same spot designed by Governor Hunter as the only situation likely to be supplied with water, but the experience of the last three years sufficiently proves that the water is very insufficient for that purpose, except in periods of much rain. The dam being firmly constructed and the machinery of the mill well executed, it must remain to work whenever there is a sufficiency of water. As the master carpenter at Norfolk Island has relinquished his situation there on the intended removals, and wishing to come here, his abilities in constructing mills will soon remove every inconvenience that has been experienced on that account.’
HRA Ser 1, Vol 5, pp 171, 172.

CALEY’S ACCOUNT 1806

George Caley virtually lived next door to the mill, on the site of the old Government Farm (see No 2). Caley’s regular walks took him past the spectacular goings-on at the watermill site. He was obviously highly entertained by the progress there and wrote a very detailed account for Sir Joseph Banks. Caley’s account of the watermill may be read in Olga Tatrai’s book (1994, see bibliography, pp 82-91). Note: 1 yard = 915mm; 1 foot = 305mm; and 1 inch = 25mm. A summary:

--Governor Hunter had intended to build a mill at point ‘K’.
--Work on the watermill began in October 1803 under the direction of a man (Alexander Dollis) from Norfolk Island who had built a mill there.
--The mill, the ‘mill race or ditch’ and dams begun in a hasty manner.
--Foundation of the mill seemed too close to the River (liable to flooding).
--Exterior measurements, ‘9 yards in length, and 8 in breadth, is three stories high, and roughly built in stone’. To work only one pair of mill stones but the structure was capable of being extended for a second pair, if ever wanted.
--The over-shot waterwheel, ‘is 18 feet in diameter, and 18 inches in breadth’.
--Dam ‘B’ (lower dam), at the end of the small hollow forming the mill pond, made of tree trunks (‘trees’) laid lengthways and others crossing at rightangles set in puddled earth. The dam wall was straight up and down on both sides, the ‘front’, or inside, of the dam was ‘rampposted’--covered in a earth/grass mix and compacted to prevent water from finding a way through the dam via the cross-placed logs.
--Dam ‘B’ was ‘80 yards’ long and ‘6 yards’ high at the deepest point of the hollow.
--A trough-like spout, set at a level one third from full capacity, carried the water onto the wheel. There was no other water overflow to carry away the water in time of heavy rain.
--Mill ditch, ‘E-H’ was about 2.5 yards wide and a little over 2 yards deep but become as shallow as 0.75 of a yard as it progressed to point ‘E’. ‘E-H’ was dug above the natural creek hollow! (where the later ditch ‘G’ was dug).
--Dam at ‘I’ (upper dam) was located up the River to form a pool, the ‘whole consisted of logs of wood and earth heaped together without any taste or neatness’ and ‘having some large erect parts’ to keep the rest together. There was no overflow.

--Mid March 1804, Alexander Dollis left the colony on the Calcutta. Caley wrote later that it was rumoured that Governor King had written to England boasting that the mill had been finished and that Dollis had been given 50 pounds and a free passage on the Calcutta with his family as a reward for his achievement. HENCE THE FOLLOWING DESPERATE MEASURES TO GET THE WATERMILL IN FULL WORKING ORDER:

--April rains. Governor King arrived to see the water fill the upper dam and the water forced into the ditch to the mill. The dam began to crack.
--A ditch hurriedly dug at the other end of the dam to relieve the water pressure. As soon as dug, the water undercut the sandy soil and the soil and the logs were carried away in the sight of the governor.
--Quote: ‘what man does, God undoes’. Governor King said as he turned to leave the devastated site.
--The ‘front’ (inside) ramposting of the lower dam ‘B’ came off, exposing the logs. The front repaired but this time not as perpendicular as a house wall.
--The upper dam, section over the stream, at ‘I’. This was rebuilt with 11 piles, ‘tree-like posts’ (the mid one set forward) about 6 or 7 yards apart. Squared logs were bolted onto the piles. The planks were 2.5 to 3 inches thick and between 8 and 11 inches-plus wide, and a minimum of 8 yards high, as seen. The planks were nailed to the squared cross beams. The planks and the piles were driven into the ground ‘with an engine’. However, the new dam, 42 yards long, was positioned in the same place as the old (which had been considerably widened because of the large rush of water carrying away the bank).
--The upper dam, section to the east, at ‘H’. Nineteen piles, or posts, but of smaller size with 2 inch thick and 8 to 11 inches or more wide planks, nailed tightly edge to edge, horizontally to the piles. This section of dam
was 34 yards long. At ‘H’ an over-flow was created, a 10 yard gap in the planking laid with sleepers to allow the water to escape.

--Because the planking had not been seasoned they shrank, especially in the hot weather.

--The planks were caulked to remedy the shrinkage but as they continued to shrink the caulking fell out—'the caulking proved useless'. The whole of the planking was to be backed with piled earth but only a section was ever completed. ‘The whole forms a stupendous ruinous appearance’.

--A new ditch ‘F - G’ was dug following the natural creek course of the hollow leading to the mill pond. From ‘H - F’ was cut 3.5 yards deep and wide, the base cutting through rock.

--The upper dam planking completed. However, on January 17, 1805 a flood breached the dam. Caley with others mused, why the same sandy site (it was wider than it ever had been) when there was a perfect rocky place for a dam a little further up. They concluded, since Marsden was the project manager, that it must have been contrary to Scriptural process.

--Further heavy rains up to February began to fill the mill pool. A heavy morning rain on February 7, 1805 caused a quicker rise than the water-wheel trough could discharge. The water pressure caused the dam to crack and begin sinking.

--An emergency team was sent on February 7 to dig a ditch at point ‘D’ (probably the site of the present road to the weir) to draw water away from the pool. Another team was sent to wheel earth to the top of the dam to prevent the water from flowing over it. Luckily the rain eased but the ‘ramposting’ came away again, slipping into the pool.

--Milling operations soon after the 7th and continuing into early March 1805. The water wheel moved too fast and about 50% of the water leaving the dam was wasted.

--A convict belonging to the Rev Samuel Marsden, an ex-canal digger, was put in management of the mill. The ramposting could not be reconstructed because the mill pool was still full and there was no provision for emptying the dam.

--Earth was dumped into the pool to make up for the lack of ramposting and to stop a small leak which had developed. A large hole was made in the dam in order to find the small leak but nothing found by Friday, March 8th, the site was left as it was over the weekend. Further wet weather over the weekend caused the water to rise up into the hole and force its way right through the dam wall by early Monday morning, March 11. The breach was ‘long and wide and deep’, on the mill side of the dam and even cut into the natural bank.

--It was decided to build a stone dam (March 1805) to form the dam of
the mill pool ‘C’.

--Ditch ‘G’ was made deeper and was linked direct to ‘H’ (as of March). Up to the descent into the natural creek hollow the ditch was about 3 yards wide and ‘very shallow’ getting deeper before it reached point ‘O’. From ‘P’ to the ‘first turn’ and the ‘second turn’ it was 3.5 yards wide and deep. Before the termination (the beginning of dam ‘H’) it became 4 yards wide at the top and 4 yards deep (narrowing at the base) but unfinished looking because of the stone. This ditch was not so rocky as the first one ‘H - E’ and often the sides would slip, causing obstruction.

--Work on the stone dam continued steadily from March 1805 to mid April 1806 During this time the wall had partly given way twice. After heavy rains mid April 1806, the water built up behind the dam to such an extent that the greater part of the dam collapsed. The dam was a little less than 50 yards long, 2.75 yards thick and, if completed, would have been 6 yards high maximum. The dam wall had two faces of stone, tied together at regular distances with long blocks of stone, the mid 12 inches ‘puddy’ (probably puddled clay with sandstone off-cuts; a common method of the time for stone walls). The stone wall had a trough in it to let out all the water, a large place intended for a sluice and part of the top arranged like a weir to let the water flow over the dam. The ‘front’ was of squared stone. Only some of the stonework was done with mortar, the rest with clay. Caley believed that some of the joints were very bad and the builders tried to fool the water by making up for the bad joints by disguising them with the clay and mortar:

'These defects the water soon found, and it is owing to this in tumbling down’. Caley put the failure of two and a half years of ‘incalculable’ expense down to the lack of having one qualified man.

--By 1806 the mill house was showing signs of cracking and of ‘giving way’. Caley thought if it wasn’t carried away by flooding, it would shake its way to ruin by the movement of the wheels.

--Caley blamed the Rev. Samuel Marsden for having his sights set on the 36 acres even before the ditches were excavated--the seemingly irrational initial placing of the first ditch ‘E - H’ to the east of the natural creek hollow leading to the mill pool instead of along it. Marsden, perhaps, wanted the hollow on his land! His 1805/1806 grant was defined by ‘E - H’ in the end. The first thing Marsden did was to fell trees over the track from ‘G and O to K’, dig a ditch and forbid trespass along the track that had for years been the road between Parramatta, and Baulkham Hills, Castle Hill etc. A new road was begun, surprisingly, skirting around Marsden’s land conveniently for him (but was never
Map showing site of Marsden’s mill on his 36 acres adjoining the Female Factory. The mill race – ‘old mill race’ – dug for the Government watermill in 1803 can be clearly seen behind the factory and down across the cell block (between the factory and the Roman Catholic Orphan School). A natural water course flows under the Orphan School and this was utilised and dug as another ditch to feed water to the dam for the old watermill. Drawn in 1846 by J. J. Galloway. (AONSW Map No. 4804.)

The inscription reads:
‘With deed of conveyance from Blaxland’s Trustees to the Queen, purchased by the Government for £2,500 for the use of the Lunatic Asylum.’
completed). It seemed that way to Caley.

-- The mill-wright's shed 'P' was converted into a cow shed for Marsden. Marsden left his herd there at one time 'to ramble where they liked in the night, and to trespass on the inhabitants'. Some of Marsden's bullocks broke into Caley's vegetable garden one night (site of the former Government Farm).

-- 'a monument to folly', George Caley wrote to Sir Joseph Banks.

-- Between 1810 and 1812, Rev Samuel Marsden eventually built his own watermill on this grant just down from where Caley thought would be the best place for an under-shot watermill. The Marsden mill survived until a little after 1866.

Conclusion:

The history of the watermill from 1806 to 1820 is taken up in M. Flynn's March 1996 report. The mill was leased to George Howell (senior) by about 1810. Bankrupted by Simeon Lord in 1820, the mill closed down permanently. The mill parts were dismantled and sold.

What happened to the mill structure, dam etc., is not clear. The huge amount of dressed and rubble stone on the site must have been reused elsewhere. Although the site has been compromised, it is believed that the footings of the mill and stone dam and many other features must still survive to some degree. Although Caley provides us with great detail of information, archaeological excavation should uncover many features not mentioned in the documentation.

Significance:

A prime early industrial and engineering site where the limitations of early technology, materials and expertise were tested to the full; and failed dismally. At the time the mill and dam would have been the most ambitious structure attempted since the beginning of settlement. The energy and resources put into this venture underlines the great need at the time to make the colony self-sufficient.

The site is intimately associated with early figures of colonial influence* such as the Rev. Samuel Marsden, George Caley and Governor King.

*It is doubted that Nathaniel Lucas had anything at all to do with this project except perhaps in regard to the machinery (with Dollis): there