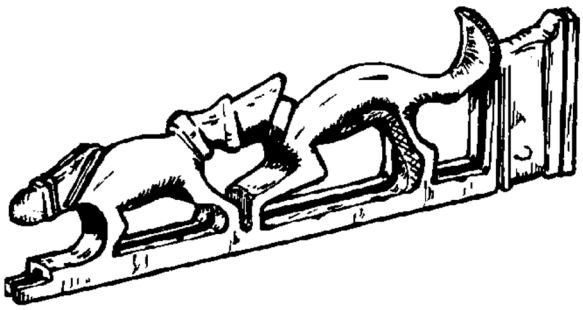
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The History of the Waterways Development At Wrest Park Silsoe

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THE HISTORY OF THE DEVELOPMENT OF THE WATERWAYS AT WREST PARK

By M J B Turner 28 Feb 1991 (updated Feb 2008)

Introduction

Wrest Park contains one of the five best remaining examples of pre-landscape formal gardening in England. The others are Westbury Court in Gloucestershire, which is more Dutch in origin**;** Powis Castle, Bramham Park in West Yorkshire and Melbourne Hall in Derbyshire. Wrest is very much in the style of Andre Le Notre who produced many grand formal gardens in France at the time of Louis XIV,

In England there were many of these French style gardens built around the end of the seventeenth century and the start of the eighteenth century but the vast majority were swept away by the English landscaping schools of Brown, Repton and others. The grand formal views of the Le Notre style with their straight lines, allees and clipped box and yew were replaced by informal sylvan scenic views. Sunken walled ditches (ha-ha's) were used to make it look as though grazing herds of cattle, sheep and deer had access right up to the house. Al1 the straight lines were removed. Typical examples of English landscape gardens are to be found at Stowe, Blenheim, Stourhead and Luton Hoo to name but a few. For the landowner the saving in labour on maintenance must have been a great attraction of this new school of gardening**.**

Thanks to Jemima, Marchioness de Grey, (1722—1797)**,** who controlled the estate from 1740 to 1797, the influence of the English landscape school was kept to a minimum at Wrest. Apart from the joining together of the outer canals, removal of the formal gardens near the Archer Pavilion and plantings of more trees, the lower gardens are virtual1y unaltered since the 1730's.

We are also fortunate in that from about 1685 extremely good accounts were kept from which the progress of the major works on the estate can be followed. This history of the development of the waterways at Wrest owes much to these accounts and other material collected in the Bedford County Archives. I have tried to include all the references to the water bodies at Wrest I could find and have extracted many references from the works of James Collett-White and the Land Use Consultants “Wrest Park Masterplan 2 for Restoration and Management”. At the end of this report I have included my own plan showing the dates when various things happened to the waterways and reduced versions of a Kip/Knyff engraving, and the Lawrence and Rocque plans; however the interested reader should certainly refer to the large scale maps and plans held in the Lucas Collection in the Bedfordshire and Luton Archives and Records Office. In particular the Kip/Knyff engravings, the Lawrence plan of 1719 and the Rocque plans of 1735 and 1737 and the Tilleman sketches and the paintings of unknown origin are valuable sources.

Chronology and Comments **Source**

c.1084 *"Manor of Wrest had a mill*" - this would have been a watermill, the first authenticated British windmill being recorded c.1191. V.C.H. vol..II, p.331

Electricity Generation from Windpower

There would have been three possible sources of water; one being the stream in the south west corner of the site which has a substantial flow of water; the second being the spring and small stream in the north west corner of the Gardens. This spring was a large one and still functioned up until c.1952, when the borehole at Pulloxhill is reputed to have substantially lowered the water-table in the Silsoe area. The third was the stream to the north-east of the site. Note also the likelihood of another spring to the east of the old house which will be discussed later although it should be noted that only one spring is ever mentioned in the accounts.

priv.comm. P,Dalley,J Cowell 1989

If we assume that a water mill with an undershot wheel required about 30kWh to grind a ton of grain then a full millpond of about 100 metres by 30 metres by 2 metres deep would support an output of about 600 tons of ground grain. With several other mills in the area this capacity would probably suffice for Wrest. The lake referred to as the old millpond is that to the north-west of the present Chinese Bridge and would have been of approximately this size. My theory is that the millpond was originally supplied from the stream in the north-west supplemented by the output from the spring. This would account for the shape of the pond and the direction of its main axis.

c.1512 *"except for the mansion house with all moats, moat water, fishponds.."*

In a lease by Sir Henry Wyatt Knight to Thomas Hall of Wrest

BRO L Jeayes 899

Judging from other local sites, eg Upbury and Faldo Farm, the moat would almost certainly be filled with water and not be a dry ditch. Nearby Upbury is an example of a spring-fed moated site whereas Faldo Farm is more reasonably called a stream fed moat. Filling such a moat would be relatively easy to achieve in the area of Wrest where a sandy ridge overlies a clay base. The clay subsoil can be smeared or puddled to make canals or ponds with little difficulty as recently proven to the north-east of the site where a paddy field in the form of a shallow canal 100 metres long and 12 metres wide was built by the author and colleagues in 1987 for experimental work.
The major water loss from canals is usually by seepage and in the Wrest area with its heavy clays is generally very low so that even a small source of water such as a spring could keep a canal or moat topped up. The paddy field mentioned above could be kept topped up from an ordinary domestic tap delivering about 20 cubic metres a day,

It appears very likely that most manor houses in the area had a moat, originally as defensive features but later as a matter of fashion. The moats would often be used in association with fish ponds.

1573 *"The inventory after the death of Reginald de Grey refers to a moated Tudor building*." CW p.2-3

c.1639 A poem by Thomas Carew contains "*Wrest* **.....**
and entertains the flowing streams in deep
and spacious channels, where they slowly creep
in snaky windings, as the shelving ground
leads them in circles, till they twice surround
this island mansion, which, i'th centre placed,
is with a double crystal heaven embraced;". Through Visitors Eyes, p.215, S Houfe

This presumably means a double moated system or perhaps a moated house with an outer stream network. The nearby site of Upbury is interesting in that it appears very much like a double moated system. But it is unlikely that this would have been confused with Wrest. On none of our aerial photographs of Wrest have I been able to spot any sign of a filled-in moat. This is not too surprising in view of the large amount of soil moving that has taken place on the site.

1651 "*Large moated Tudor manor probably on site of Medieval house. Formal garden to south.*" Did the moat extend around the house at this time or had it been reduced to the small portion shown in the later Kip engravings to the west of the house? JG 1 p.1

1686/88 "*Making a garden on the south side - levelling of the ground took four years.*" L31/288

This could perhaps be when the moats were partially filled in.
The Great Pond or Canal, now known as the Long Canal, was almost certainly in existence or being built at around this time. It appears to have been constructed by building a dam across the southern end of what must have been a shallow valley.

1687 Accounts contain a note about taking carp, tench and perch out of the best pond by the oak tree and putting them "*in the moat above the bridge next court wall*"; and also moving some carp, jack and bream from the moat to the little pond. The best pond is likely to have been the Great Canal and the little pond the diagonal pond. L31/195

1689 One large carp with spawn put in Horsepool to breed and 22 eels put in moat next to the sluice. They had been taken from the middle pond in the Billiard Room garden. 167 carp put in the moat next the sluice from the middle pond. The middle pond is again likely to have been the Great Canal. notes at front of L31/195

1690-99 Cisterns were being made for the two fountains in the present croquet lawn area. It is most likely that these would have been sited high up in the house so as to collect rain water from the roof and achieve as high a head as possible. It is less likely that water from the spring would have been used because the available head would have been only about 4 feet; the total head from the spring to the present Broadwater is about 13 feet. L31/288

Staff still working at AFRC Engineering in 1989 remember the spring at the north west of the site being Artesian in nature and the gush of water sometimes hitting the roof of the present grotto. They also recall a lesser spring keeping the Atlas Pond full and a large gushing spring down to the

south east of the area at Whitehall. There are also memories of the water feeding into the top of Broadwater to the west of the Chinese Bridge coming from a lions head and spurting out about six feet. This was also referred to as a spring but this cannot be correct and it was probably fed either from Ladies lake or by a long pipe run from a higher point of the lake system. priv. comm. 1

1691 "*The "wilderness" by the millpond being levelled*." L31/288/17
"the Necessary house"
"the elm pipes to carry the water"

1692 *"2cisterns for 2 fountains"* L31/288/18

1693 Stone piers with Wyverns and two stone basins from Robert Grumbold of Cambridge, cost £69 L31/288/23-25

1695 *"weeding the Ewe Wilderness with watering ye banks and mowing ye course grass about ye fountains"* L31/288/25

1698-99 *"claying the fountains…..work to the fountains; buying a large stopcock; bushing the drain under the terrace wall"* L31/288/29,30

April 1703 "*Making a place to lay the pipes from canal in Chapel garden to millpond*.". L31/289/79

The Chapel garden was to the east of the old house and the canal referred to is most likely to be the diagonal one shown in the Kip engravings. It probably means that this canal in the Chapel Garden had an independent supply of water from the east or north.

"*laying pipes and levelling by millpond*" L31/289/80,82-3,87, 92,113,115-6, 118,122

"felling wood for pipes and troughs and laying them down by the mill pond"

May 1703 *"felling bushes and trees by the mill pond"*

June 1703 *"(work) about the island in the millpond*" L31/289/90

"cleaning the spring at Cano"

"laying troughs in the mill pond head"

"setting on the grates in the mill pond"

Oct 1703 "*work at canal in Chapel garden*" L31/289/124,132,135

Dec 1703 *"draining in old park and spring"*

"*draying to let out the spring*". L31/289/125,144,145

This probably refers to a dredging or drawing operation to remove weeds or silt etc.

"*work at the little canal in Chapel garden.*" L31/289/127

"*carrying dirt from the hill to the moat*." - 98 mandays L31/289/153,154

"*labourers in the spring and carrying and digging gault clay to ram about the walls*." L31/289/155

Jan/Feb 1704 *"making a foundation for the spring"*

"*filling up moat and spring; work in spring*" - L31/289/156,157,162

The date here is fairly critical because the Kip engravings show the remnants of a moat system to the west of the old house. This entry could refer to the filling of the other part of this moat or to the filling in of this part.

Feb/Apr 1704 "*carrying from the hill to the moat*" - 320 mandays L31/289/163,166,167,174,177,180,183

"*making tunnel in Chapel garden.*" L31/289/164

This may refer to a tunnel arbour rather than a water feature.

Mar 1704 "*earth to pond*" - 60 mandays L31/289/171

Reference to work at the spring - "*cleaning, laying pipes to it - two millwrights laid a great pipe to it, rammed it down and stopped up the water."* L31/289/172

This was presumably to produce a more controllable source of drinking water for the house.

April 1704 "*work in the new ground by the millpond*" L31/289/185,188,190,193,195

May 1704 "*making vaults in the canal*" L31/239/220

Probably brick-vaulted conduits leading water in or out of the canal.

"*brickwall by millpond and about spring*" L31/289/221

June 1704 *"making the bridge by the Keeper's Lodge"* L31/289/206

Aug 1704 *"work about the Summer House by the mill pond"* L31/289/227

Dec 1704 *"carrying earth from the new ditch to the new orchard"*

April-May 1705 *"the Great Drain by the New Orchard"*

"the Great Drain from the Bog House" L31/289/290-2

"covering the Great Vault in the Middle Ground"

"laying down the troughs into the Old Park"

"laying thorns in the drains"

"moving the troughs in Old Park" L31/289

June 1705 "*covering the great drain*" L31/289/320,326

Where the great drain was is not clear; it may have collected the surface waters from the house area. A later reference mentions it in association with the Lime Walk.

June-July 1705 *"work at sluice by the Mill Pond"*

Aug-Sept 1705 *"felling elms and making troughs for the little canal and cutting out timber for the sluice"*

1706 Leonard Knyff drawings, engraved by Johann Kip and published in 1706 in Brittannia Illustrata. The Great Canal, old millpond and diagonal eastern canal are clearly shown as are the remnants of the moat running close to the west of the old house. The stream valley from the millpond is reasonably

defined but little of the western spring area can be detected. There are several inconsistencies between the three versions of the engravings I have seen e.g. the width of the Great Canal, the north approach to the house, the southern end of the Great Canal and the tree profiles.

Jan-Feb 1706 *"digging foundation and laying drain in the Green House Garden"*

"work in and about the Great Canal"

"planting hornbeam and whitethorn and banking trees by the Little Canal by the Summer House"

"making bridges and claying troughs in Old Park"

"making bridges in the Middle Ground" L31/289

Mar-Apr 1706 *"planting firs in the nursery from the Canal"* L31/289/427

"pulling down the cross wall by the canal" L31/289/429

"making the Little Canals for the ducks" L31/289/442-446

1706 April-June Making the little canals for my Lady's ducks (many refs); pining up the pale in Middle Ground pulled down to make the new brook; making a sluice for the new canals; making the bridges in the Canal. L31/290/19-34

"*making little canals for ducks*" - 65 mandays L31/290/7

"*making little canals for my Lady's ducks (by new orchard)*" – 78 mandays L31/290/10

"..canals for ducks" - 204 mandays L31/290/12,l6,19

"*..little canals*" - 68 mandays L31/290/23

"*..canals*" - 60 mandays L31/290/27

1706 July-Sept Setting down a sluice out of the great bason; making and dressing post and rails for Duck Canals; work about the Wilderness by the millpond; and work about the new closet. L31/290/37-80

"*ramming posts and rails for the Duck canal*" - 13 mandays L31/290/69
"*works in new orchard by the little canals*" - 29 mandays L31/290/79

"*Bishop's bill (bricklayer) for Duck canal*" - 24 mandays L31/290/80

Once again it is not clear which lake or lakes these accounts refer to; it could be the present Ladies Lake or the U-shaped lake replacing the diagonal lake which had certainly been filled in by 1719 when a scale drawing of the grounds attributed to E. Lawrence was produced. The reference to the new orchard could link in with the 1758 reference to the old orchard grounds and hence confirm the site as Ladies Lake.

1706 Sept-Dec Work in the New Orchard by the Little Canals; cutting piles for the sides of the Little Canal; draining down piles and hedging Round Bason. L31/290/c.100

1706 First mention of Great Canal also two smaller stretches of water at right angles to it and another at the far end. The Great Canal had however probably existed since the 1680's. J.G.1 p.5

1707 Jan-Mar Making brick drains across the walks; cutting piles for the millponds; filling the drains round the Great Bason; foundation for pedestal at the Canal. L31/290/103

1707 April-May Making the drains to clay in the elm troughs in Old Park across the walks through the wood; making a trench from the spring to lay troughs to the horsepond; making and

laying troughs from the Spring to the Little Horsepond and from the bridge to the millpond and the Great Canal; making a new brick drain across the fir walk by the iron gates; laying down and covering the troughs from the Spring to the horsepond and two troughs to divide the water, part into the millpond and part into the Great Canal. L31/290/c.160-172

"*Will. Bishop making the great drain in Lime Walk*" L31/290/149

"Tho. Bishop's bill making and laying troughs from the spring to the little horse pond and from the bridge to the millpond and the Great Canal"
"Will. Bishop bill for the brick wall by the little canal"
"cutting through the wall of the spring to lay in the troughs and making up again"

The troughs are almost certainly underground pipes either of hardwood or brick for conducting water from one place to another.

May 10-17 1707
"*cross the fir walk by the iron gate and laying a foundation of brick for the iron gates at the end of the Cross Canal"*

Could this refer to one of canals at right angles to the Great Canal? L31/290/171

1707 June-July Making the drain from the engine to the brook; building the water house in Old Park; work at the engine and making trench for the pipes; building the water house and sluice in the brook. L31/290/c.180-188

1707 Aug-Dec Banking up the ditch by the engine; making up the banks for the mill; levelling in Love Lane Ditch. L31/290

1707 "*Henry, beyond the formal garden to the south, by skilful use of the old moat and a nearby stream he made a great canal. Two smaller straight stretches of water were contrived to right angle at either side*.". JG 3 p.299 (Elstow Moot Hall (vii))
From the later garden plans of Lawrence and Rocque it would appear that, if the more detailed Kip engraving is scaled correctly, Henry slimmed down the Great Canal to about two thirds of its original width as part of these works and possibly widened the "spade" end which might account for the shape shown in the map published by Edward Lawrence in 1719.

1709-11 Archer Pavilion being built at south end of Great Canal

1711-12 accounts mention fisherman from Bedford being paid

to fish the millpond and later the Great Canal. - 10s and 12s6d L31/201/147,179

"*the brook is scoured*" L31/290/216,220

1711-20 Some enlargement to the park had been negotiated with the Master of Trinity, Cambridge JG 1 p.5

1712 Mention of Mr Ackres Canal; *"catching pickes in it"* L31/291
Enlarging the brook below the Pavilion L31/291
"William Gray, Gardener, for cutting and filling up the brook" L31/291

1716 Mention of an Octagon Basin CW p.6

1716 Payment to *Mr Carpenter, statuary for 6 Wyverns, 2 on the piers and 4 on the water.*
Payment to *John Turney for making the pedestal for Neptune.* L31/291

1716 Earl of Harrold wrote of "*filling up of Mr Ackers canal and making a handsome terrace in the room of it answering to that on the other side which leads to Hill House...".*
JG 1 p.6 L30/C/33/22

It is generally accepted that this refers to the filling in of the diagonal eastern canal.

1716 "*the new canal and finishing the terrace with sand and (the duckery)".* L31/305

The duckery I think is likely to be the U-shaped pond to the east of the house.

c.1716 May **"***The wall is begun which parts the millpond ground from the chapel garden … The spring does not rise as they expected so the house cannot be served without a pump."*
L30/8/35/3

1717 In the Great Garden there were 12 men, 3 boys and 3 women, in the Kitchen garden there were 5 men and boys.

Sept-Dec 1718 "*work done about Great Canal*" L31/292/141

1718 *April: Paid Thomas Peacock and Sheffield for sloping and turfing both sides of the ditches up to Cain Hill by the terrace.* L31/292
May: Paid Philip Hill for sloping the ditch on the outside of the plantation between the white pales and the water house L31/292
September: planting the palisades by the half bason L31/292

1719 Plan of gardens to scale published in a survey of the whole estate by Edward Lawrence.The originator of the heart of the plan may not have been Lawrence because a letter in 1715 stated:

"and yr Mr Ackers is doing one (a plan?) for me of the gardens". L30/8/87

The chances are that Lawrence would have had access to this plan when doing his survey of the whole estate. There is a terrace shown on both east and west sides of the south front of the house; the western end terminating in an octagonal basin. Note in particular the waters south of the Pavilion, the wings added to the north end of the Great Canal and the two short linear canals to the east and west of the Great Canal. Also note that if the larger Kip engraving is correct then the Great Canal appears to have been slimmed down to about two thirds of its original width for most of its length and the "spade" end slightly widened. The line of dots on this map either side of the Great Canal correspond with the original Kip width however in a set of painted panoramas which pre-date the later Tillemans works the line of dots coincides with a line of small trees. These panoramas show a Bowling Green House, the octagonal basin with a statue of Neptune, the wings on the Great Canal, the Temple of Diana on the site of the present Chinese Bridge, and the curved southern basin from the south side. L33/127,128

"*drain round house and connecting with octagon basin*". L31/245/f.31

1719 April: reference to tench and other fish for the Canal, horsepond and East Canal
L31/292

December: Robert Moore …. About the Canal, Bowling Green and Grove. To John Duell on account of making the canal next the late Gamekeepers Lodge.
L31/292

Summer 1719 John Dewell and about 30 men were working on the Canal "*next Cainhill*" - the John Dewell Canal L31/292/111,112,115,117,119-121
John Dewell and 30-40 men were working "*about the canals*" L31/292/121,123-5,128-131,133

Dec 1719 "*to John Dewell on account of making the canal next the late Keepers Lodge*"
L31/292/141

Jan-Feb 1720 "*more now to John Dewell on account of the canals and basin next the Old Park*" Carpenter making sluices. Bricklayer making arches. L31/292/149/153

Apr 1720 "*to John Dewell in full for finishing the canals from the penstock by the Figure, the basin and cut next the Meadow Ramming the sluices. Tiles for the house by the millpond*" L31/292/161

June 1720 John Dewell bill for 3 weeks "*about the canal near Ion brook to the gate into Fielden Mead*" L31/292/171

"*more men in cut to Fielden Mead*" L31/292/174

July 1720 "*More his men in the Great or Long Canal towards Fielden Mead*" L31/292/175

c.1720 Note by William Farrer containing measurements of the Canals and Bason at Wrest. North Canal 2525 yards; end of Terrace next to the cascade 43yds; walk on the east of the Terrace 122yds; Bason 1797.5 yds; South Canal 3292 yds; North end of the walk on the east side "of the canall is sunk 32.5 yds" L28/21

Payments for raising the west end of the Great Canal and filling the arch by the Octagon L31/292

1721 Feb-Mar: 900 tench and 210 perch put into the bason and Canal next the Old Park L31/292

1722-23 Many men working on the canals L31/292

April 1723 Great Canal - sanding - about 50 men involved L31/292/336

April-May 1723 54 men and 11 boys working on "*canal next Old Park*" L31/292/337.339.340

1723 John Dewell and 47 men and 12 boys in Great Garden L31/292

Summer 1723 John Dewell and about 50 men and 1 boys "*around Great Canal and canal next Old Park*" L31/292/336-340

1724 mention of canal next to Long Mead and canal next to Cain Hill L31/292

1724 March: Ditching by the White Bridge L31/292

1725 Jan: Men at Octagon and Canal. Men at circular canal L31/292

1725 April: *"at the new brook and circular canal" and "at the new canal and work below"* L31/292 (many references up to Jan1726)

1725 Sept: Leather for sluices and pumps L31/292

1725 Purchase of boat for new octagon. This must refer to the octagonal basin in the canal south of the Pavilion. L31/198/20

Feb 1726 John Duell's bill for 28 men and 7 boys in Great garden and making up ditch at Ion Field L31/293/22

Feb-Dec 1726 John Duell employing between 18 and 28 men and 6 or 7 boys in the Great Garden

Sept 1726 Lord Cartreff's gatekeeper was paid 5s for fishing the Great Canal L31/293/213

April 9-June 1726 "*teams at gravel cart*" with about 15 men L31/294/76-95

June- July 30 1726 "*teams at hay, dung and gravel cart*"

1726 "*at level cart with 6 carts to the white bridge*" L31/294/95

Aug 1726-June 1727 "*work on the octagon*" L31/294/96-1335
"*at level cart with 6 carts to the octagon*" L31/294/96
"*6 carts to fill in the octagon and men to pack and fill*" L31/294/104
"*a-filling up the octagon*" various
"*carrying sand from sand-hill to fill up the octagon*" L31/294/111
"*gravel and sand to the gardens*" L31./294/130-131

This work obviously refers to the filling up and removal of the octagonal basin at the west end of the terrace.

Summer 1727 "*at hay and gravel cart with the team*" L31/294/140 etc
"*Gro????? Octagon*" L31/294/183

1727-28 The sketches by Tillemans show the very formal southern canal with its new octagonal basin later appearing in the Rocque plans and a linear canal in the south west corner running from the southern canal up to meet the other western, linear canals. This linear canal, if ever built, has disappeared by the time of the Rocque plan of 1735 being replaced by the Serpentine Lake and the Bastion at its northern end. L33/129-138

1729 Sophia Grey to Duke of Kent: *" could not see the wood cutters, though I hear them near the obelisk canal."* L30/8/39/2

1735 Either modifications to existing Bowling Green House or a rebuilding to Batty Langley or Lord Burlington design; or more likely the reference might be to a new greenhouse built to the north of the terrace facing the bowling green which appears on the Rocque plan of 1737. L28/22

1735 The first of the Rocque plans. This shows the wings added to the northern end of the Great Canal are still there but the transition from the wings to the linear part of the canal has been smoothed out, the outer ring of canals are still separate features at this time but the south-western linear canal shown by Tillemans has been replaced by a serpentine canal, possibly a Batty Langley influence. A five sided bastion has replaced the circular pond and column at the north end of this area. Diana's Temple is shown at the end of the millpond and the bowling green house has its columnar front at this time. The pond in the chapel garden is still U shaped. All the fountains and mazes have been removed from the area south of the house. The plan does not extend to include the waterways to the north west corner but it is likely that the octagonal basin has gone.

1737 The second of the Rocque plans. The wings on the Great Canal have been filled in otherwise all the other waterways remain unaltered.

1744 Nov…."*make an end of cleaning John Duell's Canal, which you will scarcely believe was so full of mud as to be a month about; and new banking the millpond, which has been near as long."* L30/9a/1/42

1745 Catherine Talbot's diary contains "*we sat in Diana's Temple* " JG MgofWP p.28
The temple was sited in the region of the present Chinese Bridge.

1747 June *"…. bean blossoms' fragrance makes lower part of garden charming: that end of the great field next the circular canal is quite full of them; rest fallow;.. "* L30/9a/1/14

pre 1748 plan attributed to Thomas Wright, titled "Water at Wrest, Bedfordshire" shows proposed alterations to join the canals. Lennox Boyd 55

1748 Jemima began to alter the course of one of the canals to a more curving line to lessen the formality of the garden. JG MG of WP p.45

1748 *"clearing John Duell's canal taken a month because it was so full of mud"* L9a/1/42

1748 *"…..I am called upon to visit my workmen at the Serpentine canal who are adding to its meanders and improving it very much."* L30/9a/5/117

1749 May *"…..or contemplating the new bridge and the new-turned canal (which answers a merveille)"* L30/9a/5/121

1750 *"attended bricklayer and carpenter at the bridge, work on the Serpentine."* L30/9a/5/166

1750 "*but the common fall of water which all the canals have at their sluice runs into a very large conque shell - 2-3 ft wide, placed to receive it. Bank on either side covered with flints and stones, and there are some willows stuck in, if they will be pleased to grow.*"

Jemimas letters CRT 190/45

Probably refers to the Chinese Bridge area where there is such an outflow fed from the Ladies Lake which in turn is fed from the Great Canal, which in turn is fed from the Leg of Mutton, which in turn is fed from the western canal.

1758 Lancelot Brown was employed by Philip and Jemima "*to lay the waters together around the garden".* JG MG of WP p62

"*The canals already joined are the circular canal, John Dewells canal and the millpond: and the stream which they make is to be lost; that is, the end will be turned into and concealed by some plantation where that old piece of orchard ground within hedges is on the other side of the millpond from the terrace. This end at the water (the millpond) is now at work upon, and not near finished. When it is done, it is proposed the work should go on to the piece of water at the bottom of the garden, and join that too (altering its form a little} both to the circular and the brook; so that the whole, when finished, will appear one stream running in where the brook now comes into the garden, and winding on till it is lost among bushes.*"

CRT 190/45 letter 2 vol. 19 Oct 5

1760 August. "*The design for laying the waters together round the garden is finished. The waters behind the Bowling Green have been joined this year, and one end turned through the little additional piece of grove into the ditch that comes from the mineral spring, the other carried to meet the Serpentine where from the difference of levels, more than could be overcome by digging, there must be a bank of earth which planting and shrubs must conceal.*
The Serpentine in the same manner joins the brook at the lower end of the garden, and from that brook is now really a fine piece of water, one undivided large stream made out of the different canals on the Cain Hill side as far as the upper end at the old millpond. The parterre has been opened this year by taking away the berceaus as far down as the evergreens, which had let in the view to the windows of the house and to the terrace of all the lawn, the trees on the hill and the water with a large bridge over it."

JG MG of WP p62 CRT 190/45

This was the last major alteration to the waterways at Wrest apart from the replacement of the U-shaped pond by the Atlas Pond after the new house was built and the digging out of the amphitheatre semicircle to produce a lake later called the Leg of Mutton Canal. In the restoration of 1988 this semicircle was filled in with soil and clay restoring the canal to its 1737 size and shape.

It is not clear when the weir was built at the area called Twinwaters to the southwest of the site and the overflow stream dug. They may have been constructed following flooding problems with the southern lakes soon after the formal pattern was established.

1760 Cold Bath built. Large bridge mentioned, probably on the site of the present Chinese Bridge. CRT 190/45. Letter Aug 26 2nd VOL. p50

1760's letters describe boating on canals. JG 2 p.62

1763 *"…as for the garden, the ducks and the fowls, the great news is that the water in the great canal is let out and shows a bottom so full of mud and weeds that it requires a Hercules to clean it… there is about 32 men busy in cleaning them…"* L30/9/51/15

1765 The launching of the pleasure boat. "*At 6 o'clock in the evening the whole parish crowded down to the shore..... being arrived at the open* sea *behind the Pavilion we landed."* JG MofG p80

1767 *"just as we got to the bridge it began to rain, which made us take refuge to the Chinese building"* L30/9/54/6

1770 Edward Stevens designed a replacement bridge costing £169.17.9d and a classical cold bath costing £107.11.10d. E of H Misc 123

Horace Walpole wrote "*Mr Brown has much corrected this garden and built a hermitage and cold bath"* Colvin p782, L31/3I8, Horace Walpole vis Country Seats vol.XVI p.70-71

Edward Stevens erected a Doric Column near the Bath House E de G sketchbook

"…I never thought Wrest damp, the water about it runs and the house I think is upon gravel and sand. The Duke of Kent intended to build a little higher in the avenue, where it is extremely dry." L30/9/17/249

Work done on "*Cold Bath and new Bridge*" total cost £288.6.4d L31/318

1773 *"…. Rain enough to make several places in the gardens very wet, the gardener says he is obliged to keep the canals very low…"* L30/9/60/26

1774 Wedgwood service for Czarina. Wants to include Lady Polwarth's sketches including views of the water at Wrest and bath house etc. L30-/11/122/60

c.1770's View of Bowling Green Canal drawn and engraved by Lady Polwarth L33/145

1775 *"… the quarters between the middle canal and the bowling green canal are thinned and timber lies about."* L30/9/60/50

1778 A new timber bridge replaced the original Chinese bridge which fell down. E de G

1780 *".. the new bridge too steep…"* L30/9/60/229

"I also desired some weeping willows should be planted again to hide from sight the inner part of the bridge and break the look of that high arch." L30/11/122/265

".. the bridge has a good effect from the window, and though the inside is rather seen too much from the gravel walk, and it is certainly too steep, for I walked over it."

L30/9/60/233

1790 Aug *"..the newest employment has been fishing. The grand fisheries, in drawing the canals, with all the bustle and dirt that occasions; and at other times, angling. Bringing out the great boat is now the object."* L30/11/122/359

1802 Feb **"***The arch at which the men..are at work is at the head of the water between bowling green water and serpentine water; it is formed of bricks and being planted over, the trees had grown so large that their roots went through the brickwork and blocked the arch, and water could not pass, or be adjusted for cleaning or fishing.*" L30/11.215/122

1804 Mar Begun draining bath ground. Proposes taking down some of the larger trees on the upper side next park. L30/11/215/144

1805 Mar Now felling trees in bath ground… L30/11/215/157

1809 *".. The 3rd Diana at the head of the little canal is yet standing"* L30/11/132/40

1810 Feb *"..Cleaning out ponds and widening large ditch near the gate leading to Porter's grounds and extending to the Park paling on the west under the lime trees."* L30/11/132/69

1810 June emptying garden ponds L30/11/132/75

1817 Park relieved of surplus water by opening up old water courses L30/11/40/11

1827-28 A new hydraulic engine was supplied to the house and *"put down in the gardens"*. L26/1454

1828 The ferry was moved to *"look at down long grass walk from my Lady's Canal"* (My Lady Duchess Walk) E de G

1831 A new timber bridge replaced the one built in 1778 E de G

1831-32 Thomas Gurney, paid for a punt for clearing water and fishing. Messrs Searle and Son Lambett, paid for a pulley boat (for the ferry?) L26/1454

1856 A sequoia gigantea was planted near the Atlas Pond G.C.1900 p.373-7 and 1908

1876 A new stone Chinese bridge built R F White

1899 That lake fed by spring issuing from the rock and spilling into shell. (NB not actually a spring but made to look like one) Giant tulip tree over Chinese Bridge (rebuilt by Countess Cowper) with lilies and bulrushes in water. The ferry – near pavilion – used to reach the pavilion across the water…... Bath House – enclosing yew hedge said to be 350 years old and is 20ft thick. Spring is a mineral spring. … Old orchard with circular pond (water lilies) with Atlas statue. W Treacher Wrest and its Surroundings 1899

1939-45 Gardens allowed to become overgrown and lakes drained to obscure pattern from the air. Wrest Park Slide 33

1946-47 National Institute of Agricultural Engineering moved down from Askham Bryan and restoration commenced after a few years in which cultivation experiments were done in the actual gardens. The wartime Nissen huts and Romney huts were gradually removed over the next few years. Wrest Park Slides 10, 129

1952 Silt clearance from the lakes. The spring was still running at this time but gradually diminished possibly as a result of borehole extraction and eventually became dry. The Atlas Pond also gradually dried up after this time, filling only occasionally in wet winters.

1952-69 Electric recirculating pump installed to bring water from the north end of Broadwater to the site of the mineral spring. This pump also feeds water to the lion's head over the conch shell near the Chinese Bridge.
The lake levelling systems were renovated using simple adjustable overflows. The Leg of Mutton lake is fed from Old Park Water via a pipe whose inlet level is fractionally below that of the Old Park Weir. Thus while surplus water goes over the weir enough runs into the Leg of Mutton Lake to maintain its level. The Long Canal is fed from the Leg of Mutton via a similar pipe. The Ladies Lake is fed from the Long Canal via a similar pipe whose intake level is fractionally below that of the sluice at the south end of the Long Canal. Any surplus water in the Ladies Lake goes through a similar levelling pipe to the Broadwater. Should the village stream entering Old Park Water be insufficient to maintain the levels then an electric pump can transfer water from Broadwater back to the site of the original spring by the Bathhouse. Broadwater can be topped up from the stream at Twinwaters by adjusting levels and opening a valve.

The inlet for a boathouse in the south east corner of Broadwater was filled up with soil. A new automatic weir replaced a hand operated sluice in this area.
The pipe run from a defunct hydraulic ram pump supplying roof tanks in the Mansion was re-used to run mains water back down into the gardens for watering and to supply the fountain.
The weir at Twinwaters to the southwest at the site was refurbished during this time.

1986 Silt clearance from the Serpentine. Old Park and Serpentine wiers repointed.

1987-8 Silt clearance from Ladies Lake, Leg of Mutton and Spade end of Long Canal. New conduit fitted between Long Canal and Ladies Lake. Beds C. C. archaeologists on site.

1988 Ladies Lake and Leg of Mutton campshedded (revetted) to original size and shape. Amphitheatre restored.

1989 Flap valve refurbished on Broadwater south of Pavilion. Serpentine weir leaking again.

1990 Serpentine weir rebuilt by Dawsons(Shefford) Ltd.

1991 Atlas Pond restored by Institute and Paul Davis Ltd. As no sign of a spring was found by the archaeologists the pond was puddled with clay and filled with water from a tanker. Over subsequent years the continual need for refilling, as a result of seepage caused by the cracking of the puddled basin when the water level fell, proved unacceptable. Until a permanent supply of water could be installed it was decided to temporarily fill in the pond with soil and grass it over.

M J B Turner
Ex-Head of Estate Services,
Wrest Park 1984-1998

REFERENCES

CRT Transcriptions of letters from Lucas Collection

CW James Collett-White, Bedford County Records Office exhibition, March 1983, "The Old House at Wrest"

CW 1960 James Collett-White

E de G Notes to accompany paintings in sketch book

E of H Misc.123 Earl of Harrold, Bedford Record Office

GC WT. Gardeners Chronicle, 29 Aug 1908

Jemimas letters in Lucas Collection, Bedford Record Office

JG 1 Joyce Godber "Wrest Park and the Duke of Kent"

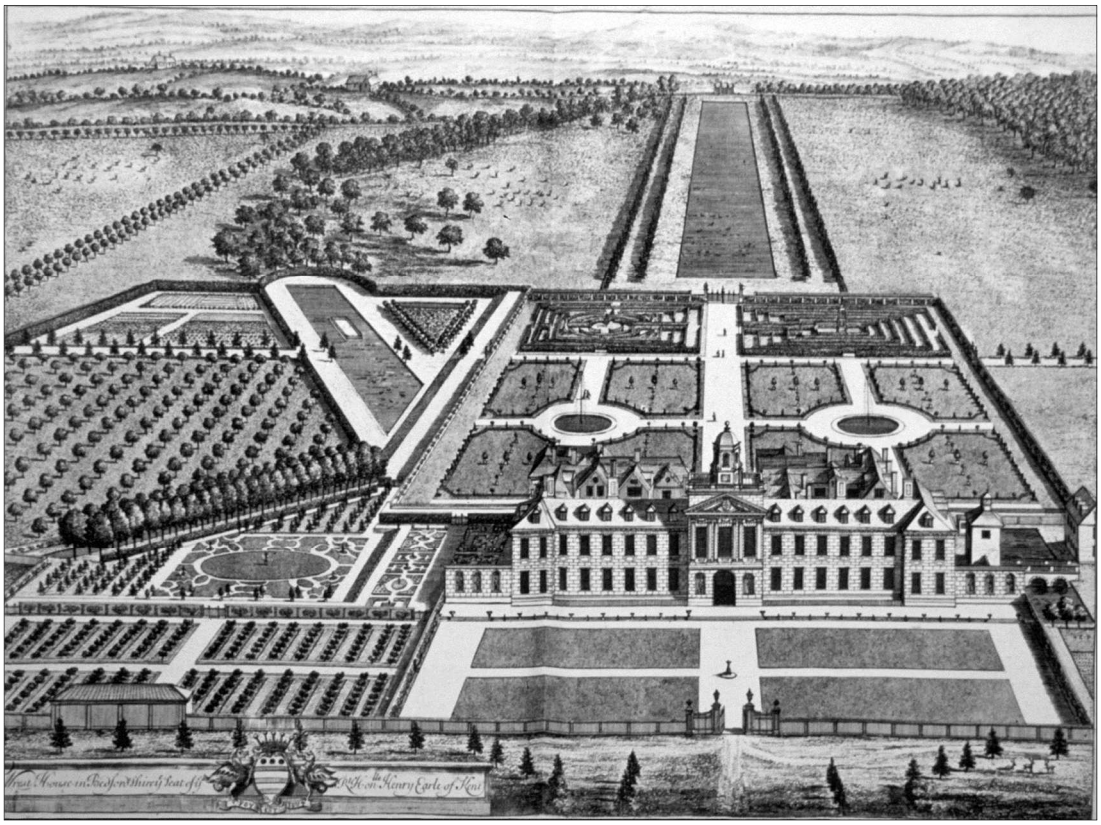
JG 3 Joyce Godber "History of Bedfordshire 1066-1888"

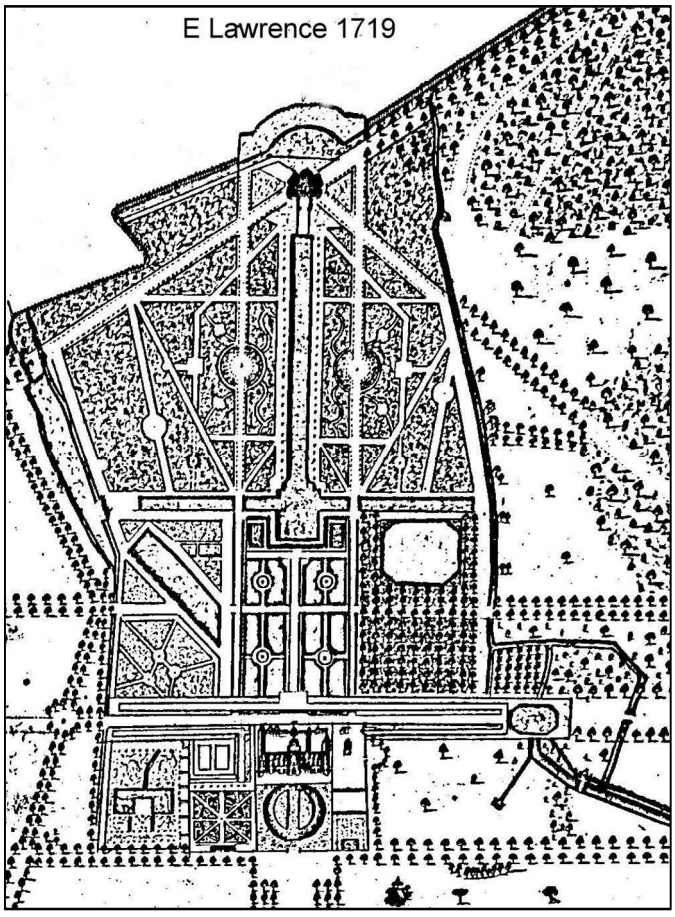
JG MG of WP Joyce Godber "Marchioness Grey of Wrest Park"

L—-/---/--- Lucas Collection, Bedfordshire and Luton Archives and Records Office

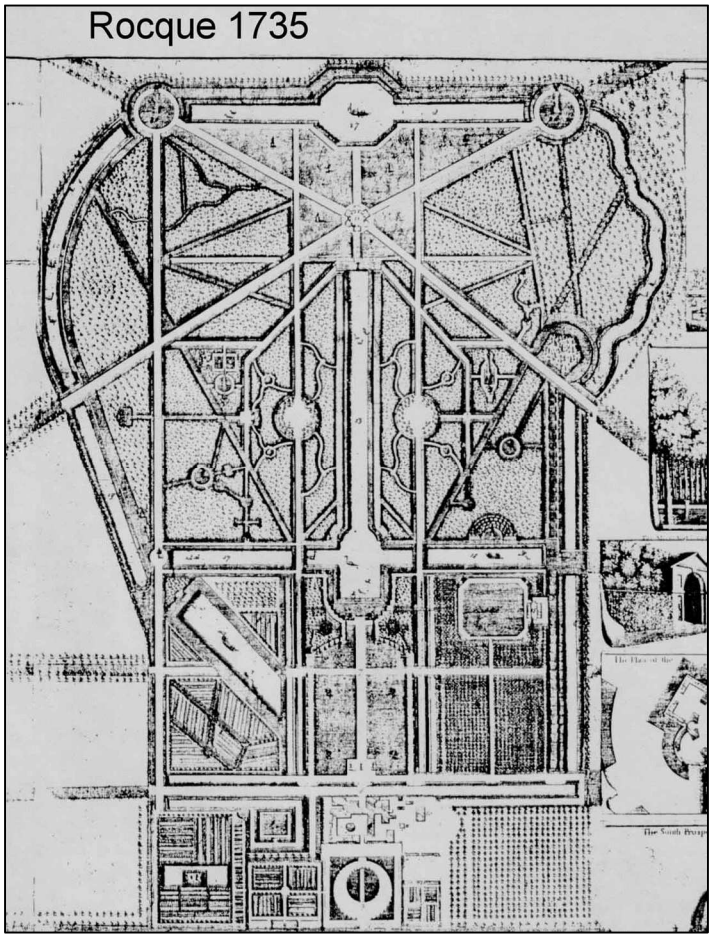
R F White notes in DAMHB box file

VCH Victorian County Historie

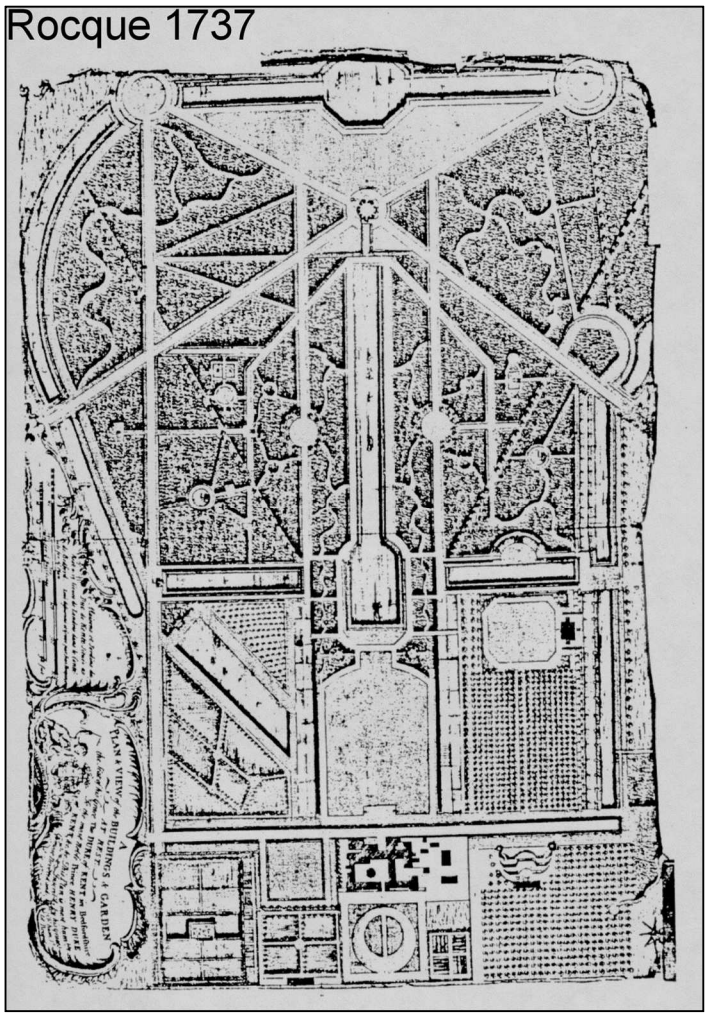


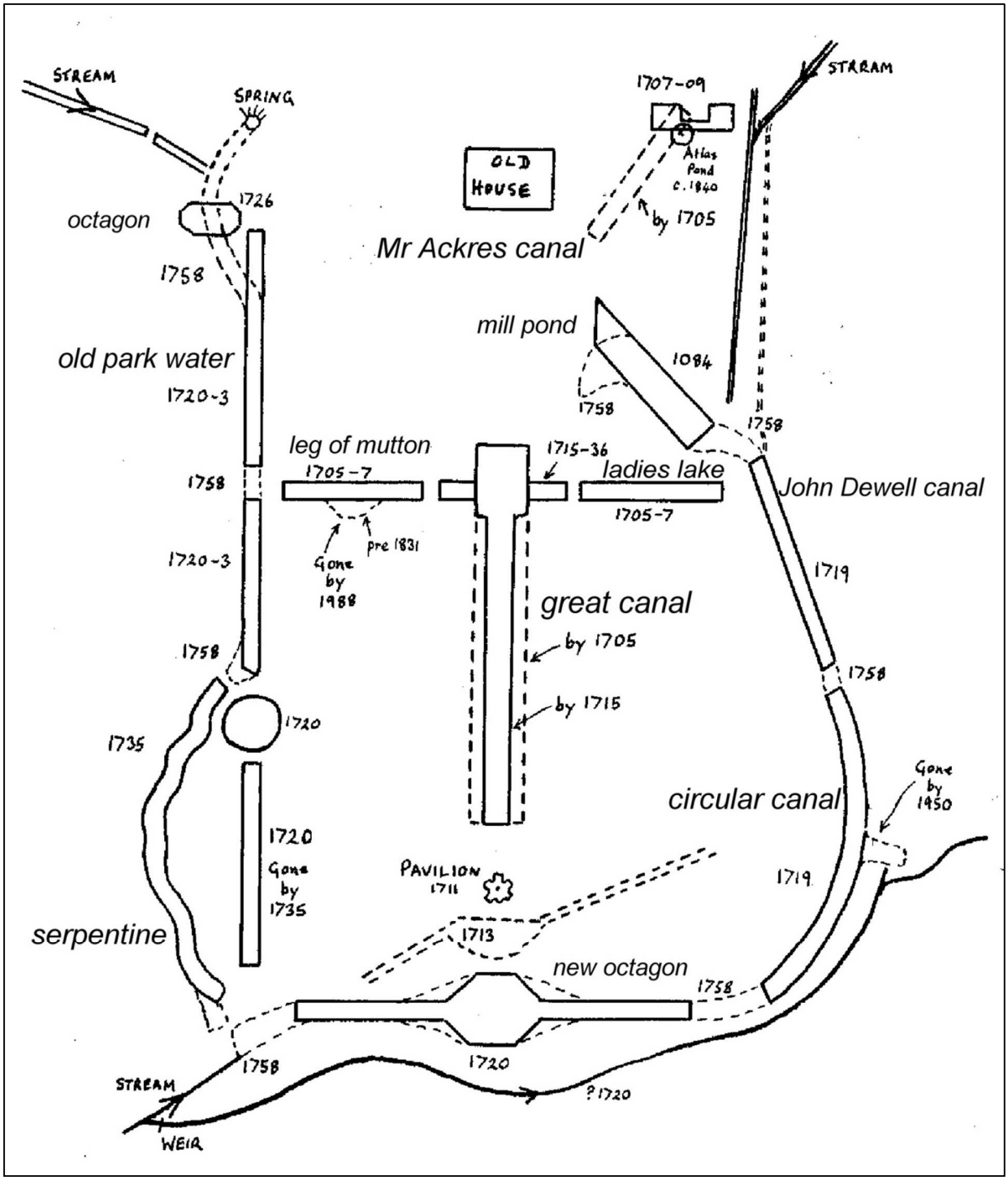

E Lawrence 1719

Rocque 1735

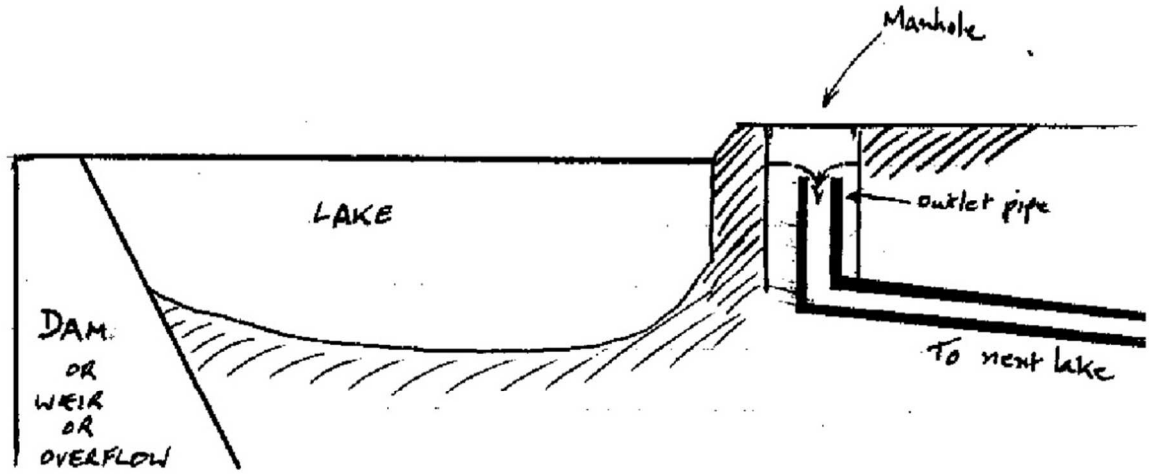


Rocque 1737




STREAM
SPRING
1726
octagon
1758
old park water
1720-3
1758
1720-3
1758
1735
1720
1720
Gone by 1735
serpentine
1707-09
Atlas Pond c.1840
by 1705
OLD HOUSE
Mr Ackres canal
STRAM
mill pond
1084
1758
1758
leg of mutton
1705-7
1715-36
ladies lake
1705-7
John Dewell canal
Gone by 1988
pre 1831
great canal
by 1705
by 1715
1719
1758
circular canal
Gone by 1950
1719
PAVILION
1711
1713
new octagon
1758
1720
?1720
1758
STREAM
WEIR

PRINCIPLE OF OPERATION OF THE AUTOMATIC LAKE LEVELLING UNITS



The top of the outlet pipe is supposed to be about half an inch below the level of the dam.

It is absolutely essential to the system that water flows down the outlet pipe before it goes over the dam or weir

If all three units are adjusted as above the lakes should reach the desired levels and stay there with water flowing through them all if the level in Old Park Water is above the outlet pipe.