

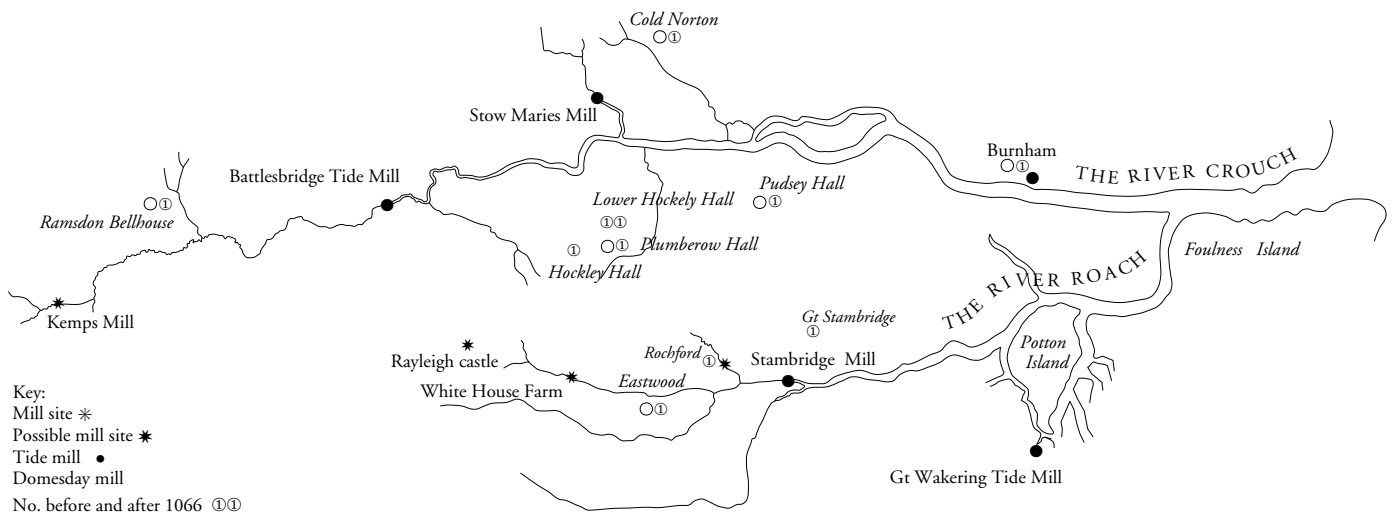
A SURVEY OF WATER POWERED INDUSTRIES IN THE COUNTY OF ESSEX

THE RIVER ROACH

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River Roach

THE MILLS OF THE RIVERS CROUCH AND ROACH



Rayleigh

Rayleigh Castle was built shortly after 1066 by Swein.

In 1306 William de Dunhamleigh chaplain, granted to Peter Burre and his wife, one messuage, 1 mill and three acres of land in Rylegh [1]. In 1315 a windmill was listed.[2]

Edward Duke of York, who was killed in 1415 at the battle of Agincourt, held the the honor of Rayley, the town fair and market, with the park, a mill, the *courts*, &c., the manor of Estwood, and the manor and park of Thunderslee.

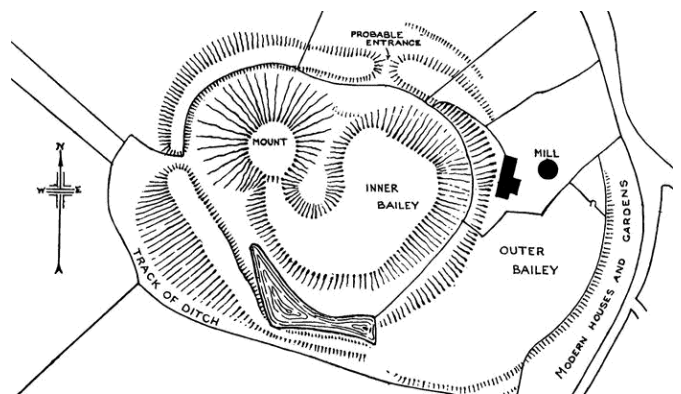
Greenwood's county maps of 1824 and 1831 shows two post mills on the Eastwood Road another post wind mill on the Hockley road, and appears to mark a water mill below Castle Hill, the water mill possible feed from a spring. A pond in the castle is shown in a map of 1825 [3]



. The tith award map of 1839 shows no water mill and indicates only Rayleigh tower windmill, built in 1809. [4].

NOTES

- 1] Feet of Fines for Essex.
- 2] Cal. inquis p.m
- 3] E.R.O D/DNe P7
- 4] E.R.O D/CT 285



Plan of Rayleigh Castle showing pond.



Rayleigh tower mill and castle mount

Earth dam at White House Farm (TQ 81814 89684)

In the seventeenth century of Eastwood-lodge farm, which stood to the east of White House, was is the possession of the Bury family who lived at one time at Eastwood-bury. Documents of this time refer to manor of Eastwood-bury *alias* Eastwood.

Philip Benton in his History of Rochford Hundred placed Eastwood Lodge farm in the manor of Eastwood.

A document dated 20 May 1687 recorded :

Mortgage (Demise for 500 years) for £400

Edw. Bury of Eastwood to John Allen of West Hanningfield, esq.

Tenement called Whitehouse (80a.), 3 arable and pasture fields (32a.) now in occ.of Henry Bury, 1 messuage and mill with 2 parcels of land adjoining highway bet.Rayleigh and Prittlewell now in occ.of Tho. Lambert, in [Rayleigh]

[1]

It is is not stated whether the mill was a wind mill or water mill., Ogilby & Morgan's map of Essex published 1678 shows a post wind mill on the Eastwood road.

In 1888 Philip Benton in his history of the Rochford Hundred, wrote concerning Rayleigh :

"In the days of Suene the park or forest lands extended into Eastwood, and seems to have joined the parks of Thundersley and Hadleigh. Norden map (*temp* 1594) shows a a brook, having its origin in Rayleigh park. This stream runs through White house farm on the Eastwood road, and there are plain indications now existing of a dam in connection with a water mill (the mill pond consisted of a bout two acres, at the bottom of which reeds still luxuriate. Near where the mill wheel was placed, is an oak post with the letters S.H.M.P cut thereon, showing the boundary of South Benfleet manor) [2]

In 1932 The rev A. G Fryer wrote, quoting in part Benton :

"There was also in Rayleigh at one time a water mill which was on the south side of the Eastwood road near the house known to-day as the White House. The power which actuated its water wheel was obtained from a stream which according to Norden's map (1594), seems to have had its source in Rayleigh Park, and ran through White House Farm. It was evidently held back there by a dam, forming a mill pond of about two acres which was known as Fishponds, a name which still

survives in connection with land in the that neighbourhood still known as Fishponds. Until recently two or more small pond were to br seen at the spot, but they are now in course of being filled in." [3]

The Tith map for Rayleigh gives field number 555 as Fish Pond field, 14 acres 3 rods 26 perches in area.

The LIDAR map of Rayleigh indicates an earth bank in the north west corner of Fish Pond Field. The bank now stands around 8 feet high and has been cut back on the northern end to improve drainage. (TQ 81814 89684)

Many medieval water mills standing on small streams were superseded by wind mills, this seems to be case with White House mill, the mill pond being retained as a fishery.

NOTES

1] E.R.O D/DU 817/18

2] History of Rochford Hundred, Vol 2. P. Benton. 1888.

3] Rayleigh Yesterday and Today. Rev A.G Fryer. 1932



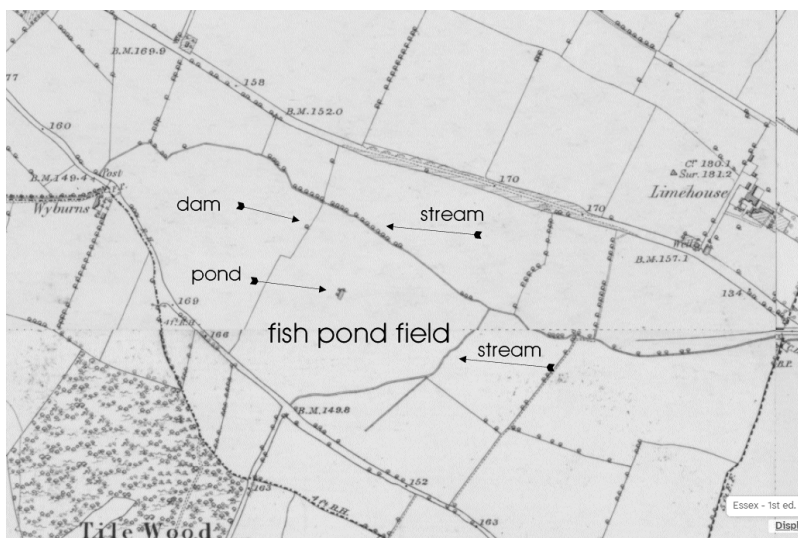
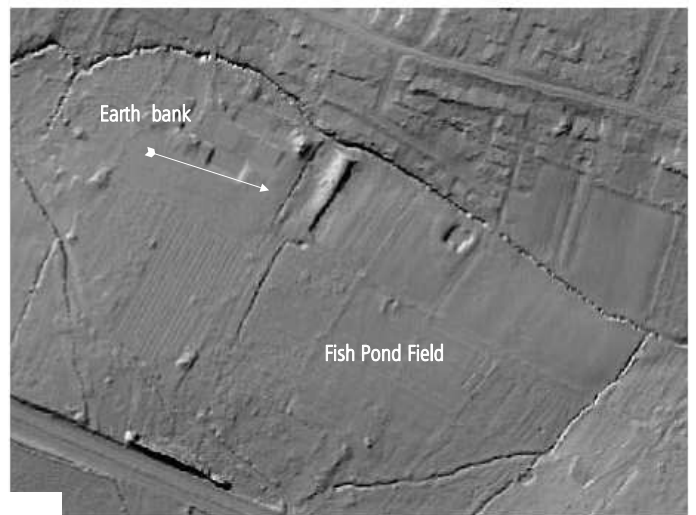
Map of Essex Ogilby & Morgan. 1678

River Roach



1st series 1inch OS (1830) map showing Whitehouse Farm, two windmills to the north and a stream to the south
To the east Eastwood Lodge.

The LIDAR map of Rayleigh indicates an earth bank in the north west corner of Fish Pond Field. The bank stands around 8 feet high and has been cut back on the northern end to improve drainage. (TQ 81814 89684)



1st series 6inch OS map 1830



1st series 25inch OS maps (1892)

Eastwood

In 1086 there was in *Estuuda* (Eastwood) In the lands of Swein, (held before 1066, by his father as one manor), now one mill.

The mill was probably erected, around the same time as Swein built his castle at Rayleigh, shortly after 1066.

The mill site may possibly be associated with the earth works near White House Farm which may have been within Swein's manor of Eastwood.

The Feet of Fines for Essex record in

1239 Simon Perdriz. 1 mill with appurtenances in *Estwod*.

1307 Philip Partriche. 1 mill and land in Estwode, Great Sutton and Rocheford

1319 John de Hevenyngham. 1 mill and land in Estwode, Rochesford and Great Sutton

Edward Duke of York, who was killed in 1415, at the battle of Agincourt, held the the honor of Rayley, the town fair and market, with the park, a mill, the *courts*, &c., the Manor of Estwood, and the manor and park of Thunderslee.

Sutton

Phillip de Hevenyeglan of Sutton possessed a water mill in 1322. [Inq post Mort].

Rochford

In 1086 there was at *Rochefort* (Rochford) on the lands of Swein, (held by Alfred, before by a free man as a manor), one mill.

L R Cryer in "A History of Rochford" published in 1978 states that there was a water mill in West Street Rochford. Arthur Topsfield, a blacksmith in what was then Church St, lived in a cottage adjacent to his workshop. He later purchased the adjoining cottage which was called "The Old Water Mill". A stream that ran across the grounds of the old Union Workhouse (now Rochford Hospital) went under the building across the street in to the brook. Arthur Topsfield's son Jack relates that in 1902 part of the wheel was found and also that one end of the house was much lower than the remainder.

Gt & Lt Stambridge

Rochford or Lt Stambridge tide mill.

In 1086 there was at *Stanbruge* (Gt. Stambridge) on the lands of the Bishop of Bayeux, (held by Swein, before 1066 by Oswald), one mill.

Rich Lord Rich in his will, dated 1568, included a mill called Rochford mill which in a survey taken in 1577 was identified a water mill in the manor of Rochford. In 1662 Rochford mill was said to be now or late in the occupation of Hellen Garnington, widow [1]. The tide mill is shown on Norden's county map of Essex, dated 1594.

The mill may have at some time been moved since in a conveyance of land dated 1659, there is reference to a piece of land that abutted on the East upon a lane leading from Gt Stambridge towards Salt Cove sometimes called the Old Mill, and abutting West upon the lane leading towards New mill [2] The tith award map for Rochford indicates a Salt Bridge field (No. 325) next to Salt bridge which is upstream of the existing tide mill site [3], this would not seem to correspond with the location of Salt Cove which would seem to be in Gt Stambridge, but is not identified on the tith award for Gt Stambridge.

Rochford Hall was purchased by Lord Tylney Long of Wanstead House [4], the tide mill is shown in detail on a map of the Tylney Long estates dated 1795 [5]. John Davis was tenant in 1780 when he insured his utensils and stock in trade in his water corn mill called the New mill, timber and tiled for the sum of £700 [6]. John Bullock as trustee to the estates of the late Lord Tylney insured the dwelling house and water corn mill adjoining and communicating, brick and timber built and tiled for £800 and the water wheel and gears for £50 [7].

In 1809 Miss Catherine Tylney Long leased the mill to John and Robert Kemp following the death of James Davis [8]. As the mill was taken over from the trustees of James Davis estate an inventory was taken on the 29th of September 1809 which listed the following [8]:

STAGE. Sack tackle with gudgeons hoops and keeps Sprogger wheel Round ropes Sack rope and chain Snap cords and iron sheath all complete 20 feet of Elm slab One sack cart broom and old shutter 5 feet of board

FLOOR CHAMBER. 71 feet of three inch leather strop 26 feet of 6 inch .. Bunch of riggers 2 foot 3 inches high by 15 inches thick Iron Gudgeons and two brasses to d°. double frame 4 feet long by 26 inches wide screw lifting riggers poppets all as fixed complete two standing flour mills hoppers shoes and riggers complete 2 No. 14 cloths and 3 old D°. Block hae and shovel Sack jack and chain 3 feet 6 in Scale

beam 2 scales and ropes stacking sack etc. One 4ft 2in scale beam five 56lb one 28lb Iron weights, 4lb brass d°. One iron Cap One sack cart 4 wooden shovels 4 have brooms One hand shovel Buish and Strike One peck measure and one Quarter of d°. Wire Sieve and Scraper. One old Rigger 5 feet of deal .uze bags, 14 feet shooting spout

CATCH MILL FLOOR. Old catch mill as fixed 37 feet of 37 inch leather strap horizontal shaft 13 feet long gudgeons hoops brasses and coupling bolts nut hoops and bolts bunch of riggers 2 feet high by 12 ins thick 7 iron bolts to d°. poppets and brasses as fixed complete juniper with 3 wire iron crank riggers coupling bolts poppets brasses as fixed complete 50 feet of ____ rope one rigger and two chains four flour cloths number 9 No.11 No.12 and No.14 4oze bags and hooks one sack cart and one pair of heads.

HIRST. 2 strait staves one oak and one mahogany two bill thrifts fly wheel 4 feet high bolts & coggs Oak upright shaft gudgeons hoops step and coupling brass top bridge tree 9 feet long 9 by 9 spur wheels bolts Coggs wollow mot bolts hoops and coggs complete 2 eleven felt deals 2 wheat screens 2 spouts as fixed complete One sack bag and barley hopper complete One pair 4 feet 4 inch french stones Iron box spindle ring and damsel Lals ladder hopper shoes and Iron grat bridge tree and brass bray and lighter fere.. and iron budging box One pair of 4 foot 4 inch french stones as above for _____ complete 3 stone nuts and coggs and bolts stone bo.. rope and iron clamps fore heving stone over two setts of stone bearers 2 saddles 2 stonewedges One notch clock and 3 levers 3 hammers and one cogg chissell 3 iron crows broome wire siev one trangle 2 levels and rubbing lever Sundry lot of Coggs Riggers & wire rat trap and hand shovel.

LOWER FLOOR. 26 mill bags 4 feet 2 inch scale beam with scales and ropes four 56lb and 56lb of different weights iron 3lb of brass weights and 52lb of lead d°. small scale beam 1 in scale and wood d°. 2 meal troughs and an old scuttle tool hutch and flour hutch 3 cupboards as fixed 3 sack jacks sundry lot of tools and box sackbarrow broom and brush. 3 oz bags lined lanthorn stool and 4 candles sticks basket & strike.

WATER HOUSE. grindstone Irons and troughs as fixed Crow bar Sundry lot of old iron pitch kettle stand and two ladles, 14 feet of inch elm board One oak gate bar 34lb of pitch rope 72 flour sacks 4 barley meal sacks 46 corn sacks 5 Bran bags

Valued at £274..16..0. by William Cureton & Wood.

Kemp took Possession on 24th September 1809 and agreed to take the going gears and utensils in the mill for consideration of £500 [9]. The lease was for a period of 25 years at £220 per annum being on a Tide or water corn mill called Little Stambridge or Rochford Mill, with the mill pond, banks, walls, waterwheel, waterwheel shaft, pit wheel, tide gates swingbridge and land all in Lt Stambridge and Eastwood. The premises was to be insured for at least £3000. In October 1809 John Kemp insured the water wheels, standing and going gears, mill stones, wire machines, dressing mills for £400 and his stock in trade for £800, it was war-

ranted that there was no steam engine [10].

It would seem that the tide mill was in need of repairs since William Cureton, millwright and builder from Maldon, produced an estimate, dated 14 August 1810, for erecting a new tide mill [11].

Surviving plans of the mill dated 1811 show a single water wheel driving 5 pairs of stones, the mill building having four floors with a mansard roof [12]. The estimated cost of the repairs was put at £2907, [13], but it would seem likely that the final cost exceeded this. [14]. John and Robert Kemp mortgaged the mill for £1500 at 3% in 1812 with a Josiah Taylor of High Holborn. 1815 John and Robert Kemp agreed to build a "good and substantial post wind mill" which with the going gears would be worth £700. The Kemp brothers also leased a windmill in Prittlewell which seem to have been transferred to a James Robsant for £200. In 1820 Robert assigned his part of the lease to his brother John who in 1822 made an agreement to sell the lease. John Kemp, miller and farmer, with Josiah Taylor, of High Holborn bookseller, agreed to sell the lease on Stambridge mills to William Rankin, of Bocking gentleman, and John English Tabor, of Bocking gentleman. The sum of £2000 was to be paid to John Kemp and the sum of £1205..12..6d to Josiah Taylor, the fixture and fittings in the mill were purchased from Kemp for £154..19..0d [15].

In 1829 Tabor and Rankin insured their stock in trade in the water mill for £1550 and in 1835 they insured for £1200 the water corn mill with waterwheel Iron pit wheel as fixed for the sum of £400 the stones and going gear therein and for £400 their dweeling house divided from mill by brick work also for £400 the post wind mill, timber built near. [16]. In 1838 the Hon William Long Wellesley and Taber & Rankin insured for the sums of £1000 on the water corn mill at 4/-, £300 on the water wheel iron pit wheel and 5 pair of stones hirsts as fixed. £500 on windmill near and £200 on going gears therein. The going gears and machinery in the water mill were insured by Tabor and Rankin for £450 [17]. John Tabor latter retired from the business which was carried on by William Rankin.

By 1858 the mill pond was not retaining sufficient quantities of water and it was found necessary to enlarge the mill pond and deepen it by taking out the mud which was done for an outlay of £477 10s 0d.

In 1867 the Rochford Hall estates were put up for sale by auction. The mills formed lot 26 and were described as:

LITTLE STAMBRIDGE OR ROCHFORD MILL.

A VALUABLE FREEHOLD PROPERTY,

Situated in the Parishes of Eastwood and Little Stambridge, One mile from the Town of Rochford, on the road to Cricksea ferry, and intersected by the tidal river Roach.

COMPRISING

A SUPERIOR WATER CORN MILL OF FOUR FLOORS

DRIVING SIX PAIRS OF STONES

FLOUR MILL AND BOLTER

AND EVERY CONVENIENCE NECESSARY FOR THE BUSINESS

ADJOINING THE MILL IS

A CONVENIENT DWELLING HOUSE

CONTAINING

On the upper floor-Four attics and a small room

On the first floor-Four good Bed-rooms.

On the ground floor-Two sitting rooms, breakfast rooms, kitchen, washhouse, cellar, and counting house.

ALSO

A CAPITAL POST WINDMILL

On brick piers, with 2 Patent Sails, driving 2 pairs of stones.

Also included were workshops granary, Kiln, large coal yard, stabling, piggeries and henhouses with some 37 acres of land. At the time of the sale the mills were being leased by W.H. Rankin and Alfred. M. Rankin on a lease due to expire at Michaelmas, 1872, at an annual rent of £275. The mills were sold to the Rankins for the sum of £4500 [18].

By 1872 water power had been augmented by steam, but in 1878 the steam mill was destroyed by fire [19]. The fire was it seems started by small children playing in the boiler house. The Southend Fire Brigade was sent for but arrived at the mill after a considerable delay, due apparently to lack of horses, but their hose burst so they were unable to save the mill. The Shoebury Brigade was telegraphed for and under the command of the commandant Col Hastings arrived just in time to save the water mill and mill house which stood on the opposite side of the road to the steam mill. The steam mill was rebuilt in brick and tile on five floor with five pairs of stones.

In 1905 the Great Eastern Railway began construction on a reservoir and weir across the river immediately to the south of Rochford station this was seen by the owners of the tide mill as a threat to their water supply. A report was commissioned by solicitors acting on behalf of messers Rankin. [20]. Sections of this report are of interest in that it shows that the mill worked mainly by tidal power with the addition of fresh water supplied from the river Roach.

There are two mills adjacent to each other owned by our

clients at the head of the northern arm of the river Roach, one of which is driven wholly by steam and the wholly by water power. The latter mill has a mill pond partly feed by tidal waters and partly by the inflow of land waters from the streams which converge to the northern arm of the river Roach. The mill wheel is of the breast type 18 feet in diameter 10 feet wide, has a float depth of 12 inches and is not shrouded. There is a clear fall of 4 feet between the bottom of the the cill in the mill pond and low water level and the top water level of the the water level is 4 feet above the cill. At high spring tides the tidal waters fill the mill pond but a neap tides the tidal water does not rise to the cill level and consequently none enter the mill pond. At high spring tides when the water collects in the mill pond 4 feet above the cill, the wheel can be and is worked for 7 hours each tide and as the tides fall off the hours worked are reduced correspondingly until the neaps fail to enter the mill pond at all.

In addition to the tidal waters, there are the waters which enter the mill pond from the streams. The drainage area of these streams is 7,650 acres and the average rainfall is 20 inches per year. The land is flat and of low elevation and it is probable that the evaporation and losses may come to 18 inches per year on the average. This would give a flow off equal to two inches per year or an average per day of 950,000 gallons.

The works being constructed by the railway company were to be constructed such that if the flow of water was below a rate of 130,000 gallons per day then no water would be abstracted, the weir stood across a stream with a catchment area of some 5000 acres which meant that the railway could take up to 500,000 gallons per day. This rate of abstraction was reckoned to be equal to $\frac{2}{5}$ of a horse power all the year round, however the real loss to the mill would be at the neap tides when the water wheel was dependant on the upland waters. However the author of the report made the following observation on the effective use of the water resources by the tide mill:

This is not a case where we can fight very strongly because the present evidences of the value put on the water power put by our clients is against use. There was a considerable leakage from the mill head and the wheel is not shrouded, both of which facts point to some indifference as to the value of the water power.

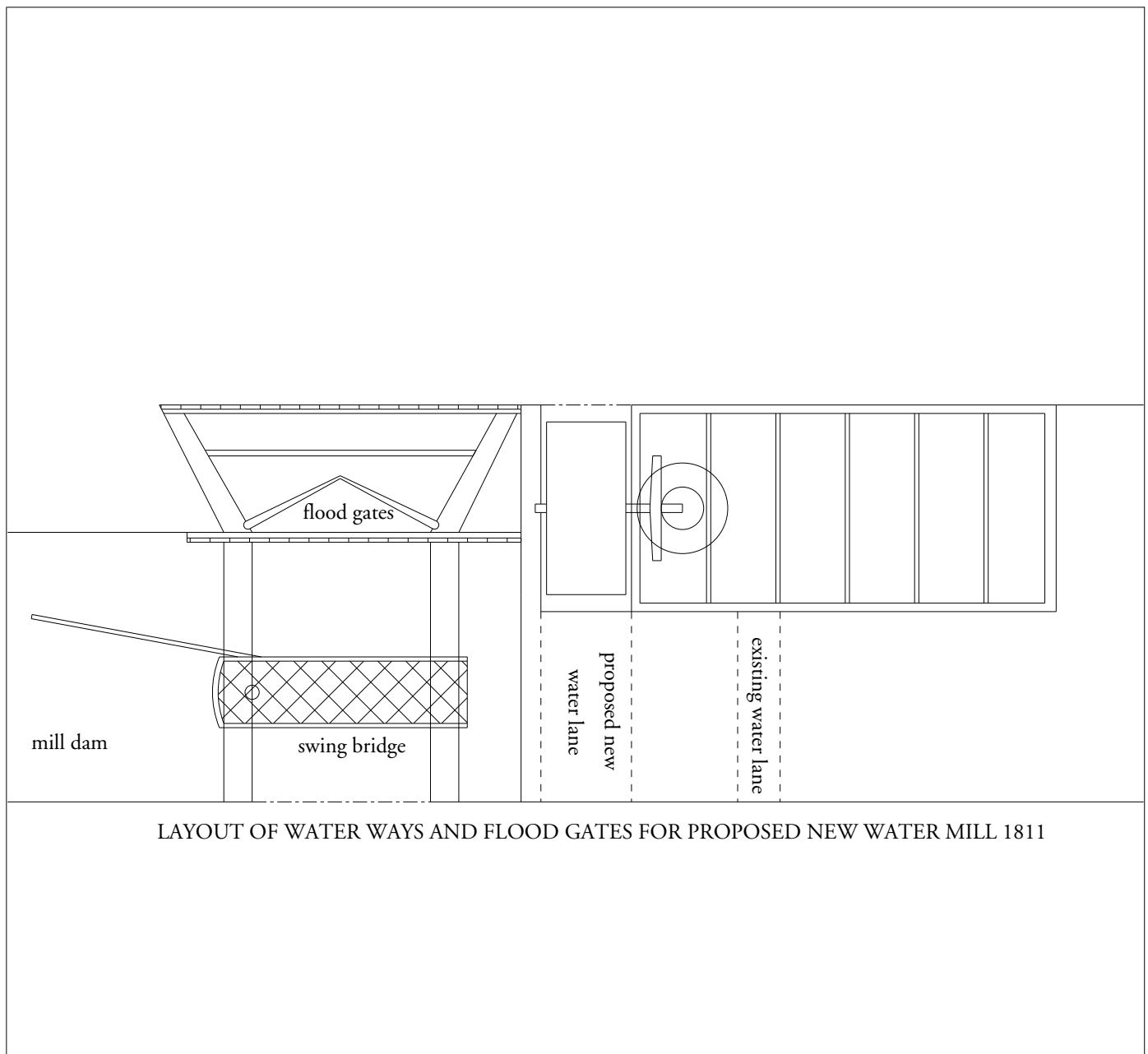
Evidently the convenience of steam power had mitigated against the cost of keeping the old tide mill in good repair.

Kelly's directory for Essex gives A M & H Rankin working with steam and water upto 1929 and by steam after this date although the tide mill was in working order up to 1951 when subsidence of the wheel housing put the wheel out of use. The water mill was subsequently destroyed by fire in 1964.

River Roach

NOTES.

- 1] E.R.O D/DP O40/1; D/DU 514/29/21;
D/DU 514/29/28
- 2] E.R.O D/DU 560/2/6
- 3] E.R.O D/CT 291
- 4] E.R.O D/DCw T2,25; D/DCw T47/10,15;
D/DGn 386.
- 5] E.R.O D/DCw P13
- 6] Sun Fire Insurance policy No.433115,19 Sept 1780
- 7] Royal Exchange Fire Insurance policy No. 151314,
6 June 1796.
- 8] E.R.O D/DS 253/7/7
- 9] E.R.O D/DS 253/7/1; D/DS 253/7/6
- 10] Royal Exchange Fire Insurance policy No. 248419,
5 October 1809.
- 11] E.R.O D/DS 253/7/5
- 12] E.R.O D/DCw P64
- 13] E.R.O T/B 213; D/DQs 13
- 14] E.R.O D/DU 18/57
- 15] E.R.O T/B 213
- 16] E.R.O D/F 21/5 pp114, 3 Sept 1829;
D/F 21/7 pp115, 18/12/1835
- 17] E.R.O D/F 21/8 pp 85, 24/12/1838; pp86,
24/11/1838.
- 18] E.R.O D/DJe B16; T/P 83/2
- 19] E.R.O D/F 21/20 pp18; T/P 147
- 20] E.R.O D/DGs E28



WILLIAM CURETON'S ESTIMATE FOR ERECTING NEW TIDE MILL

14th August 1810

Two walls for water course 45 feet long 10 feet deep 3 bricks thick, 2 oak cells 21 feet long 9ⁱⁿ by 12ⁱⁿ
Four sleepers 4 feet long 9ⁱⁿ by 9ⁱⁿ
Two pillar blocks 5 feet long 18ⁱⁿ by 20ⁱⁿ
Three elm cells 12 feet long 9ⁱⁿ by 12ⁱⁿ
20 circular ribs 5 by 6
2 oak stable posts 12 feet long 11 by 17
one oak cap all 14 feet long 12 by 12
100 feet of 3 in elm for breast one iron plate D°. 4 iron
Racks, 4 pinions, 2 wheels shafts brasses iron work etc belonging thereto and 2 wood shuts labour and
framing water wheel 20 feet diameter by 10 feet wide 3 sets of arms and rings arms 10ⁱⁿ wide by 4ⁱⁿ thick
Rings 7 by 5 starts 3 by 4 all of oak float boards and back boards of elm and all Iron work belonging thereto.
Main axeltree oak 18 feet by 34ⁱⁿ diameter 2 iron gudgeons 6 hoops 2 iron Bearings and 2 Brasses.

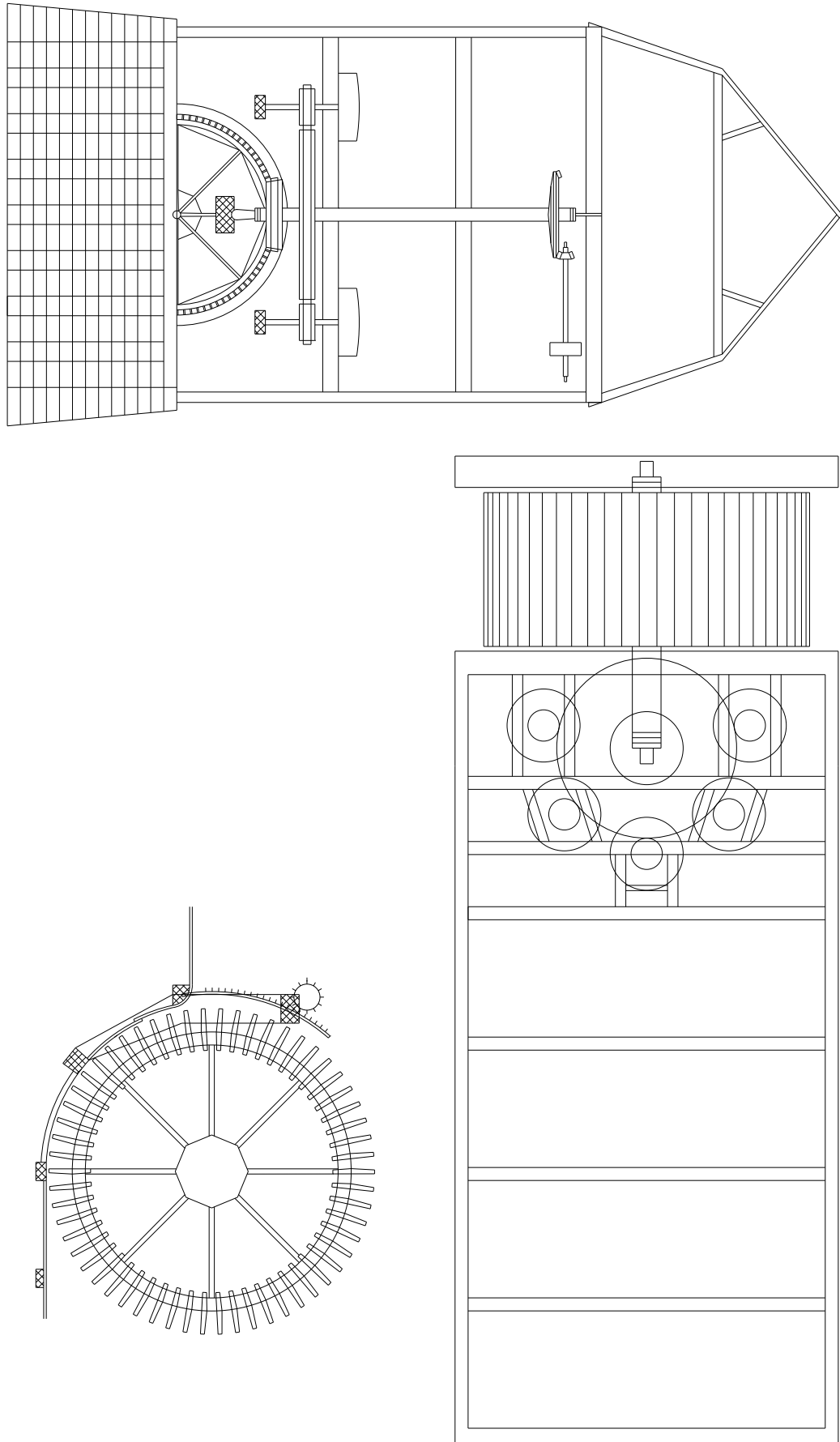
Stone hurst oak

3 bottom cells 20 feet long	9 by 12	
3 top D°. 20 feet long	10 by 12	
4 staple posts 10 feet long	12 by 12	
3 D° D°	14 by 14	
3 elm caps 14 feet long		6 by 9
10 stone bearers	9 by 12	
2 brays 6 feet long	10 by 12	
Elm bridge tree 14 feet long	8 by 18	
5 stone bridge trees 30 feet long	10 by 10	
Joice and Braces	4 by 10	

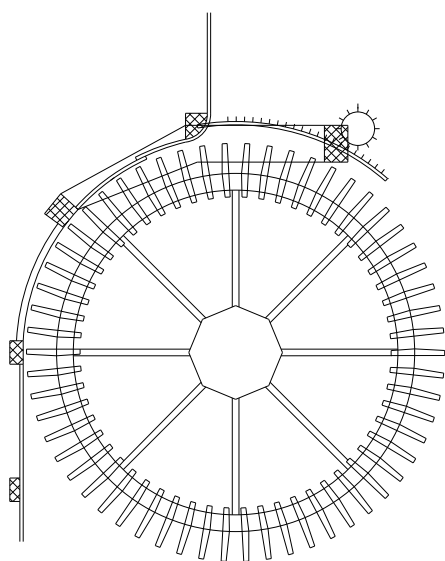
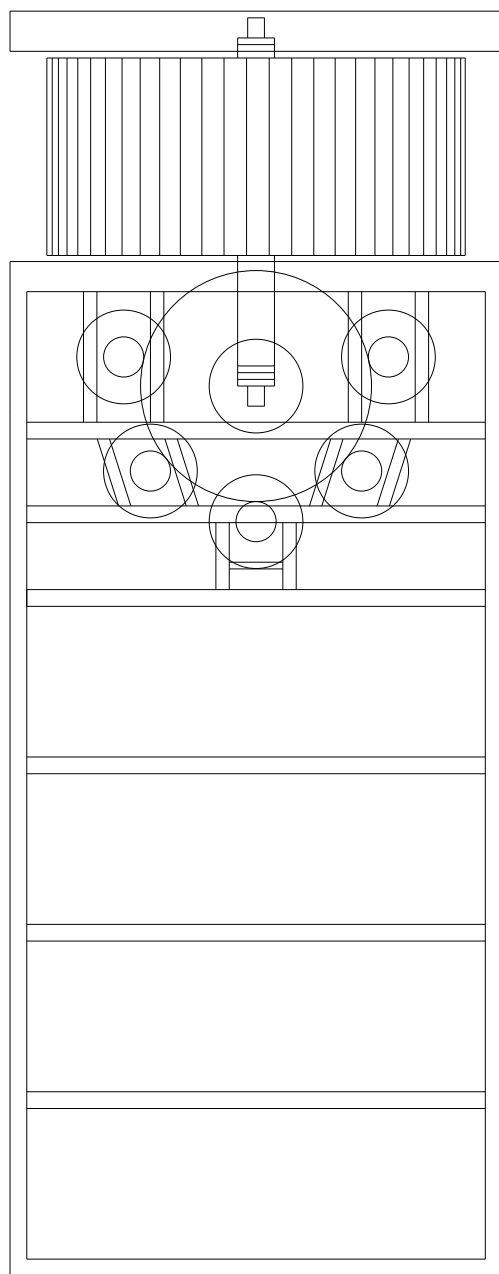
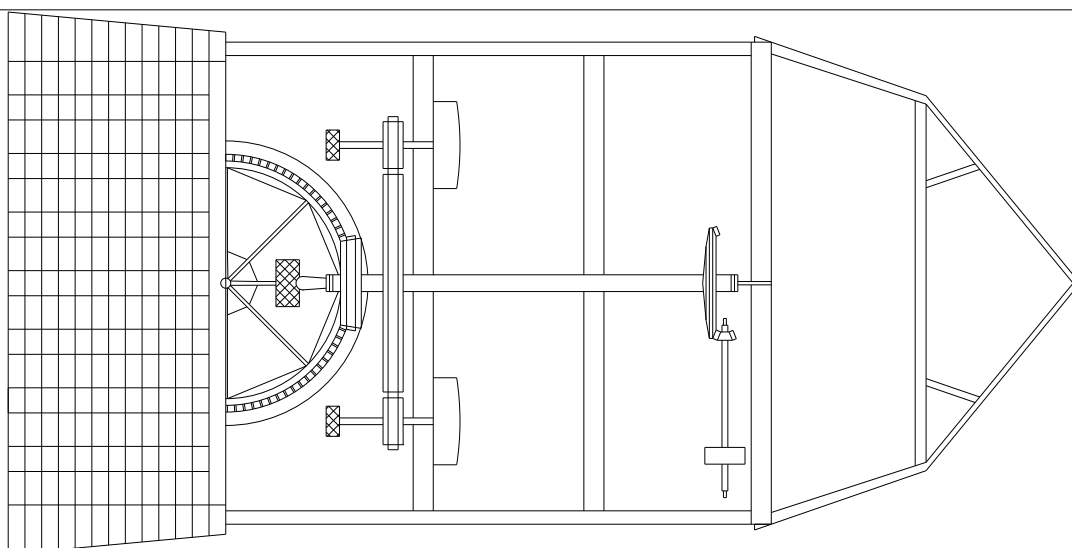
6 large knces 5 iron frames for bridge trees 6 iron bolts framing and fixing etc etc
cog pit walls and walls for hurst
Pit wheel 13 feet diameter 11ⁱⁿ thick arms 14 by 14
cogs for D°. Irons bolts pins etc. Labour for putting in the same
Brick apron at the tail of the wheel and likewise head
Two side walls of mill 48 feet long each & 14 feet high
2 End D°. 20 feet long fourteen feet high
altering the floors and uncovering and raising the old mill with an additional new end to mill 16ft long and
23ft wide with brick piers plank and story post thereto the old mill to be new weather boarded the same as the new
part with battens painting etc.
Two side walls for the tide gates 39 feet long, 9 feet deep 4 bricks thick the bottom apron paved with bricks.
Tide gates 14ft long 9ft deep with the draw gate in each. Racks pinnions irons etc with a swing bridge over the
same. one brick at the foot of warf 9 feet long 8 feet deep 2 bricks thick.

Kiln 18ft square with a granary attached thereto 24ft by 24ft
20 feet upon the stud with 2 floor girders 12ⁱⁿ by 12ⁱⁿ joice 3 by 6 story post 6 by 6 floor 1/4ⁱⁿ thick plates for the roof
4 by 8 principal rafters 6 by 4 D°. small 2 1/2 by 4 beams 6 by 6 collar beams 6 by 4 purlines 4 by
brick foundations with tiled roof doors windows and ladders.

The above estimate for building the said mill including all materials will amount to £2907 4s 2d.

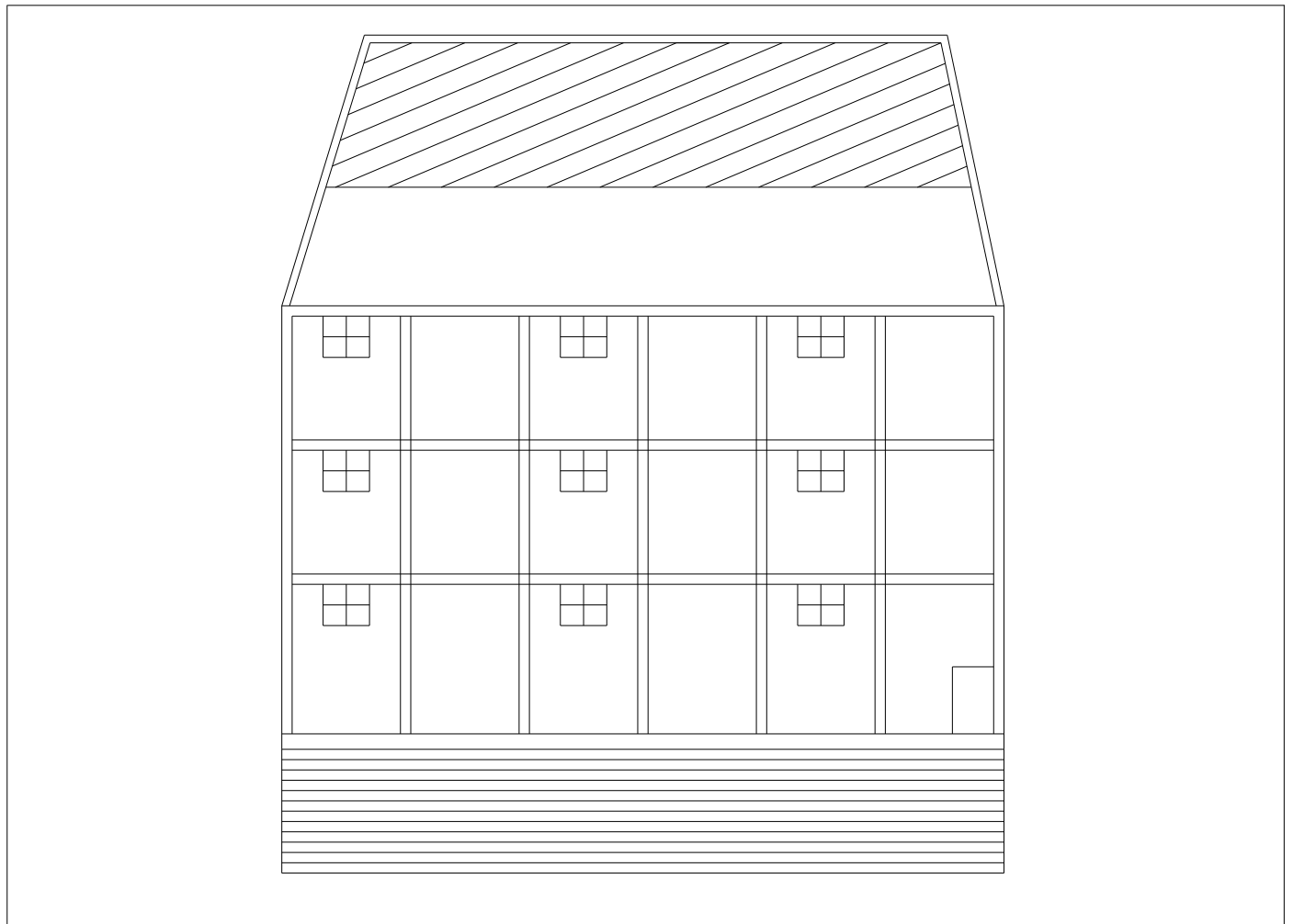
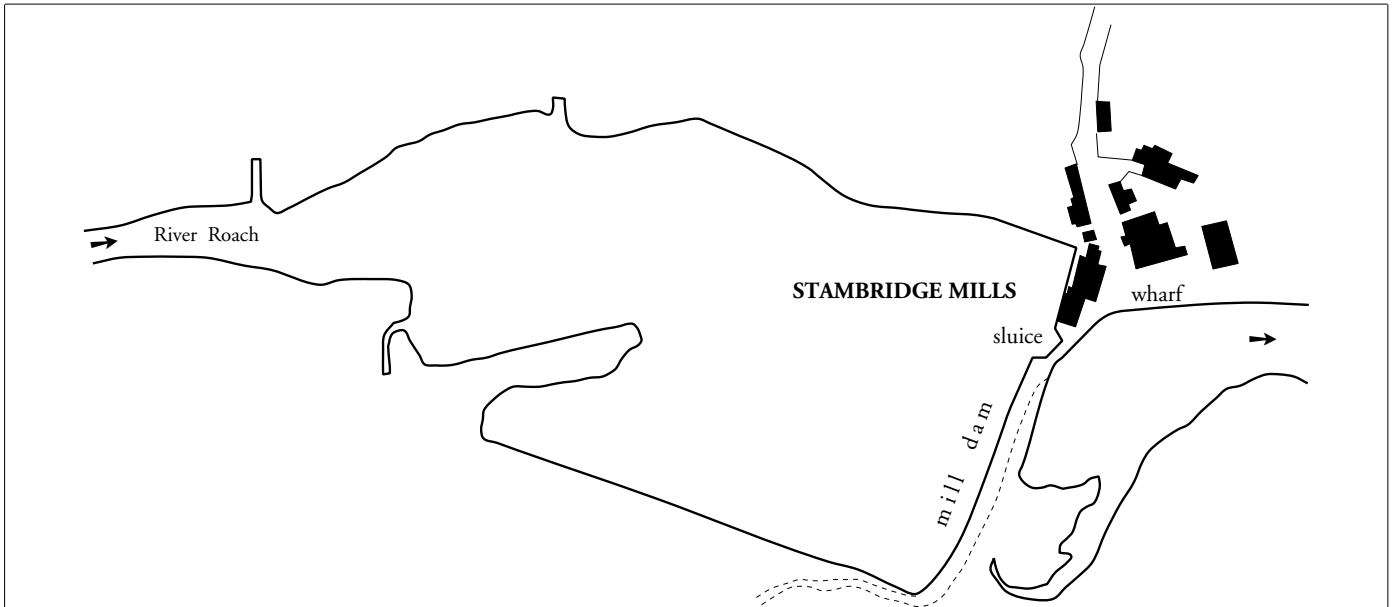


LAYOUT OF WATER WHEEL, GEAR WHEELS AND MILL STONES FOR PROPOSED NEW MILL AT ROCHFORD, 1811.



LAYOUT OF WATER WHEEL, GEAR WHEELS AND MILL STONES FOR PROPOSED NEW MILL AT ROCHFORD, 1811.

River Roach



Elevation and framing of proposed new water mill, 1811.

River Roach

