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William Cooper, Millwright - Foredown Hospital
Ford Aerodrome

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SUSSEX INDUSTRIAL HISTORY

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D. H. COX

William Cooper - Millwright & Engineer (1825-76)

Introduction.

Windmills and watermills have been places of interest and admiration by many for a very long time. It is perhaps thanks to the landscape painter in particular that we have a record of many mills now destroyed or altered beyond recognition. However, not too much thought has been given to the men who created and improved the mills and the machinery that they contain. The name "millwright" is well known but few details exist of their work. We can see the results of their labours but who did what and at which mill?

William Cooper was one of those millwrights. He came to Henfield in Sussex in 1854 with his wife and three children to work with James Neal in his millwright's business. After a short partnership with Neal, W. Cooper carried on the business on his own until his death in 1876. His wife then continued the business until about 1876, with the High Street premises being sold in 1905. The site remained in much the same condition for a further 60 years or so being used in part for storage purposes. The buildings (fig.5) were eventually demolished in 1967 and nothing remains apart from the name which is preserved in the road leading to the Village Hall now called "Coopers Way".

As a result of a series of lectures in Henfield on local industrial history a group decided to investigate William Cooper, and the following is a result of that work. Details are included of J. Neale as these lead us into the work of William Cooper.

When we examine the work of the millwright it is difficult to find out exactly the work carried by any particular millwright. This is particularly so regarding watermills. The manufacture of iron was the original reason for the development of a large number of water powered sites and it was their later conversion to corn milling that gave work to the millwright and where we find the description of millwright being used. If we are lucky we may find a nameplate fixed to an old mill. This is usually fixed to the only stationary item easily visible and on the outside of the mill i.e. on the pentrough. It is difficult from that single nameplate to ascertain exactly what work the person named carried out, but it is safe to assume that if not all the machinery was installed at that time then at least a major overhaul must have been carried out and at least a new pentrough fitted. Other changes to the mill do not usually leave a sign or mark of the craftsman involved.

William Cooper put his name on six water mills and it is known to have worked on another six mills. We also know from visual evidence from when his premises in Henfield at the period when they were used as a store, that the casting of iron had been carried out there. He could easily manufacture iron castings up to ½ ton in weight and was thus

capable of making all the iron components known to have been part of the mills at which he worked. It is strange however, that Medhurst of Lewes who was a millwright at the same period as Cooper, put his name on several water mill wheels and that Cooper put his on only one. We do not know the exact date that William Cooper moved to Henfield with his family. However, we do know that the inscription "J. Neale. Millwright 1844" was on the windmill (fig.1) just south of Henfield Common (1) and that the next known appearance of Neale's name was when combined with Cooper to give "Cooper & Neale. Millwrights 1854". This is on the pentrough of the water mill at Woods Mill, just south of Henfield.

Fig. 1 Henfield post-mill (Henfield Library)

The Millwrights of Cooper's Yard, Henfield.

The Families:

Neale.

Before Cooper's firm was established in the High Street, James Neal had founded the business of iron and brass founder and millwright prior to 1839. His premises were in Nep Town, Henfield and the tithe map of 1844-45 shows them as three tenements and garden. They are still standing today as a row of cottages.

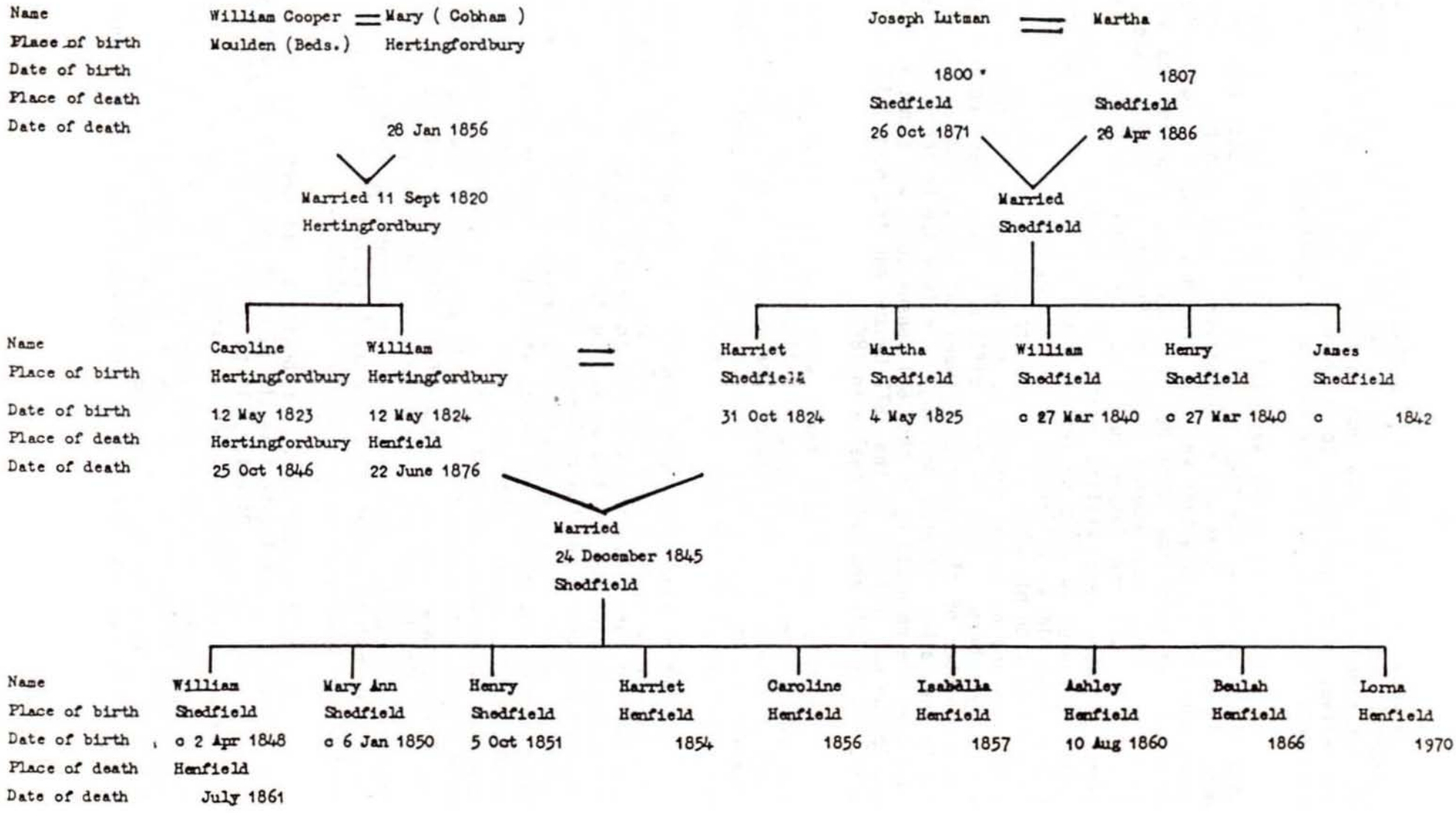
From the 1851 census returns we learn that James Neal was born in 1812 at Limpsfield, Surrey and that he married a Sussex woman from Washington in 1833. He was described as a "Millwright, Master Engineer, employing two men". At that time he was living in Church Lane with his wife and three children, and a lodger who was also his young apprentice. Another young millwright from Broadwater was lodging in a nearby house.

James Neal was still running the business in 1852 but by 1854 he had been joined by William Cooper. We have not been able to discover when the move to the High Street was made, but we do know that the firm continued as Neal and Cooper at least until 1858. James Neal's first wife Mary had died in 1852 and by the 1861 census he had remarried and moved to the High Street. The second wife was a widow with three children to add to the two Neal children still living at home.

In the 1871 census for Henfield we could find no trace of the Neal family neither have we found any record of the death of James Neal. However, by 1862 William Cooper was running the business alone, so it seems most likely that the Neal family had moved away.

Cooper

Our first reference to William Cooper in Henfield is in the inscription on Wood's Mill pentrough where we find "Neal & Cooper 1854" (fig. 3). However, from the 1861 Census Returns we find that he was born in Hartingfordbury, Hertfordshire in 1825, the son of a millwright. We next find that he moved to Droxford Parish in Hampshire. There he met and later married Harriet Lutman on 24th December 1845. They lived in part of the parish known as Shirrell Heath, where incidently decendants of the Lutman family still live in the same house in which Harriet was born. There were several wind and water mills in that area as well as the Cort's Iron Foundry at Funtley. There it is known that iron was cast and wrought iron produced in the late eighteenth century (2). Thus there was work in that area for William Cooper to learn more of his trade. In addition their marriage registration shows that the witnesses were George and Hester Reeves, a local miller and his wife. William Cooper's occupation is stated as a millwright.


Name
Place of birth
Date of birth
Place of death
Date of death
William Cooper
Moulden (Beds.)
28 Jan 1856
Mary (Cobham)
Hertingfordbury
Married 11 Sept 1820
Hertingfordbury
Joseph Lutman
1800 *
Shedfield
26 Oct 1871
Martha
1807
Shedfield
28 Apr 1886
Married
Shedfield
Name
Place of birth
Date of birth
Place of death
Date of death
Caroline
Hertingfordbury
12 May 1823
Hertingfordbury
25 Oct 1846
William
Hertingfordbury
12 May 1824
Henfield
22 June 1876
Harriet
Shedfield
31 Oct 1824
Martha
Shedfield
4 May 1825
William
Shedfield
c 27 Mar 1840
Henry
Shedfield
c 27 Mar 1840
James
Shedfield
c 1842
Married
24 December 1845
Shedfield
Name
Place of birth
Date of birth
Place of death
Date of death
William
Shedfield
c 2 Apr 1848
Henfield
July 1861
Mary Ann
Shedfield
c 6 Jan 1850
Henry
Shedfield
5 Oct 1851
Harriet
Henfield
1854
Caroline
Henfield
1856
Isabella
Henfield
1857
Ashley
Henfield
10 Aug 1860
Beulah
Henfield
1866
Lorna
Henfield
1970

In about 1854 the Cooper family moved to Henfield with their three children. We do not know the reasons for this but the Sussex Advertiser at that time covered an area that included both Henfield and Droxford. The railway from Southampton to Brighton was open so they could easily have made the move by train from Fareham to Shoreham.

In 1861 William Cooper was living in the High Street in Henfield with his wife and by now they had seven children. Later they had two more, in all three sons and six daughters. They also had a lodger, a young apprentice millwright who came from Mrs. Cooper's home parish of Droxford. At this time James Neal's eldest son, Cornelius was working as a millwright, and lodging in Church Street was Robert Fowler, who later took over the Cooper business. In 1869 there was a family tragedy, which left William Cooper badly injured. He must have recovered enough to carry on the business, however, as the 1871 census return shows him as millwright and engineer, now living at Park Villas in Henfield with his wife, five daughters and the youngest son. The two older boys are no longer mentioned, and the baby of the family, Lorna, was not yet born. There is some difficulty over these details as we found a number of discrepancies between the census returns and not all due to the rather 'flowing' writing but mainly due to the inaccurate way that ages are recorded eg in the 1881 Census Lorna was shown as 11 years old though not included in the 1871 Census and the next child was five years old in 1871 and only twelve in 1881.

At this date (1871) there were four men shown as Millwright (Servant) - presumably employed by William Cooper. They included Robert Fowler, now married with children, the others coming from Sussex, Horne, Midhurst and Hurstpierpoint. Also recorded was a 68 year old Henfield man described as "Millwright, out of employment".

In 1876 William Cooper died aged 51. In his will drawn up in 1869 when he was so very ill, he left all the contents of his home to his wife Harriet, and everything else was to be sold up by his trustees and the proceeds made over to his wife. In fact Harriet continued to live in the house and to run the business. The sum involved in the will was shown as "under £8000", a considerable amount at that time. While we were checking the records we found, with the exception of wills of the landed gentry, bankers etc. that most of the sums quoted were "under £300" or "under £150" and most of the poorer people would not even have made a will. The witnesses to the will were Robert Fowler, millwright, and Adolphus W.W. Caudle, surgeon of Henfield. He was the son of the first Dr. Caudle recently commemorated in the name of the new Caudle Street in Henfield. We found an old newspaper report which read "Mr. Cooper was much respected there (in Henfield) and is well known in this part of the country as an agricultural machinist".

It would appear that the business had been turning more to agricultural engineering to take the place of the diminishing mill work. Even by 1874 Kelly's Directory lists William Cooper as "Millwright, Engineer, Machine Brass Founder, Appraiser, Pat. Steam Ploughing and every description of agricultural machinery for hire". It would also appear that in the 22 years he was in the village, William Cooper had built up a very successful business which after his death his wife continued to run, employing much later Robert Fowler as her manager.

From their arrival in the village Mr. and Mrs. Cooper were members of the Free Church in the High Street and their eldest daughter is also shown in the Church records as being admitted on reaching 21. They appear to have been a generous family from the records of monies given to the Church and even on Mr. Cooper's death, Mrs. Cooper and her son, Ashley, were still making quarterly payments.

Another point which came to light about the family was the age at which the children were still described as "Scholars" in the census records. In the period in which they were growing up it was surely unusual for children not to be working at the age of 15, and this includes the girls as well as the eldest son, William.

From the 1881 Census Return we learn that Mrs. Cooper was still living with the family at Park Villas, the eldest daughter presumably helped to run the house, the next two girls were dressmakers and one had left home, perhaps to marry. The only boy at home, Ashley, was now 20 and called a millwright, and the other girls were at school. From St. Peter's Church records we found that the bans were called in April 1881 for Ashley to marry a girl from Woodmancote.

On the business side Mrs. Cooper was now described as a "Millwright/Engineer, Steam Thrasher, employing 22 men". We found the names of 8 millwrights living in the village at this time, and one man described as "Clerk to the Millwrights and Steam Thrashers". Other occupations showed expansion of the agricultural side of the business including an engine driver of steam ploughs and an agricultural engine driver. Kelly's Directory for 1878 adds "steam ploughing and seed cleaning machinery for hire" to the earlier list.

In the 1882 Kelly's Directory Mrs. Cooper is still shown as owning the firm but Robert Fowler is now described as Manager for Mrs. Cooper and agent for a firm of Agricultural Implement Owners and Steam Plough Proprietors. The Free Church records note Mrs. Cooper as having left the village in the Rev. Warner's time and he was only here until 1878. All we can say definitely is that by 1887 Robert Fowler is shown in the Kelly's Directory as the Millwright and he has moved to Golden Square. Any further information awaits the publication of the 1891 Census.

One further point on the Coopers is where they lived. Their first address in the High Street we cannot identify as the census only shows schedule numbers and indeed houses in the village did not have numbers at that time, or for long after. We could get no clue from the schedule numbers except that the Neal's were next to William Vinall, the tailor, and the Coopers were two numbers on from there.

However, for all this the Cooper family appear to have disappeared without trace as we have been unable to find any record of their demise. Neither have we been able to trace any descendants.

The Work of William Cooper

The following is a brief description of the mills with which the name William Cooper is associated. The mills are described in chronological order.

Woods Mill (MR TQ 218137)

This water mill is situated alongside the A2037 road just over a mile south of Henfield. The present building dates from the eighteenth century but probably replaced an earlier mill. The building is of stone on the ground floor and is timber framed above with three wooden floors. The pentrough (fig.2) is inscribed "Neal and Cooper, Millwrigths 1854". Most of the internal machinery was removed when a generator was installed. However, thanks to the present owners, The Sussex Trust for Nature Conservation, the mill has been restored to full working order with one pair of stones in operation (3).

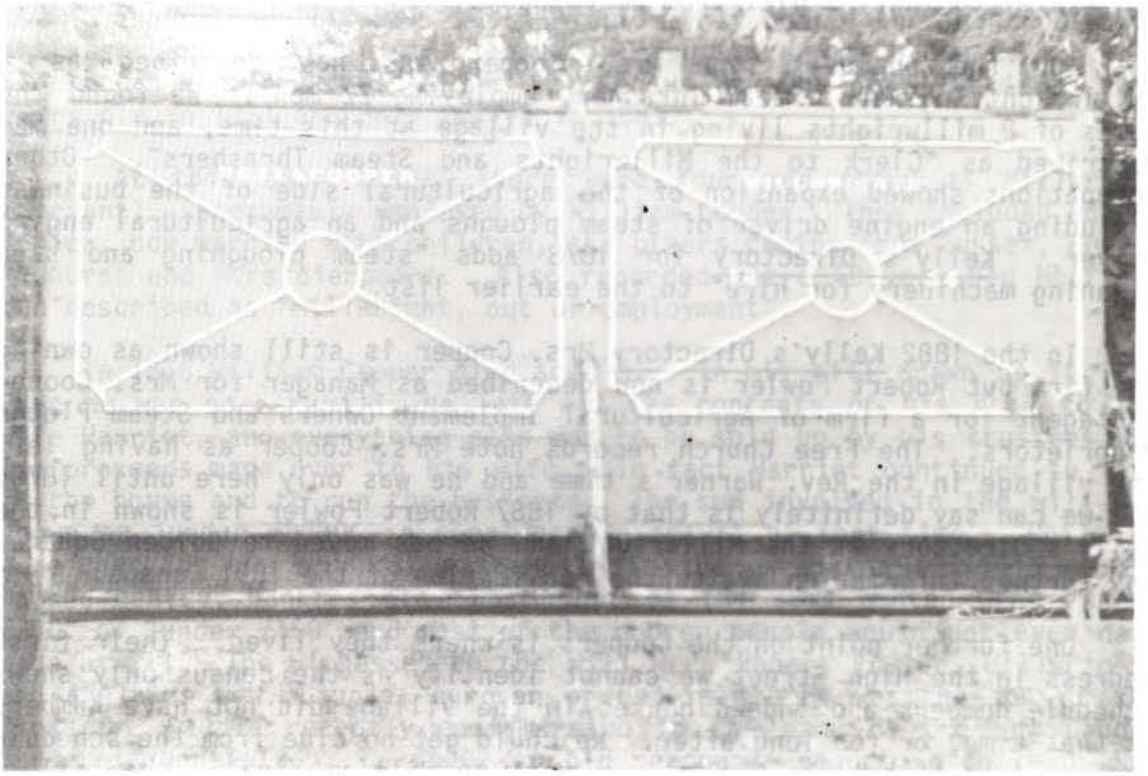


Fig.2 Pentrough at Woods Mill, Henfield

Ruckford Water Mill (MR TQ 293180)

Ruckford Mill is in the parish of Hurstpierpoint and stands about 2km (1¼ miles) north-east of the village centre. It is situated on the upper reaches of the eastern arm of the River Adur and is between Cobbs Mill and Hammonds Mill on that river. Cooper also worked on those two

mills. It is suprising that such a small stream running through flat countryside could support the work of three mills within a distance of 3km (2¼ miles)

Ruckford Mill building is now part of Hurstpierpoint College and is in residential use with little machinery remaining. An inscription on the north wall of the mill states 'E.A. L.A. 1768'. This is believed to refer to the Avery family whose family owned the mill certainly at a later date. The O.S. map of 1843 refers to the building as Avery's Mill. However, the Tithe Map of 1842 calls it Rickford Mill.

The mill had two wheels side by side with one half in front of the other to allow the two separate drive shafts into the mill. One iron pentrough carried the inscription "W. Cooper Millwright 1861", the other the inscription "W. Cooper Millwright and Engineer 1870". One drove one pair of stones and some machinery whilst the other drove two pairs of stones.

Although one water wheel was of wooden construction the remainder of the machinery was of cast iron and thus it is a distinct possibility that William Cooper made as well as installed the major part of the mill machinery. At a later date a Clayton oil engine to drive some of the machinery and a portable steam engine was also used (4).

Ashurst Windmill (MR TQ 181160)

This post mill stood about 100 metres south-west of the Fountain Inn but nowadays all trace has disappeared except for a stub of the crown post in the grounds of Old Mill House. William Cooper was employed to work on the mill in 1864 and fitted a clasp-arm iron brake wheel and possibly other work (5). Present day roads involve a road journey of some 9½ km (6 miles) from Henfield but for William Cooper the short cut across the River Adur reduced the distance to 3½ km (2 miles). Very little is known about this mill except for the various paintings that show a post mill supported on approx 90cm (3 ft) high brick pillars.

Birchenbridge Water Mill (MR TQ 193291)

This mill stood on part of the Scrace Dickins' estate to the south east of Horsham, on the west side of the A281 road with the hammer pond on the east side of the road. From an auction advertisement in the Sussex Advertiser in 1824 we learn that the mill was working at that date but from its position on the dam of a hammer pond there must have been water-powered machinery there from a much earlier date. The mill had two over-shot wheels and three pairs of stones (6). Although there were three floors, the roof of the mill was only just above the level of the dam. The name "W. Cooper" was cast into one of the gear wheels(7). The mill building was demolished in 1948 and all traces of the mill have now been destroyed.

West Chiltington Windmill (MR TQ 085181)

According to West Chiltington by Mrs. Saunders Jacobs this mill was moved to the site in 1830 and is shown on the 1840 tithe map. This

smock mill is octagonal in shape, the ground and first floors are stone and brick with upper levels in wood. The mill with two sweeps survives today as a private residence. During 1922 the machinery was removed by a Mr. Powell who stated that the name "W. Cooper 1865" was on several items of machinery indicating that extensive work must have been done at that time by William Cooper (8). Alas all traces of this machinery has disappeared except for a cast iron support member bearing the inscription "William Cooper Maker Henfield 1865". This is on display unlabelled in King's Mill at Shipley.

Clayton Windmill (Jack) (MR TQ 304134)

This is one of the well-known pair of mills that stand on the Downs above Clayton village. The restoration of Jill has taken attention away from Jack. This mill although devoid of internal machinery does have one floor as a memorial to a previous owner. Originally the mill had four sweeps, a patent novel governor and three pairs of stones. William Cooper is said to have been known for his fine iron work and carried out work on the mill in 1866 (9). Today no signs remain to confirm this.

Horsham Town Water Mill (MR TQ 168303)

This four floored brick building on the River Arun lies approximately 100 meters (100 yards) behind Prewitt's Mill on the Worthing Road, Horsham and is close by the parish church. Built in the late 18th century and shown on the 1851 tithe map, the mill had two water wheels. The north wheel was known as the flood wheel whilst the south wheel was overshot and used as the main source of power for the four in-line pairs of stones (10). The interesting part of the mill from William Cooper's point of view is the cast iron support pillars with the inscription "William Cooper Millwright Henfield 1867". These originally supported the stone floor but now have different uses - two by the front door, two by the rear entrance and two at the gateway at the entrance to the residence. The mill is interesting in that in the original machinery the water wheel drove a counter shaft and this drove the four pairs of stones. This unusual arrangement is repeated at Cobbs Water Mill where, as we shall see, W. Cooper also left his mark. No machinery remains as the mills now a private residence.

Cobbs Water Mill, Hurstpierpoint (MR TQ 273180)

This large brick and timber mill with house adjoining was standing there in 1831 according to the Sussex Weekly Advertiser. However, there probably was a mill there before that date and the Domesday reference to a mill could indicate this mill site. The mill has one overshot water wheel driving four pairs of stones via a counterpart. The pentrough has a plate marked "W. Cooper Millwright and Engineer Henfield 1868". As mentioned under Horsham Town Mill the layout of these two mills is very similar and it would be nice to know if William Cooper did more than put his name on the pentrough and the support pillars respectively of the two mills. Did he see one and copy the design for Cobbs Mill? The mill is complete except for the buckets of the water wheel. A full description and history of the mill can be found in Sussex Industry History. 11 (1981).

Hammonds Mill, Burgess Hill. (MR TQ 300176)

Situated about 2 km (1¼ miles) south of Burgess Hill this brick and stone built mill was the first mill on the stream that went on to power Ruckford Mill and Cobbs Mill. All signs of the mill building, the machinery, the mill stream and the mill pond have now disappeared to make way for a new residence. Luckily the pentrough bearing the inscription "W. Cooper Millwright and Engineer 1871" (fig.4) has been rescued and is now installed at Ifield Water Mill at Crawley. (See Sussex Industrial History 9 (1979) for a full description). Unfortunately the cast iron rim of the water wheel bearing the name "W. Cooper" was destroyed during demolition of the mill. This was the only water wheel bearing that name that we have found so far. However F. Gregory does have a broken piece of the wheel (fig.3) bearing the name in his possession.

Fig.3 Part of water wheel broken during demolition of Hammond's Mill. Now in custody of F. Gregory.

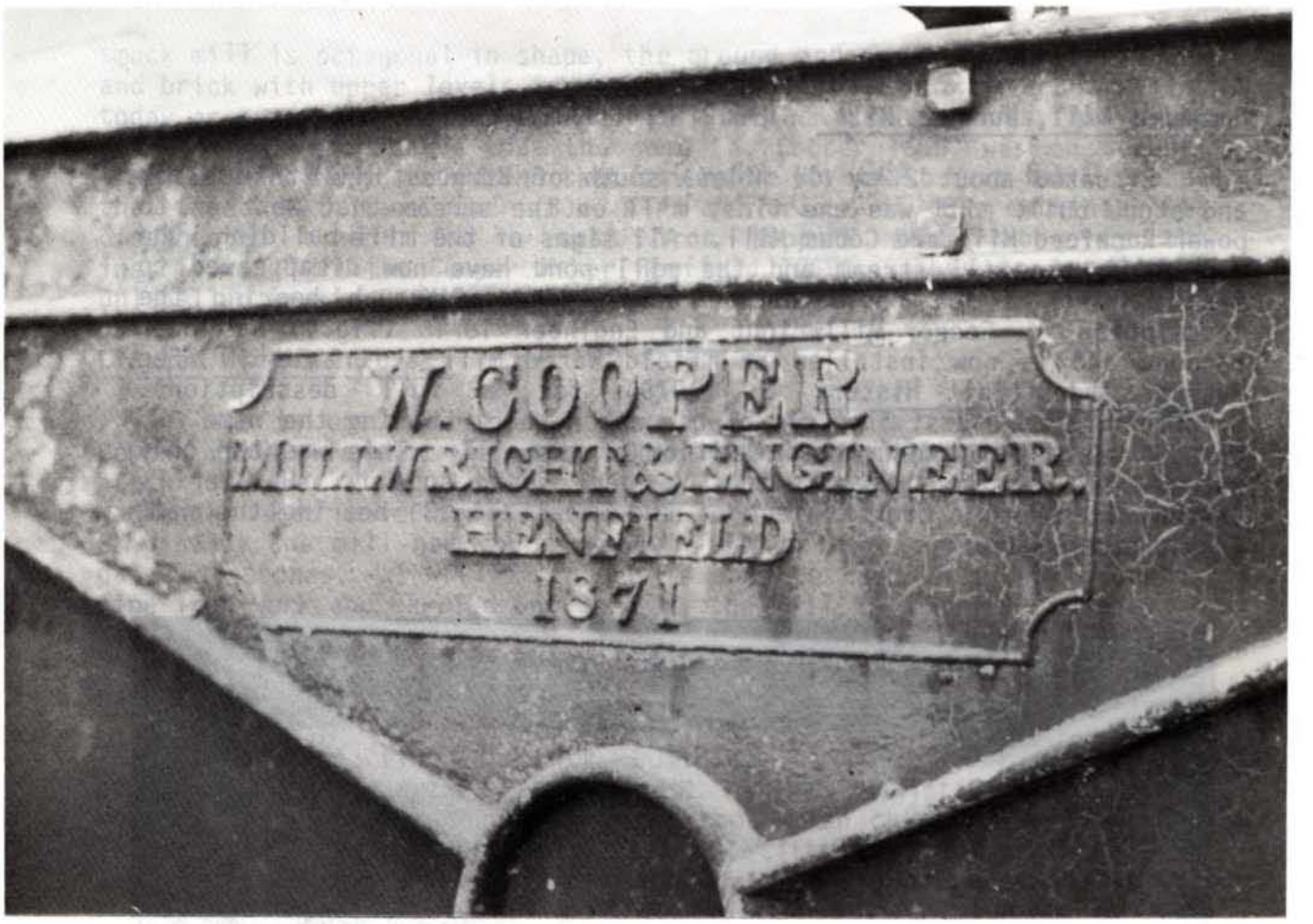


Fig.4 Nameplate from Hammond's Mill, Burgess Hill (Now on Ifield Water Mill).

Court Mill, Steyning. (MR TQ 171113)

Court Mill is situated just behind the north-west end of Steyning High Street with a public footpath just in front of the mill. A stone built ground floor supports two upper floors of wooden construction. A date of 1650 is said to have been on the old water wheel (11) when it was replaced in 1927. The building is certainly of mid-seventeenth century date. The wooden overshot wheel drove two pairs of stones as the remains of the machinery in the mill shows. The pentrough bears the inscription "W. Cooper Millwright and Engineer Henfield 1872". The mill building is now used as a residence with some machinery intact in the ground floor but alas the external wooden wheel is in poor condition.

Leigh Mill, Cuckfield. (MR TQ 286212)

As with the majority of mills built in the eighteenth century this mill was of stone on the ground floor with timber construction for the upper two floors. An overshot water wheel of 10 foot diameter and constructed of wood, drove three pairs of stones. The pentrough was inscribed "H. Cooper Millwright and Engineer Henfield 1877" (12). Although W. Cooper died in June 1876 his wife Harriet carried on the business for some years as this inscription showed. However this was the last mill with an inscription bearing the name Cooper. The mill was

last used as a corn mill in 1913-14 but nothing of the actual mill remains to-day.

Cooper's Yard, Henfield

It was in the High Street of Henfield that William Cooper had his premises. From papers in Henfield Museum we learn that on 13th June 1867 a conveyance of land was made between John Gaulty and William Cooper. We assume that this was to buy the piece of land adjacent to the Free Church in the High Street.

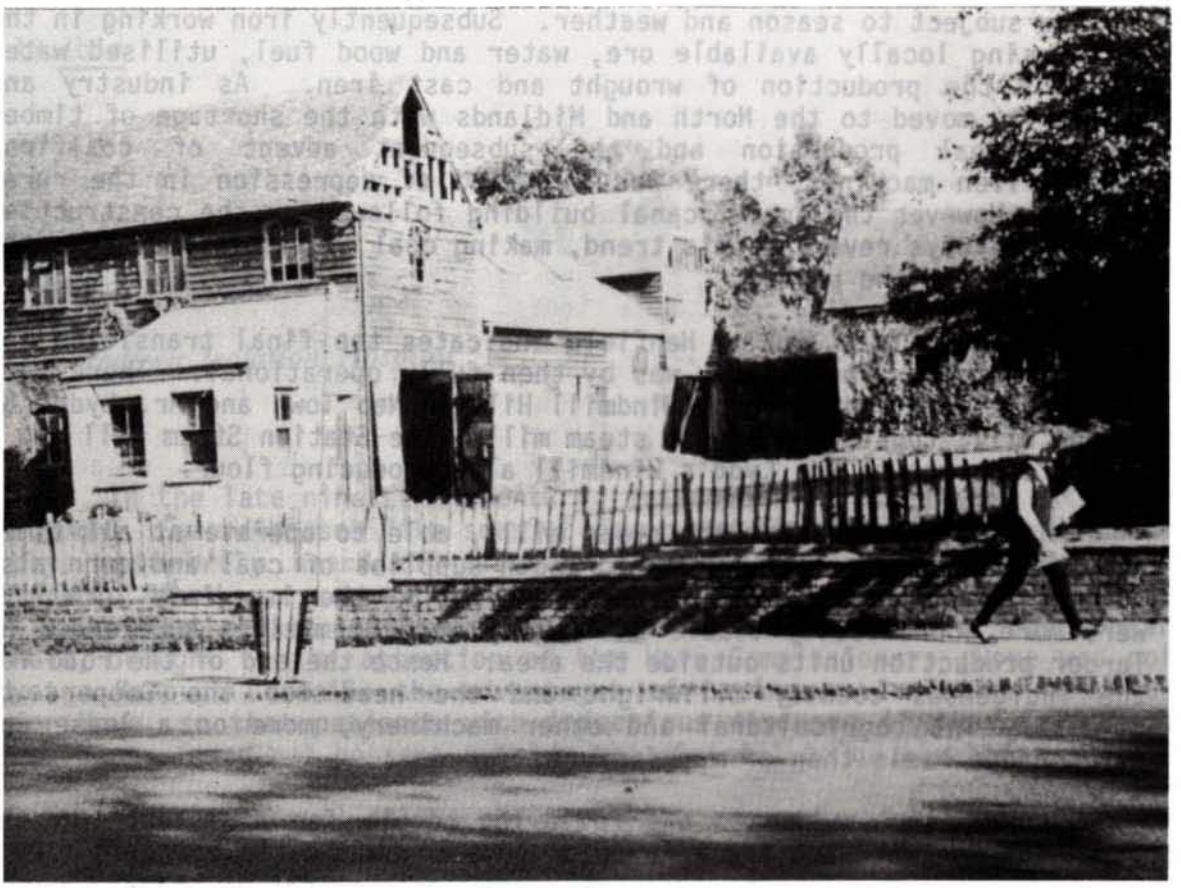


Fig. 5 Cooper's Works, High Street, Henfield. c. 1950 (Henfield Museum)

There are also details of the sale of the premises in 1904. Then the site consisted of:-

Carpenters Shop	41 ft x 25 ft
Wheelwrights Shop	30 ft x 25 ft
Cast Lodge	24 ft x 12 ft

Stores, Stables, Ladder Shed, Office and Builder's Yard, all on a site approximately 83 ft x 110 ft. This shows that here was a substantial collection of buildings capable of carrying out the size business that we believe William Cooper built up and ran for a considerable length of time.

When the buildings were eventually demolished in 1962 local

knowledge tells us of the burning of a substantial number of wooden patterns and the disposal of some Fuller's Earth (both showing evidence of the manufacture of cast iron artifacts). Thus except for the road called "Coopers Way" and nameplates on some mills in the area surrounding Henfield the name of William Cooper has disappeared leaving us with little evidence of what was at one time a substantial business.

The growth and decay of the Neal/Cooper business reflects the overall pattern of industrial development. Power from the elements drove the early water and wind mills for the grinding of corn, with milling subject to season and weather. Subsequently iron working in the Weald using locally available ore, water and wood fuel, utilised water power in the production of wrought and cast iron. As industry and prosperity moved to the North and Midlands with the shortage of timber for charcoal production and the subsequent advent of coalfired steam-driven machines, there was a period of depression in the rural South. However the era of canal building followed by the construction of the railways reversed this trend, making coal available away from the coalfields and the ports.

The 1875 O.S. map of Henfield indicates the final transition for the millwright. The railway was by then fully operational. There were two windmills grinding corn, Windmill Hill in Nep Town and Mr. Lydds at Barrow Hill, together with two steam mills, The Station Steam Mill and a second adjacent to Mr. Lydd's Windmill also producing flour.

It is probable that the steam mills, able to operate at all times and able to utilise the railway for both supplies of coal and corn also for distributing their flour and meal outside the immediate locality, were more economically viable until they were themselves superseded by larger production units outside the area. Hence the end of the road for the indigenous country millwright and the need for the Coopers to diversify into agricultural and other machinery, more on a lease and maintenance basis than of manufacture.

My thanks are due to the following people for assistance in the investigation work and the writing of some of this article:-

Mr and Mrs J. B. Hambling, Mr. R Summersill, Mr and Mrs M. Sutton, Mr A. Couper, Mr. R. Bonnington, Mr. R. Jones, Miss F. Beesley, Mr. D. Warner, Mr C. Jury, Mrs L. Cox and Miss E. Cox.

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5. Ibid

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7. Information from the late Cecil Bailey.

8. B.R.L. H.E.S. Simmons Collection.

9. Ibid

10. Ibid

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12. Ibid

HUGH FERMER

Foredown Isolation Hospital

In the late nineteenth century, infectious diseases were extremely common. Some diseases like scarlet fever and diphtheria, which in these days are rarely heard of, claimed many lives particularly children. Typhoid fever was not unknown and even smallpox was frequently diagnosed (1) During the late 1860's and 1870's an influential body of opinion in Hove, brought to the attention of the Hove Commissioners (Hove was not yet a Borough Council) the advantages of having an isolation hospital for Hove, so that patients with infectious diseases if they were Hove residents, need not be sent outside the district to be treated.

After the usual delays and problems, many of which were connected with finances, a loan was arranged with the Local Government Board, and work started in 1881.

The site which was chosen was a 6½ acre plot about one mile north of Portslade village and five hundred yards north of the disused windmill and the old smithy. It stands on the highest point of the ridge which runs north to Foredown Hill. It was considered that the site was isolated enough from the town to preclude risk of infection and high enough to allow fresh clean air to be part of the cure. It was also only a relatively short journey by horse transport from Hove and Portslade which avoided long journeys for sick people being admitted. It was part of the deal with the Local Government Board, that patients from Shoreham Local Board, and Steyning Union Rural Sanitary Authority, should be offered treatment at the new hospital. (2)

The initial concept was a rather ambitious one. It involved an administration building with a large separate laundry block. This laundry block included accommodation for a horse ambulance also the

horse, with a large mortuary and adjacent post-mortem room. There were also to be three large ward blocks with accommodation for nurses as well as patients. The original plans for this scheme, drawn by A. Taylor Allen & Co., are in the possession of Hove Planning Dept., and some extracts are reproduced in figure 1 (3). After much discussion and cost estimates it was decided to opt for a much simpler scheme which would fit more closely to the limit of the cash available. The final layout was for an administration block, and one ward block (ward block A on the plan) together with a small isolation block (block B). A laundry building was erected adjacent to the administration block although considerably simplified. The mortuary and post-mortem room were deleted.

The architect was the town surveyor Mr. E.B. Ellis Clark, and his brief was to provide accommodation for 15 patients and the necessary staff. The administration building was to accommodate the matron with the catering and kitchen staff, as well as providing a sitting room and bathroom for nurses.

The nurses' sleeping quarters were in the ward block, which would seem to be a very dangerous place indeed to sleep in an infectious deseases hospital.(4) In fact in a report of the Sanitorium Building Committee in 1904 it was stated that the practice of nurses sleeping in the ward blocks was now contrary to Local Government Board regulations, and this was one of the arguments for the extension of the hospital put forward in 1904 and eventually sanctioned in 1909. (5) A separate laundry block was erected east of the administration block. This was for laundering the hospital's soiled linen and clothing as a purely manual operation, no laundry machinery of any kind was provided. The old laundry was converted into the hospital kitchens. The buildings were to be of Sussex flint, with slate roofs, stone cills, red brick quoins, and red brick cornices. The chimney stacks were of brick and were very ornate.

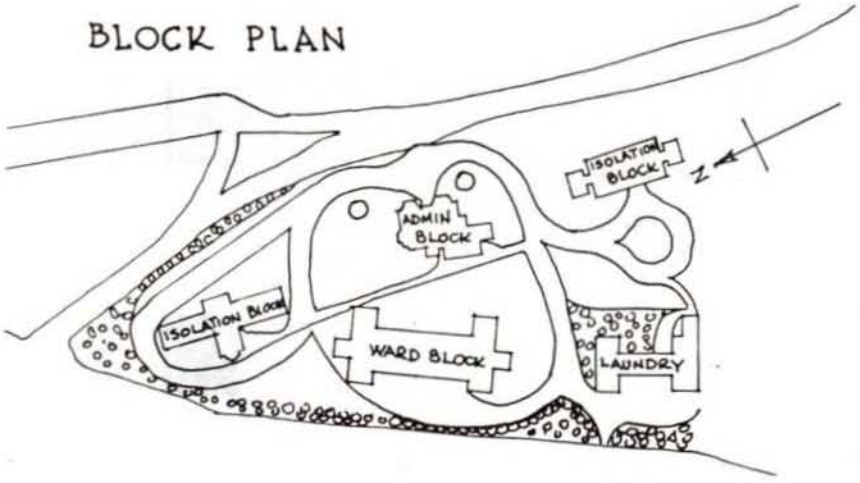
The hospital complex was completed in 1883 (the date 1883 is on a plaque built into the front of the administration building) and the first patients were admitted in that year. It is thought that the flint boundary wall round the site dates from this time (6) The hospital was, at the time of opening, known as Hangleton Hospital, but by 1900 it was being called Hove Sanatorium, and it was by this name that it was known for the next seventy years.

For a few years all went well, but by 1887 there were serious criticisms of the buildings. The reports of a sub-committee convened to look into conditions at the hospital was long and complicated, but it made a number of recommendations, these were as follows :-

1. "That a 5ft 6ins high wattle fence be erected between the administration block and the ward to provide some shelter from the wind and rain when staff were going to and fro also when taking food and equipment into the ward.

FOREDOWN HOSPITAL - HANGLETON

BLOCK PLAN



ORIGINALS PLANS FOR 1881 SCHEME


West Elevation


North Elevation


Plan

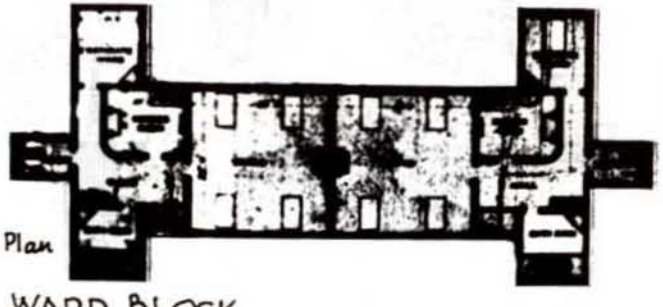

Section

ISOLATION BLOCK


Section


Section

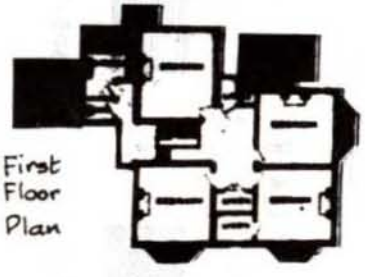

West Elevation


Plan

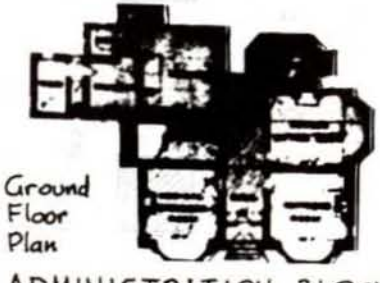
WARD BLOCK


East Elevation


North Elevation


First Floor Plan


Section

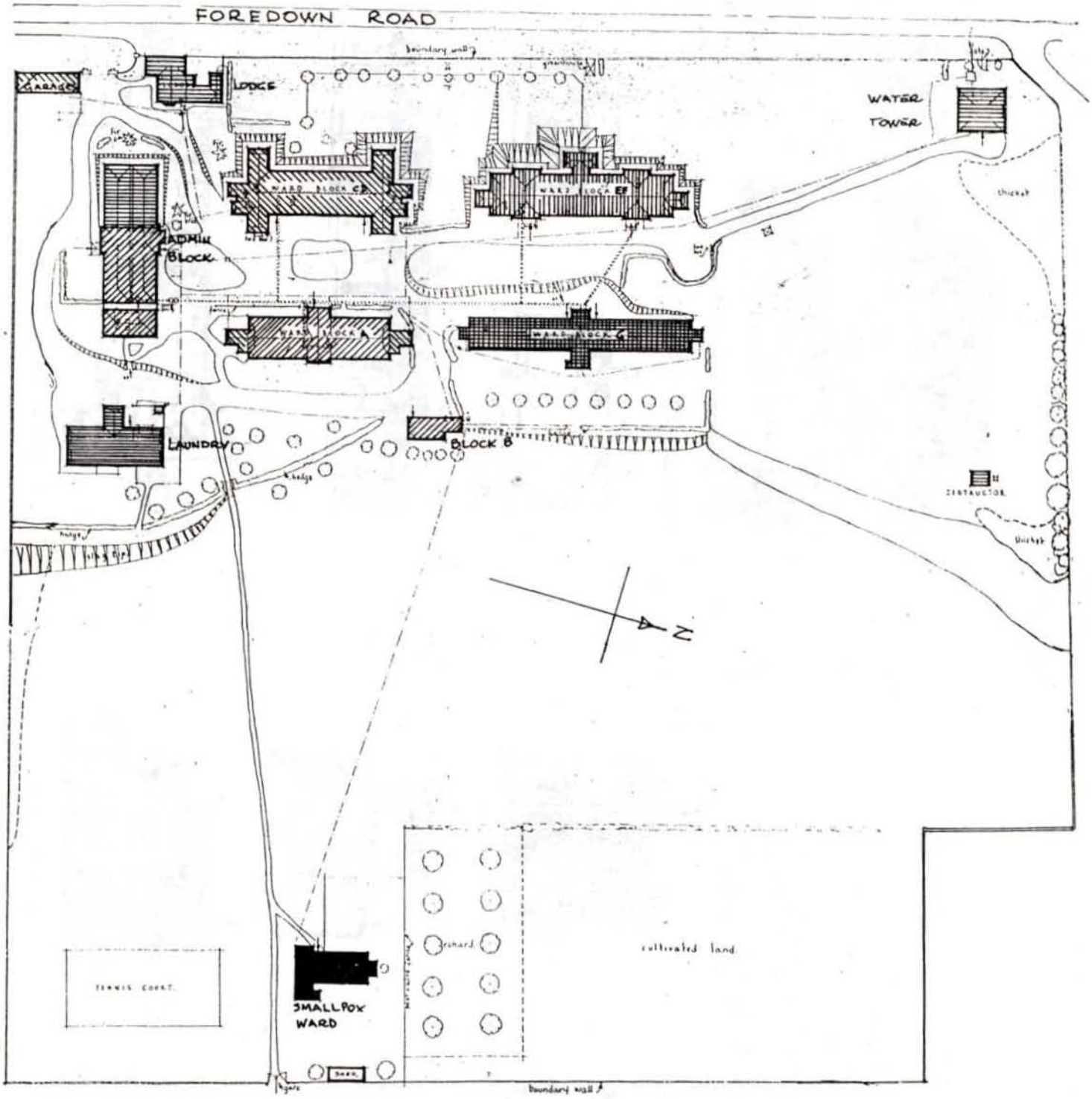

Ground Floor Plan

ADMINISTRATION BLOCK


West Elevation

figure 1

FOREDOWN HOSPITAL - HANGLETON



SITE PLAN.

SCALE 0 5 10 15 20 25 30 35 40 metres

1881-83 | 1892 | 1909-10 | 1912 | 1914-18 | Early 1920s

DATE KEY

2. That a second ward block be built because the isolation block is too small and confined for practical use.

3. That the rough brick walls of the fever wards should be covered with "Parian Cement" for ease of cleaning.

4. That a separate toilet closet should be installed for the attendant in each ward (they had presumably used the same toilet as the patients).

   "Also recommended that the earth closets are improved as they do not permit the free passage of urine". The ventilation of toilets was also criticised.

5. "That ventilation on the "Tobin" system with rectangular shafts and a roof ventilator be fitted in the wards.

6. That there should be a receptacle for all drainage, and it should be a closed cesspit to be regularly emptied", the drainage to a soakaway in the 5 acre field was criticised.

   "Also that a furnace be built for burning all emanations and dressings from patients.

7. That a shed be built for an ambulance carriage to be kept at the hospital". (7)

This report drew a very emphatic defence of his design and a denial of many of the criticisms of the Committee, from the architect Mr. E.B. Ellis Clark. He said that his design was proposed and discussed with the medical officers of the Local Government Board and the architect of the same body. All agreed to the plans he said, and they are similar to many others in different parts of the country. He defended the technical criticisms of his design for ventilation, and said that the hollow walls with the cavity fitted with ashphalt should have kept dampness to a minimum. He went on to say that the large ward block was only one of many which will be required as money becomes available.

The result of the report of the Sanitary Sub-Committee was that many of the points in the report were implemented and although the building of a new block was deferred, (it was actually built in 1892) and the cesspit was never built (main drainage was installed in 1909), the other parts were completed to the satisfaction of the Committee. In addition it was agreed that a register of patients be compiled and updated for the Sanitary Committee and the Medical Officer of Health. It was also agreed that the Medical Officer of Health be paid 10 shillings and 6 pence (52½p) per visit to the hospital but only once per day.

A scale of charges was also fixed for patients, and from 1890 the charges were as follows :-

Class 1	Wages £1 per week or less	Fee nil

Class 2	Wages £1 to £3 per week	Fee 2/6 (12½p) to £1-1-0 (£1-05) per week.
Class 3	Servants	Fee 10/6 (52½p) to £1-1-0 (£1-05) per week. Employer pays
Class 4	Sliding Scale	Fee £1-1-0 (£1.05) to £5-5-6 (£5-27½) per week

Carriage to and from the hospital except for class 1 was to be paid for by the patient.

Many items in the minutes of the Sanitary Committee after this date, deal with the difficulty of extracting the payment due from patients after their treatment was completed and they had returned home. Many excuses were also made by emloyers whose servants had been treated. The employer was of course responsible for the cost of treatment. In fact in 1900 it was minuted that no more fees would be charged for treatment at the hospital except in cases where patients had private wards.

In 1888 and 1889 there was a series of epidemics of diphtheria and scarlet fever; accommodation became impossibly stretched, and a temporary corrugated iron building was erected. This was followed in 1892 by a second permanent flint and brick ward block building, this is ward block C D on the plan. With the addition of the new ward block, the number of patients who could be accommodated was now 28 with a further 2 in the temporary building. (8) The Ordnance Survey map dated 1898 clearly shows the hospital in this condition, with the small administration building and the two large ward blocks only.

By the turn of the century,. the turnover of patients was more than 300 per year with an average stay of four weeks or more, and accommodation was once again becoming very stretched. Any sudden surge of infectious diseases would mean employing wards of tents or shelters of a similar nature which was clearly not acceptable. The thoughts of the Commissioners began to turn towards once more extending the Hospital buildings, and after a number of options had been explored, a scheme was put before the Council (as it was now called). This scheme, which was put before the Council in 1904, extended the Hospital as follows :-

1. An extension to the administration block
2. Erection of a lodge and discharge block
3. Erection of a water tower
4. Erection of a small destructor
5. Introduction of a water carriage system of drainage, with a main sewer joining that of the Portslade Urban District Council at a point adjacent to St. Nicholas Church

The recommendation stated that the advantages would be ample accommodation for the staff; a porter to sleep on the premises and control the gate, non infected rooms for bathing and dressing patients on their discharge; a good supply of water without being dependant upon pumping it, sufficient pressure of water to be used in the case of a fire, a destructor for burning mattresses etc. and a complete system of drainage instead of the pail system and surface drainage of the slop

water. The only gain to the accommodation of patients, the recommendation went on, would be that the beds in the small isolation block and some wards in the West block which have been occupied by nurses, will now be free for the use of patients. (9)

The Medical Officer of Health, Dr. Augustine Griffith, stated in his report to the Council on 22 February 1909:

> "I would call your attention to the fact that there is not yet sufficient accommodation for any real outbreak of disease such as occurred during the past year."

The number of patients in the east block and in the temporary iron building had been considerably in excess of what it ought to have been and this when only one type of infectious disease was prevalent. Had there been only a few cases of Typhoid fever requiring hospital treatment, it would have been impossible to receive them. He went on to say that the large number of patients under treatment had necessitated increases of staff both nursing and laundry, with very hard work by all concerned. He praised the staff and the excellent management of the Matron, Miss Lillian Baker. (10).

The scheme for extending the Hospital was finally started in 1909. A plate on the water tower gives the maker's name as Every of Lewes, and indicates that the water tank on the top of the tower was manufactured in 1909. (Fig 11) The extension of the Hospital was completed in 1910 and as noted previously it was now called Hove Sanatorium. Bearing in mind the fact that it was first proposed to extend the Hospital on 12 July 1900, it does appear that local government moved even more slowly in the early part of the century than it does today. (11)

The Ordnance Survey map of 1912 shows the Hospital at this stage, with the lodge building, a new laundry, and the two brick wards as well as the small isolation ward.

From about 1910, the incidence of tuberculosis in the town began to rise, and a Council sub-committee was convened to consider ways in which the disease could be contained. This sub-committee met each month and the minutes of their meetings show that the disease accounted at this time for a large percentage of the patients at Hove Sanatorium. These patients were of course long-stay compared with those suffering from scarlet fever and other infectious diseases and this once again gave rise to overcrowding in the wards. (12) From 1901 onwards, a fairly regular item appears in the Council minutes relating to the purchase of a plot of land away in the Downs and remote from the Hospital to be used for building a smallpox ward. Many locations were mentioned, some very remote over towards "Fulking Hill", and some fairly near the Hospital. All the land deals fell through however for various reasons except for one plot which was on the south side of the Hospital. This was felt by the Council to be too near the town, and at that stage the proposal to build a separate smallpox ward remote from the Hospital seems to have died a natural death.

Smallpox was being treated at the Hospital right from the 1890's, probably in the small isolation ward. In the minutes of 1 April 1894

there is an item recording the payment of £5 to Emily Buss for nursing three cases of smallpox at the Hospital. There is also a record on 2 May 1894 of a charge of £5-5s-0 (£5-25) per week for each smallpox case sent to the Hospital by Shoreham Local Board and Steyning Union Rural Sanitary Authority. (13)

There is a record in the annual report of the Medical Officer of Health regarding an additional permanent ward block being built in 1912. This did not appear in the 1912 issue of the Ordnance Survey map, probably because the survey was carried out some time earlier. It was however without doubt the ward block EF on the plan. (14)

The 1914-18 War came and went, but apart from a large number of patients from nearby army camps, it did little to alter the work going on at the Hospital. It was however noticeable that the first inflation for more than 100 years caused costs and wages to rise almost double by 1918. The Matron's post was advertised and a new Matron was appointed in 1919 at an annual wage of £100 and all found, including accommodation in the administration building.

In 1919 the possible replacement of the horse ambulance and van by motor vehicles was investigated by the Council. Moores of Brighton tendered for a new Ford ambulance at £365-9s-6d (£365.47½) and a van of similar type at £334-9s-6d (£334.47½). The idea of motorising the hospital transport was turned down by the Council on 20 February 1922 and the horse ambulance retained, as well as the horse van. It was not until 1925 that van and ambulance were motorised at a cost of £390.

The completion of the new ward block EF during 1912 and the rebuilding of the temporary iron building (15) at the north east corner (Ward block C) during the early 1920's made the configuration of the Hospital almost exactly the same as it was at the closure. The little smallpox ward was built about the time of the 1914-18 War on the east boundary of the Hospital area near the small east gate. During the 1920's and 1930's the Hospital continued to cater for all infectious diseases including tuberculosis which was at the time very prevalent in the area, and smallpox, cases of which were treated in the smallpox ward referred to above. (16)

The experiences of people who were treated at the Hospital during the 1920's are interesting because they show the way in which ordinary people lived at that time. A lady wrote in to say that she was a patient at the Hospital in 1927 and she was taken there in a horse drawn cab. Her parents when they came to visit, had to walk all the way from the town centre, as there was no bus to the Hospital and they could not afford a cab. When the parents arrived, we are told that they could only see the child through the ward windows because no one but staff were allowed in the infectious diseases wards. All the people who remember being patients in the Hospital as children in the 1920's and 30's speak of the long lonely road into the country, and the lonely and desolate buildings which looked so forbidding and austere. It is obvious that this is the way a child would see such a place when they were told so little about what was wrong with them, and had no idea how long they would be separated from their parents and family. (17) In the post-war period, in the 1940'and 50's we are told that children had the

same sort of feelings about the buildings, but of course transport was easier for visitors and parents could visit children in the wards by wearing masks and gowns. (18)

There is very little information regarding the affairs of the Hospital into the late 1930's. The annual list of food supplies and necessary goods for the Hospital which was put out to tender by the Council appeared regularly in the Council minutes. The selected suppliers were those whose tender was the lowest, and one assumes that the Council drove a hard bargain as at one time they were costing the egg supplier's prices against the cost of keeping fowls at the Hospital (19) The infectious disease returns show the usual sum of diseases during the 1930's but towards the end of this period cases of polio began to appear. In the 1940's the Hospital was still an infectious diseases unit, but the wartime growth in medical knowledge brought new drugs and treatments which greatly reduced the incidence of the old infectious diseases.

There was little change to the Hospital during the post war period, until 1951 brought the smallpox epidemic. Suspects were to go to Bevendean and confirmed cases to a hospital in Kent. The unusually heavy snow prevented ambulances reaching Kent however, and Foredown Hospital, as it was now called, was opened up as a smallpox hospital once again. The admission of smallpox cases meant that the T B patients at Foredown had to be moved to Bevendean, where in fact they stayed. After the smallpox epidemic was cleared up Foredown became even more involved with Polio, which was now becoming increasingly prevalent in this country. Ward block EF was divided into cubicles, and arrangements were made for accommodating the "iron lung" mechanical support machines upon which many of the Polio patients were dependent. During this period the small observation block (Block B) was used as a pharmaceutical store and X-ray dept. The little smallpox ward block near the east gate had fallen into disuse and was becoming a store place for old furniture and fittings. (20)

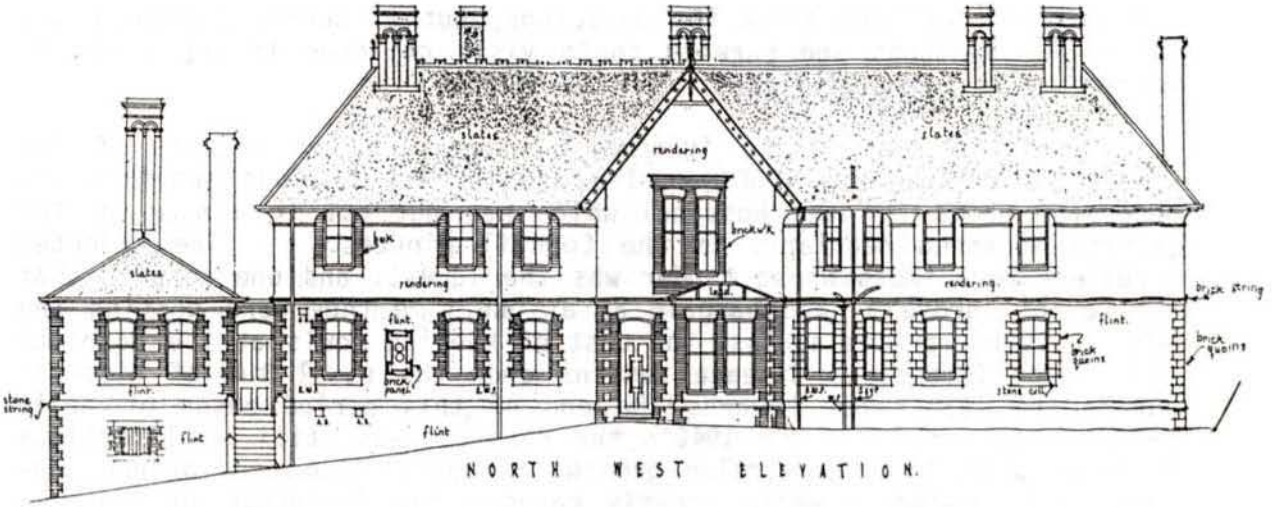
Infectious disease cases including Polio became less in numbers during the 1960's, and in 1970 one ward was opened for mentally handicapped children. Staff were retrained, and new staff recruited and in 1972 Foredown was effectively closed to infectious diseases and became a hospital for handicapped children. Apart from minor interior modifications, no changes were made to the buildings from 1972 to the closure of the Hospital, and the whole complex remained very much as it was in 1912.

During the late 1970's and early 1980's, a new school of thought was emerging regarding the treatment of handicapped people in large institutions. It was felt that it was more practical to retain them in the community in small groups, rather than risk them becoming isolated and institutionalised in hospitals. The handicapped children in Foredown were gradually moved out in the later 1980's and in 1988 the Hospital was finally closed.

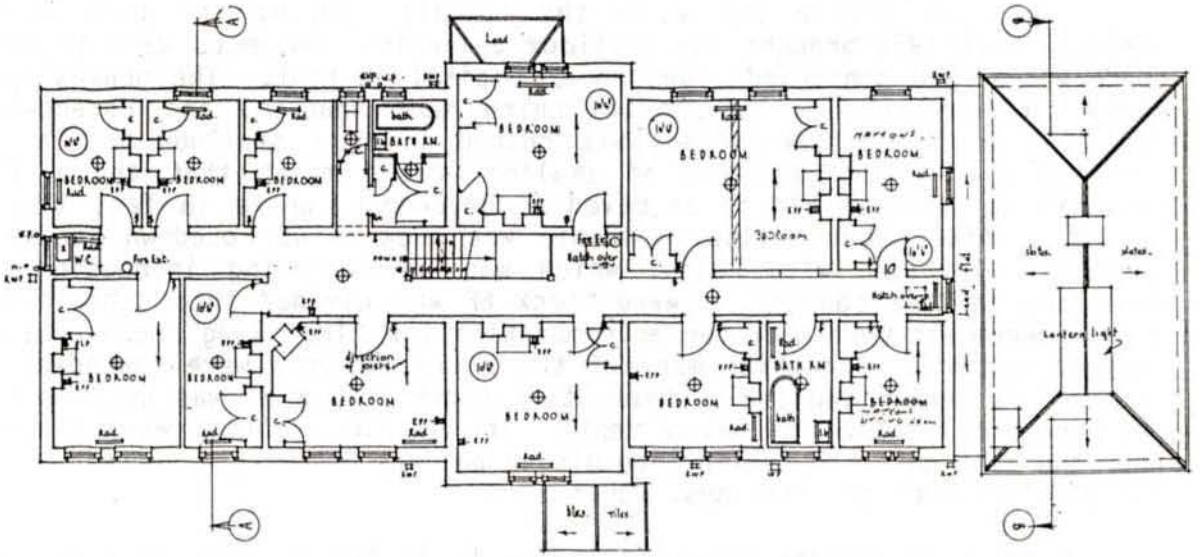
The Health Authority disposed of it to developers in March of that year as part of a complex deal for land for a new hospital, and it is now being developed for housing. (21) The administration block is being

FOREDOWN. HOSPITAL - HANGLETON

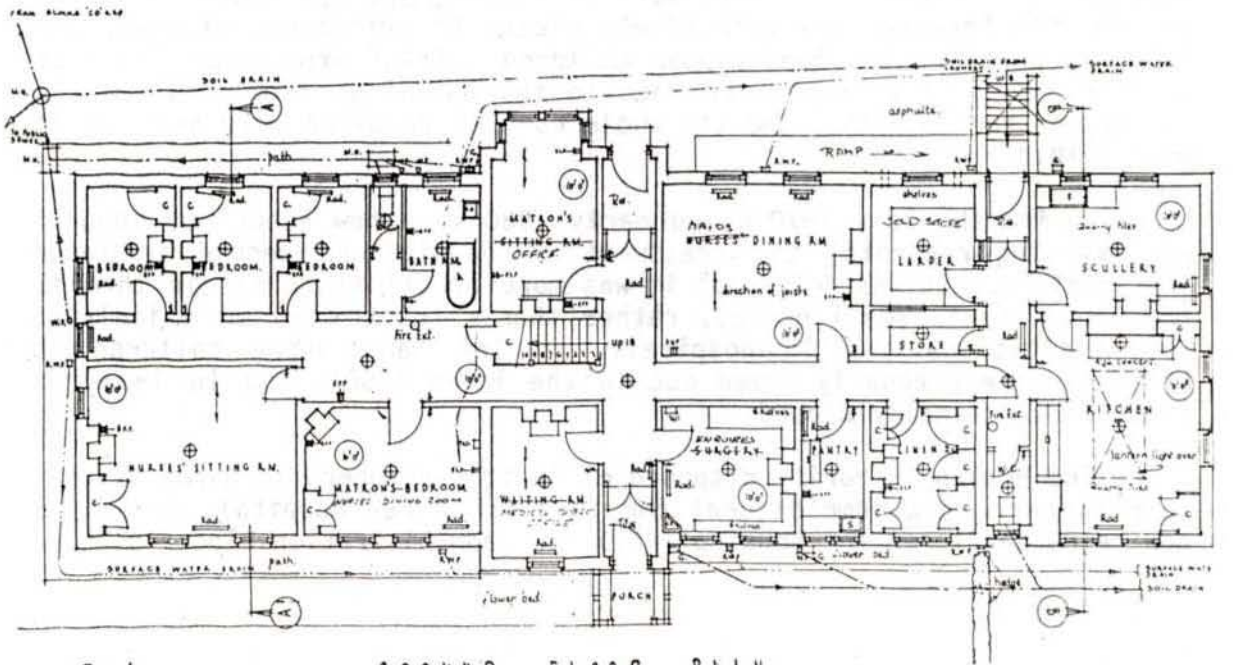
ADMINISTRATION BLOCK



NORTH WEST ELEVATION.



FIRST FLOOR PLAN



Scale

GROUND FLOOR PLAN.

0 1 2 3 4 5 6 7 8 9 10 Metres

Figs. 2 & 3 South-east elevation of the administration block

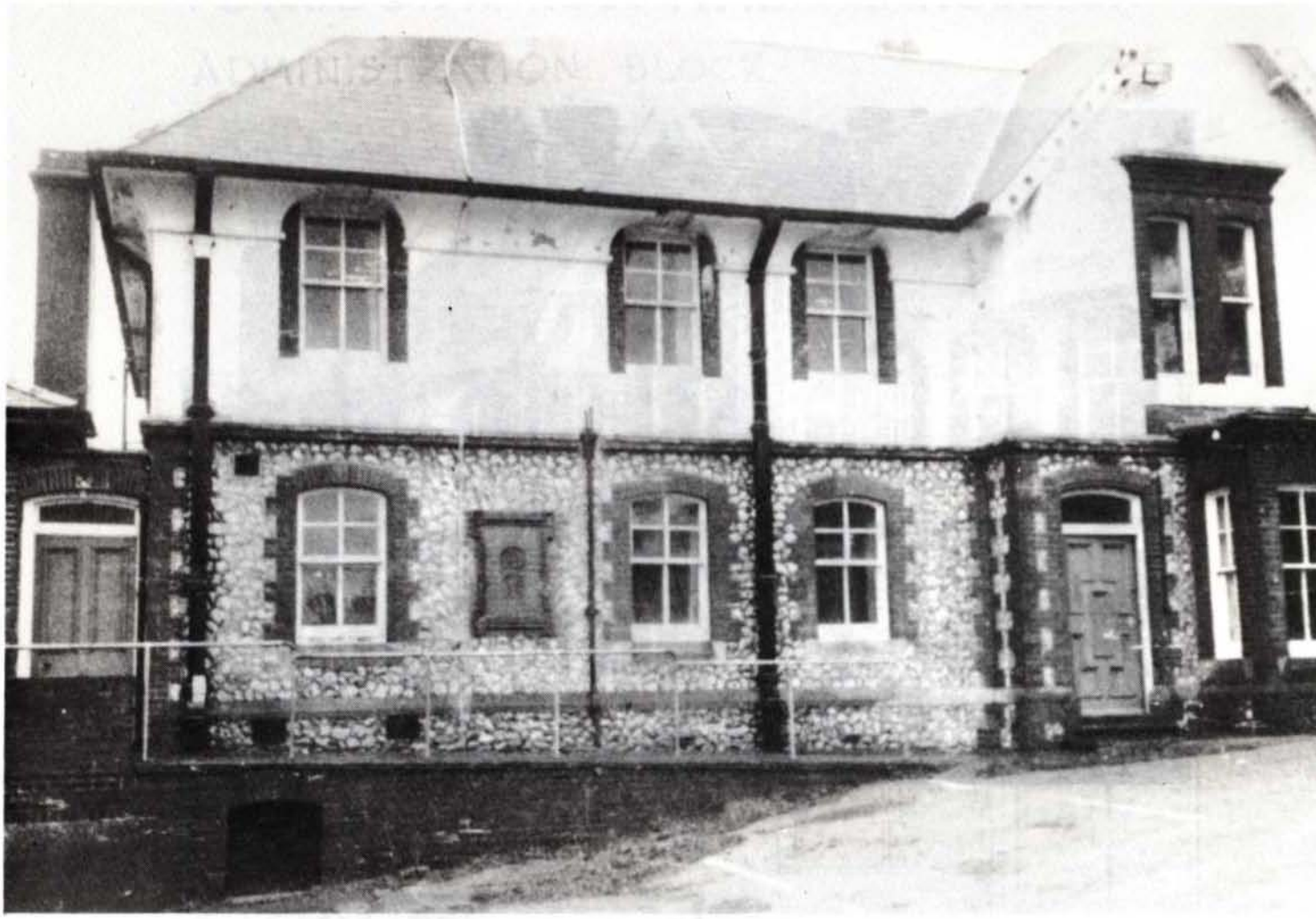


Fig.4. North-west elevation of the administration block

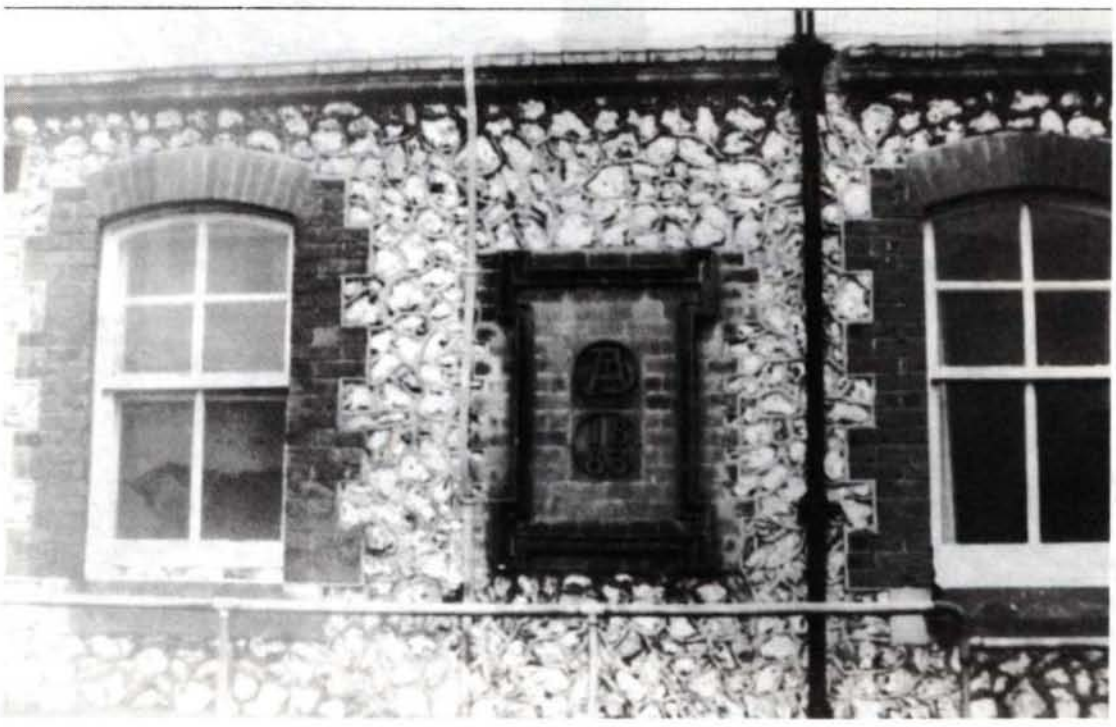
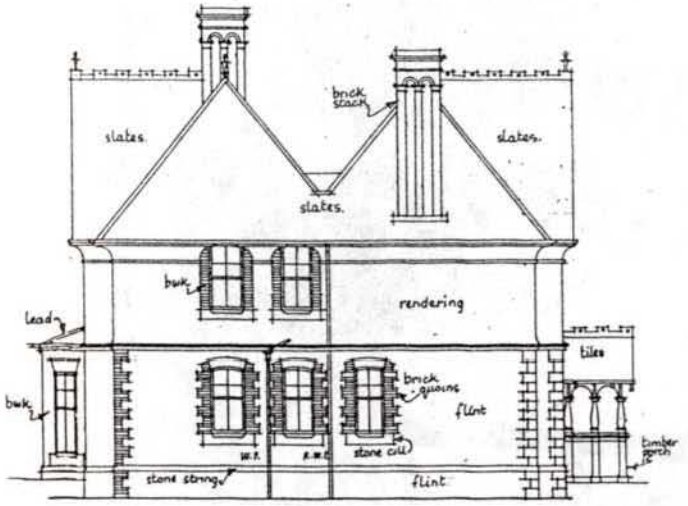


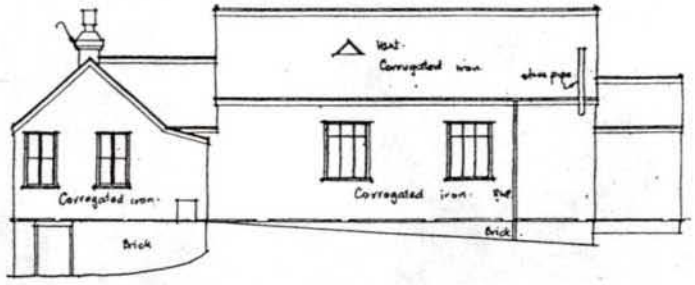
Fig.5. Plaque with date "AD1883" on north-west elevation of the administration block

FOREDOWN HOSPITAL - HANGLETON

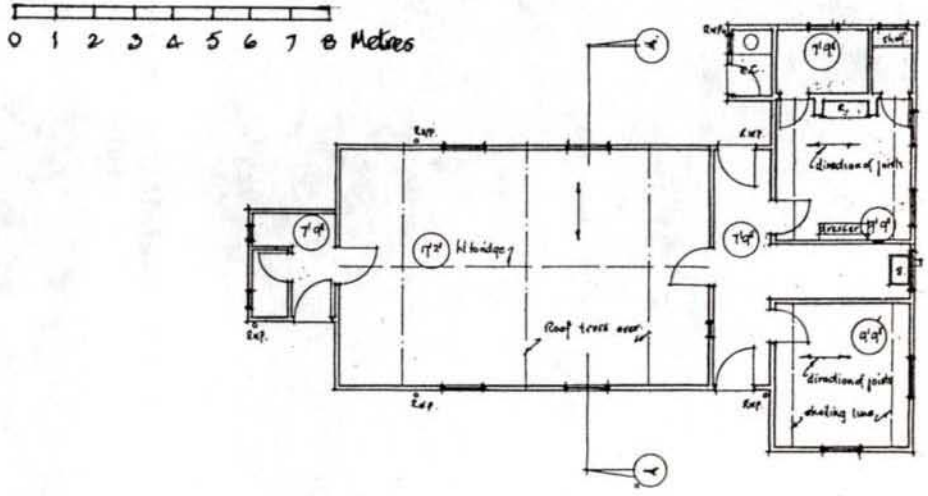


SOUTH WEST ELEVATION.

LODGE



NORTH EAST ELEVATION.



GROUND FLOOR PLAN.

SMALLPOX WARD

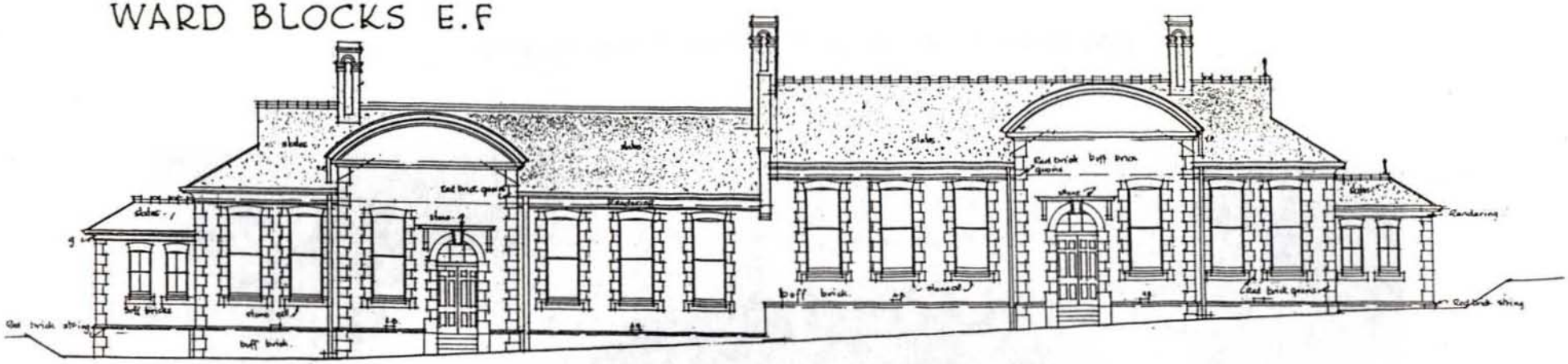
Fig.6 Administration block, south-west end with ward block CD behind

Fig.7 The lodge (centre) with part of the administration block (left)

Fig.8 North-west elevation of ward block CD of 1892

FOREDOWN HOSPITAL - HANGLETON

WARD BLOCKS E.F



NORTH EAST ELEVATION.

Scale

0 1 2 3 4 5 6 7 8 9 10 Metres

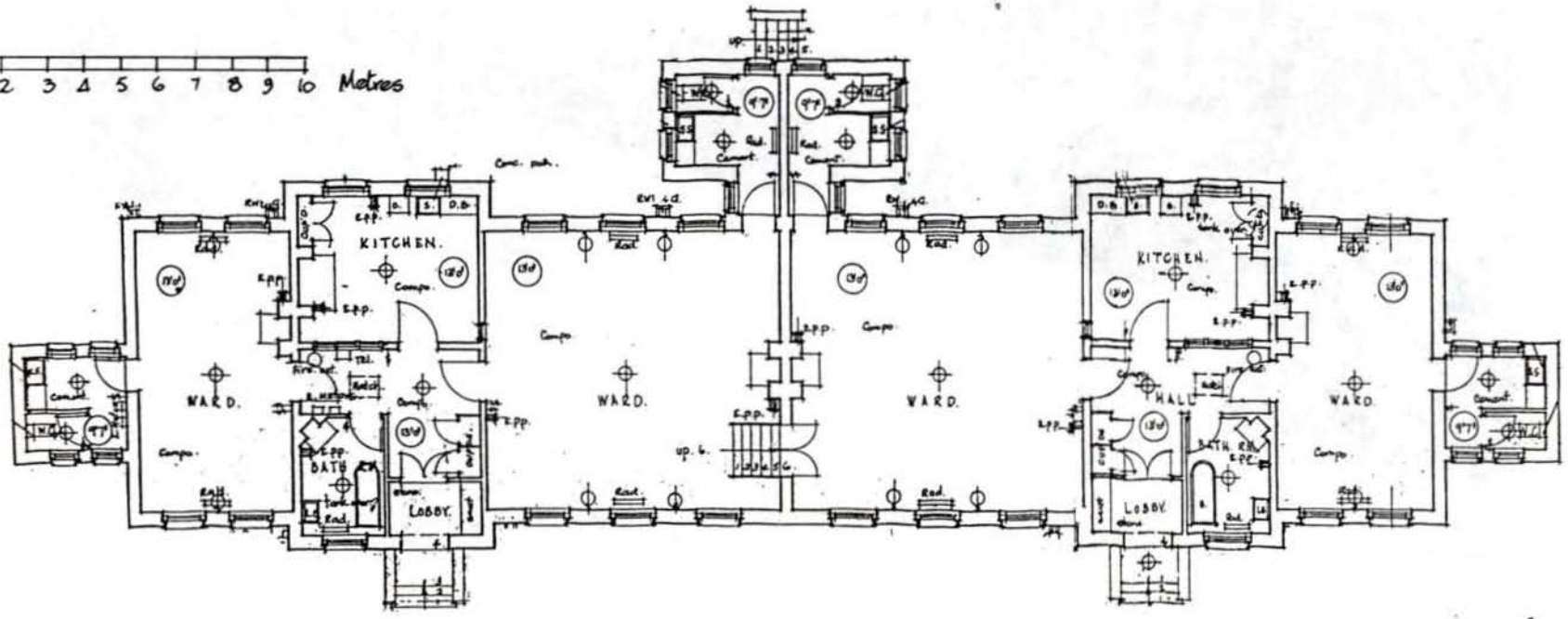


Fig.9 North-east elevation of ward block EF of 1912

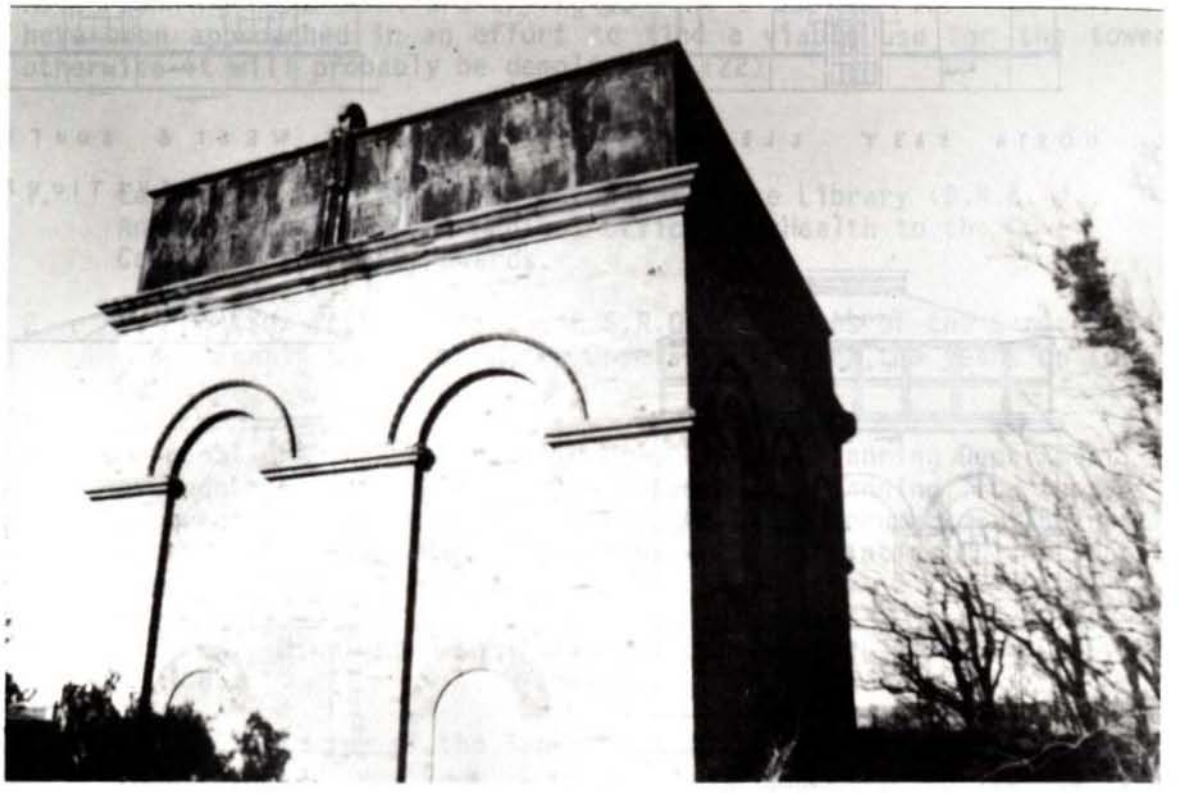
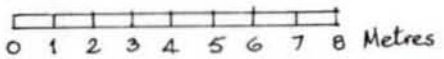
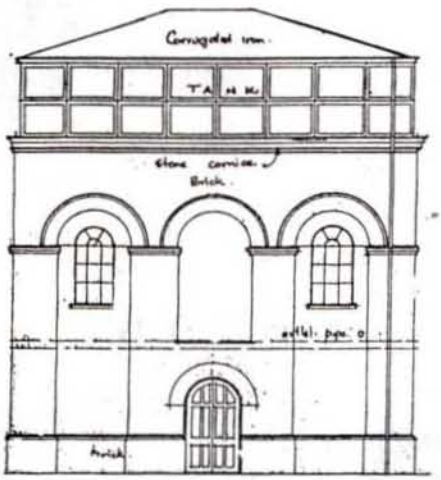


Fig.10 Water tower ironwork by Every of Lewes, built 1909 (Ron Martin)

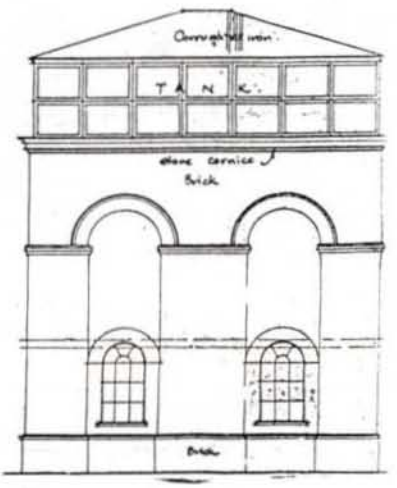
FOREDOWN HOSPITAL - HANGLETON

WATER TOWER

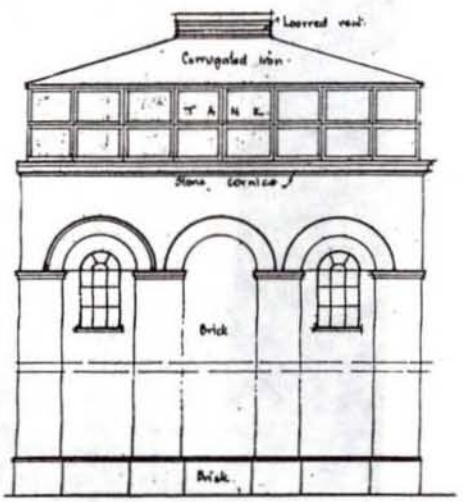




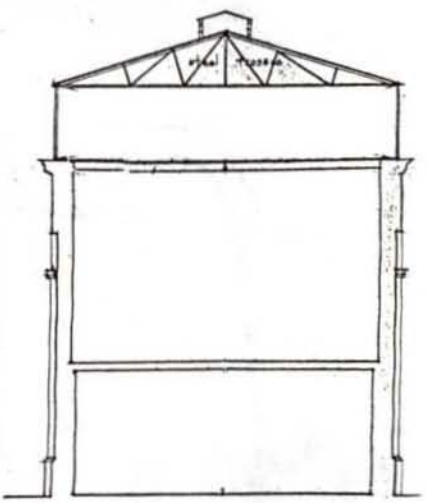
NORTH EAST ELEVATION



NORTH WEST & SOUTH EAST ELEVATIONS



SOUTH WEST ELEVATION.



SECTION

Fig.11 Detail of water tower showing Every maker's plate (Ron Martin)

retained for conversion into flats, but all of the ward buildings and the lodge have been demolished. The water tower is still standing and Hove Planning Department are trying to find a use for it. The S I A S have been approached in an effort to find a viable use for the tower, otherwise it will probably be demolished. (22)

REFERENCES

1. East Sussex Libraries, Brighton Reference Library (B.R.L.). Annual reports of the Medical Officer of Health to the Hove Commissioners 1860 onwards.

2. East Sussex Record Office (E.S.R.O.), Minutes of the Sanitary and other committees of the Hove Commissioners for the years up to 1881.

3. Original drawings and details held by Hove Planning Department. I am indebted to Mr. Michael Ray Director of Planning, for the opportunity to examine and photograph these documents. The north point on the block plan would appear to be pointing in the oposite direction to that intended.

4. E.S.R.O., Minutes of sanitary committee of Hove Commissioners 1881 to 1883.

5. E.S.R.O.,Minutes of the Sanatorium Building Committee of Hove Commissioners, now know as Hove Borough Council, for 1904 to 1909.

6. E.S.R.O.,Minutes of the Sanatorium Building Committee of Hove Council, drawings of the buildings held by Brighton Health Authority. I am indebted to Mr. Lloyd of Brighton Health

Authority for the building information and copies of the drawings.

7. E.S.R.O., Report of a special sub-committee convened to look into conditions at the Hospital and report to the council during Sept.1887.

8. E.S.R.O., Minutes of Sanitary and Finance Committees of Hove Council 1887-1900.

9. E.S.R.O., Report (No. 10) of the Sanatorium Building Sub-committee of Hove Council.

10. East Sussex Libraries, Portslade Branch, Report of the M O H Dr. Augustine Griffith, to Hove Council dated 22 Febrary 1909.

11. E.S.R.O., Minutes of Sanitary Committee meetings, Hove Council 1909-10.

12. E.S.R.O., Minutes of the Sub-Committee dealing with the incidence of pulmonary tuberculosis in the Hove area 1900 to 1912.

13. E.S.R.O., Minutes of Sanitary and Finance Committee dealing with smallpox 1890-1910.

14. B.R.L.,Annual report of the Medical Officer of Health for Hove 1912.

15. The location of this "temporary block" is uncertain. It was apparently built soon after 1889 but did not appear on the 1898 and 1912 Ordnance Survey maps.

16. E.S.R.O.,Minutes of Hove Council and committees from 1912 to the early 1930s.

17. Recollections of being a patient. I am indebted to Mrs. Jackson of Old Barn Way Southwick and to Mrs. Stewart of Errol Road, Hove.

18. Recollections of being a patient. I am indebted to Mrs. Nicholls of Melbourne Avenue, Goring by Sea.

19. E.S.R.O., Minutes of Hove Council and committees late 1930s.

20. I am indebted to Dr. Lenhoff for the information on the hospital history fromn the 1940s to the 1960s. Dr. Lenhoff, was medical superindendent at the hospital during the post war period.

21. For information regarding the later period of the hospital, I am grateful to Mrs. Lamborn of Sherbourne Close, Hove. Mrs. Lamborn was a night sister at Foredown for many years.

22. Ron Martin visted the site on 16th February 1990. He reports that "all the buildings have been demolished except the Water Tower which is being retained and used as a Countryside Interpretation Centre. Most of the boundary wall has been retained including the rather ornate stretch to the south main entrance. The site is now a housing estate".

PETER H. CHAPLIN

The Ford Trimotor and Ford Aerodrome

Henry Ford, the son of a farmer, is probably best remembered for his pioneering the mass production of cars, trucks and of course the ubiquitous Fordson tractor. However, it is not often realised that by the early 1920's, Henry Ford was taking a great interest in aircraft and to quote from his words

"In a motor car you can go almost anywhere land exists. In an airplane you can go almost anywhere a man can breathe, and with the development of the supercharger it is possible to go places even where man cannot breathe under normal circumstances."

In 1926, after some years of experimenting, the Ford Trimotor went into production. It was a high wing three engined aircraft of all metal construction and new alloy called "Alclad" which combined the corrosion resistance of pure aluminium with the strength of duralumin was used. This resulted in the machine earning the nickname of "Tin Goose". The aircraft carried 16 passengers whilst the two pilots were in an enclosed cockpit. It became very popular and at one time held the world's spped record for its class at 162 m.p.h. Production was also at a high rate: with typical Ford practice, raw materials entered the rear of the factory and finished planes, of shining aluminium, emerged from the front which also served as an enormous hangar. According to Ford historian James K. Wagner, by 1 May 1929, Ford's aeroplane production reached a record one-a-day rate. Trimotors were shipped to England and in fact they were used on the Croydon-Le Touquet service.

In July 1931, the Ford company set up a European headquaters at Ford aerodrome, near Arundel, utilising the two large hangars on the Yapton side.

A distinguished member of the aircraft industry, Sir Aubrey Burke, who recently died at the age of 84, was at this time serving with Ford and flying "Trimotors" around the continent. At a later stage he became the driving force behind the development of the De Havilland jet engine.

Ford was one of several companies making De Havilland aero-engines under licence in Word War 1 and Henry Ford used these motors for his early single engined aircraft but turned to Pratt and Whitney radial engines for his Trimotors. Incidentally Ford aerodrome was "home" to many De Havilland planes during both world wars.

Ford aircraft withdrew from Ford aerodrome in 1931 when Henry Ford decided to close down his aircraft business, the reason seems strange at a time when his aeroplanes were so successful and an advanced 40 seater prototype was well under way. His close friend and test pilot, Sherman LeRoy Manning, was killed whilst testing an experimental Ford plane for

the Air Corps, and it has been said that Ford was not only upset over the tragic death of his friend but that his pacifist feelings surfaced at the thought of building aircraft for warlike purposes.

The two hangars that once housed Trimotors at Ford were last used in 1984/85 for storing grain awaiting shipment to Ethiopia. I gather that much of this grain for famine relief was shipped from hearby Littlehampton harbour. Subsequently the hangars were demolished and the land used for residential development.

The only remaining link with Ford Trimotors in Sussex is in the shopping precinct in Worthing. Broomfields Café (a few doors away from Boots the Chemists) has its walls adorned with large pictures in Art Deco style. One of these just inside the entrance on the left wall depicts a Trimotor in flight and bears the legend "Ricks Cafe Americain".

Readers interested in further information about Ford aircraft are referred to Douglas J. Ingells, The Tin Goose, the Fabulous Ford Trimotors (Fallbrook, Calif. 1968)

THE FORD AERODROME, ARUNDEL, SUSSEX

Ford Trimotor at Ford Aerodrome

The Editor acknowledges his thanks to Ron Martin for the cover illustration and for work on the diagrams in the Foredown Hospital article.