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The Boys on the Plaque
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Cover illustration— Brighton A Power Station, Southwick, pictured in the 1960s prior to its closure in 1976

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THE BOYS ON THE PLAQUE

Resort Work Patterns in Early 20th Century Brighton

Geoffrey Mead

In the 1980s Brighton Council acquired the redundant Holy Trinity church located in the heart of Brighton's Old Town at the corner of Ship Street and Duke Street. The intention was for it to be used as a new local history museum, something which sadly never occurred as the project was abandoned due to local government cutbacks. During the initial conversion works various church monuments and plaques were boarded over for protection and, even though the church later became Fabrica Gallery, they were never uncovered until 2014, appropriate for the date as one plaque was the WW1 memorial. Nothing unusual in that as there must be one in almost every religious building in the country; however, this plaque was special in having three panels, one for the fallen, but two for those who served and returned.

Fabrica saw the importance of this and successfully applied to the Heritage Lottery Fund to commemorate the 'Boys on the Plaque' (as the project became known) through a series of arts and community related events and I was asked to organise some form of local history presentation based on the Boys. Fabrica has a 'Friends' group which does voluntary work for the gallery and several members undertook background research into the lives of the Boys sending me their findings on a regular basis.

It soon became obvious to me, working with a 1914 Kelly's street directory, that the geographical spread of the Boys fell into two main areas: the core population was in and around the town centre, in particular The Lanes of Brighton, with an outer suburban ring in Hove, Preston and Kemp Town. The directory gave indications of the work that some of the Boys undertook, either from direct reference or from the trade or occupation of the parents. The researchers, using the 1911 census and other family history sources, were able to further pinpoint work-related detail.

Using this information I was able to organise two guided walks around some of the Boys' addresses, one in The Lanes and one in the adjacent North Laine area. Subsequent research by the background team gave us supplementary facts and data and I have since revised some of the initial findings which I had made based on geographical proximity to the church. In June this year Brighton Jubilee Library, working with the Fabrica team, put on a day conference researching the town in WW1; as part of this I was asked to present a talk and I proposed to look at aspects of the town's economy and work structure at that time. Titled "Laundry maids and fishermen" the lecture used a variety of information sources, in particular the Boys, as an exemplar of resort town economic activity early in the 20th century.

I have always viewed industrial history through the model that separates various trades into three sectors — Primary, Secondary and Tertiary; put simply, raw materials, manufactures and services — and it was this model that I employed to illustrate Brighton's WW1 economy. A key document was actually a post-WW1 report: the Medical Officer of Health's report of 1919 for the preceding 12 months. The core of the presentation was around the Boys, and I used their occupations and that of their families to exemplify the resort work patterns.

Various caveats have to be introduced here! The Boys recorded in Holy Trinity were Church of England, but within a few hundred yards of that church lay other C of E churches: St Nicholas, St Pauls and the Chapel Royal. There was also a large Synagogue, a Quaker Meeting House, the Hanoverian Presbyterian chapel, various Baptist and Methodist chapels, the Countess of Huntingdon's Connection (where my paternal grandfather was a member and chorister), a Catholic church and the Four Square Gospel Tabernacle, to name but a few. All these would have seen different trades represented and of course there would have been non-worshippers to take into account. Several long-established firms in The Lanes would have had employees who lived away from the area as indeed did some of the Holy Trinity congregation.

An early difficulty in the research was defining the terms of the Boys distribution in Brighton: is it Brighton or Brighton & Hove? (The latter then, of course, was a separate borough.) Are the suburban areas included? This in itself caused another problem. The 1928 Brighton Corporation Act saw the administrative area grow five-fold and take in a huge area which, before the Act, had much of Brighton's suburban housing, then administered by smaller rural councils. My father and grandfather lived in Patcham, deeply suburban even then, at The

Lilacs, Reynolds Avenue. Although part of the Brighton conurbation, his rates were paid to Steyning East Rural District Council!

The Brighton Medical Officer of Health [MOH] Report 1919 provided a useful background to various occupations, giving a partial breakdown of some of the main resort employments with some brief comment. The principal single trade was that of hotel and accommodation work, closely followed by laundresses and laundry workers, with significant numbers of employees working in the retail sector. The changing nature of the work of the new century can be seen in the low number of fishermen, but an increase in electrical manufactures. In the latter case, Reason Electrics, which would be linked with Allen West to become the major single employer later in the century. The needs of the military in WW1 brought about an enormous increase in the use of electrical switchgear, further increased with suburban housebuilding in the interwar period.

> "The staple industry of Brighton is catering for visitors by hotels and boarding houses and apartment letting (Lodging-house keepers, females 1,487)" *Brighton Medical Officer of Health (MOH) Report 1919.*

Brighton's resort economy is exemplified by the sheer number of people employed, directly and indirectly, in accommodating visitors; with the range of large seafront establishments such as the Grand, Metropole and Queens Hotels, central inland hotels such as The Blenheim, Royal York and Sillwood Hall and smaller bed & breakfast and private apartments. Lodging houses dealt with the lower end of the accommodation spectrum, as the MOH noted in the appalling slum of Carlton Row with its

> "…9 common lodging houses for 317 lodgers…" [MOH 1919]

This equated to 35 persons per lodging and was undoubtedly an underestimate. The everyday function of domestic washing and laundry, in a pre-washing machine era gave rise to a considerable industry, although what seems missing from the MOH report is the ubiquitous working class female occupation of 'taking in washing':

> "…in consequence the laundry work done in Brighton is in excess of that done in other towns… also there is a greater number of domestic servants [7,977 females]" [MOH 1919]

Fig. 2 Preston Laundry 1900

The MOH noted the considerable extent of Brighton's retail economy which included the major stores of Hannington's and Cheeseman's as well as local stores and corner shops:

> "Brighton is a shopping centre for Central Sussex [shops assistants, males 7,663 females 6,400]…"


SILLWOOD HALL HOTEL
BRIGHTON.

This elegant Hotel, standing in its own grounds immediately facing the Sea and close to the West Pier, will be found replete with every comfort.

SUITES OF HANDSOMELY FURNISHED APARTMENTS

Double and Single Bedrooms, Ladies' Drawing Room (opening into Large Conservatory), Spacious Coffee Room.

BILLIARD & SMOKING ROOM

LIGHTED BY ELECTRICITY.

UNEXCEPTIONAL CUISINE AND WINES

Lawn Tennis and excellent Stabling adjoining the Hotel.

Tariff on application to the PROPRIETOR.

Fig. 1 Advertisement for Sillwood Hall Hotel, Brighton

Fig. 3 Marks and Spencer Ltd, North Road, Brighton, c1918

It is often forgotten that there was a significant component of heavy industry in the early 20th century industrial picture of Brighton:

> "London, Brighton and South Coast Railway Company has erecting and repairing shops at Brighton and Lancing the employees at Lancing being mostly resident in Brighton…an estimate made during 1919 of the numbers employed at these works is 3,106 as compared with the previous figure of 2705…the figures for all railway and carriage workers is 5772."

Fig. 4 Brighton Loco works, New England area, c1912

The new industries propelled by military needs were exemplified by

> "Electrical accessories; one large firm employs 1156 persons as compared with 461 prior to the war."

Fig. 5 Reason & Co. electrical manufacturers, Lewes Road, c1912

But the historic past trade of fishing, the major activity in the town for many centuries was in serious decline with MOH noting the bald statistic – *'fishermen 332'*.

The Boys project gave valuable insight around and behind the MOH statistics and comments; the pattern of trades exemplified by the various Boys and their families provide a window on one religious community's working lives. Using the model of Primary, Secondary and Tertiary it is possible to allocate several of the 'Boys' to these categories. The primary category of raw material collectors, which the fishermen of Brighton exemplify, are missing from those listed on the plaque. This is surprising, as many would have lived in The Lanes area; presumably fishermen either worshipped at other churches or were non-attenders anywhere. Only one primary occupation can be identified, that of market gardener, although this was for Sydney Port who was listed as this after WW1. The biggest market garden was that of the Bristol Nurseries in Kemp Town, although there was one nearer at Centurion Road near St Nicholas church which was run by 'H. Smythe, Florist & Seedsman' until the interwar period.

The secondary category, of manufacturing, was much more extensive and covered a wide range of production with 18 Boys here. Taken simply as animal, vegetable and mineral products, this manufacturing came as a boot & shoemaker and a boot repairer, a pastry cook, picture framer, carpenter and French polisher. There was also a host of mineral based activities: a builder and a plasterer, several people in the printing industry with a compositor, letterpress printer and print machine binder. The LB&SCR employed a riveter and there was an electrician, metalworker and gas fitter. At the higher end of manufacturing was a photographer in East Street, two opticians and a watchmaker (a brother to one of the opticians).

Fig. 6 Garnett printers, Gloucester Road, 1914

Brighton in WW1 was a major services centre, as it is in the 21st century and 38 personnel listed on the plaque come into the tertiary sector. Too many to list individually, but the range was from the high end, of stock exchange jobber, solicitor and chartered accountant, down to heavy lorry driver, groom, porter and general labourer, via a coastguard, bus conductor and news vendor (my maternal grandfather's occupation). The retail sector in Brighton at that time was noted above as being extensive and certainly the list of the Boys reveal association with several of the grander stores in the resort's retail centre, but what was particularly revealing was the family linkages, through the church to the wide second-hand furniture market in The Lanes in particular and also out in the town. The twittens of the Old Town were home to three prominent families all involved as 'wardrobe dealers' and 'furniture dealers'; the Pimms, Coopers and Nyes with several marriage linkages between the families. These dealers were a vital part of the domestic economy as many newlyweds bought their first home goods second-hand from these traders; indeed my paternal grandfather mentioned above was himself an auctioneer and second-hand furniture dealer in Bond Street.

The Boys on the Plaque project has generated much useful research on individuals which has opened up a different view of the city around the early years of the 20th century. As always there are more questions than answers! Why was someone in the Auckland Infantry listed in Holy Trinity? Or a member of the 4th Canadian Mounted Rifles (Central Ontario Regiment)?

I was agreeably surprised to see Arthur King hairdresser, listed as 'served'; Mr King of 70 Preston Road cut my hair as a child!

The economy of an early 20th century resort does not often figure large in the literature of industrial archaeology, other than major infrastructure projects such as Brighton's Volk's Railway, the wider railway system and the piers. The research for this project has cast a different light on the complexity and diversity of a resort economy and one which has revealed a web of familial and economic connections, both within the church community and outwards into the wider body of the urban area and as seen with the military associations into the global picture.

Fig.7 Mead & Co., removers and carriers, 17/18 Bond Street, c1912

ELECTRICITY GENERATION FOR BRIGHTON & HOVE

Peter Holtham

In the nineteenth century Brighton was a pioneer in street lighting by electricity and was one of the first large towns in the kingdom to have electricity and a publicly-owned electricity supply. By 1880 electricity was becoming widely recognised as a serious competitor to gas although it was being used mainly for lighting. Support grew following a number of serious fires in public and commercial premises caused by escaping gas. There had been frequent complaints about the undue heat caused by the scores of gas burners. Lighting had been limited to arc lamps but attention was given to the newly-invented incandescent lamps.

In 1880 the electrical engineer Magnus Volk[1], soon to be famous for his sea-front electric railway, successfully illuminated his own home. A Siemens Type D5 self-regulating shunt-wound dynamo driven by a Crossley 2 horse-power Otto gas-engine installed in a garden shed provided the power to various rooms in the house.

In 1881 first public use was made of electric light when a Siemen's dynamo driven by a steam roller provided illumination for a promenade concert at the Royal Pavilion. The system was arranged by Magnus Volk.

The Reed's Yard Generating Station[2]

In December 1881 Robert Hammond demonstrated an arc-lighting system and a 1¾ mile circuit was laid carrying 16 arc lamps in series supplied from a Brush arc-lighting dynamo having an output of 10.5 amps at 800 volts being driven at 900 rpm by a Robey engine of 12 NHP. The plant was erected in the yard of Reeds Iron Foundry in Gloucester Road and went into service on 21 January 1882.

On 27 February 1882 the Hammond Electric Light and Power Company began their permanent supply system, all 16 lamps being contracted for by residents delighted to pay 12 shillings per lamp week to have their premises illuminated by the new light. One such customer was Magnus Volk who decided to buy in his power and put his own generating plant in store.

By March 1882 demand had increased the load to 40 lamps. Later that year the firm's engineer Arthur Wright devised a scheme for running incandescent lamps from the arc circuits. Voltage control was a bit uncertain as it relied on a "volt boy" controlling it by means of a carbon resistance as a shunt across the field of the dynamo. This was too slow and imprecise for incandescent lamps especially when the boy nodded off so he had to be superseded by an automatic device. In 1883 another dynamo was brought into operation powered by a Marshall engine.

In 1884 Arthur Wright designed the first current-measuring meters for use in customers' premises to replace a system that required the weighing of zinc plates of the electrolytic meter cells installed there to calculate ampere-hour consumption

In January 1885 the Hammond Electric Light and Power Company went into voluntary liquidation and the undertaking was acquired by the newly-formed Brighton Electric Light Company Ltd with a registered capital of £25,000. The assets they acquired included a newly-built power station adjoining the old one in Gloucester Road. The new station measuring 70ft by 55ft went into operation that year. It began with three Brush arc-lighting dynamos each designed to serve 40 lamps in series, operating at 10.5 amps and 1800 volts. The motive power was supplied by a semi-portable compound Fowler engine with cylinders underneath the front end of a locomotive boiler, through a belt–driven counter-shaft. This engine was capable of developing 200 IHP and was in service from dusk until 1 am. Later two more Fowler engines were added.

In 1887 the service became a continuous one, the original plant being used for evening and peak loads whilst the day load was covered by a 35 IHP semi-

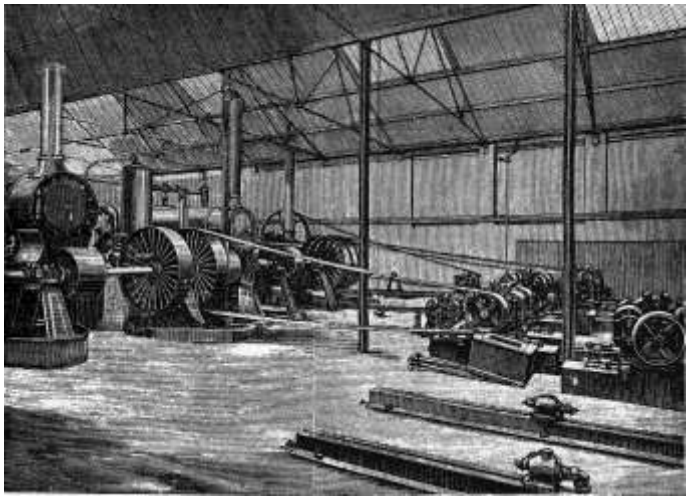

Fig. 1 Reed's Yard, Brighton, 1887

portable Hornsby engine together with a 16 lamp dynamo of 10.5 amp capacity at 800 volts. An engraving dated 1887 (fig. 1) shows steam engines coupled to the dynamos by means of belts to increase the speed required for generation. Transmission of electricity was by 7 gauge bare copper wire overhead mains 15 miles long and serving 34 arc lamps and 1500 incandescent lamps. The cost to the consumer was 1 shilling per kwh. However, the direct current series-parallel system was proving to be inadequate for the expanding demand so the company decided to change over to high-tension alternating current generated at 1.8 kV stepped down to 100 V.

In 1888 the business changed its name to the Brighton and Hove Electric Light Company. The new alternating current was generated at 2000 volts by Lowrie-Hall single–phase machines. Voltage reduction to 100 volts was achieved for the 200 customers by means of transformers placed on the roofs of the houses, or in the cellars or in street boxes.

The Electric Lighting Act 1882 allowed private generating companies to be compulsory purchased by local authorities after 21 years, amended to 42 years in 1888. The Act did include permission to break up the streets for the purpose of laying cables although it had been possible to operate outside the Act by using overhead lines. Brighton Corporation had been in possession of a Provisional Order since 1883 but had taken no action. The Brighton and Hove Electric Light Company had failed to persuade the Brighton Corporation to agree to transfer this order to them so in 1889 they decided to apply to the Board of Trade for their own Provisional Order. The Corporation opposed the application which was refused but the Corporation was warned that their Order would be rescinded unless acted upon.

The Corporation Yard Generating Station

Stirred by Hammond's initiative Brighton Corporation decided to experiment in providing their own electricity supplies to particularly large municipal buildings in the centre of the town. In 1881 a few electric arc lamps were erected on Marine Parade as an experiment and caused a great interest. Magus Volk having gained experience providing electric light to his home was consulted and assisted with project. The current was supplied by a Siemens D7 machine driven from a large steam-roller belonging to the corporation. The experiment was successful and finally there were three sets of generating plants serving the area.

The North Road, Generating Station

Fig. 2 Brighton North Road Station offices, 1984

In 1890 Brighton Corporation began erecting a power station in North Road almost opposite Reed's Iron Foundry. On 14 September 1891 Brighton's municipal station in North Road was opened supplying Direct Current at 115 volts on the two wire system. The plant consisted of three coal-fired Lancashire boilers 7ft dia. by 27ft long operating at a steam pressure of 150 psig (i.e. pounds per square inch gauge). There were four Willans-Goolden generation sets 2 × 45kW at 450 rpm and 2 × 120 kW at 350 rpm. A battery of EPS cells was installed to maintain the supply during the early hours of the morning. Brighton Corporation's Lighting Committee now assumed responsibility for the supply of electric lighting. In 1893 the plant was extended to meet growth in demand and the supply was changed to the three wire system at 115 and 230 volts. Three further Lancashire boilers were added together with 2 × three-crank compound engines driving Latimer Clark dynamos of 240kW; these generated the 230 volts and the earlier 120kW sets were rewound for the same voltage.

On 2 April 1894 the Brighton and Hove Electric Light Company, unable to continue trading in the face of such competition, accepted the Corporation's offer of £5,000 for the goodwill of their business and there was a phased transfer of consumers.

By 1904 the North Road generating station had been enlarged with a capacity of 5,935kW. There were now Six Lancashire boilers and ten Babcock and Wilcox boilers making a total evaporation of 180klbs/hour. There were fifteen Willans and

Robinson engines (from 80 – 825 hp). Fifteen dynamos (directly coupled to the engines) were supplied by the Electric Construction Company and Bruce Peebles and generated at 115, 230, 460 and 550 volts.

It was decided that a larger station would be needed and a site was chosen in Southwick. When this station was opened in 1905 the old station became less required and was closed. The auxiliaries at Southwick were operated by 2 × 220kW Willans-Siemens sets (formerly Nos. 5 and 6 sets at North Road). The new plant at the now substation at North Road consisted 2 × 500kW rotary converters, the largest then built, and 4 × 500kW motor generators, together with the necessary switchgear to supply direct current.

In 1907 a further 1800 kW Westinghouse turbo-alternator was installed and Southwick was then supplying 90% of Brighton's load and progressively North Road was to reduce generation until its eventual shut-down as a steam station in 1908.

All steam plant was now scrapped, the building becoming a main substation with a capacity of about 12,000kW. The chimney was demolished in 1929. Direct Current supply was retained until 1965 being used by the post office sorting office and telephone exchange. The southern end of the site is still used for electricity distribution, but the former offices with a red-brick façade were demolished in 1986. The Y.M.C.A's William Collier House now occupies the site.

The Davigdor Road Station, Hove

This was opened in 1892 at the corner of Holland and Davigdor Roads as the Hove Electricity Works and generated direct current for the householders in east and central Hove. Coal was delivered by railway sidings to the north. Two Babcock and Wilcox boilers were installed and a 600 KW generator was purchased from the Metropolitan Vickers Electrical Company. A second chimney was erected in 1902 by W.A. Field & Co. In 1914 Hove Council purchased the Electric Light Company and ran it until nationalisation 1947. By 1925 the steam plant had been gradually replaced by a rotary converter plant that took its driving power from the Brighton Corporation and direct current was supplied. The battery plant from the Leighton Road station that ceased generation was installed in the old boiler room in 1928. Direct current continued to be produced from rectified A.C. supplied from Southwick until a changeover was completed in the 1960s. The building also housed offices and a small showroom that was later transferred to Hove Street. From 1948 Seeboard used the premises as offices for the Mid-Sussex sub area until it was demolished in 1985. Spitfire house now occupies the site.

Fig. 3 Davigdor Station, Hove, 1983
(*by kind permission of the Regency Society*)

The Leighton Road Generating Station, Hove

Fig. 4 Leighton Road Station, Hove, 1989

The works were reached from Leighton Road. They were built by F. Johnson and opened in 1903 to the north of Aldrington Halt and a chimney was erected by W.A. Field and Co. Coal was received by rail from the south coast railway line into private sidings. This involved an intricate set of point-works to meet the requirement that sidings could only be entered from trailing points. In 1910 a Willans-Crompton set of around 90 kilowatts was received from the Davigdor Road station. The station was purchased by the Hove Corporation Electricity Works in 1914. In May 1925 the supply in Aldrington was altered from 220 and 440 volts direct current to 220 and 440 volts alternating current at 50 cycles.

Generating ceased on 17 August 1927. Later the site became the corporation refuse depot burning household rubbish until 1974 when the chimney was demolished. In about 1924 a sub-station was built in Hove Street to meet the increase demands by Aldrington residents. The building survives, being set back from the road behind offices and the former showroom. Here the first direct current converter set was switched on to the Hove mains but an alternating supply to Aldrington commenced on 8 July 1925. This was expanded in 1937. In 1926 Messrs Clayton & Black designed two new transformer stations at Stoneham Road and Saxon Road. By 1937 two more (each with two 200 KVA transformers) had been established at Wick Hall and Wilbury Grange while others were in course of construction at Eaton Court and Hove Town Hall. In 1948 Brighton Corporation built a sub-station at Easthill Drive, Portslade

Hove Council were sorry when, in 1947, nationalisation came because electricity supply had been one of their most profitable enterprises.

Power Stations at Shoreham Harbour[3]

Brighton "A" Power Station, Southwick

By 1899 it had become clear to the Brighton Corporation that in order to meet increasing demand the 5,935kW generating plant at North Road would have to be expanded beyond what was possible on site. Therefore in July Arthur Wright recommended to the Lighting Committee that a new power station be built at Southwick on the eastern arm of Shoreham Harbour. In September the purchase of land was agreed and Arthur Wright became Consulting Engineer. Building commenced on 1 May 1902 but progress was hampered by civil engineering problems due to seawater flooding.

The building was 230ft wide and 265ft long. The east and west boiler houses were 73ft wide by 265ft long and between them the main engine room was 74ft wide by 222ft long. The outer red brickwork was freely relieved with Victorian stone dressing. The turbine hall was lined with crystopal tiles. Operation commenced in September 1905 but the station was not "officially" opened until 16 June 1906 by John Burns MP.

Fig. 5 Brighton "A" Power Station, Southwick

The plant consisted of 6 × 25,000 lbs/hr Babcock and Wilcox water-tube boilers with chain-grate stokers operating at a steam pressure of 200 psig and 2 separately-fired super heaters (one of each group of three boilers) fitted with electrically-driven chain grate stokers). There were three 1800kW Westinghouse turbines generating 3-phase current at 8kV and running at 3,000rpm. Steam consumption of each machine was 19.65 lbs/kwh. The auxiliaries were operated by 2 × 220kW Willans-Siemens sets (formerly Nos. 5 and 6 sets at North Road).

After the installation in 1907 of a further 1800 kW Westinghouse turbo-alternator, Southwick was by then supplying 90% of Brighton's load, so generation at the North Road, Brighton, station was progressively reduced until its eventual shut-down as a steam station in 1908. In 1909 another three Babcock and Wilcox boilers of the original type were added. In 1911 1 × 5,250kW Richardsons Westgarth three-cylinder turbo-alternator generating 8kW was installed. After 1911 the four original turbines were scrapped one at a time. The machines that replaced them had double the output at about half the steam consumption and each boiler could steam 1,500kW instead of 600-700 as previously. Between 1918 and 1921 the first six Babcock and Wilcox boilers had their chain-grates removed and replaced with underfeed stokers.

On 10 September 1924 a major plant extension was officially opened by the Mayoress of Brighton, Mrs H. Milner Black. It consisted of 2 Yarrow, marine-type oil-fired boilers operating at 250 psig pressure and 600°F, each having a normal evaporation rate of 40klbs/hr. Three of the original boilers had been equipped for oil firing and there was oil storage capacity of 1,000 tons. Coal storage had been increased to 5,000 tons and a suction plant was installed to unload ships. There was a 6,000kW Metropolitan Vickers turbine generating 3-phase current at 8kV running at 3,000 rpm. All steam plant was now scrapped at North Road, the building becoming a main substation with a capacity of about 12,000kW.

The Electricity (Supply) Act of 1926 created the Central Electricity Board co-ordinating electricity supplies nationally. The Southwick plant was selected as a station to feed into a national grid system with a standard alternating frequency. In May 1926 No. 2 Yarrow boiler was experimentally fired with pulverised coal and over the next four years oil firing and pf techniques were tried out.

During 1928 and 1929 Nos. 1 and 2 Wood boilers made by the Combustion Steam Generating Co. Ltd went into action. These boilers had an evaporation of 77klbs/hr and operated at 230 psig steam pressure and 625°F steam temperature. They were pulverised fuel-fired boilers, the coal being ground and then delivered to 20-ton storage bins. The potential hazards of storing pulverised fuel were learnt the hard way when in 1933 there was a destructive explosion in the storage bin to No. 2 Wood boiler.

In 1929 Nos. 5 and 6 Babcock and Wilcox boilers were shut down for demolition and Nos. 3 and 4 Yarrow boilers with chain-grates went into commission. Rate of evaporation was 62,500 lbs/hr and steam conditions were 230 psig and 600°F. Also commissioned at this time was the No. 4 Richardsons Westgarth 3-cylinder steam turbo-alternator which had an output of 15,625 kW.

In 1931 the steam pressure of the boiler plant was increased to 350 psig and the No. 3 Richardson Westgarth 3-cylinder 15kW steam turbine-alternator went into service. It and No. 4 were re-bladed to cope with high pressure in 1933.

During 1932 Nos. 1, 2, and 3 Babcock and Wilcox boilers and Nos. 1 and 2 Yarrow boilers ceased to operate. Yarrow boilers No. 3 and 4 were re-number 1 and 2.

New plant extensions in 1934 housed three tri-drum boilers made by the Stirling Boiler Co. Ltd. Each had a maximum evaporation of 180 lbs/hr and final steam conditions 675 psig and 875°F. The Turbine Plant had No. 2 Parsons two-cylinder 30,000 kW turbo alternator generating 8 kV and operating at 650 psig and 850°F.and No. 3 Richardson-Brown-Boveri 6,000 kW turbo-alternator. The latter was a single cylinder three-stage impulse turbine coupled to a 7,000 kVA alternator. The machine was installed to interconnect the two pressure systems. i.e. 350 psig and 650 psig and it replaced the 6,000 kW Met-Vick turbine which had been installed two years earlier but used the original alternator. The steam capacity of the new turbine was 390 klbs/hr. An electrically-driven portal-type crane of 60 tons/hr capacity was installed to augment the existing system and a fixed telpher system which had been put in previously was converted to a travelling telpher.

On 8 February 1936 the first of two colliers the *Arthur Wright* was commissioned; her sister ship, the *Henry Moon*, came into use later but was sunk in 1940.

In August 1936 No. 2 (later No. 1) Stirling boiler went into service – it was the same type as No. 1 Service.

In January 1937 the first of the Brush Ljungstrom radial-flow turbo-alternators (No. 1) was commissioned. With an output of 37,500 kW this set operated at steam conditions of 650 psig and 850°F. The machine with its unique design of two steam rotors and two alternators was the first of three such sets. In December 1938 the second Brush Ljungstrom was commissioned, numbered 5, having the same output as No.1. It came into use in 1939.

The power station's skyline has altered frequently as each new boiler plant installation added its own chimneys. A photograph taken in the late 1930s shows two high iron stacks and four lower stacks. The configuration of chimneys changed several times until finally appearing with two brick chimneys built in 1937 and 1941 and two small metal chimneys built earlier (fig. 5).

On 19 June 1939 new plant extensions were officially inaugurated as follows: a new boiler replaced the original boiler No. 9 and now there was a No. 10 boiler. These were Babcock and Wilcox pulverised fuel boilers each with two pressure grinding mills. Maximum continuous rate of evaporation was 215,000 lbs/hr and final steam conditions were 675 psig and 875°F.

In August 1941 No. 12 boiler was commissioned. No. 11 followed in December, each being the same type and capacity as boilers Nos. 9 and 10. In 1942 the station suffered slight war damage.

In December 1944 Boiler No. 5 was commissioned being a Babcock and Wilcox pulverised fuel boiler with grinding mills. It was rated 350 klbs/hr with steam conditions 675 psig and 875°F.

In December 1945 Boiler No. 6 was commissioned being identical to Boiler No. 5 In December 1947 No. 6 turbo-alternator was commissioned. This had an output of 50,000 kW and was the largest Brush Ljungstrom turbine manufactured in Britain. Steam conditions were the same as earlier machines. This brought the stations capacity up to 190 MW.

On 13 August 1947 the Electricity Bill received Royal Assent and became the Electricity Act 1947 bringing the supply industry under public ownership. The British Electricity Authority was established with responsibility for generation and transmission and later became the Central Electricity Authority itself dissolved in 1957 becoming Central Electricity Generating Board.

On the 1 March 1969 the station suffered a partial closure, the remaining plant being required only for cover until transmission re-inforcement was complete. Boilers 1, 2, 3, 4 and 9 and turbines 1, 2, 3 and 4 were taken out of use leaving boilers 5, 6, 10, 11 and 12 and turbines 5 and 6. A capacity of 75 MWSO remained. Generation in the remaining years was sporadic and output of the turbines 5 and 6 had fallen to 18 and 25 MW due to blading problems. Final closure came on 15 March 1976. The two 250 feet high brick chimneys were demolished on 12 June 1977, the two smaller iron chimneys having gone a few years earlier. The rest of the building remained until 1980.

Brighton "B" Power Station, Southwick[4]

Fig. 6 Brighton "B" Power Station, Southwick
(*Shoreham Port Authority 1985*)

By the early 1940s it became clear that more power was need in the south east area. The Southwick site was selected by the Central Electricity Board and in 1946 the Brighton Corporation was ordered to proceed with the construction of a new station consisting of six 52.5 MW generating sets. Building commenced in 1947 was slow due to the post war shortage of material. In 1948 the supply industry was nationalised and the British Electricity Authority took over responsibility of the site. In 1950 consent for the station to be enlarged and four generating sets would have a capacity of 55.5 MW and the last two 60 MW giving a total capacity of 342 MW. The station's six units were commissioned

between 1952 and 1958. The two chimneys at 360 ft were the tallest building in the county. Larger ships were needed to supply 850,000 tons of coal a year for the two power stations. Four 3,400 ton colliers were built and the harbour entrance was widened and deepened and the larger Prince Philip Lock built. Unlike Brighton "A" station Brighton "B" had an uncomplicated history altering very little in appearance.

Closure came in 1987, the eastern chimney which had been built first was demolished in 1988 and the turbine hall followed two years later. The western and last built chimney remained in defiant isolation until demolition in 1998.

Shoreham Power Station, Southwick[4]

In January 1999 work was started on a third power station. This was to be gas fired and was built on the site of the B station and named after nearby Shoreham-by-Sea. It was to cost £200 million. It is owned by Scottish Power and was constructed by Alstom and Mott MacDonald. The chimney, a local landmark, is only 20 feet lower than those of the former Brighton "B". It was manufactured in Newcastle and brought to Shoreham by sea in five 20 -tonne carbon-steel sections.

The Station became operational in December 2000. It is a 420 MW combined cycle gas-fired power station that runs on natural gas. There is one Alstom gas turbine from which the exhaust gases heat a Stork heat recovery steam generator which drives an ABB steam Turbine in a single shaft configuration. Its single generator has a greater output than the six in the building it replaced.

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Fig. 7 Shoreham Power Station

THE PEPPER POT

Ron Martin

At the north end of Queen's Park in Brighton is a strikingly flamboyant tower in Italianate style known as *The Pepper Pot* and sometimes *The Pepperpot* or *The Pepper Box.* It is located at TQ 3216 0475. The reason for this tower was not generally known but the suggestions are that it was built as a water or an observation tower or a sewer vent[1]. Of these, when one describes a water tower this normally means a tower with a tank at the top, which is not the case here. A sewer vent and an observation tower were not applicable at the date of construction but it was used for these later. This article intends to answer these questions.

Queen's Park occupies an area of 15.32 acres in a shallow valley running southwards from Race Hill. In 1822, one John Armstrong obtained a lease of the area and set it out as a pleasure garden, charging people to visit it[2]. In 1830 Thomas Attree bought the whole park.[3] He was a prominent figure in the town, a solicitor, and was known by his enemies as the "King of Brighton" His intention was to build for his own occupation a large house, to be known as *Attree Villa.* He also had ideas of building more houses around the perimeter of the park, where 15 are shown on a futuristic painting[4], but these were never built. He appointed as his architect Charles Barry, who had in 1825 won the competition to design St. Peter's Church in The Level at Brighton and was later to share the design of the Houses of Parliament with Augustus Pugin. The builder was William Ranger (see Appendix 2).

Fig. 1 The *Pepper Pot* in Queen's Park, Brighton

The Pepper Pot is a tower five storeys 18 m (60 feet) high. The ground storey is octagonal with brick walls 450 mm (18") thick, a projecting plinth and capped with a cornice and frieze. There is a single plain door opening in the south side leading to a short flight of steps running downwards from ground floor level. Above this are three storeys of a circular tower with ten giant three-quarter section circular Corinthian attached columns above a plinth with moulded capping. These columns were made of Ranger's concrete (see Appendix 2); they appear to be of one piece, as no horizontal joints are visible and were presumably precast and with a weight of about two tons each could have been handled with equipment available in 1830. At the top in each bay between the columns there is a side-hung opening wooden casement, (recently replaced) divided into small panes, with a plain band course over, carried around the columns below the capitals. Above these there is a substantial continuous moulded cornice with modillions, a frieze and base mould.

The top storey is of dwarf height in ten bays with pilasters capped with a deep continuous cornice which is carried around the pilasters and which are capped with moulded balusters with spherical finials. In each bay there are small side-hung opening wooden casement windows (recently replaced). The roof is a semi-domical brick cupola, of ten panels, with raised divisions and panels to each bay. It is capped with a flat-topped bronze finial. All the external surfaces are rendered.

Internally, there is a probability that there is a chamber below the ground floor level, which is not accessible. Barry's early sketch[4] shows a chamber under the ground floor with the well in the centre, with a raised well head. The chamber is shown with a semi-circular vaulted soffit which supports the ground floor. There would have been access to this chamber but there is currently no evidence of this.

Internally, the ground storey walls are of brick. There is a projecting pilaster at each internal angle capped with projecting corbels four courses high, the bottom course moulded. The purpose for these is to carry 4½" thick lintels which support the circular brickwork of the tower above. In the centre up to

second floor level there is a brick pier 0.7 m (2'3") square, laid in stretcher bond, which encases a 300 mm (12") diameter cast iron flue pipe up to second floor level, the pipe then continuing uncased up to the roof finial. The brick casing was presumably provided to prevent visitors getting burnt on the hot pipe. The upper storeys above first floor level are all lined with Ranger's patent artificial stone blocks of various sizes but mainly 600 x 300 mm (24" x 12") and 270 mm (10") thick. The ground floor is of solid construction. The first, second, third and fourth floors are all of wooden construction with joists covered with plain-edged boarded flooring. In the centre of all these floors there were circular voids up to 6'6" diameter, which have been subsequently infilled. The level of the third floor is such that it could have been use as an observation platform by visitors looking through the windows: in fact, a 19th century 'i360'! Access to the first, second and third floors is by wooden ladders.

The *Pepper Pot* was built in 1830 for Thomas Attree at the same time as he was building a large house nearby for his own occupation: *Attree Villa*[5]. In Rev. Robert Barry's biography of his father[6] he writes "… it was a circular tower … intended to cover a horizontal wind-wheel for raising water." (See Appendix 1). This is interpreted to mean that the horizontal wind machine was inside the *Pepper Pot*. The use of the word "wind-wheel" is interesting and the only connection there might be with a wheel might be the machinery over the well to pump water from the well. This could possibly have been of a similar type to the machinery over the well at Preston Manor[7]. Here there is a cast iron circular framework over the well head with a circular wheel above it, with a circumferential rack engaging with two pinions attached to cranks, which actuated the pump rods.

One of Barry's drawings shows all the columns around the tower to be free standing.[8] This drawing was presumably a preliminary sketch as the actual building differs in many respects; however it does show Barry's intentions. The wind machine would have been located in the centre of the tower, probably c. 6ft in diameter, the wind passing through the gaps between the column. The height of the wind machine would have been c. 6m (20ft.) the same height as the columns. The voids in the floors, subsequently filled in, indicates its size. It is not known whether the wind machine was actually installed and then removed when its inefficiency was discovered, or whether someone with experience of horizontal wind machines advised them that it would not work and it was never installed.

On an OS map dated 1831 there is a symbol of a windmill at the location of the *Pepperpot*. This formation could only have been obtained by the surveyor on site who then interpreted the building incorrectly as a mill. A strange anomaly is that the only published reference to the wind machine is by Robert Barry in the biography of his father[9]. This

Fig. 2 Attree Villa, Queen's Park, with the *Pepper Pot* wind pump and observatory tower beyond. From Thomas Walker Horsfield, *The History, Antiquities and Topography of the County of Sussex* (Lewes 1835)

was published in 1867, 37 years after the building of the *Pepper Pot*. The information for this was probably obtained from his father's papers, who had died in 1860. It is not known who advocated the use of a horizontal wind machine – it might have been Attree or Barry, but as it was not used, it is likely that all reference to this machine was suppressed to avoid embarrassment. In the Arcana it even states that the *Pepper Pot* was built in 1836 "to house a steam engine", so its existence prior to 1836 was denied. [10]

The steam engine was fitted in c.1836, probably because of the inefficiency of the wind machine, which was exacerbated by the fact that the wind had to pass through the spaces between the columns, which would have created eddies. The steam engine may have been located inside the tower or was located externally underground together with the boiler and coal store and would have been close to the tower to simplify the shaft or belt drive to the pumps. A ground radar survey has recently been carried out with negative results. After the steam engine was installed, the whole of the second and third storeys were lined with Ranger's Patent concrete blocks. The voids in the floors were filled in and a new third floor was constructed at a level which could be used for observation. The use of the steam engine probably ceased in the early 1890s when mains water was provided for the Queen's Park area, after Queen's Park was acquired by Brighton Corporation and mains water and sewerage were installed.[11]

One of the drawings of 1829[12] shows a 20,000 gallon underground water tank. This seems excessive even allowing for Attree's envisaged building of 13 villas around the park, which were shown on the painting of 1834.[13] However, the use of a large storage tank made sense when it is related to the steam engine which then needed only to be fired up intermittently when the storage tank was empty. The tunnel shown on Barry's drawing[14] was built, probably to avoid Attree and his guests catching sight of the men tending the machinery. This was a not uncommon feature of big houses at this time.

When mains water and drainage was provided in Queen's Park[15], the flue pipe was used as a sewer vent and the steam engine was then able to be decommissioned. Recent uses for the Pepper Pot have been as a meeting place for youth groups, an artists' studio and a printing works. Recently a public toilet has been built at the north side at ground floor level.

Appendices

1. Horizonal Wind powered Machines

These were built sparingly in the early 19th century. They consisted of a series of vanes in a horizontal plane fastened to a vertical wind shaft. They had the one advantage over conventional vertical windmills in that there was no need for a complicated system for turning the sweeps into the wind as in the cap of a tower mill or the buck of a post mill. The disadvantage was that only 25% of the available power of the wind could be used to any effect. They were normally encased in a polyhedron framework, which was fitted with louvres, which could be opened or closed depending on the wind direction. This could either have been done manually or by connecting them to an external wind vane, which would have been mounted on the top of the tower.

2. William Ranger

William Ranger was a builder from Ringmer who, in 1832, was granted a patent for the production of Ranger's Artificial Stone, both *in situ* and for precast work. He used Dorking quick lime and this was mixed with aggregates with hot or boiling water in order to achieve rapid hardening. He probably used the term "Dorking" to mean "hydraulic" as it seems unlikely that he would have used material sourced locally rather than from Dorking. The coarse aggregate he used was such as could pass through a ¼" mesh. In his patent he states that the moulds for making the blocks could be removed in ten minutes.

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MORE ON THE CORPORATION TRAM & BUS SHELTERS IN OLD STEINE, BRIGHTON

Alan H J Green

Introduction

Sussex Industrial History No 46 contains an article by John Blackwell entitled *The Brighton Tram Shelters*, an article which included the four Grade II-listed, Art Deco structures in Old Steine. John had found errors in the dates given in the English Heritage (now *Historic England*) citations for these structures, and also inconsistencies regarding their form of construction. He corrected those dates in the said article, but subsequently asked me visit the shelters and give an architectural appraisal to help corroborate his opinions on the forms of construction. I duly examined them on Saturday 20 May 2017 and John suggested that my report be reworked as an article for SIH – so here it is. For completeness I have repeated the evidence for correction of the erroneous dates.

The Steine Gardens Shelter

Fig. 1 The rear (east side) of the Steine Gardens shelter in its heyday. The low building adjoining is the above-ground manifestation of the subterranean public lavatories and has since been demolished. The entrance to the building is now on this side. (*Royal Pavilion and Museums, Brighton & Hove, image 30961*)

This tram shelter, constructed on the east side of Old Steine, also served as a covered entrance to underground public lavatories which adjoined it to the rear. The lavatories have long since closed and their above-ground portions, which provided ventilation, have been demolished, whilst the shelter itself has been converted into a café going by the rather unappetising name of *Gossips*.

The shelter is in the curvilinear Art Deco (*Moderne*) style which so epitomised the 1930s. Its form is reminiscent of the signal boxes being designed by James Robb Scott for the Southern Railway at this time, having a flat overhanging concrete roof and steel-framed Crittall windows. The building is rectangular in plan with apsidal ends, and it is within these apses that winding stairs led down to the lavatories below. Only the staircase at the south end survives. The front of the shelter faced the road to the west and had a breakfront that accommodated the entrance which has since been blocked up, the entrance to the café having been moved to the east elevation. The walls, which are painted Nash cream, support a reinforced concrete roof which has a wide overhang all round providing additional shelter for those who could not manage to squeeze inside at busy times. The windows have chunky exterior sills which also serve as a platband at waist height. The surviving staircase now serves the underground kitchen and two customer WCs, but no features of the former public lavatories remain.

Fig. 2 The west side of the shelter today. The breakfront section housed the original open entrance to the shelter but has now been blocked up. Note how the overhanging roof stylishly sweeps out to accommodate the breakfront. (*Author*)

The listing citation[1] opines that the shelter was built around 1926 and has reinforced concrete walls. John found that the Corporation Tramway Committee minute books record the resolution to build the shelter as having been passed in September 1935, and the lengthening of the existing boarding island as taking place in August 1936[2], proving that construction would have taken place in 1936 not

Fig. 3 The south end of the shelter shewing the apsidal end and the curved Crittall windows. The patio of the café now occupies the area that was once the ventilation block for the public lavatories. (*Author*)

1926. How the 1926 date came to be proffered is a mystery.

The form of construction, though, takes a bit more unravelling. John in his article plumps for the above-ground walls being of brick and rendered with *Brizolit*, a patented Czechoslovakian form of sprayed concrete which contained mica chips to impart a sparkling decorative finish.

Initial inspection seemed to support the English Heritage opinion that the walls are of reinforced concrete since on all the arrises rust staining can be detected, both internally and externally, and on the outside isolated spalling on some arrises has exposed steel reinforcement.

However, the design drawings[3] (see Fig 4) tended to dispel this belief; they confirm the use of *Brizolit Plaster* on the walls but frustratingly the underlying fabric is not specified! On one drawing, however, the cross-sectional shading used suggests brickwork and the nine-inch thickness dimensioned seems to support this idea, but if this is the case why is there so much rust staining?

Brizolit is basically a variation of what is known in this country as 'shotcrete' (one trade name is 'Gunite') namely a very liquid concrete mix blown onto a vertical or inverted surface and commonly used to fireproof structural steelwork. For this last application light steel mesh (of the chicken variety) is affixed to the steel in order to provide a key for the shotcrete, but when used structurally (as in tunnel linings) reinforcing mesh is used. There is a modern video to be seen on *YouTube* which shews *Brizolit* being mixed and blown onto a wall using a hand-held mechanical applicator. In the video no reinforcing mesh is to be seen, the mix apparently being applied directly onto a concrete wall.

The walls of the tram shelter have deep window reveals, both inside and outside, and are certainly thick enough to be of brick and render; furthermore the radius of the apsidal ends is large enough to permit such construction using common bricks. The cover to the exposed reinforcement is very shallow (down to about 5mm) so it is quite possible that it is light steel mesh attached to brickwork in order to key-in the *Brizolit*, even though this detail is not called up on the drawings. Perhaps one day a stray vehicle will hit the shelter and knock off enough material to reveal the truth. Until that time the jury will have to remain out on this one!

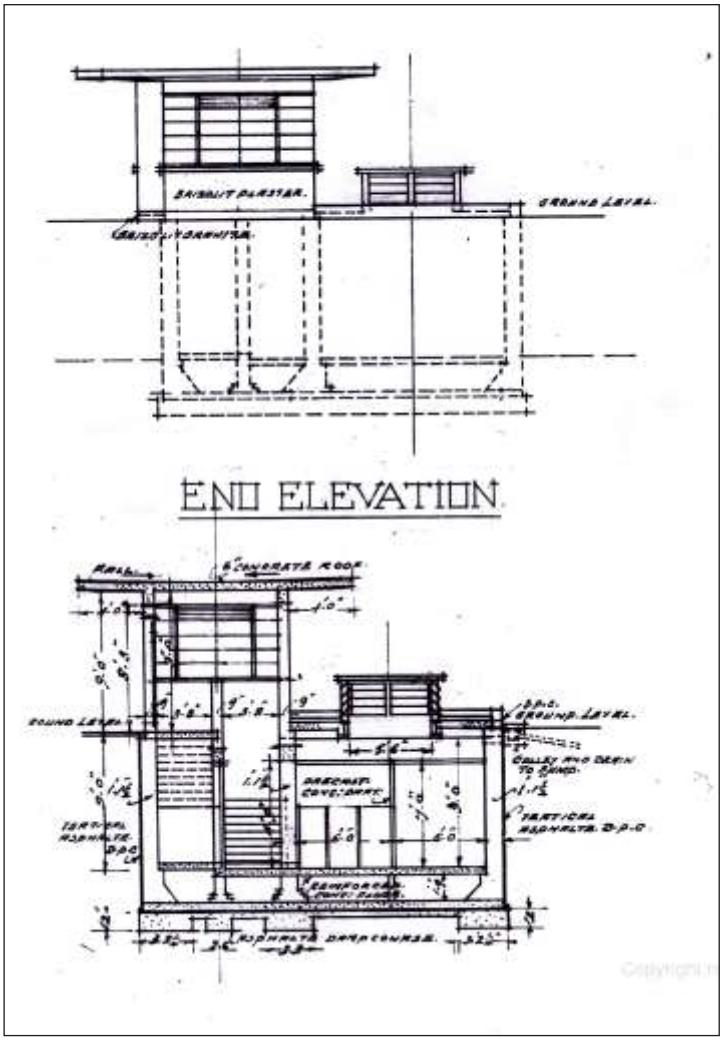

Fig. 4 An extract from the design drawings for the Steine Gardens shelter shewing how it related to the underground lavatories and indicating the use of *Brizolit plaster* on the walls. It shews the overhang of the roof to be four feet. (*ESRO*)

Fig. 5 The Stop 'D' shelter on the west side of Old Steine. clearly imitating the design used for the 1936 tram shelter. (*Author*)

Old Steine Bus Shelters

Just up the road from the tram shelter in Old Steine are three bus shelters, also listed Grade II[4], and here again the English Heritage citation has been called into question; it states that these were also built in 1926 as tram shelters. John Blackwell found a minute recording that in 1949 Brighton Corporation had decided to construct three new bus shelters in Old Steine[5] and these are they; their construction actually took place in 1950 not 1926 and were definitely *bus* shelters from the start as trams had ceased in 1939, being replaced by trolleybuses from 1 May that year[6].

The design is decidedly 'retro' for 1950 and is seemingly based on that of the 1936 tram shelter. They are rectangular in plan but very narrow, again having apsidal ends and Crittall windows. The reinforced concrete roof is flat and has a greater overhang than the tram shelter, doubtless to make up for the narrowness of the building. The shelter is open on the road side where the roof is supported by three steel circular hollow section columns. At the north end the rear half of the apse accommodates an open entrance whilst the south end is fully glazed. The shelters are painted Nash cream.

John Blackwell was in doubt about the construction of the walls: the English Heritage citation states that they are of reinforced concrete whilst he thought that they were of rendered brick, basing this assumption on the said Corporation minute which records that they were to be "built of traditional materials similar to the tram shelter".[7] Examination of the shelters suggests most strongly that their walls are indeed of reinforced concrete, borne out firstly by their thin construction and secondly by the fact that the tight radius of the apse (about 500mm) could only be achieved in masonry by using specially-made circular* bricks. That would have been expensive so, having gone to all that expense, why would you hide them under render?

Fig. 6 The north end of the bus shelter shewing the very wide overhang of the reinforced concrete roof, and the entrance which takes up half of the apse. (*Author*)

* 'Circular' bricks are those curved in plan, not in cross section as might perhaps be inferred!

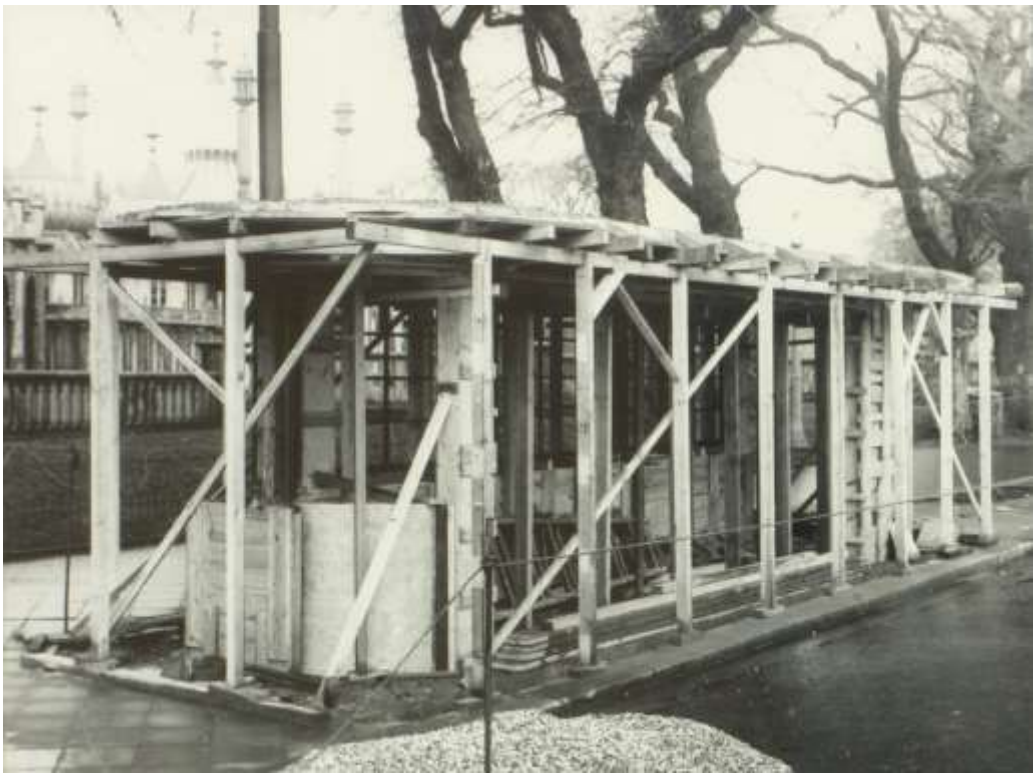

Fig. 7 One of the Old Steine bus shelters under construction shewing the formwork for the walls and the falsework to support the casting of the roof slab.
(*Royal Pavilion and Museums, Brighton & Hove, image 64084*)

Fortunately, since my visit the matter has been settled by finding some photographs in the Brighton & Hove Museums collection taken during construction of the shelters which prove that they are indeed of in-situ reinforced concrete. The citation is at least correct on this point!

Envoi

Numerous errors are to be found in English Heritage listing citations, particularly in those made in the 1950s. The 1959 entry (since revised) for Eagle House in Midhurst, for example, contained the wording "believed to contain a fine staircase" — a very strong hint that the case officer did not attempt to look inside to prove the point, or maybe didn't even visit the building at all, working instead from photographs and hearsay. The Brighton shelters were listed in 1993 by which time the approach to listing was more rigorous, but in this case background research had clearly not been carried out, hence the errors over dates. Today anyone putting forward a building as a candidate for listing is expected to have done the background research and provide it as evidence – as I found with Singleton Goods shed. Perhaps the above evidence can persuade Historic England – as they now are – to correct the citations for the Old Steine shelters.

Acknowledgments

I would like to thank the Royal Pavilion and Museums, Brighton and Hove for providing the photographs used at Figs 1 and 7, and East Sussex Record Office at The Keep for permission to reproduce the extract from the drawing at Fig 4.

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TURNPIKES AND TOLL ROADS TO RYE

Brian Austen

At the eastern extremity of Sussex, beyond the line of the London to Hastings Road, there was only one settlement recognised as having town status. This was Rye, 68 miles from London, 48 from Brighton and 10 from Hastings, a town which had historical connections with it. Lines of communication from London to the Channel Ports closest to the Continent were important to the government, and this was recognised by including that which jointly served Hastings and Rye, joining together at Flimwell on the Kent border, as one of the Great Roads of the Kingdom. Both Towns played an important role in the Confederacy of the Cinque Ports, Hastings being one of the original members, while Rye, initially a limb of Hastings, became a full member c1336, and was described as an "Ancient Town". Both subsequently suffered the same problem: the silting up of their harbours from the easterly coastal drift of shingle and silt.

By the beginning of the eighteenth century the Admiralty abandoned its interest of Rye as a port of refuge for naval vessels and both towns struggled to support their maritime significance. The population of Rye had fallen to 2,187 by 1801 and over the next thirty years was to achieve only modest growth, reaching 3,715 in 1831. The maritime activity of Hastings fared little better, but found a new prosperity from the rise in visitors indulging in the various activities bought about by the attractions of sea-bathing. Rye did not have the same advantages and could only hope to attract those seeking antiquarian pleasures. The Hastings population rose to 11,881 by 1841 whereas Rye lagged behind with only 4,031 inhabitants in the same year.[1]

Rye did however, against all adversities, attempt to try and reverse its maritime fortunes, and in 1723 managed to get Parliament to pass an Act to construct a new channel from the sea. Conflict existed within the Harbour Commission, which represented both the interests seeking to improve navigation, and those landowners anxious to drain the salt marshes in the interests of agricultural productivity. It was not until eight years later before

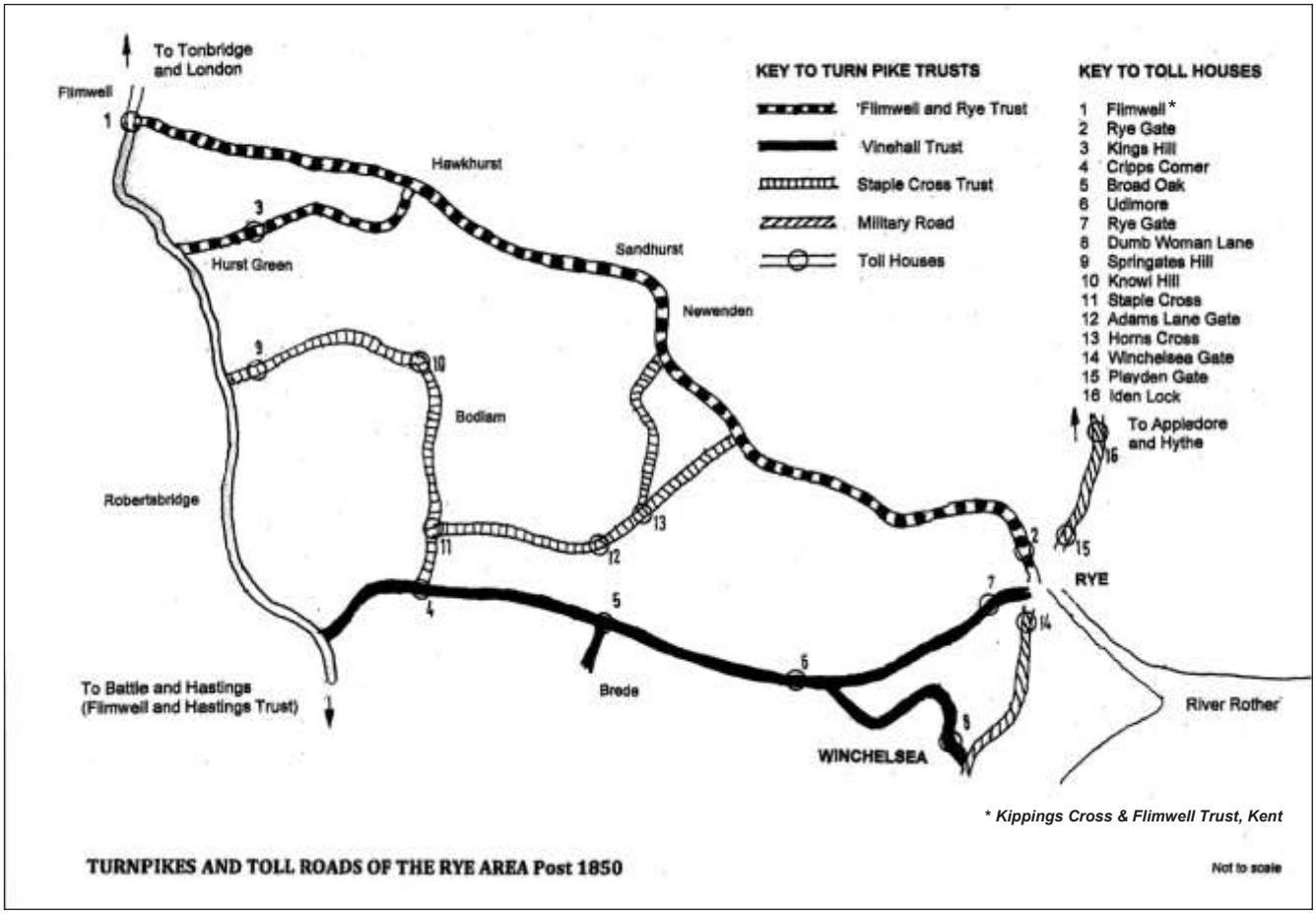

Fig. 1 Map of turnpikes and toll roads to Rye c.1850 (Philip Spells)

a further Act provided for the cutting of the new channel and the construction of a new harbour to provide a greater depth of water. The Harbour Commissioners sought advice from John Smeaton, but only in 1787 were the works deemed to be sufficiently advanced for them to order that no vessels in future should use the old channel to Rye quay. The new harbour provided, however, rapidly silted up, and by the autumn the whole project was abandoned, the workmen paid off and maritime traffic returned to the old channel to Rye town, a change for which the merchants, tradesmen and vessel owners expressed their sincere thanks. Thereafter trade improved, and Rye could accept vessels of 200 ton burthen up to the town quays.

By the 1830s Rye was importing Dutch cheeses, timber from Norway and America, rags (for manure) from Hamburg, eggs, poultry, rape and linseed oil from France and received permission to act as a bonding port enabling trade in French wine. Export cargoes included wood to France and Ostend. Chalk was brought by coastal sloops from Beachy Head to be burnt for lime. Customs duties for the year ending 6 January 1837 amounted to £8,565. In this year the number of vessels belonging to the port was 97 and the tonnage entering the port was 22,402 coastwise, and from foreign ports 2,763.

The passenger steam packet *Edinburgh Castle* was in 1839 sailing from the town twice weekly to Boulogne, and a further vessel *The Fox* provided a weekly service. The fishing fleet was smaller than that of Hastings and mainly supplied the town and the adjacent country with mackerel and herring, much being smoked or dried. The opening of the turnpike between Flimwell and Rye in 1781 encouraged coaching, with a daily service (except Sunday), routed by way of Hawkhurst, Tonbridge and Sevenoaks from the *George* in the High Street to the Bolt-in-Tun in Fleet St. London. The Post Office provided a mail coach for Hastings but deemed that Rye should continue to be served by mail cart connecting with the Hastings coach at Lamberhurst. Stage coaches were also operating daily from Hastings and Margate by the 1830s, calling at Rye.[2]

Agricultural production was of importance and Rye acted as the market centre for this area of East Sussex. Surrounding the town were the reclaimed marshes which maintained an extensive sheep rearing industry, the soils being in general unproductive for arable farming but suitable to rye grass. Young in 1813 noted a total sheep population for Sussex of 455,350 of which Rye accounted for 67,544 and Winchelsea a further 9,627 The recovered marshland could feed 2 to 3 per acre compared with only 1½ on the Sussex Downs. On the higher lands surrounding the town a more diverse agricultural pattern was to be found corresponding with their soil diversity which ranged from "stiff rich loam, running in some cases into a much lighter soil". These were well adapted to hop production which was on the increase, and in 1833 it was reported that 108 acres were maintained as hop gardens, some supplying the town's breweries. Corn production was stated to less successful as it required "immense quantities of manure and was often a secondary consideration" in the minds of farmers. Cattle grazing, however, played an important role and this was reflected in the produce sold in the town's markets. These were for corn every Wednesday and other goods on a Saturday. There was also a large cattle market every other Saturday. Fairs were held on Whit Monday and the 10th August.[3]

The town of Rye not only serviced the agricultural areas that surrounded it but also had elements of industry and general and legal functions for its hinterland. By 1840 the town had a piped water supply fed from a reservoir close to the rising ground leading to Playden. The streets were paved and lit by gas with the gasholder supplying both the town and vicinity. These improvements were recent, for Horsfield five years earlier declared the streets to be "tolerably well paved, indifferently lighted with oil". The town's facilities included a public subscription library and even a small theatre. The town had lost one of its borough M.P.'s as a result of the passing of the 1832 Parliamentary Reform Act, but it retained its borough and parliamentary functions and courts of Petty Session and jail delivery for all offences. Courts of Petty Session were held on Monday and Thursday.

Industry was generally on a small scale but ship building and maintenance was carried on in four yards in 1839. Two sail makers operated from the Strand and a rope and twine manufacturer from the Rope Walk. Those travelling by road were served by 19 inns and public houses and carrier services by van (including passenger conveyance) operated to Appledore, Ashford, Tenterden and Hastings. Other carriers provided daily services to London and a wide range of locations in East Sussex and East Kent. Professional services were provided by six attorneys, three valuers and appraisers and a bank associated with another in London. Smaller businesses in the

town included blacksmiths, brick makers and lime-burners, ironmongers, printers, tallow chandlers, timber merchants and wheelwrights. All of this activity, various retail shops and five schools provided employment and the need of transport by road and water. The Post Office in the High Street provided communication with London and across the neighbouring counties and further afield to and from Rye businesses. No competitors with Rye's road and water routes arose until the arrival of the South Eastern Railways line from Ashford to Hastings and the establishment of Rye as the most important intermediate station, opening on 13 February 1851.[4]

The Flimwell and Rye Trust 1762

The decline in the importance of the harbours and trade at Hastings and Rye from the late medieval period led to a falling off of traffic on what had been regarded as one of the important national highways and this is reflected in the lack of urgency in turnpiking the routes to these ports. Turnpiking of this route had begun in 1709 and by 1749 the entire road from London to Flimwell on the border between Sussex and Kent was complete (the Kippings Cross to Flimwell Turnpike being the latest section). After a further delay the road from Flimwell to Hastings received parliamentary consent for work to commence on it in 1753. It was nearly a decade later that a further Act was passed for the road from Flimwell to Rye. A further turnpike authorised in 1767 connected Flimwell westwards through Ticehurst, Wadhurst and ultimately to Tunbridge Wells, making this relatively isolated spot a veritable turnpike hub.

The Flimwell and Rye Road set up by the Act 2 Geo III c 24 (1762) followed the line of the present A286 road passing through Hawkhurst, Sandhurst and Newenden before crossing the border between Kent at Sussex at the point where it was marked by the River Rother. It then progressed through the Sussex parishes of Beckley, Peasmarsh and Playden, a distance of 24 miles and 14 poles in distance. Two branch roads were authorised and are listed in the 1762 Act. One of these was from Hawkhurst (Highgate) north to Tubbs Lake (Cranbrook) but powers to control this road were excluded from the 1782 renewal act. The other connected Hawkhurst to Coopers Green just north of Hurst Green on the Flimwell and Hastings turnpike. This branch had a tollhouse on the Sussex section in Salehurst parish known as Kings Hill gate. Otherwise, throughout its history the main route of the turnpike was little altered, the most substantial improvement occurring in 1825 when the Act 6 Geo IV c 93 permitted a link at the Rye end to the Land Gate of the town, and then along Rope Walk Road to Taylors Corner where it joined the Vinehall Turnpike Trust.

The list of Trustees recorded in the first Act of 1762 include many prominent members of the Curteis family, important landowners in the Tenterden, Peasmarsh and Rye areas. Several members of the family were Whig MPs for Rye. In 1820 Edward Curties introduced a Bill to strengthen the powers of the Commissioners of Sewers for Rye opposed by interests involved in the use of the harbour. Further members of the family were elected MPs for Rye in 1832-37, 1841 and 1847. The Trust's financial history shows considerable restraint and it never felt the need to implement any expensive works to improve gradients and straighten its line, as there was little fast long distance coach traffic to be accommodated. Roads near the sea coast, including the eastern part of this Trust, were maintained by using "gravel from the sea side".

In the year to 31 December 1837 toll revenue was £891 18s 4d (£891.91) and a balance of £62 19s 10d (£62.94) was carried forward from the previous year. Parish composition income had by then fallen to a mere £6. Total expenditure for this year was only £661 16s 11d (£661.85) of which the largest amounts were £123 0s 10 (£123.04) for surface repairs, £170 5s 2d (£170.26) for manual labour and £201 8s 7d (£201.43) for team labour and cartage. In 1840 the condition of the road was reported as "good"[5]. Its total mortgage debt in 1829 was £1,262 9s 6d (£1,262.48) and in that year toll revenue amounted to £952 4s (£952.20) while expenditure was only £743 19s (£743.95). By 1851 its total mortgage debt had fallen to £541 18s 3d (£541.91) and it was regularly able to pay 4% interest due to the investors. All but £500 of the stock had already been redeemed and it was estimated that toll revenue could pay off the balance in just over a year. The Trust did not suffer from direct railway competition and would have benefitted from local traffic to its station at Rye. The Trust continued to operate until 1 November 1872 when by parliamentary Act it was wound up[6].

Tollhouses

Of the 17½ miles between Flimwell and Rye, eight miles were in Kent and outside the scope of an article

concerned with Sussex turnpikes. Those eight miles provided sites for three tollhouses which fed income and road maintenance costs into the Flimwell and Rye Trust accounts. These gates were at:

1. Seacox Heath, which was set up early in the history of the Trust just to the west of Hawkhurst. The gate was already open in October 1775 when its removal to a new site in Hawkhurst with a new associated side bar was advertised. In this form it appears to have continued until the closure of the Trust. Its toll revenue was fairly modest being advertised for farming at £89 in 1775 and £78 ten years later. It did however produce better returns from the 1790s, reaching £118 11s 9d (£118.59) by 1846.
2. Sandhurst, which until its closure in 1829 was yielding over £100 in income annually, reaching as high as £148 8s 10d in 1799
3. Newenden with its associated side bar with a yield of £113 in 1775 rising to £148 4s 7d (£148.23) by 1799. After the closure of Sandhurst and Beckley, both in 1829, its income benefitted and reached £253 by 1846. This gate remained open until the closure of the Trust.

Over the border in Sussex were four tollhouses:

Kings Hill and side bar TQ 738281

This gate was situated on the A265, which left the Flimwell and Hastings Turnpike just north of Hurst Green at Cooper's Corner and connected with the Flimwell and Rye Trust at Hawkhurst. The gate and side gate were situated where the turnpike made a junction with a minor road heading east , then north-east to the Flimwell and Rye Trust just over a mile east of Hawkhurst. The tollhouse was situated on the north-east side of the junction with gates across both roads. No evidence of it now remains. It is shown in the 1808 and subsequent editions of *Patterson's Roads* recorded as on a Brighton to Canterbury Cross Road. Tolls were farmed but produced only a small return, this being £29 14s 10d (£29.74) in 1846, £53 in 1856 and £57 in 1866. It was in Salehurst parish and marked on the tithe award of 1841.

Beckley toll and side gate TQ 845254

This gate was closed in 1829 and therefore on 1839 Tithe Award Map, although the building was shown, it was not being used to collect tolls. The cottage was on the north side of the A268, immediately to the west of the point where it crossed a stream (Carmans Bridge) and at a point where Whitebread (now Stoddarts) Lane exited leading south, the side gate controlling traffic from this direction. The last year for which toll revenue at this gate is known is 1824 when it was £212.85. The house was purchased from the Trust in 1829 and ten years later was being used for a dwelling for an agricultural labourer and his family. By the time of

Fig. 2 Playden, Peace & Plenty (Rye Gate) 1872 (Hastings Public Libraries)

the 1872/4 6" O.S. map the building had been demolished but the plot was still clearly marked[7]

Rye Gate and associated side gate TQ 918222

Situated at the top of Rye Hill a quarter of a mile north of the village of Playden where the turnpike makes a junction with the B2082 heading north towards Iden. From the commencement of the Trust this was the gate that generated the greatest income, which as early as 1775 was £257 rising to over £300 annually in many years by the nineteenth century. Most traffic leaving Rye, including all to the Kentish Weald and London, was obliged to use this route because of the inferiority of any alternatives. Some authors have referred to this gate as the "Peace & Plenty" gate but the substantial Arts & Crafts style public house of this name shown in photographs was not built until 1903.

The side gate was closed and dismantled on 1 January 1829 as traffic between Rye and Romney Marsh was now using the new Military Road from 1810, taking over from an earlier gate and bridge at Scott's Float Sluice built by Mr Curtieis in 1804. The Playden tollhouse at the top of the hill was demolished for road widening after the demise of the Trust and was buried under the forecourt of the "Peace & Plenty" building. Photographic evidence from the period immediately before the closure of the Trust, shows a substantial two-storey cottage immediately adjacent to the gate, from which the toll was collected, and also a cluster of other buildings behind and there is evidence that even at this stage it was being use as a beer house and also a provider of accommodation for the travellers. Initially the gate may have been nearer Rye at the entrance of Deadman's Lane at the foot of Rye Hill, as there is a report of 1764 of the tollhouse at this point being broken into[8].

Milestones

One of the most complete series of milestones on any of the Sussex turnpike trusts. The pattern chosen was however quite simple, consisting of a cast iron rectangular plate 12" wide and 14.5" tall with a semi -circular top showing the distances to both London and Rye. They follow the pattern used on a number of Trust roads in south-east England. Others of the same type can be found beside the A21 road extending towards London and maintained by the Kippings Cross (Pembury) to Tonbridge Trust as far as Sevenoaks, and along the A26 road from Tonbridge to Tunbridge Wells. They can also be found along the A25 road of the Wrotham Heath Trust. The iron plates are usually fixed to stone blocks. The date of installation cannot be identified with certainly but are probably early nineteenth century. Over their long history some plates have been lost and replacements cast. These are sometimes different in the style of lettering used or in the placement of the numbers or letters.

The original survey of these mile markers was published in *Sussex Industrial History* 5 (Winter 1972-73) but two more recent surveys have been conducted by Keith Sharp in 2015 and by the Sussex Industrial Archaeology Society in September 2016. The latter indicated that 53 (TQ 83572693) and 60 (TQ89752248) had the plates missing. Plates on 49 (TQ782298) and 51(TQ808281), identified in 1972 as missing, were replaced in March 1974 by replicas cast by Foundry & Engineering Ltd at the Phoenix Works In Lewes, while 57 (TQ857241) was thought to be a replacement on the basis of the style of lettering used. At the time of the 1972 survey it was noted that the plates on the markers maintained by the Kent County Council were painted with the

Fig. 3a (*above*) Northiam milestone showing 54 miles to London (TQ 829256)

Fig. 3b (*below*) Northiam milestone with plate missing

figures in black on a white background and within East Sussex vice versa.

List of Flimwell – Rye Trust Milestones

Miles to London	Miles to Rye	Map Reference	Parish/Township
45	17½	TQ 721310	Flimwell (Kent)
46	16½	TQ 737308	Hawkhurst (Kent)
47	15½[2]	TQ 753307	Hawkhurst (Kent)
48	14½	TQ 768303	Hawkhurst (Kent)
49	13½[2]	TQ 782298	Hawkhurst (Kent)
50	12½	TQ 794288	Sandhurst (Kent)
51	11½	TQ 808281	Sandhurst (Kent)
52	10½	TQ 824278	Newenden (Kent)
53	9½	TQ 836270	Northiam
54	8½	TQ 829256	Northiam
55	7½	TQ 830243	Northiam
56	6½	TQ 843237	Beckley
57	5½	TQ 857241	Beckley
58	4½	TQ 869235	Beckley
59	3½	TQ 884231	Peasmarsh
60	2½	TQ 896225	Peasmarsh
61	1½	TQ 912226	Playden
62	½	TQ 921214	Rye[9]

The Vinehall Trust 1771

Soon after the turnpiking of the roads to Hastings (1753) and to Rye (1762) another scheme received parliamentary consent. This provided for the improvement of connections between the two existing turnpikes and connections from Battle towards Rye. The new Trust received its powers under the Act 11Geo III c94. It commenced at Vinehall Street (parish of Mountfield) on the Flimwell to Hastings Trust original line of road from Robertsbridge to Battle by way of Whatlington. From this point the new turnpike (now the B2089) progressed north-east for about two miles reaching Cripps Corner and by means of the present B2165 reached Staple Cross (Ewhurst). Authority was granted here for two roads:

1. Continuing north east to the village of Beckley and its windmill and a junction with the recently opened Flimwell to Rye turnpike
2. From Staple Cross using minor roads to reach Bodiam Bridge and, a short distance north of this, Longleys Water Corn mill on the Kentish Ditch, a tributary of the River Rother.

The total distance of the Trust roads was recorded as 11 miles 2 furlongs and 20 rods with four gates in 1840 The picture is however made more complex by the terms of the 1801 parliamentary Act 41 Geo III c 108 which did not renew powers over the roads from Staple Cross to Beckley and Bodiam. Instead this area was to be served by a newly authorised turnpike, the Staplecross Trust, which received its Act of Parliament under the terms of 41 Geo III c41 passed in the same year. The renewal for the Vinehall Trust Act did, however, give new powers to take control of the road from Cripps Corner, progressing eastwards through Broad Oak (Parish of Brede) and Udimore to the Rye Strand Ferry (the present B2089) deemed to provide better access to Rye. The Ferry rights were purchased by the Trust under the powers of the 1832 renewal Act (Wm 2 & 3 c108) and a bridge replaced the Ferry.

Rights were also provided by this Act for taking over the road from Broad Oak, south to Westfield to within 100 yards of Brede Bridge which would feed additional traffic on to the main road towards Rye. These extended the length of the Trust to 17 miles, 3 furlongs and 40 rods by 1832 with the branch of 2 miles 6 furlongs and 69 rods in addition, and by 1840 it controlled six bars.

The powers of the Trust expired on 1 November 1876 (Acts 37-38 Vic c5 and 38-39 Vic c194). The finances of the Trust were maintained in good order. Initially, as with all trusts, it was necessary to raise funds to repair the roads by issuing mortgages bearing interest. The rate of interest offered by the Vinehall Trust was 4%, a generous rate that subsequently provided income sufficient to maintain it. In 1829 the Society's mortgage debts stood at £3,122 12s 5d (£3122.62). In that year road toll income amounted to £414 16s 5d (£414.82) and total income £497 5s 8d (£497.28) including £31 18s 8d (£31.96) in payments from parishes through which the road passed. Total expenditure was £474 12s 11d (£474.66). The Trust cut costs by not employing either a specific General Surveyor or Superintending Surveyor.

The arrival and rapid spread of the railways was a threat to any surplus, though with railways stations near both the start of the turnpike at Battle and the end at Rye, through traffic was compensated for by an increase in shorter travel to both railway stations. Both the government at Westminster and local turnpike trustees were anxious to raise funds to eliminate turnpike mortgages. This the Vinehall

Trust was successful in achieving. Lower road maintenance costs resulted as faster passenger traffic took to the railway and local carrier and farm traffic, not concerned with speed, could be accommodated by roads which were no longer maintained to the higher standard required by passenger coaches, saving in materials and labour. In 1850 toll revenue was still £403 and the projected surplus after debts had been paid was estimated to be fractionally over 10% per annum. With total debts including mortgage obligations the total could be paid off in just over ten years from such a surplus. As the powers of the Trust were not due to expire until 1 November 1876, full repayment of the debt could be realised with ease[10].

Toll houses

The number of gates recorded in a parliamentary return for 1829 was 4 but in1852 it was 6.

Cripps Corner TQ778212 and associated side bars

At this point the turnpike, the B2089, made a junction with the road north to Staple Cross, and from 1801 the new line to Rye by way of Udimore. In 1838 the junction was to become more complex with the opening of the St. Leonards and Sedlescombe Trust and in 1841 the Cripps Corner and Hawkhurst Trust with its flyover taking the existing Vinehall Trust over the new road. The tollhouse location was on the south side of the junction but no longer survives, the site being under the forecourt of a later public house. This was the first toll on the Vinehall Trust after leaving the western end at Vinehall Street (Mountfield) and probably existed from the opening of the Trust. It is marked in Patterson's *Roads* 1806 edition and on the first edition one inch Ordnance Survey map. The tolls at this gate were being advertised for farming as early as 1803, and it and the associated side gate provided valuable income to the Trust, this being £142 in 1861, the highest in that year of all the gates with the exception of those at Rye.

The side gate at Cripps Corner may have been the one at the entrance to Beacon Lane (TQ783209) a short distance to the east of the main gate. This provided access from the Turnpike on to the present B 2165 heading north to Staple Cross and Northiam. Authority to erect this and three other side gates was given in August 1856. Another was a mile further to the east across Ellen Hall Lane (TQ789208). Both Staple Cross and Ellens Hall locations were to be provided with a gate and "a house with conveniences". It was also ordered that gates were to be placed across both ends of Goatham Lane two miles to the west of Broad Oak (TQ 810204 and TQ 816202). No accommodation for a toll collector was mentioned[11].

Broad Oak TQ 826198

This was the first toll on the newly authorised turnpike of 1801 from Cripps Corner to Rye and therefore probably dates from that year. At Broad Oak the new line of turnpike crossed a road providing access to Northiam to the north and Brede to the south and a side bar was also necessary to prevent the bypassing of the main gate. A side gate was provided at Broad Oak in 1812 and was in that year advertised to be farmed together with Broad Oak at £219, the joint income reaching as high as £230 in 1856. Additional gates named as Stubb Lane side gate (TQ843194), from 1803 and Steep Hill Gate were also set up. The gate at Stubb Lane was close to the corner with the Vinehall Turnpike with a toll house built into the lane. Neither the cottage nor the land on which it stood was listed as belonging to the turnpike road commissioners. The Steep Hill Gate was described as having additionally a bar across the end of Steep Hill Lane near the old workhouse at Brede. Steep Hill Lane is not referred to until 1856, and may well be connected with the additional short branch to Brede Bridge authorised in 1832. In 1838 a new Hastings and Sedlescombe Trust was authorised and apart from the main line of this road towards London there was a short branch from Black Brooks which covered the road to Sedlescombe Bridge. This with the Vinehall Trust branch from Broad Oak provided a shorter and better route to Hastings from Rye.

Udimore Green side gate TQ 874188 and Dumb Woman's Lane Bridge Toll TQ 903179

The Udimore Green side gate was recorded as early as 1801 and operational until the demise of the Trust. It had a long existence and the farming of this gate was included in an auction as late as November 1863 for a two year period commencing from 1 January 1864. It controlled access to the Turnpike from a lane (now named Winchelsea Lane) leading south to a ferry over the River Brede to Winchelsea. A small toll collection building was situated in the Lane entrance. The Vinehall Trust took over the ferry rights at the River Brede, built a bridge to provide better access, and collected tolls on this

Fig. 4 Ferry Gate, Udimore Road, Rye

Fig. 5 Dumb Woman's Lane, Winchelsea, prior to 1876

Fig. 6 Dumb Woman's Lane, Winchelsea; today with house enlarged by one bay

bridge situated in Dumb Woman's Lane from 1856. A tollhouse was provided on the Winchelsea side at the river crossing and still exists. In its original form it was a simple two bay single-storey bungalow of brick construction with a single chimney flue with a gate across the road and provision by a further gate beside it for pedestrians. The building has subsequently been extended, probably twice, to more than double its original size. The road is now known as Station Road as it provides the only access from Winchelsea to its railway station, and toll was discontinued when the Trust was wound up in 1872. A further toll bridge over the Brede existed at Snailham but this was not the property of the Trust and continued to operate under private control and was mentioned in a *Sussex County Magazine* article in 1936 (vol 10[12]).

Cadboro Farm TQ 906198

The gate was situated about a mile to the west of the Rye Ferry crossing over the River Tillingham on the Udimore Road. As the ferry did not come under the control of the Vinehall Trust until 1811, and a replacement bridge was not provided until c1830, Cadboro Farm was from 1801 the effective eastern commencement of the Trust, where the first road toll would be collected. Toll collection was advertised for farming at this gate and in 1812 raised £188 6s 3d (£188.31) and in 1824 £122 14s (£124.70) and revenue figures are known as late as 1828.

Rye Ferry Gate TQ 916204

The terms of the Vinehall Trust Renewal Act of 1811 authorised the purchase from Edward Jeremiah Curteis of "The Ferry called Rye Ferry or Strand Ferry and the bridge erected thereon, and all tolls payable thereat". The Act also exempted from toll the traffic to and from Cadboro Farm. No immediate action appears to have been taken to construct a bridge and at the time of the 1832 renewal Act a clause had to be inserted confirming the purchase, the delay in action being blamed on "doubts about the legality of the said Ferry Bridge and Tolls by reason that a sufficient Number of Trustees were present to authorize such a purchase". Nine or more Trustees were required at the Trustees' meeting to give the authority. After the passing of the 1832 Act swift action followed and the bridge was provided with a tollhouse for the collection of the toll and in 1834 it was let for £134, remaining at similar levels in 1856 (£144 14s 5d) and 1866 (£136). The tollhouse still survives in the form of a small two-room bungalow on the north bank of the Tillingham, the plot a mere 27 perches. At the date of the Rye tithe survey it was stated to be owned by Edward Barrett Curteis and was occupied by Jeremiah Smith, the toll collector. It is of brick construction with a tiled roof and, in 1972, was stated as being used as a workshop, and under renovation. It is now a residential property known as "Paygate Cottage" 1 Udimore Road, Rye. At the same time as the bridge construction the road on the Rye town side was taken over by the Vinehall Trust to provide a connection at Taylor's Corner with the recently extended Flimwell and Rye Turnpike from the Landgate along Rope Walk Road authorised in May 1825[13].

Although on parliamentary returns this Trust continued to be referred to as the Vinehall Trust, it was sometime in the later part of its existence named in other sources as the Brede Trust.

Milestones

None noted or shown on OS maps.

The Staplecross Turnpike 1801

The new Staplecross Turnpike maintained a connection with the same major points as the discontinued lines of the Vinehall Trust which to a large extent it continued, but it also added a further road, making three roads in total. These were:

1. The road connecting Staple Cross with Beckley and the Flimwell & Rye Turnpike. The route was, however, different. Instead of striking north to Bodiam Bridge it continued along the line of the present B2165 to Horns Cross and then struck north east along the present B2088 to reach the Flimwell & Rye Turnpike near Beckley.
2. From Horns Cross a connection was made by way of the present A28 through Northiam to reach the Flimwell & Rye Turnpike giving a connection just south of the village of Newenden and from there enabling access to the River Rother.
3. From Staple Cross along the minor road north to Bodiam Bridge and village and then westwards to connect with the Flimwell & Hastings Trust road at Silverhill between Hurst Green and Robertsbridge (parish of Salehurst).

The only subsequent change was brought about by

the Act 4 Geo IV c70 which placed the control of the road from Cripps Corner to Staplecross and Horns Cross under the control of the Staplecross Trust, regularising the position that had been in place from 1801. In 1829 and 1840 the Trust was stated to be 10 miles 4 furlongs and 2 rods long and to control four gates. The Trust continued to operate until 1 November 1876 when its powers were discontinued.

The condition of the roads taken over from the Vinehall Trust were probably in a serviceable condition but the powers of the new Trust extended to sections of road not previously turnpiked, and especially the long branch from Staple Cross to Silverhill. To undertake such work the Trust felt it necessary to raise finance, and issued turnpike mortgages offering annual interest payments of 4%. Initially such bonds were issued to a value of £2,982 and by 1851 this bonded debt was declared to be £2,005 showing a reduction by this date of £355. Nationally railways were by then well established and concern was being shown in Parliament that such debt should be repaid and eliminated by the time that the Trusts lost their powers over their sections of road and the right to collect further dues. On 1 January 1851 the bond debt on the Staplecross Trust was £1,650 which the Trustees thought possible to clear. The trustees had, however, earlier shown their willingness to reduce the debt by providing means for early redemption if the owner was prepared to accept a penalty. As early as September 1833 they had offered immediate redemption at prices lower than the face value. Stock to a value of £500 was purchased by the Trust from holders for £479 19s 6d (£479.98) and a further £200 of stock for £184 19s (£184.95).

Towards the end of the Trust, on 1 May 1872, holders of mortgages were offered £45 for each £50 of stock. The total mortgage debt was then £1,650[14]. Although traffic was fairly modest, careful husbandry enabled expenses to be covered from revenue received. The main source of revenue was toll income which averaged around £260 per annum. From 1866 to 1875 the highest annual figure was £300 11s in 1869 and the lowest £241 7s (£241.35) in 1874. Some revenue was received from the parish composition. In the year to 29 March 1833 Ewhurst paid £26 3s 10d (£26.19), Salehurst £11 16s 7d (£11.83), Bodiam £7 11s 6d (£7.58) and Beckley £3. Most of the expenditure was for road repairing materials and the labour involved in laying the stone.

Alterations were minimal, and when in 1836 they agreed to ensure a 30-foot-wide road outside Brickwall in Northiam, it was agreed that the owner of the house would cover the cost of the diversion and improvements all the way to the junction with the Flimwell & Rye Trust road at Beckley and maintain this section for two years. Small sums were given in salary to officers of the Trust, The Surveyor receiving £12 per annum, the Clerk £10 and the Treasurer £2. Small amounts of legal and parliamentary costs arose from time to time. A Parliamentary Report on the condition of the road issued in 1850 declared it to be good with no indictments issued against the Trust by road users[15].

Tollhouses

Staplecross and side bars TQ 781224

The gate is shown across the road to Cripps Corner just south of its junction with the roads to Horns Cross to the east and Bodiam to the north. The side gate, though not marked on the map, was probably across the Bodiam road. The tollhouse was built into the road and set forward in the middle of the junction. In March 1876 when the tollhouses were valued prior to their disposal when the Trust was wound up, the Staplecross tollhouse was valued at £25 with a note that it had lately been let "but will be demolished to improve the road". In the early years of the Staplecross Trus toll receipts at the gate were encouraging, with £131 being received in 1811, £122 in 1828 and £128 8s 4d (£128.42) in 1833. They had however fallen to £68 10s 3d (£68.51) by 1846 though a steady rise thereafter brought them up to £106 by 1876.

Horns Cross gate and side gate TQ 823223 also Adams Lane gate (TQ 803223)

It was situated at the junction of the B2165 with the A28. It was at this point that the Turnpike divided with one road heading north east through Beckley to reach the Flimwell & Rye Turnpike just north of Four Oaks, and the other road heading north to reach the same Turnpike south of Newenden. The 1840 Tithe Award Map shows only one tollhouse on the intersection, partly built into the road. The 1872 O.S. map however seems to show two smaller tollhouses at the intersection with separate gates for each road. Close to the termination of the Trust's powers in 1876, the tollhouse was valued at £30. Toll revenue at this gate was £76 in 1811, £89 in the year to 29 September 1828 rising to £116 3s 4d (£116.16) in

1838 but fell thereafter. In 1859 it was £70 but fell to as low as £46 in 1876 and ten years later was only £56. The gates were let together with a side gate at Adams Lane (TQ 803222) about three miles west of Horns Cross A small tollhouse is shown on the 1872 O.S. map built into the road at the entrance to the Lane to prevent traffic to and from Northiam avoiding the Horns Cross toll. Henry Ridley was shown as toll keeper at Horns Cross in 1840[16].

Springates Hill and side gate TQ 741257

The 1808 edition of *Patterson's Roads* and subsequent editions shows this toll gate on a cross road from "London to Rye and Winchelsea by Silver Hill and Beckley". It branched from the Flimwell and Hastings Turnpike just over a mile south of Hurst Green. The first gate was Springates Hill which also controlled a side gate across Beach House Lane at this point. It is shown as half a mile from Silver Hill Barracks and with a further 2 miles to Knowl Hill. Toll revenue was £44 9s 4d (£44.46) in 1828-29 and £31 8s 7d(£31.43) in the following year. Records of the gate exist from February 1803 when the toll collection was advertised for farming. Toll revenue was small and is last mentioned in 1874. A resolution was passed to remove the toll house on 1 January 1839 and it may have been removed just before the closure of the Trust. No evidence on the site remains.[17]

Knowl Hill and sidegate TQ 781258

Shown on the 1872 6" O.S. map at the point just to the north of Bodiam Castle where the road forks, with one line heading north to the Flimwell & Rye Turnpike at Sandhurst and the other, the turnpike, curves west to reach the Flimwell and Hastings Turnpike at Silver Hill just over a mile south of Hurst Green. At Knowl Hill gates were constructed across both roads. The tollhouse was valued at £40 in 1876. The level of toll collection at these gates was consistently high compared with others on the Trust. In the year 1818 it was at £139 and although it had fallen to £98 15s 2d (£98.76) in 1829-30 it rose to as high as £155 both in 1869 and 1870 and was still at £130 in 1876.

Milestones

None found or recorded on OS maps

The Royal Military Road

This stretches from Cliff End, Hastings to Hythe and was conceived as part of the coastal defences against French invasion during the Napoleonic Wars. The main defensive barrier was the Royal Military Canal itself which was started in 1804 and intended to act as a barrier to prevent any French forces landing from advancing inland or building up a coastal bridgehead. It was built in two sections, on either side of the town of Rye, and taking advantage of the rivers Rother and Brede. The road was along the inland bank of the Canal and constructed on soil excavated for the Canal with the raised bank acting as a parapet to hide the defenders should it ever be required.

The project was not completed until 1809 and cost £234,000. Changes in the angle of the Canal allowed artillery to enfilade the sections on either face. Both canal and road were seen to have value in helping to meet the cost and tolls were charged to those who wished to use them for commercial purposes. Toll collection houses were built for this purpose. The Royal Military Road was thus not a turnpike, had no local trustees to administer its maintenance, and did not need to renew its powers at intervals. The road continued to collect tolls as a private road, long after those on turnpikes had been abolished. The military received the toll income and were responsible for maintenance. The roads were well used as they often provided more direct communication. This was particularly so on the section from Winchelsea to Rye (now the A 259) and from Rye to Appledore and Hythe (partly the B2067). As with turnpikes the toll collection was farmed from 1827 as the honesty of directly employed collectors was felt to be uncertain. The War Office contracted the maintenance of the road from Appldore to Iden Lock to the Hastings Highway Board in 1865 and renewed the contract three years later. The Canal ceased to be used from 1877 but the road remained in military hands and well used until 1927 when its care passed to the East Sussex and Kent County Councils respectively for the lengths within their borders[18].

Toll Houses

Winchelsea Road TQ 919199

The toll house no longer survives and its site is under the forecourt of the Tollgate Garage at Rye. At this point the road from Rye Harbour makes a junction with the main Winchelsea road (A259) as it enters the town. Photographs exist which show the building as a single-storey bungalow with two bays facing the road, the toll board being displayed near

Fig. 7 Winchelsea Road Toll Gate, Rye, in the 1890s

the door. A single tall chimney stack was originally provided but the building was later extended towards the rear and another stack provided. Tolls were first collected at this gate on 22 August 1810 by which date the road was deemed sufficiently consolidated to permit usage. All the buildings along the road were originally constructed of brick noggin but by the 1820s they were decaying fast and had to be rebuilt as stone structures between 1822 and 1825.

Playden TQ 926217

This was the first toll gate on the section of the military road running north along the line of the Canal from Rye towards Hythe and below the high ground on which the village of the same name was

Fig. 8 Playden toll house

built. The height of the road surface was raised 18 inches to avoid flooding at the time of the spring tides and the road widened from 14 to 30 feet. In 1804 a Mr Curteis had already built a gate to collect toll on the road that he had constructed from the Romney Marshes to Rye including a bridge that he had constructed over Scots Float Sluice. When the military road started to collect toll a claim was made to the War Office for compensation for loss of income which was finally settled in 1809. Tolls were not taken initially by the War Office until the road surface had settled, but were charged from 10 July 1810 on the section from Rye to Iden. This tollhouse, which survives, was built for the gate keeper. It is similar to that at Winchelsea, a single-storey cottage probably originally of two bays facing the road, though later extended by a further bay.

Iden Lock TQ936245

This was the point at which the Military Canal recommenced after Rye, the Rother Navigation branching west. Here a complex of buildings were erected by the War Office and maintained by the Royal Staff Corps who were responsible for its maintenance and operation until 1837 when it was disbanded and powers were passed to the Board of Ordinance. To the left of the south end of the lock were barracks for the soldiers, the end of which faced the west side of the military road where tolls were collected from a projection on the end bay. Immediately opposite on the other side of the road was a smaller structure designed initially as the officers' building.

Fig. 9 Iden Lock, barracks where tolls were collected prior to 1838

Fig. 10 Iden Lock, officers' quarters, where tolls were collected post 1838

When the Staff Corps were disbanded in 1838, toll collection was transferred to this building, a bungalow of two bays extent. All the buildings survive and are now under the protection of Historic England. They are of stone construction dating from 1824 replacing those originally built of brick noggin. Tolls taken at this gate in 1821 were estimated at £109 including 1,927 horses, 449 carts and 797 waggons. Toll income for the road as a whole remained at satisfactory levels throughout the nineteenth century, while the canal was valuable to turnpikes generally for the carriage of shingle and sea beach for road maintenance[19]. Canal tolls would also have been collected at these toll houses.

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Corrections to **SOUTHDOWN BUS GARAGES AND OTHER PREMISES IN SUSSEX**

(Southdown Premises in Brighton)

which appeared in Sussex Industrial History 47 (2017)

Paul Snelling

Further to my article on Southdown Bus garages and other premises in Sussex I was made aware that the picture numbered SEC 307 had the wrong caption. Upon investigation I found that in the picture library there were two pictures numbered 307.

The picture intended was the premises in Steine Street (below) and the caption is correct.

SEC 307

Two for the price of one. The building nearest the camera was 5 Steine Street. Originally a house, in 1915 part of the building was let to Southdown. Eventually they took over the whole building in 1917 and it remained the Head Office until new offices in Freshfield Road opened in 1964. Beyond is the exit from the Manchester Street coach station, opened in 1931.

(The picture published in *SIH 47* was of Pool Valley—see below.)

SEC 307 (second) Pool Valley, Brighton

This was the centre for Southdown bus operations in Brighton. It was established by Brighton Borough Council on the 1st July 1929. Stagecoach Southdown vacated Pool Valley on Saturday 13th November 2010 when the Coastliner 700, the only bus service then using the site, took up a stand in Old Steine. Pool Valley then became a coach station, a role it still performs to this day with only National Express and Crewflyer using it. Brighton Corporation never used Pool Valley for their bus services although pictures exist of their vehicles laying over in the yard. The photograph is undated but the newest vehicle in shot is the single decker on the right hand side which dates from 1962.

I'm indebted to my colleague Chris Warren for his assistance with the notes.

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