A GUIDE TO THE INDUSTRIAL ARCHAEOLOGY OF HERTFORDSHIRE AND THE LEA VALLEY

Tim Smith and Bob Carr
Association for Industrial Archaeology
This Guide is dedicated to the memory of
BILL FIRTH
1925-2003

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This should not imply there is permission to wander anywhere at will.

☐ Open to the public, often with visitor facilities, or regular open days.

❖ Private, not normally accessible.

◆ No access.

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it is always courteous to ask permission to enter a site unless it is clearly open to the public.

Abbreviations Used in the Text

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>ECR</td>
<td>Eastern Counties Railway</td>
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<td>ELWW</td>
<td>East London Water Works Company</td>
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<td>GER</td>
<td>Great Eastern Railway</td>
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<td>GJC</td>
<td>Grand Junction Canal (Company)</td>
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<td>GNR</td>
<td>Great Northern Railway</td>
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<td>GUC</td>
<td>Grand Union Canal (Company)</td>
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<tr>
<td>ILN</td>
<td>Illustrated London News</td>
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<tr>
<td>L&amp;B</td>
<td>London &amp; Birmingham Railway</td>
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<tr>
<td>LCC</td>
<td>London County Council</td>
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<tr>
<td>LGOC</td>
<td>London General Omnibus Company</td>
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<tr>
<td>LMS</td>
<td>London Midland &amp; Scottish Railway</td>
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<tr>
<td>LNER</td>
<td>London &amp; North Eastern Railway</td>
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<td>LNWR</td>
<td>London &amp; North Western Railway</td>
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<td>LT</td>
<td>London Transport</td>
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<td>MBW</td>
<td>Metropolitan Board of Works</td>
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<tr>
<td>MET</td>
<td>Metropolitan Electric Tramways</td>
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<td>MetR</td>
<td>Metropolitan Railway</td>
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<td>MidR</td>
<td>Midland Railway</td>
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<tr>
<td>MWB</td>
<td>Metropolitan Water Board</td>
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<tr>
<td>N&amp;E</td>
<td>Northern &amp; Eastern Railway</td>
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<tr>
<td>NR</td>
<td>New River (Company)</td>
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<tr>
<td>Northmet</td>
<td>North Metropolitan Electric Power Supply Company</td>
</tr>
<tr>
<td>mgd</td>
<td>million gallons per day</td>
</tr>
<tr>
<td>RSAF</td>
<td>Royal Small Arms Factory</td>
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<tr>
<td>RGPF</td>
<td>Royal Gun Powder Factory</td>
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This Guide covers the county of Hertfordshire plus those parts of the Lea Valley outside the county, from Luton, in Bedfordshire, to the head of Bow Creek, in Greater London. It excludes the tidal creek itself but does include sites on the east side of both the Lea and its tributary, the Stort, which are in Essex.

W. Branch Johnson wrote that Hertfordshire has always been a rural county, not noted for its industry. This is still broadly true today though there has been considerable growth in the county’s urban areas since the 1960s when electrification of its railways prompted considerable increase in London commuter traffic and much growth of housing. During the same period the county’s industries suffered mixed fortunes. New Towns brought new industries which have since declined, and old established industries such as papermaking and malting have now almost gone. Even the twentieth-century aircraft industry, once a major employer in the centre of the county, has all but disappeared.

Luton has the air of a Midlands town, with its red brick terraced housing and town centre hat factories. From the late nineteenth century, engineering industries moved to the town, including the Vauxhall Iron Works, which gave rise to the Vauxhall Motor Company. But nowadays Luton is perhaps best known for its airport.
The Lower Lea Valley, south of the Hertfordshire border, is closely related to London and its port. Waterpower combined with water transport encouraged early process industries including gunpowder mills. A tolerance of noxious processes in this downwind and marshy area, and the non-regulation of effluent disposal on the Essex side of the Lea were factors in its becoming a centre for the chemical industry. Other industries followed. Further north the electrical and electronics industries were a particular feature, with much pioneering work being done. Today, industrial and trading estates have grown up replacing older industrial sites.

Geology, Agriculture and Building Materials
The geology of Hertfordshire embraces the chalk of the upper Cretaceous period, overlain south-eastwards by the clayey Reading Beds and the thick London Clay of the Eocene period. Upon these locally there are glacial and river-laid gravels, sands and clays and partly wind-blown brick earth, from the ice ages and recent times. The chalk forms the Chiltern Hills, of which the north-west-facing escarpment roughly determines the county’s northern boundary while main roads, railways and the Grand Union Canal pass through gaps at Hitchin, Luton and Tring.

Rivers of the dip slope include the Gade and Ver, feeding the Colne, the Lea and the Stort. The chalk is a major aquifer, supplying water via springs, rivers and boreholes to an ever-increasing population both in Hertfordshire itself and in north London. Watermills formerly abounded and English papermaking started here.

Watercress was a local speciality. The first watercress beds were established at West Hyde in 1815. By 1890 there were some ninety sites in use. Watercress needs a plentiful supply of pure, fresh water which was provided from springs and boreholes. In return it provides an all-year-round crop.

The Chilterns were, in late medieval and early modern times, an area for sheep grazing, with Hitchin raised to prosperity on wool, while woods provided timber for building and furniture making. Particularly in the east of the county, however, the well-drained soils of chalk admixed with glacial clay, and the closeness of the London market encouraged the growing of grain, including barley for the notable malting industry. A by-product was straw for hat-making and other uses. Further south, on the London Clay, dairy farming predominated.

Market gardening flourished on the gravel terraces and brick earth of the Lea Valley, with nurserymen growing fruit, flowers and vegetables for London. This industry had been driven northwards as London expanded in the nineteenth century. Ancillary trades included greenhouse building, flowerpot manufacturing and steam sterilisation services. Numerous sundriesmen supplied string, hosepipes and such items. In 1915 an Experimental and Research Station for the industry was set up in Cheshunt. After World War II imports and pressures on land led to a decline, with vast acreages of glasshouses being cleared, but some pockets remain, often as garden centres.

Seed growing developed around St Albans where, in 1921 the Hertfordshire Institute of Agriculture and Horticulture was established. John Bennett Lawes was a manufacturer of artificial fertiliser in London and owner of the Rothamsted Estate at Harpenden. In 1843, in collaboration with J. Henry Gilbert, he founded the Rothamsted Experimental Station for agricultural research, beginning a series of ‘Classical Field Experiments’ to study the effects of fertilisers on crops. These experiments are still in progress.

Hertfordshire has lacked good building stone, although hard chalk, flints, glacial-erratic cobbles and the siliceous pudding stones found above the chalk were all used in medieval churches. The vernacular buildings are, therefore, timber framed, often plastered over or, sometimes weatherboarded. Common roofing tiles were made from the Middle Ages, while brick, used by the Romans in their city of Verulamium (St Albans), came into widespread use from the sixteenth century. Many of the varied clays have yielded bricks of reddish colour but, if they were naturally or artificially admixed with chalk, the fabric tended to pale yellow or ‘white’. Both red and white bricks were made in the Hitchin area. The nineteenth and twentieth century industrial period diversified the range of products. Caleb Hitch of Ware patented a jumbo-sized, hollow interlocking brick in 1828, of short-lived popularity. The distinctive London stock brick, widely used in the nineteenth and early twentieth centuries, used coal ashes mixed with the clay to save fuel. In the Lea Valley, making flower pots for market gardeners was an offshoot from brickmaking, with South’s at Tottenham remaining in production until 1960. Despite voracious demand in the twentieth century, local brickmaking dwindled in the face of technically advanced competition from nearby. Beart’s patent extruded and wire-cut bricks, with perforations to assist drying, were mass produced.
from the 1850s at Arlesey, just across the Bedfordshire boundary, using the Gault clay that underlies the chalk, while the now dominant Fletton bricks have been made from the carbon-rich, fuel-saving Lower Oxford Clay, by the efficient, semi-dry production process, at Stewartby, near Bedford, since the 1890s. Cornish's, however, produced high quality red facing bricks at Enfield until 1976.

The chalk formerly yielded lime and cement, especially where cut by the railways. A resource of continuing importance to the construction industry, but now constrained by planning controls, are the gravels and sands deposited by rivers, both the present ones and their ancestors in glacial and pre-glacial times. (The Thames flowed north-eastwards across mid Hertfordshire half a million years ago). Disused gravel pits have become landfill sites for urban waste or, in the Lea Valley, reservoirs for flood control. Just north of our area, the Lower Greensand of the lower Cretaceous around Leighton Buzzard remains a major source of high-grade sands for building and industrial purposes.

The course of urban expansion across Hertfordshire during the twentieth century coincided with the adoption of new constructional methods and the throwing off of old architectural traditions in favour of light and air. Reinforced concrete particularly blossomed during the steel shortages of the 1940s and 50s, when the New Towns were started. The New Towns, coupled with the provisions of the 1944 Education Act and the post-war 'baby boom', led Hertfordshire County Council to take the lead internationally in developing, from 1946, a modular, prefabricated constructional system (of steel and precast concrete) for the wave of new school buildings required across the county.

It was not entirely a coincidence that the government's Building Research Station (now BRE), established after the First World War when 'homes fit for heroes' had first risen high on the national agenda on the back of the Garden City movement, found a permanent site at Garston, near Watford, in 1926.

**Food and Drink**

In east Hertfordshire the major industry was malting. Good barley growing land lay to the north and east. The Rivers Lea and Stort gave easy access to London. The rise of the common brewer in eighteenth century London allowed towns such as Ware and Bishops Stortford to develop maltings on a grand scale. A distinctive type of malthouse was used in and around Ware, with grain progressing from one end to the other. Multi-storey malthouses appeared in the late nineteenth century. Although the industry has all but ceased many of the malthouse buildings survive in other uses, preserving their characteristics. Others have been transformed almost beyond recognition into flats and offices.

The area had its share of corn mills, both wind and water-powered including a major cluster of tide mills north of Bow Creek. Only two Hertfordshire windmills still have sails, the privately owned Arkley tower mill and the preserved post mill at Cromer, which is regularly open to the public. So too are Redbournbury and Kingsbury watermills on the Ver, though the former has been extensively rebuilt after a fire. Mill Green Mill at Hatfield produces flour for a local baker. On the Lea, Hyde Mill, just south of Luton, and the preserved 1779 tide mill at Three Mills, Bromley-by-Bow, are outstanding. Large roller mills still in production include Bowman's at Hitchin, Heygates at Tring and Wright's Mill at Ponders End.
In 1925, Shredded Wheat set up their large factory at Welwyn Garden City. The well-known Ovaltine factory, first established in 1913 at King's Langley, closed in 2002. The Ovaltine Dairy Farm has been converted to housing, the Egg Farm to a renewable energy centre, both retaining original buildings. Of Hertfordshire's many traditional breweries only MacMullens in Hertford is still in production. On the lower Lea, Three Mills Distillery made alcohol for both gin distillers and industrial use.

**Papermaking and printing**

The first paper mill in Britain was established towards the end of the fifteenth century, by John Tate, at Sele Mill near Hertford, the mill reverting to corn-milling after his death. The Fourdrinier brothers installed the first commercial papermaking machine at Frogmore Mill, in west Hertfordshire, in 1803. Well before that, the clear chalk streams of the Hertfordshire – Buckinghamshire border, the Rivers Chess, Colne and Gade, had been used for paper making. In 1808 John Dickinson established his first paper mill at Apsley. Nash Mills (1811), Home Park Mills (1826) and Croxley Mills (1830) followed. Apsley and Nash mills were water-powered paper mills from the eighteenth century. Dickinson introduced the steam engine to paper making in 1815 at Apsley. Late twentieth century rationalisation saw the closure of all but Nash Mills and Frogmore Mill, the latter run as part of the Apsley Paper Trail.

From tentative beginnings in the early nineteenth century, Watford became a major centre for the printing industry. Pre-eminent in the twentieth century were the Sun Engraving Company Ltd and Odhams Press. Sun was a renaming, in 1918, of an earlier amalgamation of firms. They specialised in high quality colour photogravure work, but also printed mass-circulation magazines, including Picture Post. Odhams Press moved to Watford in 1936. Printers inks were made at Watford and in the Lower Lea Valley.

**Chemicals and Pharmaceuticals**

The Lower Lea Valley was a cradle of the British chemical industry. Locally produced alcohol and coal gas by-products coupled with excellent water transport for imported raw materials and finished product enabled the area around and including the Bow Back Rivers to develop its important chemical industry. By the eighteenth century dye works were well established. Early nineteenth century pioneers included Philip Taylor who developed a method of producing gas from oil. At Bromley-by-Bow, Hills and Haddock perfected their 1818 patent for production of sulphuric acid. The area’s diverse product range included acids, solvents, oil and tar products, printing inks, fertilisers, insecticides, glues, soaps and perfumes. All have now gone leaving parts of the area with derelict buildings and wasteland. Hackney Wick is associated with Alexander Parkes (1813-1890) and the early plastics industry. Carless, Capel & Leonard established their works in 1859. By 1870 it was Britain’s main distillery for crude petroleum from America, producing oil for lamps, benzole for dry cleaning, and gasoline for increasing the luminosity of coal gas. Before 1904 they were the only firm making fuel for the internal combustion engine, which they named ‘petrol.’ Dry cleaning was developed here by Achille Serre. The former Atlas Works at Hackney Wick was important for making aniline dyestuffs. At Bow, the huge Bryant & May match factory has been converted to flats. The Royal Gunpowder Factory at Waltham Abbey later made chemical explosives such as cordite. This remarkable site is now open to the public. In 1843, William Cooper began making sheep dip at Berkhamsted. The firm diversified into veterinary products before being absorbed into the Wellcome empire. In the twentieth century pharmaceuticals became important in Hertfordshire with Roche Products at Welwyn Garden City and Glaxo Smith Kline at Ware.

**Engineering**

Watford and Luton had engineering industries to service papermaking, printing and hat making. The available skills attracted other industries to the towns, including the manufacture of vehicles and domestic appliances. Letchworth became, for a while, a centre for motor car production. Hewlett & Blondeau opened an aircraft factory at Leagrave in 1913. It closed in 1920 and became part of the Electrolux factory. In 1937 the Percival Aircraft Company moved to Luton from Gravesend. Before that, Handley Page had moved from Cricklewood to Radlett, in 1930, and, around the same time, de Havilland moved to Hatfield from Hendon. All these works have closed but Hertfordshire is involved with modern aerospace technology.

At Enfield Lock, in the Lower Lea Valley, the RSAF began manufacture of small arms by the method of interchangeable parts. American machine tools were introduced from Springfield, New England and complete firearms were mass produced. Weapons such as the famous Lee–Enfield rifle and the Bren and Sten guns were made here, the ‘en’ in the names standing for Enfield. The Ediswan factory was
established in Enfield in the 1880s. It was followed by Belling & Co Ltd, Belling & Lee and Thorn EMI Ferguson. In the twentieth century Enfield was a centre of innovative electrical engineering. Further south Hawker Siddeley Power Transformers were, until recently, in Walthamstow. The automotive industry was represented by AEC in Walthamstow and J. A. Prestwich (JAP) in Tottenham.

**Textiles and Clothing**
Hitchin was a centre of straw-plaiting but this cottage industry was found throughout the northern Chilterns and South Bedfordshire. Straw hats were made at St Albans, but it was Luton where hat making was established as the major industry. Until the second half of the nineteenth century it was largely a domestic industry, but the introduction of the sewing machine brought hat factories. As the fashion for straw hats declined Luton turned to making felt hats. There were ancillary trades such as dyeing and hatters engineering. Despite decline, Luton still makes hats and much evidence of the earlier hat industry survives. In the early nineteenth century, silk mills were established in West Hertfordshire, taking advantage of available waterpower and proximity to London. Abbey Mills at St Albans have been converted to flats whereas the Georgian Tring silk mill is in multi-occupation. There was a large clothing factory in Berkhamsted, now demolished. The Spirella corset factory and the Kayser Bondor stocking factory survive in other uses.

**Film Industry**
Film pioneer Arthur Melbourne-Cooper (1874-1961) began making advertising films in and around St Albans in 1908. Another Hertfordshire pioneer was the once renowned Victorian portrait painter, Sir Hubert von Herkomer (1849-1914) who set up his daylight film studio at Bushey. London film makers moved to Borehamwood to take advantage of clean air and a good train service. Neptune Studios, built in 1914, is now the site of the BBC’s Elstree Studios. The Gate Studios of 1926 were later used as a factory making cinema screens. Although the film industry was concentrated on Borehamwood other Hertfordshire town such as Welwyn Garden City had studios. So too did the Lea Valley, in Walthamstow. The National Film Archive is held at Berkhamsted.

**Roads**
The Roman roads of Ermine Street, Watling Street and Akeman Street formed the basis of the Old North Road (A10), the Holyhead Road (A5) and the A41 which cross Hertfordshire radially from London. The Great North Road (A1) is a seventeenth century creation. All have been altered over the years, bypassing towns and villages. A very early experimental turnpike scheme at Wadesmill, north of Ware, levied tolls on heavy wagons carrying barley to the maltsters, to pay for graveling the road. The Holyhead Road (A5) was improved in the early nineteenth century with government assistance under the superintendence of Telford. McAdam, who lived at Hoddesdon from 1825 to 1836, was surveyor to many turnpike trusts in the county.

Several milestones survive and at Tring and elsewhere there are boundary posts erected by the Sparrows Herne Trust. A few Coal Duty Boundary Posts can still be found, notably in the Potters Bar/London Colney area. In the Lea Valley some early bus garages survive, extended for modern usage, and in Clapton there is a former horse tram depot.

The M1, the first major British motorway, opened on 2nd November 1959 from the St Albans by-pass (near Watford) to Crick, Northants. This first section, 55 miles long, was by Owen Williams (built in only 19 months) and many of his original bridges survive. They now have protection as historic structures. Originally 134 bridges were built and the M1 was the largest civil engineering operation ever carried out by one firm in Britain (contractors John Laing & Son, Ltd).

![M1 Motorway, Owen Williams overbridge on original 1959 section](image)
River Navigations and Canals

The River Lea has been navigable from time immemorial. Inefficient, privately operated flash locks allowed small barges to negotiate the mill weirs and shoals of its tortuous channels. A major attempt at improvement in the late 1570s, including the construction of an early, but short-lived, pound lock at Waltham Abbey, was thwarted by vested interests. A navigation trust, however, was set up in 1739 and, under an Act of 1767 which followed a report by John Smeaton, extensive new cuts with pound locks were built. Major improvements, achieving a 100-ton standard as far as Ponders End, were made in the 1850s and 1860s. Locks northwards to Hertford were enlarged mainly in 1922-3.

The Bow Back Rivers, a network of navigable channels behind the former tidal mills at Stratford, were extensively remodelled for flood control in 1930-5. Upstream, as far as the junction with the Stort, a modern flood relief channel has superseded reliance on distinctive, fully-gated adjustable weirs. Promoted by the maltsters of Bishops Stortford, the River Stort was made navigable in 1769 under an Act of 1766. The engineer was Thomas Yeoman, surveyor to the Lee Navigation. The Stort Navigation is 13¾ miles long with fifteen locks. Both Lee and Stort Navigations are now administered by British Waterways.

The short Hertford Union Canal was completed in
was completed in 1830, joining the Hackney Cut of the River Lee Navigation with the Regent’s Canal. The Limehouse Cut of 1770 by-passed the long haul round the Isle of Dogs.

The GJC was built under an Act of 1793 as a shorter route from Birmingham to London compared with the Oxford Canal and the River Thames. The engineers were William Jessop and James Barnes. The canal opened to Tring in 1799, and throughout in 1800, except for the Blisworth Tunnel which was not completed until 1805. The canal rises 380 feet from the Thames at Brentford, through 55 locks, excluding the tidal lock, to a summit level through the Chilterns at Tring. Some 23 miles of the canal, from Harefield to Marsworth, are in Hertfordshire. The channel was made for ‘wide’ barges as far as Berkhamsted and 14-foot wide ‘broad’ locks continue throughout. The major engineering works are around the Tring summit. In 1929 the GJC and Regent’s Canal combined to form the GUC. Commercial traffic ended in 1981 when the last boat of limejuice for Rose’s was delivered to Boxmoor.

**Railways**

The first railway in Hertfordshire was a rather odd line opened in 1825 to convey bricks and lime from kilns beside the main road at Cheshunt to a wharf on the Lee Navigation. Built for a Mr Gibb, it was a monorail to the 1821 patent of Henry Robinson Palmer. Railways proper reached the county in 1837 with the opening of the L&B from Euston to Boxmoor, on 20 July, and then on to Tring, on 16 October. It was opened throughout in 1838. Built under an Act of 1833, the engineer was Robert Stephenson. A third line was added in 1859 and a fourth in 1875. The N&E opened its line up the Lea Valley from Stratford to Broxbourne in 1840, thence to Bishops Stortford by 1842 and Cambridge in 1845. A branch to Hertford was completed in 1843. The line was built to a gauge of 5 feet to enable trains to reach Bishopsgate station over ECR metals. In 1844 the ECR took over running of the N&E, and the same year the gauge was converted to standard. The line became part of the GER on its formation in 1862.

The other main lines through the area were the GNR of 1850 and the MidR of 1867. ‘Metroland’ arrived in Hertfordshire in 1887 with the opening of the MetR to Rickmansworth. Several rural branch lines have closed, the former GER branch to Buntingford, the GNR branches from Hatfield to Hertford, St Albans and Dunstable and the MidR branch to Hemel Hempstead. Others, such as the GER Enfield and Chingford branches and the GNR/LNER Hertford loop are important commuter routes. All lines have now been electrified, the first being the dc line to Watford in 1917 followed by the MetR to Rickmansworth and Watford in 1925. Railways west of the Lea Valley had to traverse hilly country and involved heavy engineering works including some lengthy tunnels and line viaducts.

**Water Supply and Sewage Disposal**

Hertfordshire is well endowed with a variety of different types of village pump, such as the one at Sarrat. Its large houses used various means to obtain a supply of water. For instance, Annables Farm at Kinsbourne Green had a donkey wheel. The horse wheel at Gormanbury was under a tiled canopy. At
Ashridge House the horse engine of 1808 survives over its well as does the water-powered pump which supplied Chorleywood House. A similar pump supplied Langleybury. Its remains lie beside the canal at Hunton Bridge. At Little Gaddesdon, on the Ashridge Estate, a waterworks was established in 1856, with a four-column Woolf compound beam engine by Easton & Amos, sadly scrapped.

The New River was constructed under an Act of 1606 by Sir Hugh Myddelton. Water was taken from springs at Chadwell and Amwell, near Ware, by open channel to New River Head, Islington, to supply the City of London, and later the West End. From the eighteenth century water was also taken from the River Lea. The Marble Gauge of 1770 replaced a wooden gauge and was itself replaced in 1856 by the New Gauge, to control the amount of water abstracted from the river. In the nineteenth century wells were sunk to the chalk to supplement the supply. Their pumping stations are a feature along the New River. That at Turnford still houses its Boulton & Watt side-lever engine.

In 1838, at Old Ford in the Lower Lea Valley, the ELWW introduced the Cornish pumping engine to London waterworks. Later the company built pumping stations of distinctive 'Arts and Crafts' architectural style, and several
large reservoirs further north. This policy continued under their successors, the MWB, with even larger reservoirs below Enfield Lock.

In the Lower Lea Valley Bazalgette's great interceptor sewers come together at Old Ford and Abbey Mills, the Northern Outfall taking the flow onwards to Beckton. At Abbey Mills there is now a large complex of pumping stations of different dates. Tottenham has early settlement beds, and a fine beam engine at Markfield Road.

**Gas and Electricity**

Several Hertfordshire towns had gas works by 1850. The first were Hertford, in 1825, and St Albans a year or two later. Smaller towns and large villages followed suit in the next two decades. In the Lea Valley, the Tottenham & District Gas Company was dominant, taking over smaller concerns including several in Hertfordshire. Further south, a gas works were established at Lea Bridge in 1853 but London's largest were just outside our area. There are still a number of gas holders in use throughout Hertfordshire and in the Lea Valley, the largest of them at Edmonton.

By 1881 the dining room at Hatfield House was lit by arc lights. Later two water turbine driven dynamos supplied power to the estate. At Chorleywood House a small turn-of-the-century powerhouse survives in the grounds. Watford Corporation power station opened in 1899, and Northmet ran one at Hertford from 1901 until 1926, when the town was converted from dc to ac. The First Garden City Company built a power station as well as a gasworks at Letchworth to attract industry to the town. Hertfordshire’s electricity supply was mostly in the hands of Northmet. Their largest power station was Brimsdown, at Enfield, opened 1904 to supply MET trams as well as lighting and industrial power. Luton Corporation had its own power station from 1901. Part of the Borough of Hackney’s power station survives beside the River Lea. New Combined Cycle Gas Turbine stations occupy several of the earlier sites. Electricity is a by-product of the large modern refuse incinerator at Edmonton.

**Garden Cities and New Towns**

In 1898 Ebenezer Howard (1850-1928) put forward his ideas for relieving overcrowding and congestion in big cities by creating garden cities, each with a population no greater than 32000. The first, Letchworth, was established in 1903. Welwyn Garden City followed in 1920. Abercrombie’s Greater London Plan of 1944 recommended ten new towns. Legislation was passed in 1946 to allow this to happen. The first, Stevenage, was designated in December of that year. Harlow, Hemel Hempstead and Hatfield followed. Welwyn Garden City was designated a New Town, with the Garden City Company being taken over by a Development Corporation in 1948. Garden Cities and New Towns included housing and industrial areas. In the ten years after the Second World War the LCC built large housing estates at Borehamwood and Bushey.

*TIM R SMITH*
B1.1 BRIDGE OVER RAILWAY
Station Road, Broxbourne
TL373071
Substantial, dogleg, brick viaduct, 1908, carrying road over railway and River Lea. A branch viaduct carries Old Nazeing Road to south. A second branch to north gave access to grazing ground.

B1.2 BROXBOURNE MILL
Mill Lane, Broxbourne
TL372068
The mill, with brick ground floor and weatherboarded upper floors, burnt down in 1949. A few walls and wheel chamber, complete with restored low-breast wheel, survive. Alongside, in a second chamber, are the remains of a water turbine.

B1.3 BROXBOURNE PUMPING STATION
St Catharine's Road, Broxbourne
TL373075
212-foot deep Broxbourne Well was sunk by NR in the 1860s. Pumping station, 1886, with tall red-brick engine house and adjacent boiler house are listed, grade II. The chimney has been demolished. The well delivers 2.8 mgd.

B1.4 PULHAM'S KILN
Behind Beech Court, Station Road, Broxbourne
TL373071
James Pulham (1820-1898) set up works for the manufacture of terracotta and artificial stone. The Pulhams used their artificial stone in garden features and other works. One conical kiln survives alongside an edge-runner mill, used to crush stone prior to moulding. The edge-runner stones were turned by a single horse.

B2 TURNFORD PUMPING STATION
Cheshunt
TL360044
Engine house and well tower, built 1870, with side lever engine by Boulton, Watt & Co, brought here from Hampstead Road Well. The engine, with 28-inch diameter cylinder, 3½ feet stroke, drove a lift pump through a bellcrank. In 1882 NR installed a second engine, by Moreland & Sons, its exhaust steam then supplying the side lever engine. This second engine was scrapped when the pumping station was electrified.

B3.1 DOBB'S WEIR
Hoddesdon
TL385082
Modern weir with older sluices below it. Channel with sluice of 1906, leads to wheelpit chamber of Charlton Mill, which burnt down in 1868. Dobb's Weir Lock is at end of long cut from weir.

B3.2 FEILDE'S WEIR
Hoddesdon
TL391092
The junction of the River Stort Navigation and the River Lee Navigation is just above Feilde's Weir and Feilde's Weir Lock. Present weir and sluice to flood relief channel are modern. Lock has cast iron bridge at downstream end.

B3.3 HODDESDON PUMPING STATION
Essex Road, Hoddesdon
TL378090
Stock brick NR pumping station of 1866, also known as Essex Road Pumping Station with 385 feet deep well delivering 2.7 mgd.

B3.4 MALTHOUSE
Bell Lane, Hoddesdon
TL374088
Three storey, late nineteenth century malthouse, built of yellow brick with a slate roof and two pyramidal kiln vents, on site of former Christie's Brewery, most of which was demolished in 1928. Now in other commercial use.
D1.1 APSLEY MILLS
London Road, Apsley
TL063049
In 1808 John Dickinson bought an existing paper mill at Apsley and introduced a papermaking machine of his design. The mills expanded to cover a large area, including powerhouse, envelope factory etc., all now demolished except for one canalside building and 'The Cottage', the company's timber-clad offices. The northern wing of the Cottage is an early mill building; the rest dates from 1933. On front wall is the 'Basildon Bond' clock.

D1.2 FROGMORE MILL
Frogmore Road, Durrant's Hill Road, Apsley
TL059054
In 1803 the Foudrinier Brothers, London stationers, installed first commercial papermaking machine here. After being used to produce half-stuff from esparto grass for John Dickinson, the British Paper Company ran it from 1890 until 2000. Now, as part of the Apsley Paper Trail, it still produces paper from waste. The papermaking machine is driven by a 130hp Ashworth & Parker inverted vertical steam engine. The buildings are of various dates. One straddles waterwheel pits.

D1.3 NASH MILLS
Belswains Lane, Nash Mills
TL070045
Large working paper mill, now Sappi Nash Mills. On Domesday site, bought by John Dickinson in 1810, mill was largely destroyed by fire, 1813, but large two-storey stuccoed Mill House, c1790, with hipped, slate roof and pedimented façade, survives. Mill substantially rebuilt, 1879, with 'Hercules' turbines replacing water wheels. First papermaking machine powered by electricity installed here, 1887. New machine house built 1956, for big board machine. There are workers cottages on Belswains Lane and some turn of the century buildings, including a sprinkler tower of 1909.

D1.4 APSLEY RAILWAY STATION
TL063049
Built by the LMS to serve Dickinson’s mills, being opened on 28th September 1938 by a special train, carrying the Chairmen of both the LMS and Dickinson's, breaking through a large screen of Croxley paper stretched across the rails. Station is substantially as built with brick and concrete booking hall, waiting rooms etc on up slow. Canopy roofs are of cast-in-situ concrete on concrete beams.

D1.5 GASHOLDERS
London Road, Boxmoor
TL052058
Two moderate-sized holders of probably c1900 with guide frames of the distinctive Cutler’s Patent design.
D2.1 ASHRIDGE HOUSE
SP994123
Once a monastic foundation of the Bonhommes, Ashridge became seat of the Dukes of Bridgewater. Largely rebuilt, early 1800s, now a management college. In the cellar is wellhead gear, c.1808, over 224 feet deep well, sunk in Middle Ages. Two donkeys turned an inverted crown wheel driving a crankshaft through bevel gear. Donkeys were stalled in adjoining room. Has ice-well in grounds. Granite column (SP970131) forms monument to Francis, Third Duke of Bridgewater, the ‘Canal Duke’ (National Trust).

D2.2 CANAL LOCKS
near Bullbeggars Lane, Berkhamsted TL004073 and TL008070
GUC climbs through Berkhamsted up a series of locks. Locks 56 and 57 have disused sideponds, said to be the first used on the GJC.

D2.3 CASTLE MILL
Lower Kings Road, Berkhamsted SP992080
Four-storey, canal-side, animal-feed mill with five-storey silo, built c.1910 for J. G. Knowles & Co. Converted to offices after World War II.

D2.4 RAILWAY STATION
Lower Kings Road, Berkhamsted SP993081
Little remains of first Berkhamsted station, some distance to south-east. Present station, 1875, has fine booking hall with subway access to platforms. Some platform buildings and wooden canopies survive. On north side, at ground level, is former private waiting room of Lord Brownlow.

D3 IRON BRIDGE
Gadebridge Park, Hemel Hempstead TL052080
Decorative iron bridge made locally by Joseph Cranstone’s Phoenix Works, to give access to Sir Astley Paston Cooper’s country seat. Other examples of Cranstone’s work are a drinking fountain of 1835, near Boxmoor Hall, and a pump-and-lamp-post, of 1848, in High Street.

D4 NOAKE MILL
Noake Mill Lane, Hemel Hempstead TL044097
Small, red brick mill, three storeys plus loft, with high-pitched roof, once with lucarn. This is the highest mill on the River Gade. On a medieval mill site, the present building dates from the mid-nineteenth century.
D5 OVALTINE FACTORY
Station Road, King’s Langley
TL077026
Built 1920s for Wander Ltd, makers of Ovaltine on this site from 1913. Production has ceased and factory is due for redevelopment. The Egg Farm (TL081022), 1929, and Dairy Farm (TL096029), 1931, at Abbots Langley, now called Antoinette Court, have been converted to other uses.

D6.1 BROWN’S BREWERY
High Street, Tring
SP926113
Accessed through a marked entry, John Brown’s brewery later became a butchers and slaughter-house.

D6.2 LIVESTOCK MARKET
Brook Street, Tring
SP926115
Small livestock market with outdoor, cast-iron pens, of a type now becoming rare.

D6.3 RAILWAY CUTTING
Tring
SP 951122 to SP 931151
Tring, at summit of the L&B, was where passengers travelled on by coach to Aylesbury, Oxford and beyond. The huge cutting to north of station, subject of the famous Bourne print showing its construction, parallels the earlier canal cutting. Since late nineteenth century quadrupling of track and 1960s electrification, the dramatic impact of the cutting has been lost. Near station is a fine coaching inn and stable block, now converted to housing, and a row of railwaymen’s cottages.

D6.4 SILK MILL
Brook Street, Tring
SP925118
L-shaped textile mill built 1824 by William Kay, later associated with David Evans & Co. In Georgian style, main block was five-storey, but is now three. Original water-power later supplemented by steam. A single storey range along the street once housed some of the mill’s child labour force. Buildings now in multiple occupation, and with later additions.

D6.5 TRING FLOUR MILL
Tring Ford Road, New Mill, Tring
SP 925130
Five-storey roller mill, 1875, beside Wendover Arm
D6.6 TURNPIKE TRUST POST
London Road, Tring
SP927115
Rare turnpike boundary post of the Sparrow's Herne Trust. There is another at Gossoms End, Berkhamsted. Nearby is a fine cast-iron milepost.

D7.1 GRAND JUNCTION CANAL WATER SUPPLY
Series of reservoirs, built just below summit level by GJC to supplement supplies from Wendover Arm; Wilstone, Nos 1 to 3, (SP905131) built 1802, 1835 and 1839, Marsworth (SP921136), 1806, Tringford (SP918133) and Staropsend (SP918138), 1818. Tringford Pumping Station (SP918129), 1818, but extended and altered, with four wells and network of tunnels connecting reservoirs. Electric pumps installed in 1910 and 1926, were themselves replaced in 1960/61. Shaft in field near Lock 38 (SP924153), is on Railway Feeder North, 1838, draining north end of Tring Railway Cutting into canal.

D7.2 AYLESBURY ARM
SP918143 (junction)
Opened in 1815, the canal descends $6\frac{3}{4}$ miles, through sixteen 7-foot wide locks. At the junction there is a stone-built warehouse, now offices. First two locks form a staircase.
D7.3 BULBOURNE WORKSHOPS
Bulbourne Road, Tring
SP933137
GJC used this site from early nineteenth century. In 1848 they began making lock gates here. Fine group of mainly mid-nineteenth century buildings includes Blacksmiths’ Shop, with later water tower, and Carpenters' Shop. The Sawyers' Shop has early twentieth century planing machine, originally belt-driven, by Charles Powis & Co of Millwall Pier. Traditional wooden lock gates continued to be made here until Spring 2004.

D7.4 MARSWORTH FLIGHT
(Locks 39 to 45)
SP920141 to SP929138
A series of locks lifts the canal from the Aylesbury Arm to three-mile long summit level. Bottom lock, (No.39) was duplicated, 1838, with a lock for single narrow boats, to save water, now filled in but double bridge (No 132) remains. Most locks on the flight have sideponds, now disused, and lock cottages. Next to the top lock is a covered dry dock and tollhouse.

D7.5 WENDOVER ARM
SP929138 (junction)
Built as navigable feeder, tapping springs along the foot of the Chilterns scarp, the Wendover Arm was not a success. From the start difficulties were experienced in keeping the bed watertight. After considerable expense the arm was abandoned beyond Tringford. Efforts are now being made to re-open the arm using Bentomat and concrete to seal the bed. The first phase is due to open in 2004.
**EH1 BISHOP’S STORTFORD**
Medieval market town on the junction of a former Roman west-east road and a north-south route following the river valley, which became main coaching road from London to East Anglia (although it ran through Hockering rather than town centre). The town was a major regional agricultural centre with principal industries of malting and corn milling. Improved transport links, vital for the town to competitively trade in the London market, came with completion of the Stort Navigation in 1769 and opening of the railway in 1842. The Dunmow and Braintree Branch line, opened 1869, further stimulated trade. The large goods yard and sheds handled very large quantities of barley and malt along with other agricultural produce. Other local industries included brewing, brick making, lime burning, a foundry, and a match factory (closed 1970, demolished 1973).

**EH1.2 BREWERY**
Water Lane, Bishop’s Stortford
TL487216
Remains of 1790 brick built brewery initially operated by Hawkes and then taken over by Benskins. It is now converted into a Community Church, retaining no internal features.

**EH1.3 WORKHOUSE**
Haymeads Lane, Bishop’s Stortford
TL499210
Built 1836/7 to one of Sampson Kempthorne’s three models as published by the Poor Law Commission, aimed at control and segregation of the sexes and ages. Designed by T. L. Evans. Main building is of Y-plan design surrounded by outbuildings which have an hexagonal plan. A three storey, red brick building with stone dressings under a slate roof. Most recently part of a hospital, there are plans for its conversion to flats.

**EH1.4 CORN EXCHANGE**
Market Square, Bishop’s Stortford
TL487214
Built 1828 and designed by Lewis Vulliamy in the classical style. It was still in use for its original purpose until 1959, then fell into disuse, having to be saved from demolition in late 1960s. Now used for retail and office purposes it continues to be an important feature of the market square townscape.

**EH1.5 MALT HOUSES**
In 1839, malthouses were concentrated around Hockering, close to the turnpike road, wharves at the head of the Stort Navigation and the main road through the town centre. By 1900 there were over 50 malthouses in the town, with newer ones in the open spaces to the south and east of the town centre between the navigation and the railway. Today the remains of 14 can be found, including WINDHILL (TL485213); seventeenth century with timber-frame and remains of conical kiln vent, now a private house (The Oast House); MASLEN’S, Bridge Street, (TL487215) three malthouses, two
early, timber-framed, nineteenth century and one later nineteenth century, built close to the head of the Stort Navigation, now in retail use; THE TRIAD, Southmill Road (TL492206), built in open spaces adjacent to the navigation and newly constructed railway, these three demonstrate the development of malthouse construction from mid to late C19th. Millars 1, built early 1840s, with timber-framed barley and malt stores and red brick growing floors and kiln area, three-storeys with lucam, Millars 2, built 1843, with similar layout and construction, having slate roof and pyramidal kiln vents and Millars 3, built 1897, of red brick, four storeys high with two pyramidal kilns, now mainly in leisure use.

**EH1.6 TWYFORD MILL**  
Pig Lane, Thorley Street, Bishop's Stortford  
TL494193  
Two and three storey mill built of rendered brick with slate roof. Water for the mill was taken, via a sluice, *in situ*, from an arm of the Stort Navigation at Twyford Lock. The tailrace also survives. The mill operated until World War II; converted to flats 1954.

**EH2 BRAUGHING STATION**  
TL390243  
Intermediate station on GER Buntingford Branch Railway, opened 1863, closed 1964. Station buildings, platforms, track bed and goods shed extant

and used as a private residence. (Buntingford Station building (TL364288) is also extant and used as a factory.)

**EH3 BREWERY**  
Violets Lane, Furneux Pelham  
TL436278  
William Rayment built this brewery c1860 to increase his brewing capacity from that at the local Hall. A tower brewery of two and three storeys, in red brick. A two-storey malthouse was added in 1869, with single pyramidal kiln vent. Brewing ceased in the late 1980s by which time Rayments had sold out to Greene King Ltd. The whole site recently converted to residential units.

**EH4.1 AMWELL HILL PUMPING STATION**  
Great Amwell  
TL367127  
Italianate pumping station, 1847 by William Chadwell Mylne for NR. It had a 50hp beam engine raising 0.5 mgd for local use.

**EH4.2 AMWELL MARSH PUMPING STATION**  
Lower Road, Great Amwell  
TL376123  
Built for NR, 1883, Amwell Marsh pumping station is similar to Rye Common and Broxbourne. Steam plant, two single-cylinder inverted vertical steam engines, by Richard Moreland & Son, drove four pumps through bell cranks. Replaced by electrically driven pumps and the chimney demolished. The 392-foot deep well yields 3.5 mgd delivered into NR.

**EH4.3 EMMA’S WELL**  
Lower Road, Great Amwell  
TL3762125  
One of the original sources of the New River, the pool has two islands, one with a monument to Sir Hugh Myddelton, the other a monument on which is written a poem to Emma’s Well.
**EH4.4 NEW RIVER BRIDGES**
TL366131
Lower Road crosses NR by a concrete bridge. Just upstream is a small cast-iron bridge bearing the words 'New River Co 1824 Priestfields Iron Works near Bilston' on each side. A couple of hundred yards upstream is a similar cast-iron bridge, but without inscription.

**EH5.1 ADDIS TOOTHBRUSHES FACTORY**
Ware Road, Hertford
TL337129
Founded 1780, Robert Addis II moved company from East End of London to Hertford in 1919. First part of Ware Road site built 1935, by Donald Hamilton, listed grade II, now occupied by Riversmead Housing Association. Matching addition of 1955, now newspaper offices and print works. Art Deco style brick, metal-framed windows and flat roofs.

**EH5.2 HARTHAM PUMPING STATION**
Thornton Street, Hertford (near car parks)
TL326129
Hertford Corporation waterworks building, beside a channel of the River Lea, rebuilt 1900.

**EH5.3 HERTFORD EAST RAILWAY STATION**
Mill Road, Hertford
TL330129
Good example of GER branch terminus, built 1888 to the designs of W N Ashbee. Fine porte-cochère at the front entrance and another at the side lead to the concourse and two platforms. On the up side is a wooden, ex-GER signal box. Listed grade II.

**EH5.4 McMULLEN'S BREWERY**
Hartham Lane, Hertford
TL325129
Red brick tower brewery of five storeys with a number of ancillary buildings. New brewhouse added 1984. Peter McMullen began brewing in 1827, in Railway Street, before moving to Mill Bridge in 1830. In 1891 his two sons established their brewery on the current site. McMullen's remains the only independent brewery in Hertfordshire, uses traditional brewing processes and is still managed by the McMullen family.

**EH5.5 MALTHOUSES**
Nicholas Lane, Hertford
TL325127
Old Cross maltings consists of three buildings one of which has sixteenth century foundations. Otherwise they are mainly nineteenth century yellow and red brick structures, one with some weatherboarding. Three other malshouses remain in Hertford.

**EH5.6 NEW GAUGE HOUSE**
Hertford
TL340138
Visible from towpath of River Lee Navigation
Built by NR 1856, a special floating gauge controls the amount of water flowing from the River Lea into NR. The brick building in which it is housed straddles the channel.

**EH5.7 SELE MILL**
North Road, Hertford
TL319127
Sele Mill, on the River Beane, has an important place in English history, as it was here, towards
the end of the fifteenth century, that John Tate became England’s first papermaker. After his death, Sele Mill reverted to grinding corn. Present buildings date from the mid-nineteenth century. Steam later supplemented waterpower and a chimney stands in the yard. The mill is being converted to flats.

**EH6.1 BURTON’S MILL**
Mill Lane, Sawbridgeworth
TL486151
Eighteenth century corn mill, rebuilt c1880 when converted to steam power. Timber-framed and weather-boarded, it has a tiled roof and a lucam, and was still operating in 1970. Eighteenth century mill house, of similar construction, but has slate roof. Sluice gear by Ransomes and Rapier, in situ. Mill and mill house are now private houses. Adjacent early nineteenth century three storey malthouse, of brick with slate roof, originally had one conical kiln vent, now private housing. Nearby is Sawbridgeworth Lock, on Stort Navigation.

**EH6.2 MALTHOUSES.**
Malting in Sawbridgeworth was originally concentrated near the turnpike road and in the town centre, there being some remains of two of these structures. However, the concentration gradually moved to the navigable river, e.g. Burton Mill malthouse, and others around the wharves on the river and then to the railway, which was built along the river valley. The main ranges of malthouses which remain are around the Stort Navigation and the railway to the south of the station.
EH6.3 STATION ROAD MALTHOUSES
TL490149
Long J-shaped range of malthouses, south of station, with at least five different structures possibly as many as nine. Of three storeys, built from 1857, mainly of yellow brick, one has weather-boarded upper storey store, and there are two extant lucams, but no surviving kiln vents. At southern end is another, parallel structure complete with pyramidal kiln vent and wooden grain elevator. Further south is a substantial three storey, yellow brick malthouse with barley store in a northern cross-wing and the kilns and malt store in another cross-wing at the south end. The building retains its two pyramidal kiln vents. All these malthouses had railway sidings from the GER line. All are now in retail use.

EH6.4 SHEERING LOWER ROAD MALTHOUSES
TL492149
On east of railway line, two malthouses built for H.A. & D. Taylor. One of 1896 was a pneumatic malting, six storeys high, of yellow brick, with one large conical kiln vent. Barley was stored in silos and moved to the six malting drums by conveyor and there was artificial control of air so that growing of the grain could be a continuous, year round process. The other of 1897 was a traditional floor malting, of six storeys in red brick with four pyramidal kiln vents. Both had railway sidings and have now been converted to flats.

EH7 STANDON MILL
Kent’s Lane
TL395225
Standon has a history of mills on the River Rib, with papermaking and then a sawmill in Paper Mill Lane at TL392221 of which the Mill House and other structures are extant. A corn mill, on east bank of Rib, burnt down in 1611 and was replaced with a factory which retains its chimney. Extant steam mill, built 1901, on the opposite bank, of three and four storeys, for Chapman Bros. Taken over by British Soya Products Ltd in 1936. It has lost its 100-foot chimney and there are plans for conversion to residential units.

EH8.1 CORN MILL
Roydon Road, Stanstead Abbots
TL386118
Water mill rebuilt 1861 and converted to steam in 1890; probably built for Joseph Pearce. The four-storey mill is of red brick under a slate roof and has five bays of giant arches, with a two-storey extension. The tailrace arch has a cast-iron beam dated 1865. Milling ceased in 1926, the building is now used as offices.

EH8.2 FRENCH & JUPPS
Roydon Road, Stanstead Abbots
TL386117
Group of three separate malthouses, listed grade II, dating from the early to mid-nineteenth century, all at least three storeys, brick built under slate roofs. Two are now in retail and commercial use and have pyramidal kiln vents. One, with a conical kiln vent, remains in use as a maltings run by French & Jupps.

EH8.3 RIVERSIDE MALTHOUSE
off Station Road, Stanstead Abbots
TL383118
Two storey malthouse built c1840, alongside the Lee Navigation, of brick and slate construction, with unusual ridge kiln vent. Listed grade II.

EH8.4 MALTHOUSES
Amwell Lane, Stanstead St Margaret’s
TL380121
Substantial complex of three malthouses with pyramidal kiln vents, built 1866 with a siding from the GER East Hertford branch. The buildings were used as a warehouse and were virtually destroyed by fire in 1986. Now refurbished, extended and converted to flats. It is difficult to see what if any of the original structures remain and the new parts are a pastiche of the original construction. Listed grade II.

EH8.5 RAILWAY SIGNAL BOX
Stanstead St Margaret’s
TL381118
GER signal box of 1887, built of weather-boarded timber, stands on the down platform of St Margaret’s station. The box is out of use but retains its 55-lever frame, by McKenzie & Holland.
**EH8.6 RYE COMMON PUMPING STATION**
Hoddesdon Road, Stanstead St Margaret's
TL379111
Built 1883, this pumping station is architecturally similar to those at Amwell Marsh and Broxbourne. Like those it housed two single-cylinder inverted vertical engines by Richard Moreland & Son. The well, 264 feet deep, yields 1 mgd, now pumped electrically into NR.

**EH9 WARE**
Ware was a market and trading town on the River Lea, which was being used to transport goods to and from London as early as medieval times. In the 1580s the Lea was subject to its first improvements as far north as Ware, which included locks. Continued improvements culminated in the 1739 Lea Navigation Act. The Lea valley had been used for a road north from pre-Roman times which then became Ermine Street. It had heavy use by packhorses and wagons bringing barley to the town and taking malt to London and this resulted in it being turnpiked following the 1663 Act. Ware became a major malting centre based on good local barley, a tradition of malting skills, closeness to London, production of malt for porter from the early eighteenth century and good transport links to London. It had a malt market as early as 1339 and a maximum of nearly 100 maltings. Other industry in the town included corn milling, brewing, engineering, brick making and the provision of fresh water to London via the New River.

**EH9.1 AMWELL END PUMPING STATION**
London Road, Amwell End, Ware
TL360139
Small pumping station with well tower, built by NR in 1867, and listed grade II.

**EH9.2 BREWERY**
Watton Road, Ware
TL355145
Star Brewery built 1862 by Caleb Hitch, son of Caleb Hitch the brickmaker (see introduction), a second floor date stone reads - 'CH 1862'. In the 1880s it was occupied by William Wickham Ltd., forerunners of D. H. Wickham, makers of brewing equipment and later diesel railcars. The brick built tower brewery has now been converted.

**EH9.3 BROADMEAD PUMPING STATION**
Hertford Road, Ware
TL353139
Built by NR, 1881, tall, gabled engine house with boiler house, superintendent's house and chimney. Listed grade II.

**EH9.4 CHADWELL SPRING**
Hertford Road, Ware
TL350137
A stone commemorates one of the original sources of the NR.

**EH9.5 MALTHOUSE**
Hoe Lane, Amwell End
TL359138
Recorded on the 1839 Tithe map, a two storey malting house of stock brick with timber at one end and one kiln vent. The roof has been re-tiled and windows inserted. Now used as offices, workshops and a store.

**EH9.6 MALTHOUSE**
63 High Street, Ware
TL357143
One of the few remaining of many maltings which ran south of the High Street down to the River. Recorded on the 1845 Tithe map, this is a three storey structure of grey stock brick. The significant feature is the rebuilt kiln of 1880, four storeys high. Now in other commercial use.

**EH9.7 MALTHOUSES**
Kibes Lane, Ware
TL360143
Three maltings, each of brick with two conical kiln vents and rotating cowls. Probably mid-nineteenth century; now in various uses. Listed grade II.

**EH9.8 MALTHOUSE**
Park Road, Ware
TL353146
Early nineteenth century malting house, significant for the use of Caleb Hitch's bricks in its construction.

EH9.3 Broadmead Pumping Station, New River
*Photo: Wendie Teppen*
EH9.9 MALTHOUSES
Watton Road, Ware
TL355145
This site consists of four malthouses, a fifth having been demolished, with the brewery (EH9.2) on the north edge of the site. The 1845 Tithe map shows three structures (including the one now demolished); the 1851 OS map shows all five. By 1880 one had been widened and another had its kiln rebuilt. All are brick with some weather-boarding and lucams. Now in various commercial uses. Listed grade II.

EH9.10 MARBLE GAUGE
Ware
TL345138
Marble Gauge 1770 straddles the watercourse of NR. Nearby, upstream is the White House Sluice, a small weather-boarded timber building with tiled roof.

EH9.11 RAILWAY STATION & GOODS WAREHOUSE
TL360140
Opened 1843 by N&E, with a single platform and passing loop. Single storey station building of brick and slate with portico entrance. Goods warehouse, also 1843, large in size because of the expected traffic in agricultural produce and malt for London. There was a large goods yard and a siding for D. Wickham & Co. Ltd., manufacturers of maintenance trolleys, railcars etc.

EH9.12 WARE FLOUR MILLS
Viaduct Road, Ware
TL 360141
Large roller mills built 1897 now converted to flats.

ENFIELD

EN1 ARNOS GROVE UNDERGROUND STATION
TQ293925
London Underground station, 1932, on Piccadilly Line, listed grade II. Well known Charles Holden design with circular brick ticket hall. Still has its 'passimeter' booking office, now used as display unit. Other listed Charles Holden stations are at Cockfosters (TQ281964) Oakwood (TQ294959), and Southgate (TQ297943).

EN2 BANBURY RESERVOIR
TQ362914
Built under ELWW Acts of 1897 and 1900. Taken over by MWB when opened, 1903. Now used by Lea Valley Watersports Centre. Further south Lockwood Reservoir, TQ 353903, is contemporary.

EN3 GLASSHOUSES
Cattlegate Road, Crews Hill
TQ312999
To the east of Crews Hill station, north and south of Cattlegate Road, is an area of glasshouses of the kind formerly ubiquitous in the Lea Valley.

EN4 ANGEL WORKS
Hawley Road, Angel Road
TQ358923
Ridley, Whitley & Co established their linoleum factory here in the 1860s. The substantial Victorian factory has brick built water tower with an iron tank on top.

EN5 FORMER MENSWEAR STORE
169-71 Fore Street, Angel Edmonton, Silver Street
TQ341923
Typical Burton's menswear store in characteristic style on west side of the road. Now in other use.

right: EN6 Clarendon Arch, New River, Bush Hill
Photo: Dr Denis Smith
EN6 THE CLARENDON ARCH
Bush Hill N21, Bush Hill Park, Enfield
TQ 325951
Brick tunnel culvert carrying NR over Salmon’s Brook, through an embankment. Present brick archway replaced original timber-boarded aqueduct,1682. Oldest surviving structure on NR, listed grade II.

EN7 GAUGE HOUSE
Bush Hill Road, Enfield
TQ327952
A classic NR gauge house just north east of the Road. The flow of NR was controlled by means of adjustable stop boards.

EN8 WATER TOWER
Quaker’s Walk, Bush Hill, Enfield
TQ326953
An artesian bore was sunk here into the chalk in 1877 to supply the new housing estate of the Bush Hill Park Company. The waterworks scheme failed and supply was taken over by NR. The unused brick water tower, four storeys high with slit windows and stair turret, was converted into a house.

EN9 CAST IRON AQUEDUCT
Flash Lane, Enfield
TQ323994
Two-span, cast iron trough carried on brick piers, built 1820-21 to carry NR over Cuffley Brook. Ironwork was cast by Hunter and English of Bow.

EN10 CAST IRON BRIDGE
Rammey Marsh Lock, Enfield
TQ327956
Cast iron bridge with beam dated 1835.

EN11 GASHOLDERS
Willoughby Lane and Leaside Road, Enfield
TQ349919 and TQ354915
Three early twentieth century gasholders of former Tottenham & District Gas Co. The largest, built 1914-23, holds seven million cubic feet. It is about 180 feet high with box-lattice guide-frame standards of unusual trapezoidal section, simplifying the design of the girders.

EN12 HADLEY ROAD PUMPING STATION
Hadley Road, Enfield
TQ303981
Tall pumping station building of 1903, for a well next to Salmon’s Brook. Steam pumping engines, consisted of a vertical triple-expansion engine by Ashton, Frost and Company of Blackburn and two Worthington compound engines, removed 1948, and replaced by electric pumps. The station pumps to Plumridge Hill Water Tower.

EN13 G E LIGHTING FACTORY
Great Cambridge Industrial Estate, Great Cambridge Road, Enfield
TQ344956
Large industrial complex, north of Progress Way. Lighting equipment manufacturers, still in production.

EN14 NEW RIVER AQUEDUCT
Between Bulls Cross Road and M25 Junction 25
TL347000
Post-tensioned in-situ concrete structure carries NR in two rectangular boxes over M25 motorway. Completed 1965, contractor Sir Robert McAlpine. Aqueduct was built without interrupting flow of NR.

EN15 PLUMRIDGE HILL WATER TOWER
The Ridgeway (A1005), Enfield
TQ274999
Red brick water tower of battlemented design, built 1913-14 to supply local residents.

EN16 RAILWAY STATION
TQ322966
Windmill Hill, Enfield
Enfield Chase station, ten miles from King’s Cross by rail, built 1910 on GNR extension to Cuffley. Built on embankment, of lightweight wooden construction with Art Nouveau entrance porch and classical platform canopy pillars. Prior to 1910 the GNR branch from King’s Cross terminated at Enfield. The original terminus (1868-71) was on Windmill Hill to west of here.

EN17 RIPAULT’S FACTORY
Southbury Road, Enfield
TQ348963
Ripaull’s Ltd factory, built 1936 by A. H. Durnford, with long streamlined Art Deco façade, white with...
black trim and with original metal glazing bars. The firm was famous for telephone and electrical equipment. Listed grade II. Now M.A.N.

**EN18 SOUTHBURY RAILWAY STATION**
Southbury Road, Enfield
TQ348962
GER suburban railway station, of 1891, with booking hall, in pleasing Jacobean style, on over bridge, at street level.

**EN19 WHITEWEBBS PUMPING STATION**
Whitewebbs Road, Enfield
TQ318998
In 1895 NR sank a 14-foot diameter well, 200 feet deep, driving two headings, 700 feet and 550 feet long from the bottom. It yielded 2 mgd. The pumping station was completed in 1898. The two inverted vertical compound steam pumping engines by R. Moreland & Son have been removed. Engine house, boiler house, small workshop, valve house and coal store survive, but the chimney has been demolished. Converted for the Enfield & District Veteran Vehicle Society as their museum. A vehicle shelter has been built of re-used cast-iron columns from Enfield Chase station.

**EN20 CARNEGIE LIBRARY**
258 Hertford Road, Enfield Highway
TQ351974

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**EN22: Vertical section through King George V Pumping Station showing a Humphrey Pump. The combustion chamber is beneath the pitched roof. Water entered on the left and was delivered to the King George V Reservoir on the right.**

*Courtesy of Dr Denis Smith.*
EN21 ENFIELD LOCK
River Lee Navigation
TQ372984

On east side of lock is red-brick Lock House, Lee Conservancy 1889, and, to north, smaller stock-brick lock cottage of c1748. To south of lock, down Navigation Drive, on west side of the Navigation is Maintenance Depot of c1792 with dry dock, Superintendent’s House and other buildings.

EN22 KING GEORGE V PUMPING STATION
Off the south end of Swan and Pike Road
TQ373979

Contains the world prototype installation of Herbert Humphrey’s thermally efficient pumps patented in 1906. These devices dispense with piston, connecting rod, crank, flywheel and gearing and were powered by producer gas. A Humphrey pump is basically a large U-tube with a combustion chamber at the closed end and a delivery outlet at the other. Water in the U-tube is made to oscillate by combustion of the producer gas at the closed end and water spills out at the other. Thus at the closed end the surface of the water in the tube acts as the piston. Five pumps were originally installed and three are in situ. The building, in a classical mannerist style, red brick and Portland stone, by W. S. Bryan, was opened with great publicity by H M King George V on 13th March 1913. The surge towers of the Humphrey Pumps are surrounded by an elegant brick screen wall with coupled Portland stone Doric columns.

EN23 KING GEORGE V RESERVOIR
TQ374952 to TQ371978

The purpose of the Humphrey Pumps was to fill this reservoir, enclosed by a giant earth fill embankment. Covering 420 acres it is the largest in London. Built by MWB, opened 1913.

EN24 WILLIAM GIRLING RESERVOIR
Enfield and Waltham Forest
TQ366940

Construction work began 1935 but was interrupted by major earth slips and World War II. After modifications the reservoir was finally completed in 1951. Named after the chairman of MWB it has a perimeter of 3½ miles and a water area of 334 acres.

EN25 ROYAL SMALL ARMS FACTORY
Enfield Lock
TQ372987

Begun by Board of Ordnance during Napoleonic Wars and enlarged during Crimean War, RSAF occupied 94-acre island site between River Lee Navigation and Cattlegate Flood Relief Channel. American machine tools and interchangeable parts used to manufacture small arms, including famous Lee-Enfield rifle. Production ceased in 1938 and site redeveloped as Enfield Island Village. Buildings retained include Machine Shop, 1854-8, listed grade II, with clock tower facing James Lee Square and re-excavated canal basin. To the west is long two-storey range of offices and stores, which incorporated the drawing office, with brick-and-timber police station to south. Outside RSAF to west, is terrace of cottages, Government Row 1816.

EN26 FIRST AUTOMATIC TELLER MACHINE (ATM)
Market Place, Enfield Town
TQ328966

In keeping with Enfield’s innovative reputation, world’s first ATM (‘hole in the wall’ cash machine) installed 27th June 1967 at Barclays Bank, 1897, at south-eastern corner of Market Place. Mayor of Enfield unveiled a commemorative plaque, 1992.

EN27 DEPARTMENT STORE
11-14 The Town, Enfield Town
TQ328966

Pearson’s department store opened 1928 on site of Enfield Manor. The firm was founded in 1903 and is still a family business (now quite rare).

EN28 DRINKING WATER PUMP
Market Place, Enfield Town
TQ328966

Cast iron public supply hand pump still with handle, which stood in the Market Place from 1847-1904. Reinstalled 1979.

left: EN26 Plaque, first Automatic Teller Machine, Enfield Town

Photo: Dr R J M Carr
EN29 OLD COURSE OF THE NEW RIVER
Gentlemans Row, Enfield Town
TQ324968
The town of Enfield is almost encircled by an abandoned loop of NR (TQ 328968 to TQ 323964). A particularly fine stretch is that alongside Gentlemans Row, west of the Town Centre where there is a classic NR cast iron bridge.

EN30 EDISWAN LAMP FACTORY
Off Duck Lees Lane, Ponders End
TQ364959
Former offices, dated 1890, and sole remnant of Edison and Swan's works. Exterior substantially modified hiding Victorian origins. To east, Ponders End Industrial Estate, brick built, c1960, typical of Lea Valley. Here Joseph Wilson Swan, the inventor of the incandescent electric lamp, manufactured electric light bulbs from 1886. Here also, Professor Ambrose Fleming patented in 1904 the world's first thermionic valve (the diode) and James Dewar developed the world's first vacuum flask (the Dewar Vessel).

EN31 GASHOLDERS
Woodall Road, Ponders End
TQ359954
One gasholder of 1920s, lattice framed with Padddon wind ties and two mid-twentieth century, spiral guided gasholders.

EN32 PONDERS END PUMPING STATION
off Wharf Road, Ponders End
TQ364957
The Navigation Inn was created in 1995 from parts of the Ponders End Pumping Station, built 1899, by W. S. Bryan. An extra building in pastiche was added to the north. The style of both buildings is half-timbered with big tiled roofs. This pumping station was for one of five wells sunk by ELWW under their Act of 1886.

EN33 WRIGHT'S FLOUR MILLS
Wharf Road, Ponders End
TQ362955
Domesday water-mill site on River Lea with some buildings dating from late seventeenth century. Wright's Mill, established 1867 by George Reynolds Wright, one of the first in country to install roller mills. Electric power introduced 1909 replacing water wheels. Tall 600-ton grain silo built 1925, now local landmark. G. R. Wright & Sons Ltd is still a flourishing concern.

EN34 RENDLESHAM VIADUCT
West of Hilly Fields Park, Clay Hill
TQ314986
Viaduct, built 1907-10 to carry the double-track extension of the GNR from Enfield to Cuffley across valley of the Turkey Brook. In 1924 it became part of the Hertford Loop. Fourteen concrete arches with brick facing.

EN31 Gasholders, Ponders End
Photo: Dr R J M Carr
EX1 BERDEN PRIORY TREADWHEEL
Berden Priory
TL463303
Seventeenth century, wooden treadwheel, 15 feet by 3 feet, in a tiled and weatherboarded building. It turned a 3-foot wooden winding drum over a 130-foot well.

EX2 MALTHOUSE
Berden Priory
TL462303
Early seventeenth century farm malthouse, timber-framed on a brick plinth, with rendered walls and roofed with handmade clay tiles. Single storey, as barley and malt were probably stored elsewhere on the farm. Its single conical kiln vent has been dismantled.

EX3 MALTHOUSE
Manuden
TL491267
Seventeenth century timber-framed malthouse with plaster walls and peg-tiled roof. Of two storeys, it has a taking-in door or remains of a lucam at roof level, but the kiln has been dismantled.

EX4.1 WINDMILL
Mill Side, Stansted Mountfitchet
TL509247
Restored, five-storey brick tower mill, 1787, stopped work 1910. Domed cap with four patent sails and fantail, driving three pairs of stones by Hughes & Son, London and Brown, Huxham.

EX4.2 DRINKING FOUNTAIN
Chapel Hill, Stansted Mountfitchet
TL510251
Late nineteenth century cast-iron drinking fountain, with canopy on four slender columns, cast by Macfarlane & Co, Glasgow. Promoted by local coaching family and wine-merchants, H. & W. Gilbey.

EX4.3 MALTHOUSE
Stoney Common Road, Stansted Mountfitchet
TL512246
Built c1870, three storey, brick-built, slate-roofed structure with all evidence of kiln vents removed. An almost parallel, later building was used for storage, offices and ancillary purposes. Served by a railway siding from main GER Cambridge line. Now extensively altered, and converted to commercial premises.

EX4.4 BREWERY HOUSE
Lower Street, Stansted Mountfitchet
TL514252
Stansted Brewery, first recorded in the 1870s ceased brewing c1925. The brewhouse has been demolished. Hand bottling was undertaken in ‘Brewery House’, a fine red-brick, clay tiled, three storey building with bay windows either side of a decorative doorway.

EX5 MALTHOUSE
Malting Farm, Little Hallingbury
TL503175
Rare example, in Essex, of a late sixteenth, early seventeenth brick-built malthouse. Of two storeys, L-shaped with a clay tiled roof, the kiln vent has been removed and it is now a private house.

EX 4.1 Windmill, Stansted Mountfitchet
Photo: Tony Crosby
**EX6 GASTON GREEN MILL**
Old Mill Lane, Gaston Green
TL496169
The water-powered corn mill recorded here in 1720 was being used for silk throwing and twisting, probably using a copy of machinery patented two years earlier by Sir Thomas Lombe. It soon reverted to corn milling and was re-built in 1874 with a brick ground floor, and upper storeys clad in vertical weatherboard, all under a pantile roof. Two lucams are extant. Now used as a restaurant.

**EX7 HATFIELD HEATH BREWERY**
Stortford Road, Hatfield Heath
TL518152
Mid-nineteenth century, brick-built brewery with weatherboarded top floor and lucam, converted to corn mill c1900. Now offices. The brewer’s house opposite (now residential care home) has plaque dated 1863.

**EX8.1 MALT HOUSE**
St John’s Walk, Old Harlow
TL472116
Late nineteenth century three-storey malthouse built of Cambridge gault bricks under a slate roof, retaining a pyramidal kiln vent and two lucams. Internal roof with both king-and queen-post roof trusses. Now used as the local campus for the Memorial University of Newfoundland.

**EX8.2 MAL THOUSE**
Old Road, Old Harlow
TL473128
Eighteenth century timber-framed, weatherboarded malthouse with a clay tiled roof. Two storeys high, it retains its conical kiln vent. Built adjacent to where the former Hockerill Highway turnpike road crossed the River Stort. Now a private house.

**EX8.3 BURNT MILL WORKS**
Burnt Mill Lane, Harlow
TL446113
Two-storey, brick-built with a slate roof, this late nineteenth century factory was built for the marine engineers John Kirkaldy Ltd. who occupied it until 1930s. Now Harlow Outdoors, Centre for Outdoor Learning.

**EX8.4 HARLOW TOWN STATION**
Station Approach, Harlow
TL447112
Dramatic station, listed grade II, with prominent lift towers is 1959-60 rebuild of Burnt Mill station serving Harlow New Town. The waiting room is situated on a bridge. Architects John Bicknell and Paul Hamilton, British Railways Eastern Region.

**EX9 PARNDON MILL**
Parndon Mill Lane
TL437111
Four-storey mid-nineteenth century mill, built of
yellow brick, with a corrugated roof. Features include two lucams, remains of a chimney, tie-plates and sluices. The mill and mill house are adjacent to Parndon Mill Lock on the Stort Navigation. Now used as an arts centre.

**EX10 ROYDON MILL**

Roydon
TL406105

This four-storey nineteenth century mill has the lower two storeys built of yellow brick and the two upper storeys timber-framed and weather-boarded. It has a slate roof and there is a lucam. It is now used as the administrative centre for a mobile-home park.

**EX11 ROYDON STATION**

TL406105

Single-storey, brick and stone building of 1840s, with a hipped slate roof and a curved portico to the roadside. The former goods shed is also extant. The station is still in use but the station building is a restaurant.

**EX12 ROYAL GUN POWDER FACTORY**

Beaulieu Drive, Waltham Abbey
TL377025 to TQ378988

Once hidden behind a wall of secrecy, part of this important site is open to the public. Gunpowder production began here c1650 by private enterprise. Sold to the Crown in 1787, becoming RGPF. Manufacture of cordite and other explosives and propellants began in the later 19th century. Production ceased in 1943, but research and development work continued until closure in 1991. Lower Island, dating from 1801, and South Site, or Quinton Hill Factory, 1890s, have been redeveloped. The North Site, a scheduled ancient monument, including the original gunpowder works, contains some 300 structures, twenty-one being grade I or grade II listed. These include steam incorporating mills built between 1857 and 1889, and a press house, with waterwheel driven pump and hydraulic press. The many water channels were used for both power and transport.

**EX13 BLOOMERY FLOOR**

Waltham Abbey
TL383007

Twelfth century bloomery floor from the Abbey Ironworks.

**EX14 BEACH VIEW NURSERY**

Avey Lane, Waltham Abbey
TQ390991

On the north side of the road is a large area of glasshouses with chimney and heating boiler of the type characteristic of the Lea Valley, especially
post World War II. Other nurseries survive nearby.

**EX15 GLASSHOUSES**
Mott Street, Sewardstone
TQ386981
Glasshouses were once commonplace in the Lea Valley. Here are several nurseries with glasshouses between Sewardstone Road and the King George V Reservoir.

EX14 Beach View Nursery, Avey Lane, Waltham Abbey

*Photo: Dr R J M Carr.*

Cutler's Patent Guide Framing, as used particularly for Hornsey No. 1 Gasholder of 1892: the actual size is grossly exaggerated in relation to the men in the foreground.
See D1.5 (page 11) HG1 and HG2 (page 35)

*right: HA5 Bryant & May Match Factory, from Fairfield Road*

*HA7.1 Riverside (printing ink) Works see page 32*

*Photos: Dr R J M Carr*
HAGKNEY

HA1 HACKNEY POWER STATION
TQ359862
Hackney Borough Council canal side power station, 1901. Mostly demolished but a red brick building survives with vestiges of concrete arches.

HA2 LESNEY'S FACTORY
Lee Conservancy Road
TQ367852
Derelict. Matchbox diecast toys were made here.

HA3 LEA BRIDGE TRAM DEPOT
Upper Clapton Road
TQ349864

TOWER HAMLETS

HA4 BOW BUS GARAGE
Fairfield Road
TQ374831
LCC tram depot 1908-10 converted for trolleybuses 1939. Further altered 1959 when it became a bus garage. Large arched vehicle entrance.

HA5 BRYANT & MAY MATCH FACTORY
Fairfield Road
TQ374833
Scene of one of the most famous industrial disputes in British trade union history when Fabian lecturer Annie Besant provoked, through an article in the newspaper Link, the walkout of 700 women matchmakers. Nineteenth century range fronting Fairfield Road with large, impressive early twentieth century blocks behind, converted to flats. The match factory was built on the site of the Fairfield Works of William Bridges Adams, coachbuilder and builder of railway locomotives.

HA6 LIMEHOUSE CUT
TQ365809 to TQ383824
Opened 1770, at the suggestion of Thomas Yeoman following Smeaton’s report of 1766. Connects the River Lee Navigation, at Bromley, to the Thames at Limehouse, obviating the need to go round the Isle of Dogs.

HA7 OLD FORD and HACKNEY WICK
Although part of two London boroughs, this area has been brought together here as it forms a cohesive whole. The northern part of the parish of St
Mary, Stratford-le-Bow is known as Old Ford, after the crossing point on the River Lea of the old Roman road. Hackney Wick lies to the north. The name 'Fish Island' is sometimes used for the streets between the Northern Outfall Sewer and the Hertford Union Canal, as the streets are named after freshwater fish. The whole area is likely to undergo considerable change following London's bid for the Olympic Games in 2012.

**HA7.1 RIVERSIDE WORKS**
419 Wick Lane, Tower Hamlets
TQ373837

Important printing ink works of John Kidd & Co Ltd, who supplied Fleet Street with its inks. A range of two-storey warehouse blocks lies to the north with single storey production units, black grading shops and colour grading shops, to the south. The central two-bay block was built 1897, extended to east, 1914-16 with small, two-storey office added 1926. The fine west block, of Holman & Goodram, was added 1935-6. Across the yard, to north, is laboratory and office block of 1915-6, with drum washing room on ground floor. Along Iceland Road is the boiler house of 1915 with earlier chimney.

**HA7.2 NORTHERN OUTFALL SEWER**
TQ370840 to TQ450822

Part of Bazalgette's main drainage scheme for MBW, the Northern Outfall Sewer, built 1862-3, runs in a long earth embankment from the Wick Lane Main Drainage Depot, Old Ford to Beckton. At Wick Lane, the High Level and Middle Level sewers meet, both discharging into the Northern Outfall. At Abbey Mills they are joined by the Low Level Sewer. Two extra sewers, from the Middle Level, were added 1904-7 by LCC. Plate-girder bridges carry the sewers in pipes over river channels, roads and railways. Public footpath on top.

**HA7.3 HACKNEY CUT**
TQ374839 to TQ 356866

Two-mile cut built in the early 1770s following Smeaton's report of 1766. At the south end, Old Ford Lock was rebuilt c1856 as a double lock, with a rise some 4ft higher, so as to eliminate a second lock 1½ miles upstream. The banks were raised and walled with Kentish ragstone to provide quays to attract industry.

**HA7.5 STABLES**
Dace Road, Tower Hamlets
TQ373839

Three-storey stable block built for Henry Crane, cartage contractor. The western half was built 1906, the eastern half by 1912. On the south side are the remains of a brick and concrete horse ramp to the first floor. Windows were blocked and loops added on conversion to a warehouse.

**HA7.6 BRITANNIA WORKS**
Dace Road, Tower Hamlets
TQ372839

Built 1898-9 for the Britannia Folding Box Co Ltd, owned by a New York firm of milliners. They made folding paper boxes and were printers and lithographers. The range was extended to the east in 1907. The western end was rebuilt after war dam-
The much altered and enlarged gatehouse now offices of Percy Dalton group.

HA7.7 WICK LANE RUBBER WORKS
Dace Road/Smeed Road, Tower Hamlets
TQ372839
Grouped on each side of Smeed Road is the former works of Bernard Birnbaum, manufacturer of vulcanised India rubber clothing, including two four-storey process buildings. That on the west side of Smeed Road, built 1882, is the earlier and has unusual giant segmental arches. On the east side is a two-storey office block, with imposing cart entrance to yard. On Dace Road is the farina house of 1887, with lantern roof, and boiler house to the east. The rubber works closed in 1906, being taken over the following year by Waterlow & Sons Ltd, printers. It is now in multiple occupation.

HA7.8 ALGHA WORKS
Smeed Road, Tower Hamlets
TQ372840
On the south corner of Smeed Road and Stour Road, Algha Works was built in 1908 for Waterlow & Sons Ltd, printers. Of four storeys plus semi-basement, it has unusual giant-arched window bays, with combined lintels and sills not matching floor levels, to provide extra daylight above the printing machines. Unusual panels of small, square panes, by Hayward Brothers of Borough, light the semi-basement. Now occupied by spectacle makers.

HA7.9 PIANO FACTORY
Beachy Road, Tower Hamlets
TQ373842
Between Beachy Road and Stour Road was the 1902 piano factory of John Broadwood & Sons Ltd. Only the eastern part survives, including a fine chimney.

HA7.10 CROWN WHARF YARD
Roach Road, Tower Hamlets
TQ373843
Chimney erected 1899-1900 by builders J Chessum & Sons for their Crown Wharf yard. Later used by Abraham Younger’s cabinet works.

HA7.11 ROACH WORKS
Roach Road, Tower Hamlets
TQ373843
Former yard of D. Anderson & Son, makers of roofing felts, etc., and Belfast truss roofs.

HA7.12 TRAVELLING CRANE RAMPS
Hackney Cut
TQ374841 to TQ374843
Ramps for three electric travelling cranes used to transfer logs and timber from barge to stockpile in East End’s largest timber yard, established 1912-13 by J. Gliksten & Son Ltd.

HA7.13 HERTFORD UNION CANAL
TQ373844 to TQ358840
The canal forms a straight line between the River Lee Navigation, in Old Ford, to the Regent’s Canal, at Bethnal Green. The three locks are all on the eastern half. The small Homerton Footpath Bridge, at Parnell Road (TQ368840), is of cast iron and Three Colts Bridge, at Gunmaker’s Lane (TQ36837), is of wrought-iron, with one cast-iron section.

HA7.14 LEA CHEMICAL WORKS
White Post Lane, Tower Hamlets
TQ373843
In 1894 Carless, Capel & Leonard took over the Pharos Works, Leon Clerc’s Benzoline and Oil Works. Little survives. After World War I, they established another works further east for distilling solvents, especially xylene, used in the manufacture of printing inks. Only the boundary wall survives, incorporating end walls of buildings.

HA7.15 ACHILLE SERRE
White Post Lane, Tower Hamlets
TQ372844
Achille Serre established his dry cleaning business in a corner of Griffith’s Tar Yard, now Queen’s Yard. Two of the three multi-storey blocks on the south
side of White Post Lane were built in 1905, the other, nearest the canal, with flat roof and concrete lintels, was built in the early 1920s. Further north is the Achille Serre 'office and entering room'. Everett House, built 1911, still has a vestige of the company name in mosaic around the parapet.

**HA7.16 LONDON & PROVINCIAL DYWORKS**  
Hepscott Road, Tower Hamlets  
TQ372844  
Three-storey block built 1905-6 for Lush & Cook, dyers and dry cleaners.

**HA7.17 HOPE CHEMICAL WORKS**  
White Post Lane, Wallis Road and Hepscott Road, Tower Hamlets  
TQ370845  
Unfortunately, all that survives of this extremely important site is the boundary wall of 1891. This was the Carless, Capel & Leonard works, established in 1859. It was rebuilt after a fire in 1890. The firm were the first to use term 'petrol'.

**HA7.18 QUEEN'S YARD**  
White Post Lane, Tower Hamlets  
TQ372845  
Six-storey stock-brick block built 1913-4 for Clark, Nickolls & Coombs Ltd (Clarnico) as a chocolate factory as part of their Queen's Yard complex. The rest of Queen's Yard has been redeveloped.

**HA7.19 KING'S YARD**  
Carpenters Road, Tower Hamlets  
TQ374846  
Former factory of confectioners and jam-makers, Clarke Nickolls & Coombs Ltd, who traded as Clarnico. The firm was founded in 1872 and had a number of works in the area. At King's Yard, the three-storey, canal side building of 1905 was the starch department, later a warehouse. Two build-
HG1 GASHOLDERS
North of Clarendon Road, Hornsey
TQ308898
Hornsey Gasworks Gasholder No 1 of 1892 has early example of Cutler’s Patent, helically-girdered guide frame. Nearby, against tall railway embankment are three abutments of former gasworks coal stores, 1889 and later. Hornsey Gas Co offices of 1895.

HG2 GASHOLDER
Off Lawton Road, New Barnet
TQ265965

HG3 GASHOLDER
Station Road, New Southgate
TQ290919
Heavily stylised box-lattice guide frame with cast-iron finials. In the London Borough of Barnet.

HG4 RAILWAY DEPOT
Marsh Lane, Northumberland Park
TQ349907
Large depot for Victoria line underground trains, opened 1968. Railway lines stretch to the south and can be seen from Watermead Way.

HG5 METAL BOX FACTORY
Chequers Way, Palmers Green
TQ320923

HG6 BELL BREWERY
High Road, Tottenham
TQ339907
Former nineteenth century Bell Brewery, entrance lodge stucco, single storey with clock above and yard behind, latterly used by Whitbread’s for distribution.

HG7 CANNON FACTORY
881, Tottenham High Road
TQ338916
Large factory building, c1950s, with north-light roofs, still in use by Cannon Avent. The business started as Cannon Rubber in 1936, their principal product being rubber mats for car interiors. They have since diversified but the Tottenham factory still makes car mats, supplying Fords, General Motors and retail outlets.

HG8 EAGLE PENCIL WORKS
Ashley Road, Tottenham
TQ344897
Alfred Berol founded the Eagle Pencil Co in USA, 1856. Their first UK factory was opened here in 1910. Name changed to Berol Ltd in 1971 on acquisition of Venus Pencil Co. Long two- and three-storey, architecturally pleasing factory building.
**HG9 FACTORY**  
International House, 175 Willoughby Lane, Tottenham  
TQ348917  
Stylish factory frontage, now Gerhardt Ltd, Engineering, c1930.

**HG10 GAS COMPANY OFFICES**  
639 Tottenham High Road  
TQ338906  
Jacobian style, red brick office block with terracotta decoration and iron finials depicting gas lights, built for Tottenham & Edmonton Gas Company in 1901, architect John Sherwell Corder of Ipswich. It was extended 1914. Listed grade II.

**HG11 HIGH CROSS PUMP**  
Tottenham High Road  
TQ337895  
Well, sunk 1791 by Thomas Smith, lord of the manor. Wellhead rebuilt 1876 by parish surveyor, P. P. Marshall. The mechanism is surrounded by brickwork supporting a tiled, conical roof. Two removable handles turn single-throw crank to work subterranean pump.

**HG12 MARKFIELD ROAD BEAM ENGINE**  
Tottenham  
TQ344887  
Tottenham & Wood Green Joint Drainage Board

**HG12 Markfield Road Beam Engine House**  
Photo: Dr R J M Carr  
Established a sewage works here c1885. The concrete walls of filter beds survive along with a plain, stock brick engine house. Inside is a Woolf compound rotative beam pumping engine, by Wood Brothers of Sowerby Bridge, 1886, with high-pressure cylinder 21 inch diameter by 52 inch stroke and low-pressure cylinder 36 inch diameter by 72 inch stroke. It is self-contained with decorated en-tablature supported by eight fluted cast-iron columns. The beam, 21 feet long, is fabricated from riveted wrought-iron plates and the flywheel is 27 feet in diameter. Engine stopped 1964. Preserved by local enthusiasts.

**HG13 J. A. PRESTWICH (JAP)**  
1/3 Landsdown Road, Tottenham  
TQ339906  
Original buildings in which John Alfred Prestwich lived, with his wife and had his first works, 1898. Now a health centre and a printers. The company moved manufacturing to new premises in Northumberland Park in January 1911. JAP became respected for its precision engineering and its innovative product range, including engines for racing cars etc.

**HG14 TOTTENHAM BUS GARAGE**  
Philip Lane, Tottenham  
TQ337895  

**HG11 High Cross Pump, Tottenham Green**  
Photo: Dr R J M Carr
HM1 ARKLEY WINDMILL
London Borough of Barnet
TQ218953
Tower mill, built c1800, with four sails, two of which were installed 1984/5.

HM2.1 ELSTREE AERODROME
Off Aldenham Road
TQ161963
A very active centre of private flying. Elstree was operational well before World War II. A large number of light aeroplanes are based here. Operates during daylight only.

HM2.2 ELSTREE RAILWAY TUNNELS
TQ193957 to TQ197948
The former MidR main line passes under Deacon Hill, south of Borehamwood. The Old Tunnel, built 1868, and the New Tunnel, 1895, are both 1072 yards long.

HM2.3 ELSTREE STUDIOS
Shenley Road, Borehamwood
TQ197968
Built 1926 as the British National Studios, becoming EMI Elstree Studios in 1968. Purchased by Hertsmere Borough Council in 1990s, part of the site is now a supermarket.

HM2.4 GATE STUDIOS
Station Road, Borehamwood
TQ192963
Opened 1928, as a sound stage, in a large shed with arched roof. Now Harkness Screens & Hall Stage Ltd, makers of cinema screens.

HM2.5 NEPTUNE STUDIOS
Eldon Avenue, Borehamwood
TQ195970
Site of Neptune Studios, 1914, first film studios in Borehamwood. After several owners the studios were acquired by ATV in 1961. Since 1984, BBC Elstree Centre.

HM3 ELECTRIC SUB-STATION
The Spider's Web, Bushey
TQ147970
Long-established nodal point on the National Grid.

HM4 HERKOMER'S FILM STUDIOS
Melbourne Road, Bushey
TQ137952
Early example of a daylight film studio, built above a former chapel, which Sir Hubert von Herkomer had previously used as a theatre. Converted to offices 1985. Opposite is Herkomer's former printing shop and art studio. At the opposite end of Melbourne Road is Lululaund, Herkomer's fantasy house.

HM5 DE HAVILLAND AIRCRAFT HERITAGE CENTRE
Salisbury Hall, London Colney
TL195027
There is no public access to Salisbury Hall itself, listed grade II*. Historic, moated Hall c1668 chosen by de Havilland in 1939 for development, in private, of a high-speed, unarmed bomber, of
wooden construction, the Mosquito. Some of the first were flown from here to Hatfield. The site now has the oldest aircraft museum in the country. The construction of at least parts of aircraft from wood is a speciality of this place, connected with the Chiltern furniture industry. The World War II Horsa glider, used for D-day invasion, and parts of de Havilland twin-boom jet fighters are of wood. Around the Hall are buildings of interest, including a small granary on staddle-stones.

**HM6.1 BUS GARAGE**
High Street, Potters Bar
TL262015
Potter’s Bar former LT bus garage, opened 1930 by LGOC, still fairly complete. Now used by Metroline London Northern.

**HM6.2 POTTERS BAR RAILWAY STATION**
TL250014
Rebuilt 1955, with four platforms. Interesting prestressing of platform canopies.

**HM6.3 RAILWAY TUNNELS**
TQ262977 to TL257004
Three railway tunnels on the former GNR main line, Hacley Wood South (384 yds), Hadley Wood North (232 yards) and Potters Bar (1214 yards), all duplicated in the late 1950s when the line was quadrupled.

**HM6.4 GRASSHOPPER BEAM ENGINE**
Home Farm, Wrotham Park
TQ247986
Single cylinder grasshopper beam engine 1856 by Easton & Amos, used to drive a sawmill and farm machinery, and to pump water to Wrotham Park. The engine has an unusual air pressure governor. The farm buildings, listed grade II, are being converted to office use.
L1 HAT FACTORY
64 Bute Street, Luton
TL092215
Archetypal hat factory of Walter Gurney & Sons, dated 1889, has three floors plus semi-basement. Ground floor showrooms, in classical style, have large windows, with access through etched glass doors. Floors above have smaller windows, still giving adequate light to sewing rooms. Listed grade II. On open ground to side a hat blocking press, from James Egleton's hat factory, 65-67 Bute Street, is displayed.

L2 BUTE MILLS
Bute Street, Luton
TL093215
Red brick flour mill, built for Brown Bros., with tall water tower and tank for sprinkler system.
L3 Millinery House, Guildford Street

**L3 MILLINERY HOUSE**
47 Guildford Street, Luton
TL092214
Distinctive three-storey hat factory, 1860s, listed grade II, now used by Maurice Davis, millinery manufacturer. Factory extends behind, down Barber’s Lane. There are other former hat factory buildings along Guildford Street.

**L4 HAT FACTORY**
Bute Street, Luton
TL092214
Large former hat factory, with some Art Deco decoration, was rebuilt for Vyse & Sons after a fire in 1930.

below: L5 Hat Factory, 50 Guildford St

**L5 HAT FACTORY**
50 Guildford Street
TL092215
Durler & Suter’s late 19th century plait warehouse in red brick and terracotta, four storeys with central tower and Dutch gable. Narrow street frontage, but extends well back. Later used as a hat factory. Listed grade II.

**L6 HAT FACTORY**
40 Guildford Street
TL092215
Impressive plait warehouse of 1905, for Durler & Suter, four storeys in Jacobean style, listed Grade II. No 40A, also listed grade II, is a late nineteenth century hat factory.

**L7 OFFICE BLOCK**
Kimpton Road, Luton
TL105207
Built 1907, by H. B. Cresswell for Vauxhall Iron Works, later Vauxhall Motors.

**L8 BAILEY HILL WATER TOWER**
West Hill Road, Luton
TL092201
Water tower of 1901 in Arts and Crafts style, by Henry T. Hare. Listed grade II.
L9 HAT FACTORY
98-100 Midland Road, Luton
TL092217
Typical of the High Town area, late nineteenth century, domestic scale buildings with factory to rear.

L10 HAT FACTORIES
Midland Road/Dudley Street, Luton
TL092217
Large hat factory, c1930, built for Paul Walser trading as Reslaw Hats, with entrance on corner. Next door, in Dudley Street is a three-storey red brick hat factory with modern extension to north.

L11 HAT FACTORIES
10 Old Bedford Road, Luton
TL091217
Domestic scale frontages with workshops behind. Best seen from Coupes Path is three-storey factory building with tall octagonal chimney.

L12 HATTING WORKSHOPS
Frederick Street, Luton
TL091220
South side of Frederick Street is typical nineteenth century urban terrace, but behind are hatting workshops, best seen from Mussons Path. Note Randall Ribbons, behind No 12, and, now closed, W. S. Hooker, hat manufacturers, behind No 62. There are similar, less visible workshops behind houses in Reginald Street and Clarendon Road.

L13 DYEWORKS
North Street, Luton
TL093221
Two- and three-storey range between North Street and Mussons Path, is works of Barford Brothers, who still dye hats.

L14 HART HILL WATER TOWER
Hart Lane, Luton
TL101221
Octagonal water tower, 1901, in Luton grey brick with terracotta decoration, conical roof and finial. Listed grade II.

L15 LEAGRAVE RAILWAY STATION
Station Road, Leagrave
TL061241
Leagrave station is 33 miles from London St Pancras. The source of the River Lea, Leagrave, is...
Hat factory sewing room showing women at work, Luton c1907


half a mile to the north. On the down side is a classic MidR station building; on up side, a mast for VHF communication with trains.

**L16 HEWLETT & BLONDEAU FACTORY**

Oakley Road, Leagrave

TL058235

Hilda Hewlett, a pre-First World War pilot, and Gustave Blondeau set up factory to manufacture aircraft under licence, in Vardens Road, Battersea. Moved to Leagrave 1914, factory closed 1920, and was incorporated into the Electrolux factory. Some early buildings survive.
BOW BACK RIVERS

Below Lea Bridge Road the River Lea diverges to the east, from the River Lee Navigation. South of Hackney Marshes it splits into a number of separate channels. Channelsea River, now partly in culvert, takes a wide loop to the east, rejoining the main channel in Bow Creek. Abbey Creek, formed by the tailrace of Abbey Mill, forms a loop on the Channelsea River. Next down the Lea come Waterworks River, City Mills River and the Pudding Mill River, now a dead end. The Old River Lea rejoins the Navigation below Old Ford Locks. At the northern end, between Waterworks River and City Mills River is Carpenter's Road Lock (TQ 376844), opened 1933, and at southern end is City Mill Lock (TQ 382835). The Prescott Channel, built 1933 as part of the new flood relief scheme which saw the widening of some channels, connects Three Mills Wall River, an extension of Waterworks River, to the Channelsea River. Below Three Mills the Navigation enters Bow Creek at Bow Locks, at the start of the Limehouse Cut of 1770. As their names suggest, many of the Rivers have been associated with mills. Of seven tidemills only the present Three Mills survives. The Bow Back Rivers have, in the past, been used for navigation, serving factories in Stratford Marshes. Public footpaths follow most of the rivers.

N1 ABBEY MILLS PUMPING STATION
TQ388833


N2 BOWDEN'S GLASS FACTORY
10-14 Marshgate Lane, Stratford E15
TQ381834

Established in Highgate in the late eighteenth century, John Bowden Ltd, glass benders, moved to Bloomsbury c1800. After World War II took over part of Grove Glassworks, of Robinson King & British...
Challenge Glazing Co Ltd in Marshgate Lane. The works contained kils used to bend large panes of window glass, which was heated and allowed to assume the shape of a mould before being annealed.

N3 CHEMICAL FACTORY
Carpenters Road, Stratford E15
TQ379844
A. Boake & Co started a business in Warton Road, becoming A. Boake, Roberts & Co in 1897, producing flavouring essences and essential oils. The firm moved to two sites on opposite sides of Carpenters Road. In 1966 the firm became Bush, Boake & Allen Ltd, now part of International Flavours and Fragrances. The sites have been cleared and that on the west side is now a store for old fridges. Some evidence of Boake’s use of the site can be seen in the wall.

N4 CONCRETE BRIDGE
Bridgewater Road, Stratford E15
TQ352838
Concrete beam bridge over the Waterworks River, built in 1938, has two spans cantilevered from a support in mid-channel. The contractors were Commercial Structures Ltd.

N5 ENGINEERING WORKS
Carpenters Road, Stratford E15
TQ380843
Complex of derelict buildings between Carpenters Road and the Waterworks River once formed the works of S. H. Johnson, makers of plant for the chemical industry, including pumps and filter presses.

N6 NORTHERN OUTFALL SEWER
TQ370840 to TQ450822
Part of Bazalgette’s main drainage scheme for MBW, the Northern Outfall Sewer runs in a long embankment from Old Ford to Beckton, with plate-girder bridges to carry the sewer in pipes over river channels, roads and railways. Public footpath on top. see entry HA7.2 (page 32)

N7 PRINTING INK WORKS
Sugar House Lane, Stratford E15
TQ382833
Dane & Co Ltd began making printing inks here in 1853. The Dane Group plc occupy a group of buildings between Sugar House Lane and Three Mills Wall River. A mid-twentieth century building on High Street has tiled panel of a Great Dane to advertise the firm.

N8 RAILWAY PRINTING WORKS
Burford Road, Stratford E15
TQ388839
GER printing works, 1893 enlarged 1901. The building, in distinctive railway style of red and blue brick, forms a massive rectangular block, 354ft long and 68ft high. Here timetables, posters, handbills, tickets and other items were printed, with the composing room on the top floor.

N9 STRATFORD MARKET RAILWAY STATION
High Street, Stratford E15
TQ387841
Although the station, on the line to North Woolwich, closed in 1857 the red-brick station buildings, on the bridge over the railway, survive.

N10 HOUSE MILL, THREE MILLS
Three Mill Lane, Bromley-by-Bow.
TQ383828
Standing at the head of Bow Creek, and believed to be a Domesday site, both mills here were driven by the ebb tide. The third mill, a windmill, has gone. Peter Lefevre bought the mills in 1727 and, with partners, established a distillery. Milling ceased after World War II. The House Mill, built 1776 for Daniel Bisson, burned down in 1802 but was rebuilt by Philip Metcalf. It has a brick façade with a timber structure, behind. Renovated by the River Lea Tidal Mill Trust, who also reconstructed the mill house, destroyed in World War II. Four, late 19th century, undershot waterwheels. Some remains of Fairbairn-type silent millstone machinery. Listed grade I.

N11 CLOCK MILL, THREE MILLS
Three Mill Lane, Bromley-by-Bow.
TQ383828
Rebuilt, in stock brick, 1817 with a wooden clock turret, clock of 1753 and bell cast 1750. At west end, next to the turret, are two conical drying kils. Weatherboarded lucam and wrought-iron wallcrape above barge beds in the creek. Mill contains remains of three Poncelet waterwheels. Sluice gear set in concrete when building converted into offices 25 years ago. Listed grade II.

N12 THREE MILLS DISTILLERY
Three Mill Lane, Newham
TQ384828
Three Mills Distillery, on an island formed by Three Mills Wall River, Prescott Channel, Channelsea River and Bow Creek. Distillery produced alcohol for sale to rectifiers of gin and for industrial use. In 1872 the distillery was taken over by J. & W. Nicholson & Co,
whose gin distillery was in St John Street, Clerkenwell. Distilling ceased c.1973. Some older buildings remain including bottling plant, rebuilt 1953, and Old Still House. Three-storey Victorian New Still House, contains nineteenth century stills removed from Clerkenwell 1967. Two-storey laboratory c.1890, was formerly a rectifying house. At east end is the single-storey spirit warehouse, c.1830.

N13 WEST HAM PUMPING STATION
Abbey Road, London E15
TQ389832
Built by West Ham Corporation from 1897. Steam plant consisted of two compound beam engines driving bucket pumps and three inverted-vertical direct-acting compound steam engines driving centrifugal pumps (the latter now removed). There were nine Lancashire boilers, four were hand fired and five mechanically stoked. The two Woolf compound rotative beam pumping engines were built by Lilleshall and Co Oakengates 1895-1900. One last ran in January 1972. They are double acting and developed 240hp with steam at 120psi. The high pressure cylinders have a bore of 30 inches and a stroke of nearly 4 ft 10 ins while the low pressure cylinders have a bore of 4 feet and a stroke of 7 feet 6 inches. The double web cast iron beams of these engines, cast in 1895, each weigh about 17 tons and are 28 feet long. Listed grade II.

N14 WOLSEY WORKS
Marshgate Lane, Stratford E15
TQ378843
The ‘Seemee’ factory of British Feeding Meals was established in 1929 to make animal foods from fish waste from Billingsgate and elsewhere. The works closed c.1980, and the buildings are now a tile warehouse.

N15 YARDLEY’S FACTORY
Carpenters Road, Stratford, E15
TQ378844
William Yardley established his lavender, cosmetics and soap business in Bloomsbury in the late eighteenth century. The firm set up a soap factory on Carpenters Road in 1904. A large complex developed with soap making in the northern part and a powder and perfume factory to the south. Now derelict, the site is under threat.

N16 YARDLEY’S BOX FACTORY
150 High Street & Warton Road, Stratford, E15
TQ383836
Box factory of the mid-1930s for Yardley’s. On the west wall of 150 High Street, now ‘Warton House Office Centre’, is tiled ‘Lavender Seller’ trade mark, adapted from the Primrose Sellers group of 1793, from Wheatley’s Cries of London series. The buildings between Warton Road and the Waterworks River were built later, for warehousing. Yardley’s moved to Basildon in 1966.
NH1.1 Kayser Bondor Factory, Baldock

**NH1.1 KAYSER BONDOR FACTORY**
High Street, Baldock
TL247334

Factory built early 1920s for a photographic company but taken over by the Full-Fashioned Hosiery Company, that became Kayser Bondor. The factory closed 1983 and building bought by Tesco. Long, impressive façade in a pinkish stone has central colonnaded entrance with frieze of Egyptian motifs.

**NH1.2 MALTINGS**
Whitehorse Street and Clothall Road, Baldock
TL246341

Quadrangle of two-storey malthouses with conical kiln, all converted to dwellings. Other converted maltings in Park Street.

**NH1.3 NORTON MILL**
Norton Bury Lane, Baldock
TL236351

Small, two-storey mill over the River Ivel. Older part has weatherboarded first floor. Larger, newer part in gault brick has timber lucam over the lane. Mill has been converted to a dwelling.

**NH2 CROMER WINDMILL**
Between Cromer and Cottered on the B1037.
TL304286

Early eighteenth century post mill with octagonal brick roundhouse and four patent sails driving two pairs of stones. The mill, which ceased work in the 1920s, has been restored by the Hertfordshire Building Preservation Trust with grants from the Heritage Lottery Fund and English Heritage. Listed grade II*.

**NH3.1 BOWMAN’S MILL**
Old Hale Way, Icklefordbury, Hitchin
TL313182

Substantial roller mill and silos situated on historic water-mill site on the River Oughton. Remains of millpond to the south west. Bowman’s Mill, established in 1857, currently employs 180 people. Bowman’s are one of the country’s largest independent millers still in business.
NH3.2 THE BRITISH SCHOOLS
41-42 Queen Street, Hitchin, Hertfordshire
TL186288
A museum in the making, this large Lancastrian schoolroom of 1837 is a unique survival. Also a
galleried classroom of 1853, a master’s house (1856) and a girls school (1856) housing the Jill Grey collection. Asphalt playground and surround-
ing buildings exude a powerful atmosphere. Listed grade II.

NH3.3 CORN EXCHANGE
31 Market Place, Hitchin
TL183291
The importance of nineteenth century Hitchin as a market town dealing in corn was magnified by the
construction of the GNR C1850, hence this splendid new Corn Exchange built 1853, listed grade II. Designed by William Fleck in an Italianate style at
a cost of £2,000. Now a public house. Splendid iron and glass roof visible.

NH3.4 GASHOLDER SITE
North of Grove Road, Hitchin
TL190314
Site of modern plant for making gas from oil, part demolished, but with three spherical gas tanks surviving. That to the north has its cladding par-
tially removed.

NH3.5 REMAINS OF FORMER MAIN-
LINE RAILWAY
Off Arlesey Road, Ickleford
TL187315
Substantial remains of railway embankment which formed part of the original MidR main-line route from
the Midlands via Bedford to London. Their trains ran into King’s Cross station, shared with the GNR until the London extension and St Pancras were built.

NH3.6 RAILWAY YARD
North of Nightingale Road (A505), Hitchin
TL192299
Remains of former railway depot at Hitchin, with some original GNR buildings surviving on both sides of the GNR main. Little survives of MidR depot.

NH4 KING’S WALDEN WINDMILL
Breachwood Green
TL146232
Brick tower mill of five storeys, built c1859. Recently restored with new cap, no sails. Private dwelling.

NH5 LETCHWORTH
Ebenezer Howard (1850 – 1928), who wrote To-
morrow: A Peaceful Path to Real Reform 1898,
advocated garden cities designed for healthy liv-
ing and industry. In July 1902 he formed the Gar-
den City Pioneer Company. A year later land was
bought to establish Letchworth as the first garden
city. Land was owned by First Garden City Ltd and
leased out. A gas works and power station were
built to tempt factory owners to relocate. Cheap
cottages with ample gardens amidst tree-lined av-

dues attracted workers. Firms such as the British
Tabulating Machine Co Ltd, the Lacre Motor Com-
pany, Shelvoke & Drewry and the Spirella Corset Co moved to Letchworth. There was even a steel
works. Some of the older factories can be seen in
the Works Road and Pixmore Avenue areas.

NH5.1 ARCHITECTS’ OFFICE
Norton Way South, Letchworth
TL221324
First Garden City Heritage Museum in the former
offices of architects, Parker & Unwin, who did much
work in Letchworth. Includes private office, from
1907 to 1940s, of Barry Parker, Arts & Crafts archi-
tect. Has Four Seasons window by A E Heasman.
NH5.2 LETCHWORTH RAILWAY STATION
Station Place, Letchworth
TL217327
Opened May 1913, some ten years after work started on the Garden City. Before that passengers had to walk across muddy fields. In Arts and Crafts style, the booking hall is at ground level connected to two island platforms in cutting below by footbridge, staircases and two prominent lift towers. Listed grade II.

NH5.3 SPIRELLA FACTORY
Bridge Road, Letchworth
TL215328
Well known factory, 1912-22, in Arts & Crafts style, by Cecil Hignett, for Spirella. Their corsets used innovative spiral wound spring construction. Customers included Mae West and Marilyn Monroe. Since 1999 a hi-tech business centre. Listed grade II*.

NH6 STEAM MILL
Kneesworth Street, Royston
TL353412
Former maltings of about 1860 and large steam mill of 1864, the latter still in use by Cereform.

NH7 STEVENAGE NEW TOWN
Stevenage New Town was the first, post World War II, to be designated in November 1946. This was not popular with the local inhabitants and one morning the (old) railway station was renamed ‘Silkingrad’ in protest. (Lewis Silkin was the then Minister of Town and Country Planning).

NH7.1 JOHN LEWIS DISTRIBUTION WAREHOUSE
Gunnels Wood Road, Stevenage
TL226244
The Spanish engineer and architect Félix Candela collaborated with local architects Yorke, Rosenberg and Mardall to produce this remarkable industrial building in 1962-3. The 142 metre long warehouse is entirely roofed with hyperbolic paraboloids of board-marked reinforced concrete supported on square columns. Each unit resembles an inside-out umbrella and is tilted to create a string of north facing rooflights between each of the 11 rows and 15 shells. All 28 John Lewis stores are supplied by road from this depot, handy for the A1. Candela’s only work in Europe. Listed grade II.

NH7.2 TOWN SQUARE, CLOCK TOWER AND RAISED POOL
Town Square, Stevenage, Hertfordshire
TL237241
Stevenage was the first new-town centre in England to be pedestrian-only, being modelled on the Lijnbaan in Rotterdam. Clock Tower, by Leonard Vincent, commemorates opening of town centre by HM Queen Elizabeth II in April 1959. It is an open concrete frame with black granite cladding and incorporates a monument to Lewis Silkin. Listed grade II. Close by is sculpture, Joy Ride, by Franta Belisky - a mother and child symbolising the new town.

NH8 WALKERN MILL
High Street, Walkern
TL286254
Four-storey brick flour mills, 1881, with Mansard roof, converted to housing. Name C D Pearman and date on gable.

NH9 VILLAGE PUMP
Watton-at-Stone
TL301194
Hertfordshire has a fine selection of village pumps. This one has an unusually bulbous and decorative barrel under a canopy.

NH10 WINDMILL
Weston
TL253306
Converted tower mill, without sails or cap.

NH11 NINE WELLS WATERCRESS BEDS
Lilley Bottom Road, Whitwell
TL179213
Watercress beds run by the Sanson family, supplied with water from eleven artesian wells, and still in production. There are sheds for packing and storage, and a narrow gauge railway.
SA1 HYDE MILLS
East Hyde
TL132169
Important survival of water-powered corn mill, with steam roller-mill extension to west, listed grade II*. 1835 building, partly in Bedfordshire, contains iron breast-shot waterwheel, 14 feet in diameter, 8 feet 6 inches wide, and three pairs of stones. Late C19th extension to west still has two single-cylinder horizontal steam engines, by Nathan Varty of Royston Iron Works, in situ, though other machinery has been removed. The red-brick mills, with slated lucans, form part of a complex of farm buildings.

SA2 RAILWAY BRIDGE
Southdown Road, Harpenden
TL141134
Unusual skew arched bridge carrying former MidR main line over road, built in red brick, 1868, and extended to east in blue engineering brick, 1892.

SA3 REDBOURNBURY MILL
TL118108
Eighteenth century, three-storey mill building, listed grade II*, with two-storey mill house alongside. Both are built of red brick, the mill with steeply-pitched slate roof, the house with a shallower tiled roof. The overshot wheel, of cast- and wrought-iron, is 9ft 6ins in diameter and 7ft 6ins wide. The stones are unusually driven from a layshaft on ground floor. A working Crossley oil engine is on site.

SA4.1 ABBEY MILLS
St Albans
TL142068
Former cornmill site, converted to silk mill in early nineteenth century by John Woollam. Two blocks, listed grade II, converted to housing.

SA4.2 BEAUMONT WORKS
3 Sutton Road, St Albans
TL167071
Central five bays built 1900 for Nicholson & Co, coat manufacturers, who moved here from Manchester. Note N & C monograms on "Dutch" gables and decorative glazed tile door surround. Extended at various times, the factory, listed grade II, closed in 1970s.

right: NH6 Steam Mill, near railway station, Royston
Photo: Dr R J M Carr
SA4.3 CORN EXCHANGE
Market Place, St Albans
TL147071
Classical style of 1857 by John Murray, now shops. Nearby is clock tower, 1403-12, restored 1864. From 1808 to 1814 the tower was by an Admiralty shutter telegraph on the Yarmouth line.

SA4.4 ELECTRICITY WORKS
Campfield Road, St Albans
TL163070
Former Northmet power station, 1908. Built as refuse destructor – generator station, later converted to oil engines, closed 1929.

SA4.5 HAT FACTORIES
Victoria Street, St Albans
TL150071
No 53, three-storey, red brick, was straw hat factory of Edward Scott. Second Scott factory, now offices, diagonally opposite. Between Marlborough Road and Lattimore Road was hat factory of E Day (St Albans) Ltd, now flats (TL151071). Behind 36 Lattimore Road, is former hat factory of W Macqueen & Co, (TL152070) best seen from Inkerman Road.

SA4.6 KINGSBURY MILL
St Albans
TL138075
The origins of the present buildings at Kingsbury Mill, on the Gorehambury Estate, are thought to be sixteenth century, but the facade is eighteenth century. It is a two-storey mill, with bin floor in the loft. Internal undershot iron waterwheel, 12-foot diameter by 6 feet wide, iron pit wheel and wallower, and wooden great spur wheel. There are three pairs of stones. Machinery includes a bean kibbler and an oat crusher. Milling ceased in 1936. Listed grade II.

SA4.7 NEWSAGENT'S SHOP
25 Market Place, St Albans
TL147072
W. H. Smith's newsagents shop, still fully functioning, with pre World War II period shop front of a type once ubiquitous. Formerly sixteenth century Town Hall, listed grade II.

SA4.8 RAILWAY STATION
London Road, St Albans
TL156065
Former GNR station of 1865, on branch from Hatfield, now a business centre. Listed grade II. MidR main line is carried over trackbed on skew arch bridge.

SA4.9 SHIP TESTING TANK BUILDING
222 London Road, St Albans
TL156063
Behind facade, at lower ground level, is long narrow building, 1910, which once housed Ship Model Experiment Tank of Vickers Shipbuilding Group Ltd. Closed 1980 and now in multiple occupation.
SA4.10 ST ALBANS SOUTH SIGNAL BOX
South of St Albans City station
TL155070
All timber MidR signal box of 1892, with 44-lever Tumbler frame, now disused, listed grade II.

SA4.11 ST ALBANS CITY MUSEUM
Hatfield Road
TL151075
Local history museum, founded 1899, includes important Salaman collection of trade tools. Nearby is a cast iron mile marker. Opposite, Marlborough Buildings, almshouses begun 1733. In Upper Marlborough Road is a Wimbledon Column for sewer ventilation.

SA5 NEW BARNES MILL
Cottonmill Lane, Sopwell, St Albans
TL155054
Also known as Cowley Mill and Sopwell Mill, thought to date from the seventeenth century, but the present group of buildings date from a reconstruction in the 1890s. Roller mill until 1957, now a business centre. Turbine installed 1890s; watercourses remain.

SA6 NAPSBURY HOSPITAL
London Colney
TL166039
Built as a Middlesex County Asylum, now a housing development called Napsbury Park. Prominent is tall, red-brick water tower.

SA7 FORMER AERODROME
London Colney
TL155035
Radlett Aerodrome dates from 1930 when Handley Page moved manufacture here from Cricklewood. Now gravel workings and warehousing.

SA8 SEVEN ARCH BRIDGE
London Colney
TL182037
Part of the Holyhead Road, turnpiked in 1715. Bridge, built 1760, carries the road across the River Colne on seven, semicircular brick arches, of varying span. Cantilevered concrete footpaths added 1997/8.
THREE RIVERS

TR1 PRINCE ALBERT COTTAGES
Tibbs Hill Road, Abbots Langley
TL098019
Pair of model cottages in neo-Jacobean style, by Henry Roberts, for Prince Albert at Great Exhibition, moved here 1856. A replica pair stand on Cowbridge, Hertford (TL323127).

TR2 WATER-POWERED PUMP
Chorleywood
TQ039975
Small pump house, built over a channel from the River Chess, contains a small waterwheel, and a three-throw pump, by John Warner & Sons of Cripplegate, London. It pumped water to nearby Chorleywood House. In the grounds of the house a small rectangular building was a powerhouse. At one end there is a capped well with a canopy.

TR3 HERONSGATE
TQ0294
This was the first Chartist village, set up in 1846/7 by Fergus O'Connor's Cooperative Land Company, and originally called O'Connoville. Thirty-five cottages each had up to four acres of land, with narrow lanes for access. The company was deemed illegal and dissolved by Act of Parliament in 1851. O'Connor died insane.

TR4 CROXLEY GREEN WINDMILL
Windmill Drive, Croxley Green
TQ067953
Brick tower mill now converted to dwelling.

TR5 HAREFIELD COPPERMILL
Coppermill Lane, Harefield
TQ041911
On county boundary, former late-eighteenth century rolling mill of Company of the Mines Royal, where copper sheathing for ships was made. Later used by Bell's Asbestos Co, now converted to housing.

TR6 WATER-POWERED PUMP
Hunton Bridge
TL083000
Hidden in undergrowth beside towpath are remains of a waterwheel which pumped water to nearby Langlebury. Wooden waterwheel has gone, leaving the axle and an iron pit wheel amidst remnants of the pump house, a corrugated iron structure.

TR7 BATCHWORTH LOCKS
London Road, Rickmansworth
TQ063940
Around Batchworth are complex watercourses at confluence of rivers Colne, Gade and Chess, with water-filled gravel pits and GUC. Two adjacent locks on the canal, one leads to Chess Basin. Canalside buildings include small museum, with a narrowboat moored alongside. To south former Batchworth Mills absorbed into waterworks.

TR8 SCOTSBRIDGE MILL
Park Road, Rickmansworth
TQ069951
Formerly a corn mill, a fulling mill and a papermill.

left: TR3 Heronsgate, first Chartist village
above: TR3 O'Connorville Plaque, Heronsgate
Photos: Dr R J M Carr
Bought by Herbert Ingram, 1849, founder and owner of ILN. Paper for ILN made here and at Loudwater Mill, further upstream on River Chess. Later run by William McMurray, until closed, 1885,

following pollution of the river. During twentieth century the mill was associated, firstly with photography, then with film when MGM made cellulose acetate for cinematic films there. A restaurant since 1988.

**TR9 MOTORWAY BRIDGE**
North Orbital Road, Waterdale
TL119020

One of a number of original Owen Williams road bridges associated with the M1. Takes motorway over the A405 at Junction 6. The motorway has been widened here with a new bridge to the east but the bridge on the west side is original.

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**WA1 BILLET ROAD WORKS**
Billet Road E17
TQ368908

Billet Road Works, on north side of the road is a quite substantial, two-storey red brick building, part of Kimberley Industrial Estate a trading estate set up c1925 with associated local housing.

**WA2 CHINGFORD MILL PUMPING STATION**
Lower Hall Lane E4
TQ362925

Chingford Mill Pumping Station, on River Lea Division, fine Victorian pumping station, 1895 for
ELWW in their characteristic style. Originally equipped with a horizontal quadruple-expansion steam engine by John Cochrane, which pumped drinking water from a borehole. Removed for scrap 1948. The substantial red brick tower was for hygienic removal of pump rods. Nearby is a small half-timbered turbine house, 1891, contained two 36hp Girard turbines of different dates.

**WA3 ELECTRICITY SUB STATION**
East end of Billet Road E17
TQ372999
Electricity sub station, on north side of road. There is a sub station of similar design in Wadham Road at TQ384910. Part of the original infrastructure when this area was first developed.

**WA4 ELECTRICITY SUB STATION**
123 Billet Road E17
TQ368907
On NE corner of Wigton Road E17 is a red-brick, electricity sub station, on south side of the road, with a panel above the door with date and inscription: WUDC 1925. Now in new use, named 'The Old Sub Station'.

**WA5 FERRY LANE PUMPING STATION**
TQ349892
Built by ELWW, water from a well was pumped to Hornsey Wood Reservoir and to Hagger Lane, Woodford, by an inverted vertical, triple expansion engine. There were three Lancashire boilers. The station was electrically lit, power being generated by water turbine, using water from the high pressure mains.

**WA6 GREAVES PUMPING STATION**
Harbet Road, E4
TQ363917
ELWW pumping station of 1903, named after Charles Greaves, engineer to the company 1851-75. Long, low red brick structure in classical style, housed three Tangye vertical reciprocating engines.

Steam plant replaced by electric pumps c1971 when chimney was demolished. Now used by Lea Valley Watersports Centre.

**WA7 GREYHOUND RACING STADIUM**
Chingford Road E4
TQ376912
Walthamstow greyhound racing track has a strong 1930s flavour with Art Deco work in south-west corner. It has an electronic totaliser and dog races are still held here regularly.

**WA8 HAWKER SIDDELEY POWER TRANSFORMERS**
Fulbourne Road, Walthamstow
TQ383903
John Leslie Fuller originally founded the Company 1898, at 9 Red Lion Court, Watling Street, London E C. In 1901 Company moved to Haunch of Venison Yard, Brook Street, four years later relocated to factory in Blackhorse Lane, Walthamstow. By 1915 the business had outgrown the factory and new factory was built on six acres of ground here. Closed 2003.

**WA9 HITCHMAN'S DAIRY**
Walthamstow Avenue E4
TQ372913
Former Hitchman's Dairy, on north side of road (A406), large, prominent white-stuccoed building.

**WA2 Chingford Mill Pumping Station, Lower Hall Lane**
Photo: Dr R J M Carr
1938, with green tiled roof. Became St Ivel, then Unigate, now a Holiday Inn Express with new back extension in yellow brick.

**WA10 INDUSTRIAL ESTATE**  
Argall Way, off Lea Bridge Road E10  
TQ360873  
Cromwell Industrial Estate and Dorma Trading Park. Factories in Staffa Road were already in production by 1935. Many later additions.

**WA11 LEA BRIDGE WATERWORKS**  
TQ357866  
Little remains of this once extensive works of the ELWW. Red brick office behind chunky cast iron fence, on the east side of the River Lea. Nearby is small octagonal building dated 1893, next to a weir. To the east the East London Aqueduct, 1854, now the Lee Valley Pathway. The Middlesex Filter Beds, TQ359865, in Hackney, between the Lea and the Hackney Cut, now a nature reserve, still surrounded by original boundary wall.

**WA12 LEA MARSHES**  
TQ352875  
Site of A V Roe's flight of 1909.

**WA13 LEA VALLEY VIADUCT**  
North Circular Road  
TQ360923  
Lea Valley viaduct for the North Circular Road, originally 1924-27 by Sir Owen Williams but modified to suit present-day heavy traffic requirements in the late 1960s, a significant civil engineering work by a major 20th century engineer.

**WA14 LEYTON SUB-STATION**  
Lea Bridge Road  
TQ364872  
London Borough of Leyton electricity sub-station. Edwardian classical style, ashlar masonry, on south side of road.

*below: WA15 Low Hall Depot, engine house  
below right: German Tramcar, Low Hall Depot  
Photos: Dr R J M Carr*
WA17 SHADBOLT WORKS
Lea Valley Viaduct E4
TQ363921
Shadbolt veneer works and hardwood store, white reinforced concrete factory built late 1940s, characteristic of industrial buildings of period. Shadbolt's supply wood panelling for company boardrooms, fireproof doors etc., redolent of the Lea Valley timber trade. F R Shadbolt and Sons Ltd founded in London in 1884 and still a family business.

WA18 FORMER TOLL BRIDGE
Lower Hall Lane E4
TQ362925
Formerly carried Chingford Hall Lane across original millstream. Payment of tolls to the miller was abolished in 1877. Cast iron plate, MWB, c1905 with warning of load restriction.

WA19 TRAMWAY OFFICES
Chingford Road, Walthamstow E17
TQ373902
Offices of Walthamstow Urban District Council's tramways, 1905. Adjacent tram depot demolished.

WA20 TYCO FACTORY
Billet Road E17
TQ368909
1930s, Art Deco in white, adjacent to Kimberley Trading Estate.

WA21 WADHAM ROAD VIADUCT - NORTH CIRCULAR ROAD
Wadham Road E17
TQ384910
Surviving original work by Sir Owen Williams, parts of 1920s North Circular Road survive here as a slip road for local traffic. Raked pier supports with roughcast surface treatment show Williams' original approach to reinforced concrete.

WA22 THE COPPERMILL IN 1966
Photo: Dr Denis Smith

WA22 WALTHAMSTOW COPPERMILL
Coppermill Lane, E17
TQ351883
The British Copper Company formed in 1807 acquired former oil mill on this site, 1808. Copper was smelted at Llandore near Swansea in South Wales and ingots brought here by sea and the Lea Navigation. At this mill they were rolled into sheets for general use and for stamping into coinage tokens. The rolling mill which was driven by a waterwheel ceased work in 1857 and the building was bought by the East London Waterworks Company who used the waterwheel to pump water. They also added the Romanesque tower at the west side to accommodate a Cornish Bull pumping engine, since removed. Outside is ancient wooden crane.

WA23 WALTHAMSTOW RESERVOIRS
TQ 347878 to TQ 354907
Under an Act of 1853 and later Acts, ELWW built two series of reservoirs on Walthamstow and Tottenham Marshes. High level group, supplied by a high level culvert from Chingford, are High Maynard (1870), No. 4, No. 5, Racecourse and Warwick East (1897). Water from Racecourse fed into the East London Aqueduct leading to Lea Bridge Waterworks. Low level group was supplied from Chingford Mill via a low level aqueduct. These were Low Maynard (1870), No. 1, Nos. 2 and 3, which were interconnected, and Warwick West (1897). Water from No. 3 also fed the East London Aqueduct. Further north, the Lockwood Reservoir, partly in Haringey, was built just before takeover of the company by the MWB.
**WF1 BUSHEY ARCHES**

Oxhey

TQ118955

Five arch brick and stone viaduct built by L&B. Later viaduct alongside was replaced during 1960s electrification of the line. The former Rickmansworth branch curves round to the west on an impressive brick viaduct, 1862, partly hidden by trees, now used by dc line trains.

**WF2 BUSHEY RAILWAY STATION**

Oxhey

TQ118953

Rebuilt by LNWR when the suburban lines to Watford were electrified in the early twentieth century. Note the cupola with locomotive weather vane. The dc system swings away from the main lines at Bushey, to reach Watford High Street and the Croxley Green branch. Lower brick courses of the large electricity sub-station survive in the vee of the lines, a new sub-station having been built within the walls.

**WF3 GARSTON BUS GARAGE**

St Albans Road, Garston

TL117003

Bus garage built to standard LT post-war design, in international modern style by T Bilbow. Buses enter past one end of the admin block, fronting street and leave at the other. Between this and the garage behind are workshops. The garage opened 18 June 1952, replacing Leavesden Road garage. The latter building still survives.

**WF4 GASHOLDER**

Lower High Street, Watford

TQ117957

Late example of column-guided gasholder, 1930s, with rolled-steel guide frame with very clean lines.

*left: WF4 Gasholder, Lower High Street, Watford*
**WF5 ODHAMS PRESS**  
North Western Avenue, Watford  
TQ112992  
Former Odhams Press printing works by Owen Williams, 1937, now Mirror Colour Print, in Swedish style with clock tower at north end and murals on east side. On opposite side of avenue, standing back from road at an angle is Sun Chemical, printing inks factory.

**WF6 PUMPING STATION**  
Local Board Road, Watford  
TQ116958  
Small water pumping station built for the Watford Local Board of Health in 1854 and appears to have been extended in 1885. The building is now used by the Pump House Theatre, which also occupies the former foundry buildings next door.

**WF7 RAILWAY VIADUCT**  
TQ0089961  
The MetR crosses the Gade Valley on a four arch brick viaduct with a fifth steel span crossing the Grand Junction Canal. A short distance downstream, the former LNWR Croxley Green branch,
**WF7 LNWR bridge over the Grand Junction Canal, TQ089958**

Now disused, crosses the canal by means of a three span bridge of deep lattice girders.

**WF8 REMBRANDT HOUSE**
Whippendell Road, Watford
TQ 097959

Early 20th century factory has impressively long, brick façade, with decorated central pediment. Behind is single storey shed with northlight roofs. Until about 1930 the building was North’s Magnet factory, then, from 1934, it was used by Rembrandt Photogravure Ltd. It is now in multiple occupation.

**WF9 WATFORD HIGH STREET STATION**
High Street, Watford
TQ114961

Former LNWR station opened in 1913 as part of the Euston to Watford electrification scheme, still retains its ambience.

**WF10 WATFORD METROPOLITAN RAILWAY STATION**
TQ090966

Branch terminus of 1925 designed by MetR’s architect, Charles W Clark (1885-1972), in an Arts and Crafts vernacular style, in keeping with Metroland. Croxley station is in a similar style.

**WF11 OLD WATFORD STATION**
TQ109786

St Albans Road, Watford

Original station building of 1837 now used by repair garage. To north, at rail level, is a loading bank made up of L&B stone sleeper blocks.

**WF12 WATFORD TUNNELS**

Watford Old Tunnel, 1837 by Robert Stephenson, 1 mile 55 yards (fast lines); Watford New Tunnel, 1874, 1 mile 230 yards (slow lines), at both ends there are deep cuttings. The southern tunnel mouth of earlier, west tunnel is listed grade II. On the A41 (TQ 092996), there is a square cross-section brick ventilation shaft supporting original-style smoke vent for the New Tunnel, made necessary by the substantial cutting for the road. Nearby is a ventilation shaft for the Old Tunnel.

**WF2 Bushey Station, Oxhey, clock and locomotive weathervane**

**WF3.5 Mill Green Mill interior, Hatfield: see page 62**
WH1 BROOKMAN'S PARK RADIO TRANSMITTER

East of Great North Road (A1000) TL259050

One of the BBC's earliest radio transmitting stations, with a mast height of 153 metres, opened 14 October 1929, marking an important stage in the history of broadcasting. P. P. Eckersley, engineer, made considerable effort to make the station building aesthetically pleasing. The plan of the Brookman's Park building was subsequently used for eight other BBC regional transmitting stations. Used to transmit Radio 4. It still transmits medium wave Radio 5 Live at 908 kilohertz and a power of 150 kilowatts. Also broadcasts Virgin Radio and Sunrise Radio. Additionally there is a VOR (very high frequency omni-directional radio range) aerial at Brookman's Park for aircraft navigation. VOR was adopted by the International Civil Aviation Authority in 1960.

WH2 FULLING MILL

Fulling Mill Lane, Codicote TL226169

On the River Mimram, former fulling mill site now occupied by an eighteenth century corn mill, with brick ground floor and weatherboarded upper floors, converted to offices.

WH3 HATFIELD NEW TOWN

Hatfield New Town was designated in 1948. It is to the west of Hatfield Old Town which is by the railway station on the original Great North Road (former A1). The new town was planned on the premise that everyone would own a motor car.

WH3.1 'COMET' FLIGHT TEST HANGAR

Former Hatfield Aerodrome, Comet Way, Hatfield, Hertfordshire TL212088

Innovative structure built 1952-54 to test and maintain world's first jet airliner. Made from a new strain-hardened aluminium alloy, HE, which is less prone to oxidation. It has portal-framed trusses with pin joints on welded steel bases and marked an increased sophistication over earlier aluminium structures. At 100 metres long, 14 metres high and with a clear span of 61 metres, it was world's largest permanent aluminium structure. Integral office block, fire station and airport control tower. The five-storey Tower (on the west side) added in 1954. By SMD Engineers Ltd and James M. Monro & Son (architects). The building, listed grade II*, is being converted into a keep-fit centre.

WH3.2 DE HAVILLAND OFFICES

Comet Way (A1001), Hatfield TL218091

Former de Havilland administration and design block, by Geoffrey Monro, 1934, now the Art and Design Department of the University of Hertfordshire. Listed grade II. British Aerospace Hatfield closed in 1993. Hatfield Aerodrome now being re-developed. On west side of A1001 are two white reinforced-concrete buildings from their factory.

WH3.3 HATFIELD ROAD TUNNEL

East of and below Comet Way (A1001), Hatfield, Hertfordshire TL220094 to TL214083

Road Tunnel, 1986, 1,400 metres long, takes A1(M) beneath The Galleria shopping mall. Major civil engineering work built by cut and cover techniques, replacing the last single-carrigeway section of the A1 between London and Newcastle. Ventilated by electric fans in ducts which hang from the roof.
WH3.4 FORMER HATFIELD TECHNICAL COLLEGE
College Lane, off Roehyde Way (A1001), Hatfield
TL215073
Built 1951-1953, architect Howard Robertson. Structural engineers Felix Samuely and partners. There were foundation problems due to swallow holes. College built to serve the then numerous ‘high tech’ industries of the locality. Hatfield Technical College became Hatfield Polytechnic and is now part of the University of Hertfordshire.

WH3.5 MILL GREEN MILL
Bush Hall Lane, Mill Green, Hatfield
TL240097
Working watermill astride the River Lea, run as a museum. Three-storey brick building, 1762, with wooden clasp-arm, low-breastshot waterwheel (a replacement). One of the two pairs of stones is in use. Listed grade II*. Flour is sold locally to make bread. Nearby is a horse trough dated 1889, turbine cottage of 1886, late 1930s sewage pumping station and electric sub station of 1961.

WH3.6 RAILWAY STATION
Great North Road (A1000), Hatfield
TL232088
Small red brick box of a building now in use for station accommodation. Built 1973, architect S. Hardy of British Railways Eastern Region. Serves the Old Town (and Hatfield House).

WH3.7 ROADSIDE HOTEL
Comet Way (A1001), Hatfield
TL213083
Comet Hotel opened 1936 for use by the London Flying Club and de Havillands. Outside, on a pole, is a red painted model of famous, pre-war, record-breaking, twin-engined Comet aeroplane, serving as an inn sign. Architect E. B. Musman (1888-1972) for Benskin Brewery Company of Watford.

WH4 LEMSFORD MILL
TL219124
Water corn mill on Domesday site, rebuilt 1863. Four storeys, lower two in gault brick, upper weatherboarded with lucam. Overshot, internal waterwheel has been removed. Listed grade II.

WH5 PONSBOROUGH RAILWAY TUNNEL
Between Cuffley and Bayford stations
TL309053 to TL315077
Ponsbourne Tunnel, a major civil engineering work completed 1920s by LNER for the Hertford Loop, work having been delayed by WWI. At 2,684 yards it is one of the longest in S E England.

WH6.1 DIGSWELL VIADUCT
Welwyn
TL245148
Impressive brick viaduct of forty arches, each of 30 feet span, carries the East Coast Main Line over the valley of the River Mimram. Opened 1850, engineers Sir William and Joseph Cubitt. Originally faced in red brick but outer skin of blue engineering brick added between 1930 and 1935. Listed grade II. The 100-foot high structure is a bottleneck, bypassed by the GNR’s Hertford Loop line, but still causing problems. Planned widening awaited.

WH6.2 WELWYN TUNNELS
TL248157 to TL252172
GNR tunnels built 1849-50, engineer Sir William & Joseph Cubitt, contractor Thomas Brassey. Welwyn North Tunnel is 1046 yards long, Welwyn South Tunnel 429 yards. The south portal of the South Tunnel, an ashlar semi-circular arch, is listed grade II.

WH6.3 SHREDDED WHEAT FACTORY
Broadwater Road, Welwyn Garden City
TL243129
Shredded wheat was the invention of Henry Perky, an American lawyer. In 1908 a company was formed in England to import and distribute shredded wheat. The Welwyn Garden City factory, by Louis de Soissons, 1925, described as a ‘palace of crystal’. The concrete and glass buildings are a well-known feature of the town. The factory, originally owned by Welgar, was taken over by Nabisco in 1938, and is now owned by Nestlé. It was extended in 1939 and again in 1959. Listed grade II.

![Ponsbourne Tunnel, Welwyn Garden City](Photo: Dr R J M Carr)
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