

= Brill Tramway =

The Brill Tramway , also known as the Quainton Tramway , Wotton Tramway , Oxford & Aylesbury Tramroad and Metropolitan Railway Brill Branch , was a 6 miles ( 9 @. @ 7 km ) rail line in the Aylesbury Vale , Buckinghamshire , England . It was privately built in 1871 by the 3rd Duke of Buckingham as a horse tram line to help transport goods between his lands around Wotton House and the national rail network . Lobbying from the nearby village of Brill led to its extension to Brill and conversion to passenger use in early 1872 . Two locomotives were bought but the line had been built for horses and thus trains travelled at an average speed of 4 miles per hour ( 6 @. @ 4 km / h ) .

In 1883 , the Duke of Buckingham planned to upgrade the route to main line standards and extend the line to Oxford , creating the shortest route between Aylesbury and Oxford . Despite the backing of the wealthy Ferdinand de Rothschild , investors were deterred by costly tunnelling . In 1888 a cheaper scheme was proposed in which the line would be built to a lower standard and avoid tunnelling . In anticipation , the line was named the Oxford & Aylesbury Tramroad .

Although the existing line had been upgraded in 1894 , the extension to Oxford was never built . Instead , operation of the Brill Tramway was taken over by London 's Metropolitan Railway and Brill became one of its two north @-@ western termini . The line was rebuilt in 1910 , and more advanced locomotives were introduced , allowing trains to run faster . The population of the area remained low , and the primary income source remained the carriage of goods to and from farms . Between 1899 and 1910 other lines were built in the area , providing more direct services to London and the north of England . The Brill Tramway went into financial decline .

In 1933 the Metropolitan Railway became the Metropolitan line of London Transport . The Brill Tramway became part of the London Underground , despite Quainton Road being 40 miles ( 64 km ) from London and not underground . London Transport aimed to concentrate on electrification and improvement of passenger services in London and saw little possibility that routes in Buckinghamshire could become viable passenger routes . In 1935 the Brill Tramway closed . The infrastructure was dismantled and sold . Little trace remains other than the former junction station at Quainton Road , now the Buckinghamshire Railway Centre .

= = Background = =

Brill is a small village at the top of the 600 @-@ foot ( 180 m ) high Brill Hill in the Aylesbury Vale in northern Buckinghamshire , 12 miles ( 19 km ) northeast of Oxford , and 45 miles ( 72 km ) north @-@ west of London . It was the only population centre in Bernwood Forest , a forest owned by English monarchs as a hunting ground . Traditionally believed to have been the home of King Lud , Brill Palace was a seat of the Mercian kings , the home of Edward the Confessor , and an occasional residence of the monarchs of England until at least the reign of Henry III ( 1216 ? 1272 ) . Although a centre for manufacture of pottery and bricks , Brill was a long way from major roads or rivers , and separated by hills from Oxford . It remained small and isolated . In the 1861 census it had a population of 1 @, @ 300 .

= = = Wotton House and the Dukes of Buckingham = = =

Richard Plantagenet Campbell Temple @-@ Nugent @-@ Brydges @-@ Chandos @-@ Grenville , the only son of Richard Plantagenet Temple @-@ Nugent @-@ Brydges @-@ Chandos @-@ Grenville , 2nd Duke of Buckingham and Chandos , was born on 10 September 1823 . By the mid @-@ 19th century the family was in financial difficulty . The family 's estates and their London home at Buckingham House ( No.91 Pall Mall ) were sold and the family seat of Stowe House seized by bailiffs as security and its contents sold . Over 40 @, @ 000 acres ( 16 @, @ 200 ha ) of the family 's 55 @, @ 000 @-@ acre ( 22 @, @ 300 ha ) estates were sold to meet debts .

The only property in the control of the Grenville family was the small ancestral home of Wotton House and its associated lands around Wotton Underwood near Brill . The Grenvilles looked for

ways to maximise profits from their remaining farmland around Wotton , and to seek opportunities in heavy industry and engineering . Richard Plantagenet Campbell Temple @-@ Nugent @-@ Brydges @-@ Chandos @-@ Grenville ( titled Marquess of Chandos following the death of his grandfather Richard Temple @-@ Nugent @-@ Brydges @-@ Chandos @-@ Grenville , 1st Duke of Buckingham and Chandos in 1839 ) was appointed chairman of the London and North Western Railway ( LNWR ) on 27 May 1857 . After the death of his father on 29 July 1861 he became 3rd Duke of Buckingham and Chandos , and resigned from chairmanship of the LNWR , returning to Wotton House to manage the family 's estates . His efforts to pay debts incurred by his father earned praise from Prime Minister Benjamin Disraeli , and in 1875 he was appointed Governor of Madras , serving until 1880 .

= = = Early railways in the Aylesbury Vale = = =

On 15 June 1839 entrepreneur and former Member of Parliament for Buckingham , Sir Harry Verney , 2nd Baronet , opened the Aylesbury Railway . Built under the direction of Robert Stephenson , it connected the London and Birmingham Railway 's Cheddington railway station on the West Coast Main Line to Aylesbury High Street railway station in eastern Aylesbury , the first station in the Aylesbury Vale . On 1 October 1863 the Wycombe Railway opened a branch from Princes Risborough railway station to Aylesbury railway station on the western side of Aylesbury , leaving Aylesbury as the terminus of two small and unconnected branch lines .

Meanwhile , north of Aylesbury the Buckinghamshire Railway was being built by Sir Harry Verney . The scheme consisted of a line running southwest to northeast from Oxford to Bletchley and a second southeast from Brackley via Buckingham to join the Oxford ? Bletchley line halfway along its length . The first section opened on 1 May 1850 , and the whole on 20 May 1851 . The Buckinghamshire Railway intended to extend the line south to the station at Aylesbury but the extension was not built .

On 6 August 1860 the Aylesbury and Buckingham Railway , with the 3rd Duke ( then still Marquess of Chandos ) as chairman and Sir Harry Verney as deputy chairman , was incorporated by Act of Parliament to connect the Buckinghamshire Railway ( now operated by the LNWR ) to Aylesbury . The 2nd Duke ensured the new route ran via Quainton , near his estates around Wotton , instead of a more direct route via Pitchcott . Beset by financial difficulties , the line took over eight years to build , eventually opening on 23 September 1868 . The new line was connected to the Wycombe Railway 's Aylesbury station , and joined the Buckinghamshire Railway where the Oxford ? Bletchley line and the line to Buckingham met . A junction station was built . With no nearby town after which to name the new station , it was named Verney Junction railway station after Sir Harry . Aylesbury now had railway lines to the east , north and southwest , but no line southeast towards London and the Channel ports .

= = Construction and early operations = =

With a railway near the border of Wotton House estate , the 3rd Duke decided to build a small @-@ scale agricultural railway to connect the estate to the railway . His intended route ran on his own land other than a small stretch west of the Aylesbury and Buckingham line . This land was owned by the Winwood Charity Trust , an operator of almshouses in Quainton of which the Duke was a trustee . The Duke agreed to pay an annual rent of £ 12 ( about £ 1 @,@ 000 in 2016 ) , in return for permission to run trains . With the consent of the Winwood Charity the route did not require Parliamentary approval , and construction could begin immediately .

The Duke envisaged a tramway west from Quainton Road railway station across his Wotton estate . The line was intended for transport of construction materials and agricultural produce and not for passengers . It would not have a junction with the Aylesbury and Buckingham railway but would have its own station at Quainton Road at a right angle to the A & B 's line . A turntable at the end of the tramway would link to a spur from the A & B 's line . The line was to run roughly southwest from Quainton Road to Wotton near Wotton Underwood . Just west of the station at Wotton the line split .

One section would run west to Wood Siding near Brill . A short stub called Church Siding would run northwest into Wotton Underwood itself , terminating near the parish church , and a 1 mile 57 chains ( 2 @. @ 8 km ) siding would run north to a coal siding near Kingswood . The branch to Kingswood was routed to pass a pond , to allow the horses working the line to drink .

Ralph Augustus Jones was appointed Manager of the project , and construction began on 8 September 1870 . Twenty labourers from the Wotton estate who would otherwise have been unemployed following harvest were employed six days a week to build the line , each paid 11 s per week . They carried out all the construction except laying the track , which was by the specialists , Lawford & Houghton . The line was built using the cheapest materials and winding around hills to avoid expensive earthworks . Ballast was a mix of burnt clay and ash . The stations were crude earth banks 6 inches ( 150 mm ) high , held in place by wooden planks . As the Duke intended that the line be worked only by horse @-@ drawn carriages , the line was built with longitudinal sleepers to reduce the risk of horses tripping . A 13 @-@ foot ( 4 m ) diameter turntable was installed at Quainton Road to link the tramway to the Aylesbury and Buckingham Railway .

= = = Opening = = =

On 1 April 1871 the section between Quainton Road and Wotton was formally opened by the Duke of Buckingham in a ceremony in which coal from the first goods wagon to arrive at Wotton was distributed to the poor . At its opening the line was unnamed , although it was referred to as " The Quainton Tramway " in internal correspondence . The extension from Wotton to Wood Siding was complete by 17 June 1871 ; the opening date of the northern branch to Kingswood is not recorded , but it was not fully open in February 1873 . The London and North Western Railway began a dedicated service from Quainton Road , with three vans a week of milk collected from the Wotton estate shipped to the London terminus at Broad Street . The only passengers were estate employees and people accompanying livestock .

The Duke and Jones intended to run no more than one train on each section of the line so the line was not built with passing loops or signalling . When more than one horse @-@ drawn train or locomotive was in operation , the Tramway operated a token system using colour @-@ coded staffs to ensure only one train could be on a section . Drivers between Quainton Road and Wotton carried a blue staff , those on west of Wotton and the Kingswood siding a red staff .

On 26 August 1871 an excursion ran from Wood Siding to London hauled by the Great Western Railway ( GWR ) . It carried around 150 people , for a total of 1051 ? 2 passenger fares ( with each child counted as half an adult ) , and was drawn by horses between Wood Siding and Quainton Road and by locomotive from Quainton Road to Aylesbury where the carriages were attached to the 7 @. @ 30 am GWR service via Princes Risborough to London , arriving at 10 @. @ 00 am . The experiment was not a success . Sharp overhanging branches posed a danger to passengers and had to be cut back in the week before the excursion . The day was wet and ticket sales were lower than expected . The return from London to Quainton Road was delayed in Slough , and the excursion arrived back at Wood Siding at 2 @. @ 00 am .

The surveyors designing the line had worked on the assumption that the wagons would have a load on each wheel of 2 1 ? 2 long tons ( 2 @. @ 54 t ; 2 @. @ 80 short tons ) and had designed the line accordingly . As it turned out , the four @-@ wheeled wagons used had an average weight of 3 1 ? 2 long tons ( 3 @. @ 56 t ; 3 @. @ 92 short tons ) and each carried 6 ? 7 long tons ( 6 @. @ 10 ? 7 @. @ 11 t ; 6 @. @ 72 ? 7 @. @ 84 short tons ) of goods , meaning this limit was regularly exceeded . The coal wagons used on the line weighed 5 long tons ( 5 @. @ 08 t ; 5 @. @ 60 short tons ) each and carried 10 long tons ( 10 @. @ 16 t ; 11 @. @ 20 short tons ) of coal , meaning a load on each wheel of 3 3 ? 4 long tons ( 3 @. @ 81 t ; 4 @. @ 20 short tons ) .

As well as damaging the track the loads strained the horses , and soon the line began to suffer with derailments , particularly in wet weather . On 20 October 1871 Jones wrote to the Duke that " The traffic is now becoming so heavy that I would , most respectfully , venture to ask your Grace to consider the subject as to whether an Engine would not be the least expensive and most efficient power to work it . "

= = = Extension to Brill and conversion to steam = = =

In late 1871 residents of Brill petitioned the Duke to extend the route to Brill and open a passenger service . The Duke agreed ; it is likely he had already planned passenger services to Brill , as correspondence from early 1871 mentions passenger facilities at " the Brill terminus " . In January 1872 a scheduled passenger timetable was published and the line was named the " Wotton Tramway " . ( Although officially named the " Wotton Tramway " , it was commonly known as the " Brill Tramway " from the time of its conversion to passenger use . ) The new terminus of Brill railway station , at the foot of Brill Hill approximately 3 ½ mile ( 1 @. @ 2 km ) north of the town , opened in March 1872 . Although it was now a passenger railway , goods traffic continued to be the primary purpose of the line . The line was heavily used to ship bricks from the brickworks around Brill , and cattle and milk from farms on the Wotton estate . By 1875 the line was carrying around 40 @, @ 000 imperial gallons ( 180 @, @ 000 l ; 48 @, @ 000 US gal ) of milk each year . The inbound delivery of linseed cake to the dairy farms and of coal to the area 's buildings were also important . The line began to carry manure from London to the area 's farms , carrying 3 @, @ 200 long tons ( 3 @, @ 300 t ; 3 @, @ 600 short tons ) in 1872 . The tramway also opened a cartage business to handle the onward shipment of goods and parcels unloaded at Brill and Wotton stations .

With horses unable to cope , Jones and the Duke decided to convert at least part of the railway for locomotives . The lightly laid track with longitudinal sleepers limited them to 9 long tons ( 9 @. @ 14 t ; 10 @. @ 08 short tons ) , and it was thus necessary to use the lightest locomotives possible . Two traction engines converted for railway use were bought from Aveling and Porter for £ 398 ( about £ 32 @, @ 000 in 2016 ) each . They were chosen for weight and reliability , and had a top speed on the level of 8 miles per hour ( 13 km / h ) . They took 95 ½ minutes between Brill and Quainton Road , an average of 4 miles per hour ( 6 @. @ 4 km / h ) . With an unusual configuration in which a flywheel drove chains which in turn drove the wheels , the locomotives were noisy and were nicknamed " Old Chainey " by locals .

The first of the new locomotives , given serial number 807 by Aveling and Porter and numbered 1 by the Tramway , was delivered to Wotton station on 27 January 1872 . On the day of its delivery , the now @-@ redundant horses had been sent away . Nobody at Wotton could operate the locomotive so a horse had to be hired from Aylesbury until the driver arrived . After the delivery of the second locomotive on 7 September 1872 , all passenger services were drawn by locomotive except on Thursdays , when locomotives were replaced by horses to allow for maintenance . The line carried 104 passengers in January 1872 , rising to 224 in April , and 456 in August 1872 .

With steam came the need for water . Plans to dig a well near Wotton came to nothing , and the Duke 's expedient of drawing water from a pond near Quainton Road did not impress the pond 's owner . By March 1872 Jones recorded that " The party to whom the pond near the Quainton Station belongs is making complaints about our having water and I expect he will be using force to prevent our getting any " . A wooden water tower was built at Brill station , and a large water tower known as the Black Tank was built in the fork of the main line and Church Siding .

While the engines proved adequate , they were slow . On 6 February 1872 , Jones timed one as taking 41 minutes to travel roughly 2 miles ( 3 @. @ 2 km ) from Quainton Road to Wotton hauling 42 tons ( 43 t ) . They were also low @-@ powered , and when pulling a heavy load their front wheels would lift off the track . The Duke 's cost @-@ cutting led to poor maintenance of track and equipment , and the service was often interrupted by derailments and accidents .

In 1876 the Aylesbury and Buckingham Railway raised its prices for coal haulage . All coal hauled on the Tramway needed to pass along the A & BR from Verney Junction or Aylesbury and Jones had to raise prices to cover the surcharge or keep prices stable despite the loss of profits . Road @-@ hauled coal from Bicester was already undercutting the Tramway and the unreliable engines had given the Tramway a poor reputation . Jones kept prices fixed and absorb the increased costs , wrecking the Tramway 's already declining business .

In 1873 the 3rd Duke attempted to have the Wotton Tramway recognised as a railway , and William Yolland inspected the line in April 1873 . The Railway Regulation Act 1844 defined minimum

standards of travel , one of which was that the trains travel at an average of 12 miles per hour ( 19 km / h ) , which the Aveling and Porter locomotives could not manage . None of the stopping places had adequate station buildings , and the line had no signals . Yolland permitted the line to continue as a tramway , but refused to recognise it as a railway .

= = Improvement and diversification = =

By the mid 1870s the slow locomotives and their unreliability and inability to handle heavy loads were major problems . In 1874 Ferdinand de Rothschild bought a 2 700 acre ( 1 100 ha ) site near Waddesdon station from John Spencer Churchill , 7th Duke of Marlborough , for his planned Waddesdon Manor . Jones and the Duke recognised that construction would increase the haulage of heavy goods and that the engines would not cope .

Engineer William Gordon Bagnall had established the locomotive firm of W. G. Bagnall in 1875 . Bagnall wrote to the Duke offering to hire his first locomotive for trials . On 18 December 1876 the locomotive , Buckingham , was delivered . It entered service on 1 January 1877 , mainly on the steep section of the line between Wotton and Brill . Although Jones was unhappy with some aspects of Buckingham , he recognised the improvement and ordered a locomotive from Bagnall for £ 640 ( about £ 54 300 in 2016 ) . Wotton was delivered on 28 December 1877 and Buckingham was returned to Bagnall in February 1878 .

Buckingham and Wotton were more reliable than the Aveling and Porter engines . With modern locomotives on the Brill ? Quainton Road route ( the Kingswood branch generally remained worked by horses , and occasionally by the Aveling and Porter engines ) , traffic rose . The figure for milk traffic rose from 40 000 gallons carried in 1875 to 58 000 gallons ( 260 000 l ; 70 000 US gal ) in 1879 , and in 1877 the Tramway carried 20 994 tons ( 21 331 t ) of goods . In early 1877 it appeared on Bradshaw maps and from May 1882 Bradshaw listed the timetable .

Despite frequent derailments , low speed meant Wotton Tramway had a good safety record . The locomotives occasionally ran over stray sheep , and on 12 September 1888 sparks from one of the Aveling and Porter engines blew back into one of the train 's cattle trucks , igniting the straw bedding and badly burning two cows . The line had one serious accident , in which Ellen Maria Nickalls , a servant at Wotton House , was struck by a locomotive near Church Siding and killed . The coroner returned a verdict of accidental death , absolving driver James Challis .

= = = Passenger services = = =

Jones increased scheduled passenger journeys from two to three each day in each direction . With locomotives generally occupied with goods , many passenger services were drawn by horse . While the increased passenger journeys boosted revenues , the Tramway no longer owned enough horses and had to hire them . By 1881 the passenger service was losing £ 11 ( about £ 1 000 in 2016 ) a month , although reduced use of locomotives lowered maintenance costs . Although reliability had improved , services were still slow . Horse drawn passenger services took 60 ? 70 minutes to travel 6 miles ( 9 . 7 km ) between Quainton Road and Brill . The locomotive hauled mixed trains , with frequent stops to load and unload , were timetabled at 11 ? 2 to 23 ? 4 hours to make the same journey , slower than walking .

Jones hoped to increase passenger revenue by promoting Brill as a spa . The chalybeate springs of Dorton Spa outside Brill were known for supposed healing powers , and a resort had been built around the Spa in the 1830s , featuring a modern pump house and eight baths , set in 12 acres ( 4 9 ha ) of parkland . Despite the redevelopment and the building of modern hotels in Brill , Dorton Spa was unfashionable and by the late 19th century was little used . Jones and the Spa 's owners hoped Queen Victoria would visit during her 1890 stay at Waddesdon Manor and thus boost Brill as a spa town . Although such a visit was arranged , Victoria changed her mind and visited the spa at Cheltenham instead . The spa traffic never materialised .

### == Waddesdon Manor ==

In 1876 Ferdinand de Rothschild began work on Waddesdon Manor , a short distance south of the Tramway 's station at Waddesdon ( later renamed Waddesdon Road ) . The top of Lodge Hill , a landmark , was levelled to provide a site and sloping drives were cut into the hill to provide access to the construction site . Transport of materials was by horse , but the contractors had to get enormous stone blocks up the hill . Rothschild 's contractors built a line , known as the Winchendon Branch , which turned off the Tramway between Waddesdon and Westcott stations and ran south to the foot of Lodge Hill . From there a cable tram ran on narrow gauge rails up the hill to a gully close to the building site . Materials were hauled along the cable tramway in tubs by a steam @-@ powered winch . The Winchendon Branch was hastily and cheaply built ; after one of the Tramway 's locomotives derailed there on 5 July 1876 Jones refused to allow his engines on it , and from then on materials were hauled along the branch by horses .

The building of Waddesdon Manor generated huge business for the Tramway . Large numbers of bricks from Poore 's Brickworks at Brill were shipped . By July 1877 the entire output of the brickworks was going to supply the Waddesdon Manor works , with 25 @,@ 000 bricks a week being used . Additional bricks were also shipped via Quainton Road , along with 7 @,@ 000 tons ( 7 @,@ 100 t ) of Bath Stone from Corsham . The manor also required power and in 1883 a gasworks was built to the west . A siding from Westcott station ran south to the gasworks , to carry coal . Waddesdon Manor chose not to use the Tramway for supplying coal to the gasworks and the siding was abandoned in 1886 .

Waddesdon Manor was complete in 1889 , 13 years after construction began . The Winchendon Branch closed and the track was removed . The gasworks remained operational , although supplied by road , until its closure during the coal shortage of 1916 . It was demolished shortly afterwards . The track of the disused siding remained until at least 1916 .

### == Brill Brick and Tile Works ==

Although Poore 's Brickworks was well established , Jones believed there was potential profit in the Duke of Buckingham 's capitalising on his access to a railway line by becoming directly involved in brickmaking . Trials with Brill clay in 1883 proved positive , and in April 1885 Jones sought estimates for machinery and labour necessary to produce 10 million bricks a year . It was decided that 5 million bricks per year was a realistic figure , with bricks to be manufactured in kilns between Brill and Wood Siding stations and shipped down the Tramway to the national network . Progress was slow and obstructed by the local authority .

Few records survive of the Brill Brick and Tile Works , as it came to be called , but it was operational by 1895 . Jones ( 1974 ) says the siding to the brickworks opened with the extension to Brill , implying that Brill Brick and Tile Works existed in early 1872 . This is almost certainly incorrect ; no mention of the sidings is made in the Duke of Buckingham 's correspondence before 1887 and no reference to the Brill Brick and Tile Works exists in any source earlier than 1895 . The bricks used to build Waddesdon Manor had to be shipped by road from Poore 's to Brill or along the Aylesbury and Buckingham Railway from further afield before being sent down the Tramway to the site , implying there was no works capable of making high numbers of bricks along the Tramway .

Brill Brick and Tile Works could not compete with the larger and better @-@ connected brickworks at Calvert and declined . The brickworks finally closed in the early 20th century . The building was taken over by the W. E. Fenemore workshop , making hay loaders , before being converted into a timber yard in the 1920s .

### == Relations with the Aylesbury and Buckingham Railway ==

Although the introduction of the Bagnall locomotives and the traffic generated by the works at Waddesdon Manor had boosted the route 's fortunes , it remained in serious financial difficulty . The only connection with the national railway network was by way of the turntable at Quainton Road .

The 3rd Duke of Buckingham chaired the Aylesbury and Buckingham Railway but its management regarded the Tramway as a nuisance . In the 1870s it charged disproportionately high fees for through traffic between the Tramway and the main line with the intention of forcing the Tramway out of business . Relations deteriorated between Jones and J. G. Rowe , Secretary and Traffic Manager of the A & B. The A & B 's trains at Quainton Road would miss connections with the Tramway , causing milk shipped to Quainton to become unsellable , to the extent that Jones began unloading milk at Waddesdon and shipping it to Aylesbury by road . Although Jones asked the Duke to intervene relations remained poor ; in 1888 Rowe blocked the telegraph along the Tramway , and in one meeting Jones and Rowe threatened violence .

Jones sought legal advice and was told that the Duke would probably win a legal action against the A & BR . The A & BR was in such a precarious financial position that any successful legal action against them would likely have forced the line through Quainton Road to close , severing the Tramway 's connection with the national network altogether . Meanwhile , local dairy farmers began to switch to beef and butter , causing a drop in milk transport . From its peak of 20 @, @ 994 tons carried in 1877 , goods traffic fell in each of the next four years , dropping to 9 @, @ 139 tons ( 9 @, @ 286 t ) in 1881 .

Many of the passengers using the Tramway continued their journey by way of the A & BR line ; in 1885 , 5 @, @ 192 passengers changed trains between the A & BR and the Tramway at Quainton Road . Jones suggested that the A & BR subsidise the Tramway 's service to the sum of £ 25 ( about £ 2 @, @ 400 in 2016 ) per month to allow passenger services to continue , but the A & BR agreed to pay only £ 5 ( about £ 500 in 2016 ) per month . By the mid @-@ 1880s the Tramway was finding it difficult to cover the operating expenses of either goods or passenger operations .

= = Oxford extension schemes = =

= = = Oxford , Aylesbury and Metropolitan Junction Railway Company = = =

Euston railway station opened in 1837 , the first railway station connecting London with the industrial heartlands of the West Midlands and Lancashire . Railways were banned by a Parliamentary commission from operating in London itself and the station was built on the northern boundary . Other termini north of London followed at Paddington ( 1838 ) , Bishopsgate ( 1840 ) , Fenchurch Street ( 1841 ) , King 's Cross ( 1852 ) and St Pancras ( 1868 ) . All were outside the built @-@ up area , making them inconvenient .

Charles Pearson ( 1793 ? 1862 ) had proposed an underground railway connecting the City of London with the main line rail termini in around 1840 . In 1854 he commissioned the first traffic survey , determining that each day 200 @, @ 000 walked into the City , 44 @, @ 000 travelled by omnibus , and 26 @, @ 000 in private carriages . A Parliamentary Commission backed Pearson 's proposal over other schemes . Despite concerns about vibration causing subsidence of buildings , the problems of compensating the many thousands whose homes were destroyed during digging of the tunnel , and fears that the tunnelling might break into Hell , construction began in 1860 . On 9 January 1863 the line opened as the Metropolitan Railway ( MR ) , the world 's first underground passenger railway .

The MR grew steadily , extending its own services and acquiring other local railways north and west of London . In 1872 Edward Watkin ( 1819 ? 1901 ) was appointed Chairman . A director of many railway companies , he wanted to unify a string of companies to create a single line from Manchester via London to an intended Channel Tunnel and on to France . In 1873 Watkin negotiated to take control of the Aylesbury and Buckingham Railway and the section of the former Buckinghamshire Railway north from Verney Junction to Buckingham . He planned to extend the MR north from London to Aylesbury and extend the Tramway southwest to Oxford , creating a route from London to Oxford . Rail services between Oxford and London were poor , and although still roundabout , the scheme would have formed the shortest route from London to Oxford , Aylesbury , Buckingham and Stratford @-@ upon @-@ Avon . The Duke of Buckingham was enthusiastic and

authorisation was sought from Parliament . Parliament did not share the enthusiasm and in 1875 the Buckinghamshire and Northamptonshire Union Railway Bill was rejected . Watkin did receive consent in 1881 to extend the MR to Aylesbury .

With extension to Aylesbury approved , the Duke of Buckingham in March 1883 announced his own scheme to extend the Brill Tramway to Oxford . The turntable at Quainton Road would be replaced with a junction to the south of the existing turntable to allow through running of trains . The stretch from Quainton Road to Brill would be straightened and improved to main line standards , and Waddesdon Road and Wood Siding stations would close . From Brill , the line would pass in a 1 @, @ 650 @-@ yard ( 1 @, @ 510 m ) tunnel through Muswell Hill to the south of Brill , and on via Boarstall before crossing from Buckinghamshire into Oxfordshire at Stanton St. John . From Stanton St. John the line would stop on the outskirts of Oxford at Headington , terminating at a station to be built in the back garden of 12 High Street , St Clement 's , near Magdalen Bridge . The proposal included a separate set of rails to be provided where the old and new routes ran together , to allow the existing Wotton Tramway to continue to operate independently if it saw fit , but given the Duke 's involvement in the new scheme it is unlikely he intended to use this option .

At 23 miles ( 37 km ) the line would have been by far the shortest route between Oxford and Aylesbury , compared with 28 miles ( 45 km ) via the GWR ( which had absorbed the Wycombe Railway ) , and 34 miles ( 55 km ) via the Aylesbury and Buckingham Railway and the LNWR . The Act authorising the scheme received Royal Assent on 20 August 1883 , and the new Oxford , Aylesbury and Metropolitan Junction Railway Company was created , including the Duke of Buckingham , Ferdinand de Rothschild and Harry Verney among its directors . The scheme caught the attention of the expansionist Metropolitan Railway , who paid for the survey . Despite powerful backers , the expensive Muswell Hill tunnel deterred investors . Ferdinand de Rothschild promised to lend money in return for guarantees that the rebuilt line would include a passenger station at Westcott , and that the Duke would press the Aylesbury and Buckingham Railway to open a station at the nearest point to Waddesdon Manor . Waddesdon Manor railway station opened on 1 January 1897 .

= = = Oxford & Aylesbury Tramroad = = =

Despite cash from Rothschild , the company could not raise sufficient investment to begin construction of the Oxford extension , and had only been given a five @-@ year window by Parliament in which to build it . On 7 August 1888 , less than two weeks before the authorisation was to expire , the directors of the Oxford , Aylesbury and Metropolitan Junction Railway Company received Royal Assent for a revised and cheaper version . To be called the Oxford & Aylesbury Tramroad ( O & AT ) , the new scheme envisaged the extension 's being built to the same light specifications as the existing tramway . To avoid expensive earthworks and tunnelling , the line would parallel a road out of Brill , despite the considerable gradients involved . The entire route would be single track , other than passing places , and the Oxford terminus was to be in George Street , nearer the edge of the city . Jones was sceptical and felt that it unlikely to recoup its construction costs .

On 26 March 1889 the 3rd Duke of Buckingham and Chandos died , aged 65 . A special train brought his body from London to Quainton Road , and from Quainton he was taken to Stowe for the service , and on to the family vault at Wotton . Five carriages provided by the London and North Western Railway carried mourners to Church Siding , near Wotton Underwood 's church . Another carried a company of the Royal Buckinghamshire Yeomanry , associated with the Grenville family and the upkeep of which had helped bankrupt the second duke . ( This second train was delayed on the Aylesbury and Buckingham Railway , arriving late to the burial . )

The Dukedom was inherited only in the male line . As the 3rd Duke had three daughters but no son , the title became extinct . The 1st Duke was also Earl Temple of Stowe , a title which descended through heirs of his relatives should the male line become extinct . Consequently , on the 3rd Duke 's death this title , with most of the Wotton estate , passed to his nephew William Temple @-@ Gore @-@ Langton who became the 4th Earl Temple .



By this time construction of the MR extension from London to Aylesbury was underway , and on 1 July 1891 the MR absorbed the Aylesbury and Buckingham Railway . Sir Harry Verney died on 12 February 1894 , and on 31 March 1894 the MR took over services on the A & BR from the GWR . On 1 July 1894 the MR extension to Aylesbury was completed , giving the MR a unified route from London to Verney Junction . The MR embarked on upgrading and rebuilding stations along the line .

Construction of the route from Brill to Oxford had not begun . Further Acts of Parliament were granted in 1892 and 1894 varying the route slightly and allowing electrification , but no building was carried out other than surveying . On 1 April 1894 , the proposed extension to Oxford still intended , the O & AT exercised a clause of the 1888 Act and took over the Wotton Tramway . Jones was retained as general Manager and work began on upgrading the line for the extension .

= = = Rebuilding and re @-@ equipping by the O & AT = = =

The track from Quainton Road to Brill was relaid with improved rails on standard transverse sleepers . The former longitudinal sleepers were used as fence posts and guard rails . The stations , little more than earth banks , were replaced with wooden platforms . Waddesdon , Westcott , Wotton and Brill were fitted with buildings housing a booking office , waiting rooms and toilets , while Wood Siding station had a small waiting room " with shelf and drawer " . Church Siding was not included and was removed from the timetable .

The Kingswood branch was not included in the rebuilding , and retained its original 1871 track . Two Manning Wardle locomotives , Huddersfield and Earl Temple , came into use on the line at around this time . Huddersfield had been built in 1876 and originally named Prestwich ; Earl Temple was identical to Huddersfield other than having a covered cab . The Oxford & Aylesbury Tramroad could not afford the price when Earl Temple was delivered and the Earl bought it with his own money and rented it to the O & AT . In 1895 two new passenger carriages , each accommodating 40 passengers , were bought from the Bristol Wagon and Carriage Company . In 1896 Huddersfield was withdrawn , and in 1899 replaced with a new Manning Wardle locomotive named Wotton No. 2 , at which time Earl Temple was renamed Brill No. 1 .

The rebuilding reduced journeys between Quainton Road and Brill to between 35 and 43 minutes . From 1895 the Tramway ran four passenger services in each direction on weekdays . The population of the area remained low , and in 1901 Brill had a population of only 1206 . Passenger traffic remained insignificant and in 1898 passenger receipts were only £ 24 per month ( about £ 2 @, @ 400 in 2016 ) .

Meanwhile , the MR were rebuilding and resiting Quainton Road station , freeing space for a direct link between the former Aylesbury and Buckingham Railway and the O & AT to be built . A curve between the lines opened on 1 January 1897 , allowing through running between the two lines .

With through running between the lines in place , in June 1899 the MR inspected the O & AT 's carriages and locomotives , and had serious concerns . The original passenger carriage began as a horse tram and was shabby internally , and unsafe as part of a longer train . The passenger carriage from the 1870s was in a poor condition . The 1895 Bristol passenger carriages were unfit owing to their light construction . Eight of the O & AT 's nine goods wagons did not comply with Railway Clearing House standards and could not be used on other lines . On 4 October 1899 the MR loaned the O & AT an eight @-@ wheeled 70 seat passenger carriage . As this had been built for the MR 's standard height platforms rather than the O & AT 's low platforms , 80 ? 100 ft ( 24 ? 30 m ) of each platform on the Tramway was raised to standard height to accommodate the MR carriage .

= = Metropolitan Railway takeover = =

The Metropolitan and the Oxford & Aylesbury Tramroad Company were cooperating closely by 1899 . Although the line had been upgraded in preparation for the Oxford extension and had been authorised as a railway in 1894 , construction on the extension had yet to begin . On 27 November John Bell , Watkin 's successor as Chairman of the MR , leased the line from the O & AT for £ 600 (

about £ 61 @, @ 000 in 2016 ) a year with an option to buy the line . From 1 December 1899 , the MR took over all operations . Jones stayed as Manager . The O & AT 's decrepit passenger coach , a relic of Wotton Tramway days , was removed from its wheels and used as a platelayer 's hut at Brill station . An elderly Brown , Marshalls and Co passenger coach replaced it , and a section of each platform was raised to accommodate the higher doors of this coach using earth and old railway sleepers .

On 28 March 1902 the 4th Earl Temple died aged 55 , succeeded by Algernon William Stephen Temple @-@ Gore @-@ Langton , 5th Earl Temple of Stowe . The Oxford & Aylesbury Tramroad Company , which by now did nothing except collect £ 600 annual rent from the MR , pay the Winwood Charity Trust rent for their land near Quainton Road crossed by the rails , and pay Earl Temple an annual dividend of £ 400 , remained independent under the control of the 4th Earl 's trustees .

= = = Rebuilding and re @-@ equipping by the Metropolitan Railway = = =

The MR sold all but one of the dilapidated goods wagons to the Llanelly and Mynydd Mawr Railway , replacing them with five eight @-@ wheeled carriages built in 1865 ? 66 . The MR considered the Manning Wardle locomotives unreliable and from early 1903 they were replaced by a pair of Metropolitan Railway D Class engines , although they were not sold until 1911 . The heavy D Class locomotives damaged the track , and in 1910 the track between Quainton Road and Brill was relaid to MR standards , using track removed from the inner London MR route but considered adequate for a rural branch line . Following this upgrading , the speed limit was increased to 25 miles per hour ( 40 km / h ) .

The Kingswood branch was again not upgraded , and still retained its 1871 track . It was abandoned at the end of 1915 , and the track removed in 1920 . In 1911 Brill Brick and Tile Works closed , and the siding to the brickworks was removed , with the exception of the rails on the level crossing which in 1984 were still in place , albeit tarmacked over . On the outbreak of the First World War in 1914 , Brill became a centre for training cadets , who were housed in Wotton House and ferried in trains of five passenger coaches .

The Metropolitan Railway was unhappy with the performance and safety of the D Class locomotives and sold them between 1916 and 1922 . With much of their route close to London now electrified the MR had surplus steam locomotives , and two Metropolitan Railway A Class locomotives , numbers 23 ( built 1866 ) and 41 ( built 1869 ) , were transferred to the route . Built by Beyer , Peacock and Company from 1864 , the A Class had been the first locomotives owned by the Metropolitan ( in 1863 , the first year of operation , the MR had used engines loaned from the GWR ) . Although the most advanced locomotives regularly to work the route , the A Class predated all other rolling stock on the Tramway . The two locomotives operated for a week at a time . Occasionally , the MR substituted other similar locomotives .

Four services per day operated , taking around 40 minutes from one end to the other in 1900 , falling to 32 minutes by 1931 after the upgrading of the route and the introduction of the A Class locomotives .

On 1 February 1903 Jones retired and control was taken over directly by the Metropolitan Railway . Jones died on 14 April 1909 , surviving to see the railway network in the Aylesbury Vale reach its greatest extent .

= = = New railways through the Aylesbury Vale , 1899 ? 1910 = = =

= = = Great Central Railway = = =

In 1893 another of Edward Watkin 's railways , the Manchester , Sheffield and Lincolnshire Railway , had been authorised to build a new 90 miles ( 140 km ) line , from its existing station at Annesley in Nottinghamshire , south to Quainton Road . Watkin had intended to run services from Manchester

and Sheffield via Quainton Road and along the Metropolitan Railway to the MR 's station at Baker Street . Following Watkin 's retirement in 1894 , the Manchester , Sheffield and Lincolnshire Railway obtained permission for a separate station near Baker Street at Marylebone , and the line was renamed the Great Central Railway ( GCR ) . The new line joined the existing MR just north of Quainton Road on the Verney Junction branch , and opened to passengers on 15 March 1899 . Many of the bricks used in the building of the Great Central Railway were supplied by the Brill Brick and Tile Works and shipped along the Tramway , providing a significant revenue boost to the O & AT .

= = = Great Western and Great Central Joint Railway = = =

Following Watkin 's retirement relations between the Great Central Railway and the Metropolitan Railway deteriorated badly . The GCR route to London ran over MR lines from Quainton Road to London , and to reduce reliance on the shaky goodwill of the MR , GCR General Manager William Pollitt decided to create a link with the Great Western Railway to create a second route into London . In 1899 the Great Western and Great Central Joint Railway began construction of a new line , commonly known as the Alternative Route , to link the GWR 's existing station at Princes Risborough to the new Great Central line . The line ran from Princes Risborough north to meet the Great Central at Grendon Underwood , about 3 miles ( 4 @. @ 8 km ) north of Quainton Road . The new line was to cross the Tramway on a bridge immediately east of Wotton station , although no intersection was built between the lines . Although the lines did not connect , a temporary siding was built from the Tramway onto the embankment of the new line , and used for the transport of construction materials and the removal of spoil from the works during the building of the new line . Although formally an independent company , in practice the line was operated as a part of the Great Central Railway .

The new line was planned as a through route and was not intended to have any stations of its own , but in 1904 it was decided to build two stations on it . A new station , also named Wotton , was built immediately to the south of the existing Wotton station . On 2 April 1906 the new route opened to passengers . The two Wotton stations were very close together , and the same stationmaster was responsible for both .

= = = Chiltern Main Line Bicester cut @-@ off = = =

In 1910 the new Bicester cut @-@ off line of the GWR Chiltern Main Line opened , allowing trains from London to Birmingham to bypass a long curve through Oxford . The new line was routed directly through Wood Siding , although no interchange station was built . The GWR ran in a cutting beneath the existing station ; Wood Siding station and its siding were rebuilt at the GWR 's expense between 1908 ? 1910 to stand on a wide bridge above the GWR 's line . The new line included the station named Brill and Ludgershall , which in reality was considerably further from Brill than the existing Brill station .

With the opening of the new routes , the Tramway for the first time suffered serious competition . Although further from Brill than the Tramway 's station , the GWR 's station provided a fast and direct route to the GWR 's London terminus at Paddington . The Great Central Railway 's station at Wotton , and the other Great Western and Great Central Joint Railway station at Akeman Street , provided fast and direct routes to both Paddington and to the Great Central 's new London terminus at Marylebone , without the need to change trains at Quainton Road . In addition , following the end of the First World War motorised road transport grew rapidly , drawing passenger and goods traffic away from the railways . The Oxford & Aylesbury Tramroad Company repeatedly tried to persuade the Metropolitan Railway to buy the line outright , but the MR declined . In July 1923 the O & AT tried to sell the line to the GWR and to the Electric and Railway Finance Corporation , but was rebuffed by both .

= = London Transport = =

On 1 July 1933 , the Metropolitan Railway , along with London 's other underground railways , aside from the short Waterloo & City Railway , was taken into public ownership as part of the newly formed London Passenger Transport Board ( LPTB ) . Thus , despite Brill and Verney Junction being 50 miles ( 80 km ) and over two hours travel from the City of London , the Oxford & Aylesbury Tramroad and the former Aylesbury and Buckingham Railway became parts of the London Underground network . The locomotives and carriages were repainted with London Transport 's Johnston Sans emblem .

By this time , the route from Quainton Road to Brill was in severe decline . Competition from the newer lines and from improving road haulage had drawn away much of the tramway 's custom , and the trains would often run without a single passenger . The A Class locomotives were now 70 years old , and the track itself was poorly maintained . Trains , once again , were regularly derailling on the line .

Frank Pick , Managing Director of the Underground Group from 1928 and the Chief Executive of the LPTB , aimed to move the network away from freight services , and to concentrate on the electrification and improvement of the core routes in London . He saw the lines beyond Aylesbury via Quainton Road to Brill and Verney Junction as having little future as financially viable passenger routes , concluding that at least £ 2 @, @ 000 ( about £ 130 @, @ 000 in 2016 ) per year would be saved by closing the Brill branch .

On 1 June 1935 , the London Passenger Transport Board gave the required six months notice to the Oxford & Aylesbury Tramroad Company that it intended to terminate operations on the tramway .

= = = Closure = = =

To fulfil their obligations , London Transport formally inspected the line on 23 July 1935 . The inspection was carried out with great speed , the special train taking just 15 minutes to travel the length of the line from Brill to Quainton Road . The inspection confirmed that the closure process was to proceed .

The last scheduled passenger service left Quainton Road in the afternoon of 30 November 1935 . Hundreds of people gathered , and a number of members of the Oxford University Railway Society travelled from Oxford in an effort to buy the last ticket . Accompanied by firecrackers and fog signals , the train ran the length of the line to Brill , where the passengers posed for a photograph .

Late that evening , a two @-@ coach staff train pulled out of Brill , accompanied by a band playing Auld Lang Syne and a white flag . The train stopped at each station along the route , picking up the staff , documents and valuables from each . At 11 @. @ 45 pm the train arrived at Quainton Road , greeted by hundreds of locals and railway enthusiasts . At the stroke of midnight , the rails connecting the tramway to the Metropolitan Railway main line were ceremonially severed .

Following the withdrawal of London Transport services the Metropolitan Railway 's lease was voided and at midnight on 1 December 1935 the railway and stations reverted to the control of the Oxford & Aylesbury Tramroad Company . The O & AT Board by now had only three members : the 5th Earl Temple , the Earl 's agent Robert White , and the former Brill hay @-@ loader manufacturer W. E. Fenemore .

Although at the time of the closure there was some speculation that the O & AT would continue to operate the tramway as a mineral railway , with no funds and no rolling stock of its own , the O & AT was unable to operate the line . On 2 April 1936 , the entire infrastructure of the stations was sold piecemeal at auction . Excluding the houses at Westcott and Brill , which were sold separately , the auction raised £ 72 7s ( about £ 4 @, @ 430 in 2016 ) in total . The Ward Scrap Metal Company paid £ 7 @, @ 000 ( about £ 429 @, @ 000 in 2016 ) for the rails , with the exception of those at Quainton Road which were retained as a siding .

With the stations at Wood Siding and Brill closed , and the GWR 's Brill and Ludgershall railway station inconveniently sited , the GWR opened a new station on the Chiltern Main Line near to Brill at Dorton Halt on 21 June 1937 .

On 5 January 1937 , the board of the Oxford & Aylesbury Tramroad met for the last time . On 5 February 1937 a winding up petition was presented to the High Court , and on 24 March 1937 Mr W. E. Fisher was appointed liquidator . On 11 November 1940 Fisher was formally discharged , and the O & AT officially ceased to exist .

= = After closure = =

After closure , the line was largely forgotten . Because it had been built on private land without an Act of Parliament , few records of it prior to the Oxford extension schemes exist in official archives . At least some of the rails remained in place in 1940 , as records exist of their removal during the building of RAF Westcott . Other than the station buildings at Westcott and Quainton Road almost nothing survives of the tramway , although much of the route can still be traced by a double line of hedges . The former trackbed between Quainton Road and Waddesdon Road is now a public footpath known as the Tramway Walk .

After the death of the 3rd Duke of Buckingham the family archives , including the records of the Brill Tramway , were sold to the Huntington Library in California . In 1968 the London Underground Railway Society launched a fundraising appeal to microfilm the relevant material , and in January 1971 the microfilms were opened to researchers at the University of London Library ( now Senate House Library ) .

In the 1973 documentary Metro @-@ land , John Betjeman spoke of a 1929 visit to Quainton Road , and of watching a train depart for Brill : " The steam ready to take two or three passengers through oil @-@ lit halts and over level crossings , a rather bumpy journey " .

Wotton station on the Great Western and Great Central Joint Railway , which in 1923 had been taken over by the London and North Eastern Railway , remained open ( albeit little used and served by only two trains per day in each direction ) until 7 December 1953 , when the station was abandoned . The bridge that had formerly carried the GW & GCJR over the tramway at Wotton was demolished in 1970 , and the former GW & GCJR station was converted to a private house .

Both Dorton Halt and Brill and Ludgersall stations were closed on 7 January 1963 and trains no longer stop , although the line through them remains in use by trains between Princes Risborough and Bicester North . Quainton Road station was bought in 1969 by members of the London Railway Preservation Society to use as a permanent base , and now houses the Buckinghamshire Railway Centre . The station is still connected to the railway network and used by freight trains and occasional special passenger services , but no longer has a scheduled passenger service . There are no longer any open railway stations in the areas formerly served by the tramway . Plans have been proposed by the Buckinghamshire Railway Centre to rebuild and reopen a stretch of the tramway as a heritage railway .

= = Satellite Mapping = =

Quainton Road railway station ( 51 ° 51 ' 50 " @ . @ 53 ' N 0 ° 55 ' 52 " @ . @ 02 ' W )

Waddesdon ( Road ) ( 51 ° 51 ' 7 " @ . @ 15 ' N 0 ° 56 ' 48 " @ . @ 72 ' W )

Westcott ( 51 ° 50 ' 42 " @ . @ 16 ' N 0 ° 57 ' 21 " @ . @ 31 ' W )

Wotton Underwood ( 51 ° 50 ' 5 " @ . @ 95 ' N 1 ° 0 ' 4 " @ . @ 18 ' W )

Church Siding Halt ( 51 ° 50 ' 18 " @ . @ 02 ' N 1 ° 0 ' 7 " @ . @ 52 ' W )

Wood Siding ( 51 ° 49 ' 58 " @ . @ 42 ' N 1 ° 1 ' 30 " @ . @ 98 ' W )

Woodham ( 51 ° 51 ' 38 " @ . @ 86 ' N 0 ° 59 ' 30 " @ . @ 79 ' W )

Brill ( 51 ° 49 ' 57 " @ . @ 23 ' N 1 ° 2 ' 53 " @ . @ 54 ' W )