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Front cover picture:

Winchester College Mill in 1816. Detail from Rudolph Ackerman's *History of Winchester College.* (J. M. Gregory)
[see page 17]

Back cover pictures:

Top: The Kings Cross Footbridge. A detail of the stairs leading up from platform 8, showing the exotic cast-iron balusters and Handyside's plate on the side of the half landing. An article in 1925 explained that the footbridge was originally built with each set of stairs running in one flight but this was hard on the passengers and so the half landings were inserted. (Andy Savage)
[see page 12]

Centre: The trowel presented by Messrs. Joseph Bull & Sons to Lord Viscount Eversley to lay the Foundation Stone for Winchester Guildhall on December 22nd 1871. (Winchester City Council Museums)
[see page 6]

Bottom: One aircraft that was based at Worthy Down was Fairey Swordfish LS326. This aircraft was at the airfield after the end of its active service life and was used for training and communication. LS326 now resides at Yeovilton as part of the Royal Navy Historic Flight. (Richard Hall)
[see page 22]

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Hampshire Industrial Archaeology Society

(formerly Southampton University Industrial Archaeology Group)

Journal No. 20, 2012

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Editorial

Welcome to Issue **20** of our *Journal*. Our first *Journal* was published in 1992 so this issue completes the *Journal*'s first twenty years. Once again, we cover a variety of subject areas in Industrial Archaeology in Hampshire.

We start with an article on Joseph Bull and Company, a Southampton builder responsible for the construction of many local landmark buildings. In the late nineteenth century, the Company expanded to take on contracts in London and abroad. In doing so, it overstretched itself and failed in 1902. Bill Fawcett tells us the history of a railway footbridge which, having served Kings Cross station in London for over a century, has been cleaned and re-erected at Ropley on the Mid Hants Railway. Winchester, in the Middle Ages, had many mills, mostly owned by the Bishop or by religious houses. College Mill was built by Winchester College just after the Reformation. The building remains today, although it is well over 120 years since it milled wheat. Early airfields needed only grass runways and sufficed for the RAF and the Fleet Air Arm until the Second World War led to enormous expansion of existing airfields and the construction of many new ones. Worthy Down dates from 1917 and the formation of the RAF. It never got a concrete runway. Chilbolton was started in 1938 and became a major RAF station. As memories fade of their wartime use, Richard Hall chronicles their rise and fall.

Martin Gregory
March 2012

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Edited and produced by Martin Gregory

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The Contributors

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Dr Bill Fawcett is an engineer with strong interests in the historic development of architecture, civil engineering and railways. Bill lectured for many years at York University and has lectured extensively since. He has had eight books published, of which the latest is "George Townsend Andrews of York", and runs the website http://www.railwayarchitecture.org.uk . He has long been interested and active in conservation, currently as a member of an advisory committee of the City of York and on the Advisory Panel of the Railways Heritage Trust.

Martin Gregory
Martin Gregory is a retired schoolmaster. His interest in the history of technology goes back 50 years. He has researched and built model steam and Stirling engines for many years and also works on the history of the sewing machine. He has been a member of HIAS and its predecessor for over 40 years, has served as Secretary and Chairman, and is the present editor of the Journal.

Richard Hall
Richard Hall has had an interest in aviation, railways, stationary steam engines and most things mechanical since a very young age. Born in Winchester, he still lives in the city. He has worked as an engineer within the heating industry for over 30 years. A keen photographer of aircraft and landscapes, most summer weekends will either find him at an air show or taking photographs of the British countryside. Along with the photography, an interest in former military airfields has resulted in a desire to research and keep alive the memories of long forgotten sites which are so much a part of Britain's aviation history. Richard is also an active member of the Airfields Research Group.

Steve Old
Steve Old works for BT and has been interested in history and archaeology since his school days in Gosport. He trained as a teacher at Culham College, Oxford and apart from spending over 30 years at BT in various roles, spent some time as a planner/cartographer at the Office of Population censuses and surveys at Titchfield. He is currently a member of WARG (for Winchester Archaeology & Local History). His interests include family history research, railway and maritime history, archaeology and social history.

Acknowledgements

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Ruth Andrews, (Figs. 29, 30); Russell Burdekin, (Figs. 17, 18); Country Life, (Fig. 25); Tony Dowland, (Fig. 31); Bill Fawcett, (Figs. 13, 15, 16); Martin Gregory, (Figs. 11, 27, 28 and Front cover); Richard Hall, (Figs. 32-54 and Back cover, bottom) Dave Marden, (Fig. 12); Steve Old, (Figs. 1,3,4,6,7); Jeff Pain, (Fig. 2); Andy Savage, (Back cover, top); Winchester City Council Museums, (Fig. 5 and Back cover, centre); Wikipedia (Figs. 8-10); The Warden & Scholars of Winchester College, (Figs. 19-21, 23-24, 26); Eleanor Yates, (Fig. 22).

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A True Victorian Company

Or "A Local Builder of National and International Repute in Victorian Britain"

Steve Old

Little do you realise when you start delving into the complex and tangled branches of your family tree what you will find as each new revelation adds to the rich and varied tapestry of your family's past. Among the finds we uncovered during our researches was an ancestor, who, along with his sons, was a major influence in the Victorian Building Industry, locally, nationally as well as internationally.

When most people study a building, its development and its history, they tend to concentrate on the owner or the architect and overlook the builders that helped realise the owner's and architect's dreams and ambitions. My ancestors were some of those builders and evidence of their skill still exists today, despite the ravages of time, world wars and town planners.

The journey to discovering these ancestors and their importance is thanks in part to serendipity, diligence and determination. Whilst looking into my father's family tree, asking relations for documents and pictures to flesh out what we had gleaned already, we came upon an indenture for my great great grandfather to be an apprentice grocer in Lymington and one of the persons mentioned as a sponsor (and uncle) of my great great grandfather was a man called Joseph Bull, a builder of Southampton. We thought little of it at the time as it is a name we could not recollect being associated with building anything significant; not a "Braziers" or "Taylor Woodrow".

Then one day, my wife and younger daughter (as a child) were in Winchester and decided to go up and down the steps at the front of the Guildhall. At the foot of the steps they noticed the foundation stone and on it, mentioned as the builders of the Guildhall, were the firm of Joseph Bull & Sons, the name of my ancestor. Could this be one and the same person? This intrigued us greatly so we decided to dig deeper and what we discovered amazed us. We later discovered the full completion and founders plaques in the entrance porch to the Guildhall which also mentioned them.

It transpires that Joseph Bull and some of his sons, Henry William, Edward Charles and Frederick were rather important and influential builders and contractors in their time, all true Victorian entrepreneurs. Some of Joseph's other sons (he had eight sons and four daughters) became Solicitors and Clergymen, quite esteemed professions requiring education and social position to enter.

Joseph Bull had started the business with a partner, a Mr Cossens, in the St Mary's area of Southampton in about 1832 but soon branched out on his own, probably starting with small local contracts, gradually building a name and reputation. A full list of the buildings he and his company had a hand in building, re-building or extending is not available and many of them no longer exist but some of the key ones are listed on page 10.



Figure 1. The County Court building in Castle Lane, Southampton, completed by Joseph Bull and Company in 1852.

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It appears from the records we have managed to find that the company started doing larger projects in and around Southampton and Winchester, with the building of the new County Court Building in Castle Lane and the Corn Exchange building on Town Quay in Southampton, both being completed in 1852.

In 1853 they won the contract for the New Borough Gaol in Ascupart Street, which was to "have provision for fresh air" and built to the same "modern" design as Pentonville. This Building was completed in 1855 but no trace of it remains today. Having seen the plans, held at Southampton City archives, the conditions would still have been very basic. No heating or running water was supplied so sanitation presumably would have been by "slopping out". The facilities were designed to be shared by both sexes.

In the "Craven & Company" directory of Hampshire for 1857 there is a section describing the City of Southampton Gaol. The extract below relates to these buildings:

> *"The New Gaol is calculated to hold 112 prisoners; it is after the Pentonville model. The Police Station and Governor's House are within the walls. The cost was about £22,000. The architect was Robert Bates Critchlow Esq."*
> *"The Corn Exchange is a handsome and noble building facing the Quays, in which are held the Corn Market and the meetings of the Chamber of Commerce."*



Figure 2. St. Mary's church, Southampton. A postcard view from the east, taken about 1900. The tower and spire were added from 1910.

The Bulls were not only concerned with their business, they were also involved in the local church; Henry Bull was a churchwarden at St Mary's Church Southampton. They appear to have built or refurbished many local churches and chapels and were an integral part of the church modernisation and expansion during this period. Probably because of their beliefs, they seem to have treated their workers relatively well and in 1860 they granted their workers a half day holiday every Saturday, allowing them to finish at 4.00 pm. This was way ahead of the rest of businesses both locally and nationally. This did not, however, make them immune from industrial unrest and this was in part to lead to their problems and eventual demise in future years.

Possibly due to his contacts within the church, being a churchwarden, Henry Bull, as head of Joseph Bull & Sons managed to win the contract for the rebuilding of St. Mary's church, the mother church of Southampton, in 1871. The architect for this project was the distinguished Mr G E Street R.A. whom Joseph Bull & Sons came to work for on a regular basis as he was also the architect chosen to design and build the Royal Courts of Justice in The Strand, London.

In a book called *Churches of Southampton and the Surrounding Area* by Monk, Joseph Bull & Sons are described as "eminent builders" of Southampton. The new church, when completed was described as "one of the most complete and beautiful of the sacred edifices which have been raised in the present generation by pious hands to the honour and glory of God". The need for a complete rebuild of St. Mary's was identified during the residence of Samuel Wilberforce (Soapy Sam) as Bishop of Winchester, famous son of the equally famous William Wilberforce (Anti-Slavery campaigner). Before becoming Bishop of Winchester, he was Bishop of Oxford and founded various establishments, including Culham College in 1853 (Teacher Training) just outside Oxford, where I was a student from 1976 to 1979.

By popular demand, the new church was to be dedicated as a memorial to Samuel Wilberforce who died suddenly in 1873 after falling from his horse. On 12th August 1878 a memorial stone was laid forming part of one of the pillars at the approach to the chapel at the North West corner. This task was carried out by the

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then Prince & Princess of Wales, Albert Edward (later King Edward VII) and their sons Prince Albert Victor and Prince George.

The inscription on the stone reads:-

This Dedication Stone was laid
In the name
Of the Father, and of the Son, and of the Holy Ghost,
In memory of
Samuel Wilberforce, Bishop of Winchester
By
ALBERT EDWARD, PRINCE OF WALES,
August XII, A.D. MDCCCLXXVIII
Rector – BASIL WILBERFORCE
Churchwardens ISAAC HAWKINS
HENRY W. BULL

The new Bishop of Winchester, the Archdeacon, Rector and Churchwardens received the Royal party at the church, which was to become known nationally as the "Samuel Wilberforce Memorial Church". The church was completed and then dedicated on 19th June 1879 by the incumbent Bishop of Winchester and special guest, the Archbishop of York, who read the lesson at the evening celebratory service.

Joseph Bull & Sons appear to have specialised in grand buildings, quite often of the "Gothic" style. This can be seen today in Winchester Guildhall and in some of their other major projects, like the Royal Courts of Justice in The Strand, London, (completed in 1881) and in the various churches and financial establishment building projects they undertook.



Figure 3. Swaythling station.

At the opening of the Royal Courts on 4th December 1882, a grand affair and reported with illustrations in the national press, the Bull brothers took part in the grand procession and were presented personally to Queen Victoria during the ceremony. A bust of Henry Bull is still to be found high on a corner in the quadrangle of the Royal Courts; the architect's bust occupies one of the other corners.

Other grand buildings that they built locally include various churches other than St. Mary's (St James' and others) the Provincial Bank in the High Street, Southampton and the Southampton Savings Bank building in Havelock Road. St James' Church and the Southampton Savings Bank were destroyed during the blitz in the Second World War.



Figure 4. Geddes warehouse on Town Quay, Southampton.

In amongst these, however, were more mundane contracts for sewage outlets at Belvidere wharf (including later repairs when the outlet was struck by a ship that seems to have strayed from the channel), warehouses like "Geddes" warehouse on Town Quay (originally a cargo warehouse for the docks), buildings for the local gas and railway companies including Swaythling station, Lymington Town station, Hook station and Netley station.

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The company had a contract to maintain and enhance the Southampton to Basingstoke line and all lineside buildings for the London & South Western Railway during the 1880s, including new facilities, repairs and the improvement and expansion of existing facilities.

In Winchester, in addition to the Guildhall, the company had contracts to build extensions to the King's House, which had become the Garrison Barracks. These included the Hospital Block (now called the Mons Block and recently converted into flats), the Married Quarters (now demolished) and the Garrison Church at the edge of the estate, which still exists as the *Everyman* cinema in Southgate Street.



Figure 5. Winchester Guildhall just before its opening in 1873, photographed by William Savage. The police station is on the right. (Winchester City Council Museums PWCM 3332)

In addition to commercial and public buildings, the company also built some significant private dwellings including *Netley Firs* at Hedge End (now demolished for the M27) for the Earl of Pembroke, *The Winslows* at West End for Mr George Gater, *Langley House*, Eling for Mr R F Wingrove, *Headbourne Worthy House* at Headbourne Worthy and the new Vicarage, including stables and outbuildings, in Froxfield. Many other houses would have been built by Joseph and his sons, possibly including their own substantial residences, but the records do not survive.

Joseph Bull & Sons were not only involved in building new premises from scratch, they were also involved in the provision and erection of temporary and second hand buildings. They were contracted by Gosport UDC in about1895 to supply and erect their first public lending library. For this Bull & Sons used a wooden building that had been used previously in Portsmouth. This was dismantled from the Portsmouth site and then transported to and re-erected in Gosport near the original Thorngate Halls.

The crowning glories of their building endeavours appeared at the height of their influence and success and some were a bit further afield. Winchester Guildhall was completed in 1873 and stands today as a monument to their skills. The Royal Courts of Justice in the Strand, London were completed in 1881 (and seem always to be in shot on television news reports regarding high profile cases), whilst the House of Assembly (Houses of Parliament) in Cape Town, their one known foreign excursion, was completed in a neo-classical style, with colonnaded portico, in 1886.



Figure 6. Winchester Guildhall, a plaque in the porch commemorating the laying of the Foundation Stone. In the bottom left hand corner are the names of the Architects (Jeffery & Skiller) and of the builder (Joseph Bull & Sons). A plaque on the opposite side commemorates the opening of the Guildhall.

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Figure 7. The Hospital block of the Garrison Barracks. Later called Mons Block it is now apartments.



Figure 8. The House of Assembly in Capetown. (Opened 1886)



Figure 9. The Royal Courts of Justice
A postcard of c1890

A diary written by Joseph Cawte Butler (Grandfather of Sir Leslie Loader CBE), held at Hampshire Records Office, details his voyage to New Zealand in 1883. His entry about the new Parliament Building in Cape Town reads:

"Tuesday Oct 16th (Cape Town)
We then went for a walk into the Botanical Garden and the Museum and were much pleased at all we saw, we also saw the new building being erected by Messrs Bull & Sons of Southampton, it will be a very fine building when finished"

In order to supply all the Company's projects, Joseph Bull & Sons had interests in many associated businesses, sometimes being the outright owners. Among these were the brick and tile works at Chilworth and Chandlers Ford, the Southampton Steam Joinery Company, Belvidere Works in Northam and a Timber Importers at Belvidere Wharf (importing timber from Canada, Russia and Scandinavia).

To serve these businesses Joseph Bull & Sons had their own tramway linking Belvidere Wharf and works with the London & South Western Railway just north of Northam railway station which was on the line from Southampton Terminus station to London and the Midlands, with links to most of the southern part of England where their jobs were located. From this riverside base they imported timber and loaded and unloaded stone, gravel and sand for distribution and use in their various projects.

There were also sidings and branches into the Chandlers Ford Brick & Tile works just south of Chandlers Ford railway station which had direct links to the west via Romsey and Salisbury and to the north, south and east via Eastleigh so it was very convenient to source and transport these essential goods for their numerous jobs.

The use of barges, by both sea and canal/river, as well as the railways meant bulk loads could be transported to site easily; the road infrastructure at that time being reliant on horse and cart, was fraught with problems, especially with the weight and bulk of the materials needed.

For the building of the Royal Courts of Justice, 35 million bricks of a specific size (10 inches by 5 inches by 2 inches were supplied from the Chandlers Ford brick works. For the Cape Town House of Assembly the architect insisted on British bricks as he thought colonially sourced bricks of

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inferior quality and unsuitable colour. It seems likely that these too were supplied from either Chandlers Ford or Chilworth and shipped via their wharf at Belvidere, probably as ballast all the way south.

Whilst the company had contracts in London building the Royal Courts of Justice etc. they had an office at 1 Clements Inn, The Strand. The company's main works in Southampton were around the James Street area of St Mary's but they also had several wharves and a joinery works at Belvidere, workshops in Bevois Road and offices and stables in Cumberland Street. In the early years the company had a presence at 37 Lower Street, St Mary's according to the Kelly's directory of 1861. Over the years the company has been described in various ways in these local directories, as Carpenters and Builders, Builders, Surveyors and Contractors.

The Royal Courts of Justice were not the only foray into the capital as it appears they did some work adding another storey onto the existing Patent Office. With their London base, they probably undertook many more projects but these records no longer appear to exist.

They also appear to have had a contract with a school board in Surrey to build and maintain schools in the area; however, we are yet to examine this contract so we have no details yet. It is known that the School Board had some dispute with Bull & Sons.

For many of the larger contracts that Joseph Bull & Sons took on, the remuneration rates for their workers were written into the contract. These would have been very similar to the rates they paid their employees working on their other, smaller works but these might have been varied according to the current economic conditions at the time, whereas the contractual rates would have to be adhered to. The table below shows the hourly rates of pay for Joseph Bull & Sons workers in 1875, 1879 and 1882, all gathered from contracts which the company had at these times.

Over the years, a man's worth varied depending on the demand for the skills he possessed. In general, wages were rising steadily with general prosperity and with the need for certain skills to fulfil the commercial, industrial and economic expansion ambitions of the Victorians. It was not, however guaranteed. With the changes in fashion and the advance of technology, some jobs were valued at a lower rate in 1882 than they were in 1875 showing a shift away from some of the more traditional crafts.

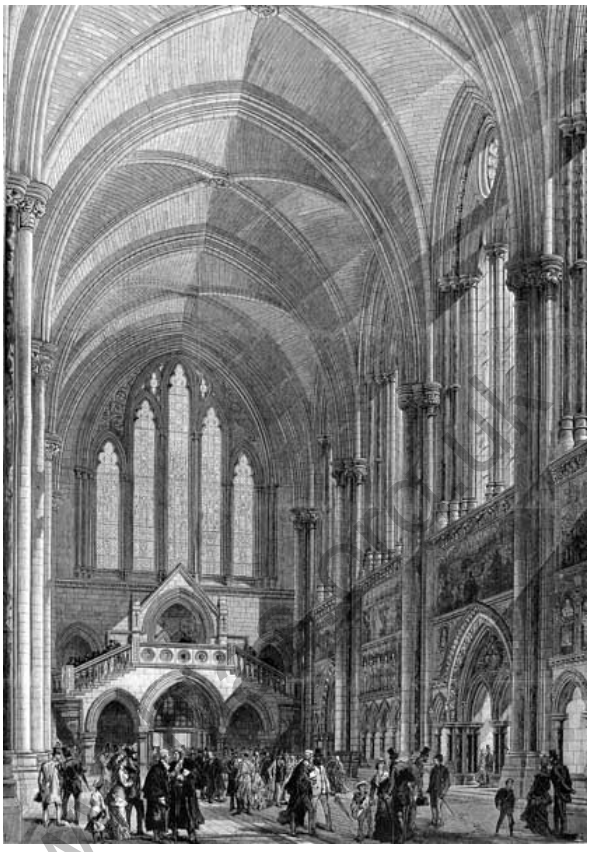


Figure 10. The interior of the entrance hall to the Royal Courts of Justice (c1890)



Figure 11. The Royal Courts of Justice today The building remains at the heart of British Justice and is familiar as a backdrop to television law reports.

New crafts were also being introduced to the building arena. In the 1879 contract, the Gas Fitter appears for the first time. This arose from the expansion in the use of gas for lighting and, in domestic buildings, for cooking; note that there is no mention in the list of an Electrician.

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The working day in the period 1870-1890 averaged about 10-12 hours and the working week was normally 6 days. However it was known for some workers to work an 11-day fortnight, working a full day every other Saturday. The building trade was no better or worse than any other, including factory work. It is known, however, that Joseph Bull & Sons were one of the early adopters of a shorter working week, in 1860 giving all their workers a half day every Saturday.

Hourly Rates of Pay for Joseph Bull & Sons for Contracted Workers

Job description	1875	1879	1882
Excavator	6 d	6½ d	6½ d
Bricklayer	9 d	10½ d	10½ d
Labourer	5 d	6 d	6½ d
Scaffolder	6 d	7 d	7 d
Horse, Cart & Driver inc Harness	1/-	1/-	1/-
Extra Horse	9 d	9 d	9 d
Mason	9 d	10½ d	10 d
Mason Labourer	N/A	6½ d	6½ d
Pavior	9 d	9 d	9 d
Slater/Slate Mason	9 d	10½ d	10½ d
Carpenter/Joiner	9 d	10½ d	10½ d
Plumber	10 d	11 d	11 d
Plumbers Labourer	N/A	7½ d	7½ d
Zinc Worker	9½ d	10½ d	10½ d
Zinc Worker Labourer	6 d	7 d	7 d
Plasterer	9 d	10½ d	10½ d
Boy	3 d	3½ d	3½ d
Painter, Glazier, Paperhanger, Polisher	8½ d	10 d	9½ d
Grainer	1/-	1/-	11 d
Gas Fitter/Bellhanger	N/A	10½ d	10½ d

For comparison, the Adult minimum wage in October 2011 was £6.08 per hour.
The 1875-1882 prices are shown in pre-decimal money when there were 240 pence (d) in the pound (£) and a shilling (/-) consisted of 12 pence.

The actual working conditions these workers experienced was very different from today with little in the way of effective protective work apparel, no Health and Safety directives and no sick pay in case an accident meant you could no longer work at your craft. Working conditions and clothing had not changed for many years.

Joseph Bull & Sons appear to have treated their workers better than most and had a fairly stable workforce to draw on; however, this did not mean they were immune from disputes and strikes, one of the most prolonged being the masons' strike when they were building the Royal Courts of Justice in The Strand, London. In order to avoid penalties for delays in the completion of the building, Bull & Sons hired masons from Europe, mainly from Germany and Italy. This did not please the striking masons and lead to many confrontations between the strikers and the German and Italian migrants, some leading to violence and court appearances.

It was a combination of industrial unrest and at least two disastrous fires at their works that eventually caused the company to fail. The industrial disputes caused delays on their building projects that lead to penalty clauses being activated, cutting the profit margin and damaging their reputation, and leading to less success in gaining new business.

In the end, however, as with many companies before and since, they seem to have overstretched themselves financially and they ended up insolvent and filed for bankruptcy. The main catalyst for this action seems to have been the delays in payment by the then government for the works on the Royal Courts of Justice. In an act of supreme irony, their bankruptcy hearing was one of the first to be heard in the court building they had just completed.

The firm survived this and reformed as a smaller company apparently at some point known as the "Southampton Steam Joinery Company" but in 1902 the final curtain fell on the firm. A combination of a disastrous fire at their main works and industrial unrest again dealt the final blow.

Many of their buildings still stand today, though their uses may have changed over the years, many becoming flats or changing from industrial to commercial use, but the fabric in most cases seems to have remained largely unaltered. These are truly a fitting testament to Victorian quality and the local materials.

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Buildings known to have been built by Joseph Bull & Sons

Royal Courts of Justice, The Strand, London (surviving)
Patent Office, London – Additional Storey (demolished)
Winchester Guildhall, Winchester (surviving)
Corn Exchange Building Town Quay Southampton (surviving)
Borough Model Prison, Ascupart St, Northam, Southampton (demolished)
Northam Railway Station, Northam, Southampton (demolished)
Northam Railway Station Bridge, Carrying Northam Road over the railway (replaced)
County Court, Castle Hill, Southampton (now flats)
Geddes Warehouse, Town Quay, Southampton (now flats)
Swaythling Railway Station, Swaythling, Southampton (surviving)
Lymington Railway Station & Lymington Pier Extension (surviving)
Gosport Main Signal Box, Gosport Railway Station, Gosport (demolished)
Central Railway Bridge, Southampton (surviving)
Main Engine Shed, Eastleigh Railway Works (Original works, since replaced)
Gosport Public Lending Library, Gosport (temporary building now demolished)
Goods Shed & Baggage Hall, Terminus Station, Southampton (surviving)
House of Assembly, Parliament Buildings, Cape Town South Africa (surviving)
Abbey Congregational Church, Romsey (surviving)
Dorchester Railway Station, Dorchester, Dorset (surviving)
Military Hospital Block (Mons Block), Garrison Barracks, Winchester (now flats)
Married Soldiers' Quarters, Garrison Barracks, Winchester (demolished)
Garrison Church Southgate Street Winchester (now the 'Everyman' Cinema)
Netley Firs House, Netley, Southampton (now under the M27)
Headbourne Worthy House (surviving)
Langley House, Eling, Totton (demolished)
The Winslows (House) West End Southampton (surviving)
Froxfield Vicarage near Petersfield, Stables and Outbuildings
St Mary's Church, Southampton (rebuilt in 1871-9 damaged in blitz)
St James Church, Southampton (demolished - blitz)
St Marks Church, Southampton
Southampton Savings Bank, Havelock Road, Southampton (demolished – blitz)
Provincial Bank, 129 High Street, Southampton (now the Treasury Club/Restaurant)
Philharmonic Rooms, Above Bar, Southampton (demolished - blitz)
Aslatts Coach Factory, Marlands, Southampton (demolished)
Bevois street Footbridge Southampton
Bishopstoke Railway Turntable (replaced later - New engine works)
Brockenhurst Footbridge & Brockenhurst Station Enlargement (surviving)
Hook Station Building, Signal Box & Station Masters House
Netley Station
Two Railway Cottages Old Basing
Redbridge New Oil Store, Southampton
Redbridge Viaduct, Southampton (stabilisation & repair)
Romsey Tank House, Romsey Station (surviving - now gents toilets)
Belvidere Outlet and Wharf, Northam, Southampton
Churches at Northam, Woolston, Netley Marsh and Winchester



Figure 12. Northam station, another railway station built by Bull & Co.

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The Kings Cross Footbridge

Bill Fawcett

This year sees a new arrival on the Hampshire railway scene, albeit a feature which is almost 120 years old. This is the footbridge from London's Kings Cross terminus, which is being re-erected at Ropley, on the Watercress Line. In times long past the bridge was a vantage point for viewing Sir Nigel Gresley's sleek 'pacific' locomotives coasting to the end of a trip down the East Coast main line; it will now give a grandstand view of Mid-Hants locomotives and rolling stock. These include some designed by Gresley's one-time assistant Oliver Bulleid, who took charge of the Southern Railway's engines and rolling stock in 1937 and whose 'air-smoothed' pacific 'Wadebridge' is a resident on the line.

Given that Kings Cross is a terminus, you may wonder why it needed a footbridge; the answer lies in the problems posed by the station's original layout as the number and variety of trains increased. Kings Cross was the headquarters of the Great Northern Railway, which built the route from London to Doncaster and Leeds and used a temporary terminus at Maiden Lane until the present station came into use in October 1852. Kings Cross was planned on the same lines as Robert Stephenson's Euston (1838) and comprised just two platforms: one for arrivals on the east side of the station and one for departures on the west side, separated by fourteen tracks, twelve of which were used to stable carriages when not in use. The arrival side had no facilities other than a roadway for cabs and carriages, while the departure side was served by a long building housing waiting and refreshment rooms with the booking hall projecting in the middle as a fairly plain but dignified centrepiece.



Figure 13. Handysides' handywork: the western span of the Kings Cross roof with their wrought-iron ribs arching above the footbridge steps.

Fortunately, Kings Cross was planned on a generous scale. The platforms and tracks were covered by a trainshed with two arched spans of 105 feet (32 m) each, whose length – 800 feet (244 m) – was exceptional for the period. This is just as well since the site offered little scope for subsequent lengthening, the station being penned in between the Euston/Pentonville Road and the Regents Canal, under which trains pass through the Gasworks Tunnel.

Over the years two further tunnels were built to handle the increasing traffic, and platforms usurped the place of the carriage sidings within the trainshed. The growth of suburban traffic was addressed by the provision of shorter platforms to the west of the main station. This exacerbated the problems of access, particularly between main-line and suburban trains, since only the original departure platform (now No. 8) could be reached directly from either the suburban station or the main booking hall. Access to and from the other platforms involved walking round the head of the tracks, where there was insufficient space for a proper concourse. The purpose of the footbridge was to provide access, half-way down the main-line platforms.

The footbridge was a key feature in a series of improvements completed in December 1893. These included the third Gasworks Tunnel, additional main-line platforms, and the

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reconstruction of the west span of the trainshed. Lewis Cubitt's roof had originally been framed by laminated-timber arches but those on the east side, where the restraining abutment proved inadequate, were replaced in the eighteen-sixties. Reconstruction of the west side was completed in 1888, and was carried out by one of Britain's leading ironfounders: Andrew Handyside & Co. of Derby, who went on to build the footbridge.

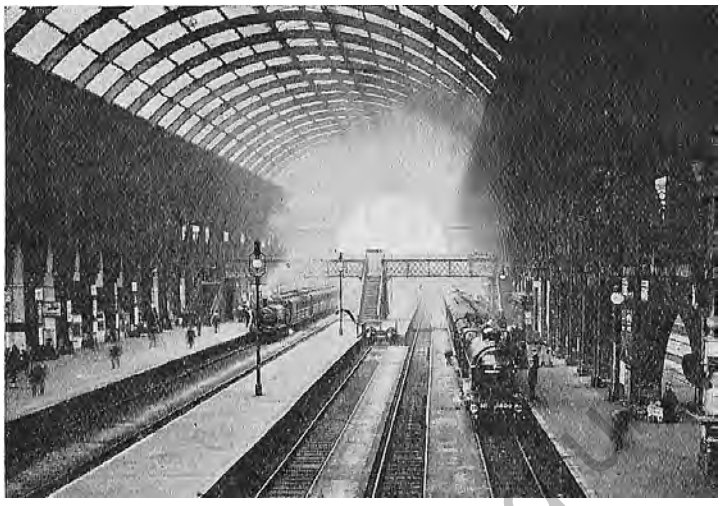


Figure 14. The eastern half of the footbridge c 1910.

Born in Edinburgh, Handyside (1805-87) had gained wide experience before taking on Derby's Britannia Ironworks in 1848 and rapidly expanding its range. This included a series of major arched roofs for British stations: Glasgow St. Enoch (1876, demolished); Middlesbrough (1877, bombed in 1942 and dismantled); and Manchester Central (1880), the latter surviving in good fettle as that city's exhibition centre. The firm also built the rather mundane Broad Street station trainshed (1865, demolished) and Liverpool Street's eastern trainshed (1893-4, demolished), a task which was in hand at the same time as the Kings Cross footbridge. For Handysides, the Kings Cross roof was one of a succession of Great Northern Railway commissions, with the reconstruction of their Newark Dyke bridge over the Trent Navigation being squeezed in prior to the footbridge.

The idea of a footbridge had probably been kicked around for some years, but the impetus to get on with it was twofold. One was the creation of additional platforms in the middle of the station, alongside the wall which divides the two spans of the trainshed; the other was the need for more space for the Great Northern Railway head office. This was based in the upper floors of the original office range, next to the present platform 8, but in the autumn of 1891 the directors agreed to more than double the accommodation by building over the cab-road on the east side of the station. The outcome was the rather Spartan building which now looms over York Way, and the footbridge was essential as a direct link between the old and new office ranges at first-floor level.



Figure 15. Kings Station in 2001: view north along platform 8, showing the west span of the footbridge, complete with the clock which was also a conspicuous feature for more than a century and which is not moving to Ropley.

The footbridge was designed in the office of Richard Johnson, the GN Engineer, who then advertised for tenders for its construction, the usual procedure. These were considered on 5 November 1891 by the GN Way & Works Committee, which was faced with prices ranging from £3 295 8s 6d to £4 814. Handysides were the second cheapest, at £3 695 14s 4d, and were given the contract on agreeing to trim their price to £3 500. The bridge was quite a costly item, as seen by the contract awarded for the new offices for £36 700, at the same meeting.

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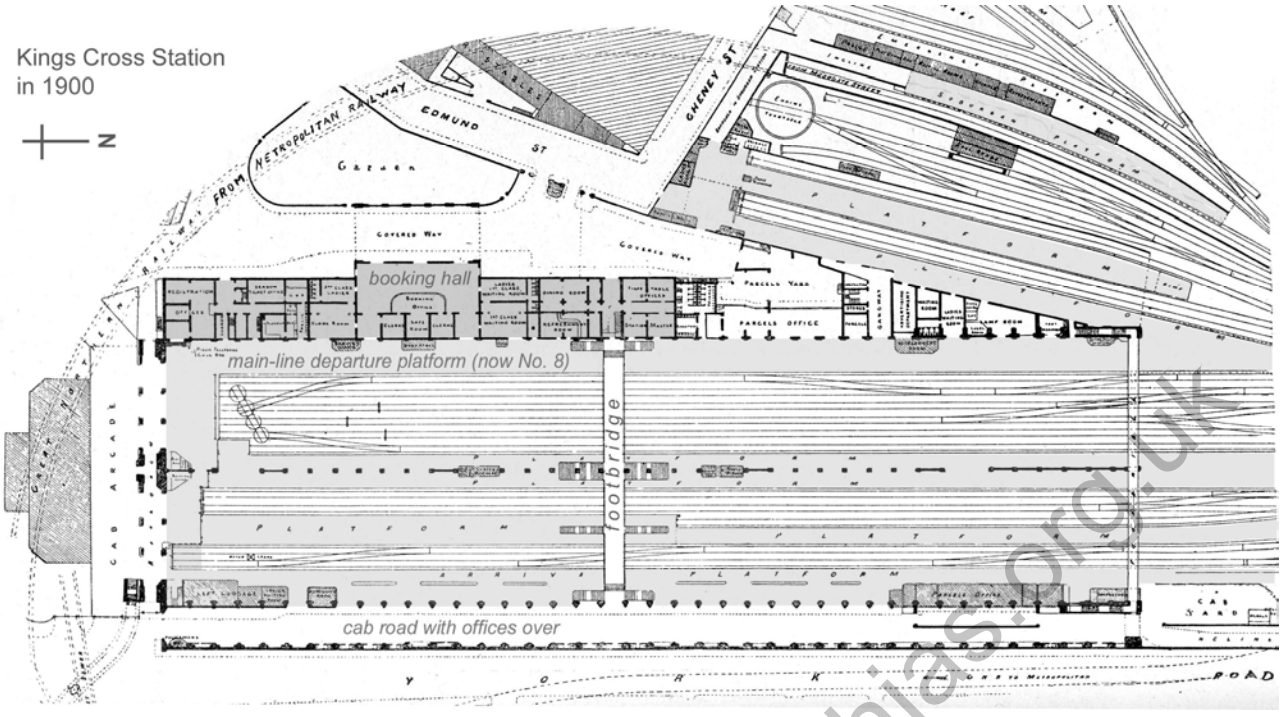


Figure 16. Modified version of a plan of Kings Cross station which appeared in the *Railway Magazine's* 'Notable Railway Stations' series in 1900. The main-line station had not yet received its long-term complement of eight platforms. The recent remodelling has increased this to nine, with the provision of a platform 0 served by a railway track on the site of the cab road.

The bridge consists of lattice-girder spans, fabricated from wrought-iron strip and angle, borne on cast-iron columns. Twenty years earlier, lattice girders had been a state-of-the-art solution for major railway bridges, as witnessed by the Runcorn Bridge (1869), bearing the main line to Liverpool across the River Mersey. Though largely superseded by later designs, they had remained popular for footbridges, indeed a steel version was used by the LNER as late as 1926 for the new Welwyn Garden City station on what had been the GN main line.

The accompanying plan, reproduced from the *Railway Magazine* for August 1900, shows the bridge in context. The western half had a clear span of almost ninety feet (27 m) but the eastern half passed over an intermediate platform, on which additional supporting columns could be mounted; this meant that less substantial (thus cheaper) girders could be employed on that section. The bridge led straight into the offices, with steps down to the platforms. New platforms on the west side (now Nos. 6 & 7) were provided in the nineteen-twenties, but only connected to the footbridge in 1938 after being widened; as first built there would not have been space to get past the stairs.

World War 2 almost put paid to the footbridge, when a bomb tore out part of the west-side offices and brought down several spans of the trainshed just south of the bridge. After the war, public access from the bridge to the intermediate platforms was closed and eventually the stairs down to these were removed. Latterly, its function was really just to link the east and west offices.

The footbridge alone could not solve the problem of public circulation at Kings Cross. A first step in addressing this was a new entrance building and concourse opened in 1973. Built in front of the Euston Road facade, this low, flat-roofed building was intended as a temporary solution, but only now is its successor about to open: a curved, glazed concourse built in front of the west offices. Part of the new order is a new footbridge, approached by a curving ramp within the concourse and linked by lifts and escalators to the platforms.

The old footbridge had to go but, thanks to J.K. Rowling, Kings Cross had acquired a new persona, with platform 9¾ as Harry Potter's point of departure for Hogwarts. The footbridge featured in several of the films, thus gaining a significance which would have mystified the GN officials of 1891. Kings Cross is a

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grade-1 listed building, and English Heritage insisted that the bridge be rescued, the ultimate beneficiary being the Watercress Line, to whom it was donated by Network Rail. The spans were carefully removed from Kings Cross during the Christmas 2008 station closure.

Its new home is at Ropley, spanning the running line and locomotive yard just west of the workshop with access from the car park and picnic area on the north side of the tracks. It will provide a wheelchair friendly route from one side of the railway to the other as well as a splendid vantage point. Both spans are re-used: the one from the eastern trainshed bridges the tracks and the other is set at right-angles to provide a ramped access to the viewing gallery of the new workshop. Fittingly, part of the restoration work on the structure (essentially shot-blasting and painting) has been carried out by PSP Ltd, part of Arlington Fleet Services Ltd at Eastleigh, formerly the London & South Western Railway's main Works. The rest of the work of re-erection is being done by the Watercress Line itself. The project has been grant aided by Network Rail and by the Railway Heritage Trust, while the Heritage Lottery fund is helping to fund research into and interpretation of the bridge and its makers, Handysides, together with related projects devised to involve local schools.

The story of the Kings Cross bridge has a happy ending. Another of London's termini is more problematic: London Bridge, whose 1866 'Brighton-side' trainshed is due for the chop at the end of 2012 to make way for Crossrail's extra high-level platforms. Any takers?



Figure 17. Ropley in February 2012, looking west, with the workshop on the left and the re-erected bridge spanning the track to the engine shed and the running line. Steaming underneath is a Southern Railway Class U 2-6-0 mixed traffic locomotive, rebuilt in 1928 from one of the 'River' Class tank engines. Public access will be from a car park and picnic area on the right.



Figure 18. View north, showing how the eastern half of the Kings Cross bridge has been built over the tracks and in front of the workshop gable. Further work involves re-erection of the former western span at right-angles to this, alongside the workshop, and the provision of a flight of steps leading down to ground level from the junction of the two.

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