



In this issue:

Grants for F-Pit Museum in Washington & National Slate Museum in Wales; 'Engines that change the World' exhibition; stationary steam engine survey results; more on climate change impacts; risky train journeys; Charles Macintosh's Manchester factory; Underfall Yard substation; Portuguese watermills; industrial heritage sites in England survey; Apsley paper trail.

INDUSTRIAL ARCHAEOLOGY NEWS

The Newsletter of The Association for Industrial Archaeology

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Chair's Letter to Members

Dear Members

I welcome you all to issue 207 of IA News and offer my sincerest thanks for your continued support through membership renewal.

Firstly, at the time of writing, I am very pleased to enclose booking papers for our 2024 Conference in Cardiff. This year we're offering two days of bespoke behind-the-scenes tours at industrial sites in South-Wales, a full day of brilliant speakers and of course plenty of time for networking. The lectures will be live-streamed so anyone can join us regardless of location. As always, conference is open to anyone, and AIA members are eligible for a discounted rate.

To encourage new attendees and to make sure conference is accessible by all, this year we're also offering five fully-funded places. These can be booked directly via our secretary by anyone for whom cost is a barrier to attendance. We really hope you can join us, and please do let your friends, family and colleagues know. The more the merrier.

We have a variety of articles and updates for you to peruse, sadly not all positive with reports of heritage crime and possible closures but we share these issues to raise awareness and advocate for more support. Thankfully some good news too, with items on restoration, grant funds and more. Be sure to check out the award-winning publications on page 19, some fascinating scholarship.

As always, contact me any time with your suggestions of what the AIA can do for you chair@industrial-archaeology.org.

Best wishes

Zoe Arthurs

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*Cover Story: Museum of the Gorge, IGMT, Ironbridge. Image
copyright Dr Michael Nevell*

Museum of the Gorge, Ironbridge, Re-opens

At the beginning of February 2024, the Ironbridge Gorge Museum Trust's Museum of the Gorge reopened after major conservation and restoration work. The building was built in 1834 as a river warehouse for the Coalbrookdale Company for the onward transport of its goods down river to Bristol and beyond. It became part of the Museum in 1976.

Standing on the northern bank of the River Severn, the museum has been flooded several times since 2019. Work on restoring the Grade II* Listed building has involved repairing the leaking roof, re-pointing brickwork, restoring the parapets and chimney pots, re-building the original roof for the Lady Chapel and removing the vegetation, as well as future-proofing the structure from future flooding events. This is part of the £9.9m grant from the National Heritage Memorial Fund to help secure the future of the buildings that form the Ironbridge Gorge Museum Trust.

Visitors to the museum can find out about the history of the building, learn about the conservation work that has been carried out and see a selection of reproductions of historic maps of Shropshire from the Patricia Bracegirdle Collection. They can also find out about the Gorge and its museums from IGMT staff and buy souvenirs and gifts from the shop.

F-Pit Museum, Washington, Due for £2.2 Million Upgrade

Sunderland City Council is seeking to appoint a design team for a £2.2 million upgrade of Washington's F-Pit Museum. Following a consultation on regeneration plans for Washington F-Pit Museum and Albany Park in 2022, the Council has now developed a draft outline Masterplan for improvements to the Park and concept sketch proposals for a new Heritage Centre and Café to enhance the heritage offer and visitor appeal of this unique site for residents and visitors.

The successful architect-led multi-disciplinary design team will oversee the details of the upgrade. Due for completion in 2027, the project aims to boost visitor numbers to the museum and to secure a 'viable and sustainable long-term future' for the site, drawing new visitors to Washington and Sunderland. The museum is currently on Historic England's Heritage At Risk Register and only receives around 1,000 visitors a year.

The F-Pit Engine House and attached headgear are a Scheduled Ancient Monument, and are the only surviving structures of New Washington Colliery. The Engine House was presented by the National Coal Board to the people of Washington as a monument, following its closure in 1968, and it has operated as a Museum since 1976. Albany Park was formed from land reclaimed from the former colliery.

Further details here: <https://www.sunderland.gov.uk/fpit-albany-park?ccp=true>

Help Sought in Finding a New Home for Historic Crane

A historic crane in a former engineering works in Yeovil is in need of a new home. The site owners, First Bus, are preparing to demolish the Nautilus Works, an early 20th century complex built by the Petter family of engineers. The site includes the former erecting shop, engine house, and foundry. However, First Bus has committed to donating salvageable items to organisations with an interest in the historic machinery left within the complex. The main items are a gantry crane made by Willcocks and Son of Buckfastleigh, c. 1907, and a large workbench.

The Petters were internationally renowned for their oil engines for use in agriculture and light engineering, and the site can be said to be the genesis of Westland Aircraft. The Petters responded to government pleas in World War I for firms to help build aircraft and built Short seaplanes on a separate site in the town, known from the start as Westland. In 1933 two Westland biplanes became the first aircraft to fly over Mount Everest. The crane

Somerset HER: Nautilus Works, Reckleford, Yeovil. First Erecting Shop of c. 1907 - Second Willcocks & Son Buckfastleigh gantry crane / trolley. HER Image 60244. Photography: Somerset Council, 14 November 2023.



can be seen, together with a full description of the works on South West Heritage Trust's website at: <https://www.somersetheritage.org.uk/record/32107#>

Demolition is to take place in early 2024 (no precise date known at the time of writing). Any organisation interested in the crane or bench should contact Craig Leake, property projects director First Group at craig.leake@firstgroup.co.uk. Smaller items are expected to go to the South Somerset Heritage Collection. A photograph of the bench may be made available.



Thwaite's Watermill/ Image courtesy of Leeds City council, museums and galleries

Industrial Heritage Museums Facing Closure in 2024

Michael Nevell writes: The cost of living crisis combined with cuts to Local Authority budgets in England are leading to the closure, or proposed closure, of industrial heritage sites and museums in 2024. Closures and threatened closures cover sites from Kent and Cornwall, to Hampshire and Yorkshire.

The Heartlands Trust and Cornwall Council have announced that the Heartlands Mining Heritage Centre, in Pool, Cornwall, is set to close, although the surrounding park, offices, and shops will remain open managed by the Council. The heritage centre opened in 2012. The Heartlands Trust said on its website (<https://www.heartlandscornwall.com/>) that it would cease trading at the end of January and "would like to express our gratitude to everyone for their support over the past 12 years". A joint statement from the trust and the local council said: "Heartlands had never seen itself as a commercial operation but finance has always been precarious. Budget over-runs on the original build project meant vital units intended to provide rental streams were never built and intended developer contributions for playground maintenance were never received." Further details here: <https://www.bbc.co.uk/news/uk-england-cornwall-67924474>

In February 2023, Eastleigh Borough Council, which part funded the day-to-day operational costs of Bursledon Windmill, informed Hampshire Cultural Trust of their intention to withdraw their funding from the end of August 2023. Simultaneously, as part of a project to refurbish and replace the mill sails, Hampshire Cultural Trust commissioned a full health and safety report, the outcome of which was a requirement either to have staff available 24 hours a day, seven days a week to turn the mill, or to install a new tethering system for the sails. As of 14 November 2023, there has been no further decision regarding the long-term future of Bursledon Windmill and if it will continue to be open to the public after 1 April 2024. Hampshire Cultural Trust is continuing to work with HBPT and Hampshire County Council to seek clarity. Further details here: <https://>

www.hampshireculture.org.uk/bursledon-windmill

Just before Christmas 2023 Kent County Council announced a consultation on proposals to change the ownership arrangements of the eight windmills that are currently owned by KCC across the county for which it is currently responsible. The windmills affected are Chillenden Mill, Union Mill, Herne Mill, Drapers Mill, Meopham Mill, Davison's Mill, West Kingsdown Mill, and Stocks Mill. The move would save the council around £800,000 during the years 2024 to 2029. Several of the mills are run by local voluntary groups who open the sites to the public. The proposal would be a change to the current strategy set out in the Kent Heritage Conversation Strategy and as such needed to go to public consultation. The consultation ended on January 29th 2024. Further details here: <https://www.kentonline.co.uk/kent/news/have-your-say-on-plans-to-sell-off-kent-s-windmills-297729/>

The future of Thwaites Mill Museum in Leeds, where the local council is considering ending its lease with the Canal and River Trust in 2025 (see <http://industrialheritagenetworks.com/2023/12/18/thwaite-watermill-museum-under-threat-from-local-authority-budget-cuts/>), remains unclear. During the period 2020 to 2022 no industrial heritage sites nor industrial museums closed in England due to the COVID pandemic.

Historic England Adds Interactive Map to its Historic Manufactured Gas Webpages

Historic England has added an interactive map to its Historic Gas Industry webpages. The new feature allows researchers to search for manufactured gas sites in England from the 19th and 20th centuries and to view summary details about each site. This new feature expands the resources already

available for those wishing to research the local manufacture of gas, which already includes a detailed overview report on the history of the manufactured gas industry in England, a heritage assets guide, and advice on recording such sites.

The new interactive map shows the location of hundreds of sites including listed gasworks buildings and gasholders, non-designated surviving gasworks buildings and gasholders, possible surviving structures related to the industry, sites with only below ground evidence, and sites only known from map evidence. The map also has links to the relevant Aerofilms Collection of aerial photographs where these show these gas industry sites, a database which is held by Historic England.

To view the interactive map follow this link: <https://historicengland.org.uk/research/current/discover-and-understand/industry-and-infrastructure/manufactured-gas-industry/>

Thefts Cause Temporary Closure of Island Warehouse at National Waterways Museum

Eleven exhibits missing from the National Waterways Museum in Cheshire are thought to have been stolen from its collection between Friday 9th and Monday 12th February 2024. The Canal & River Trust, who run the museum said that a recent 'significant' cataloguing exercise had allowed it to quickly spot that exhibits were missing. The museum's Island Warehouse room, where smaller objects are displayed and where the thefts are thought to have taken place, has been temporarily closed.

Island Warehouse, National Waterways Museum, Ellesmere, Cheshire. Image copyright Dr Michael Nevell.



A security review is now being completed and the museum is working with police to recover the items. The Canal & River Trust, which operates the museum, has released a document which details the missing exhibits. Included is a model boat, along with several small model engines and three large 'Tilly' lamps. The Canal & River Trust said that "We understand that a closure of part of our museum is disappointing for visitors and thank everyone affected for their patience and support. We hope people appreciate how serious such a theft is and the importance of the investigation and security review currently taking place."

Anyone with information into the missing items is being urged to speak to police.

Restoration Work is Helping to Preserve Craft Skills at Paradise Mill in Macclesfield

The Grade II listed Paradise Silk Mill in Cheshire reopened to the public in February 2024 after a £309k National Heritage Memorial Fund-backed restoration project, supported by building owners Allmand-Smith Ltd. This grant has helped the Silk Heritage Trust acquire a 125-year lease of the top floor of the mill. Paradise Mill, which produced luxury silk goods from 1862 until 1981, will once again be home to silk production, after restoration of two of the mill's 19th century Jacquard looms.

Silk weaving has now joined the list of Endangered Heritage Craft Skills. The Silk Museum has secured funding from The Radcliffe Trust to develop a plan for the conservation of the looms alongside creative placements for emerging craftspeople. Director of the Silk Museum, Emma Anderson, said: "The looms tell remarkable stories of silk production in Macclesfield. It is essential that they are kept in working order so that visitors can experience the incredible sights and sounds of these historically-important machines. We need to revive and expand the technical knowledge of how to operate and care for them so they can continue to inspire future generations of weavers for years to come."

The Museum is planning to return more of its collection of 26 Jacquard handlooms to working order. Tour guides at the museum, Daniel Hearn, and Trish Halloran, alongside Rebecca Faragher, who is a trained weaver, are undertaking the conservation of the building's handlooms, in work supported by funding from the Association for Industrial Archaeology. Hearn said the restoration had required considerable effort. "Establishing a strong foundation in acquiring these skills means we are taking the first critical steps in ensuring that this niche type of Jacquard handloom weaving remains operational within the extraordinary time capsule

that is Paradise Mill.” As part of the restoration project textile students Bea Uprichard and Ruth Farris, from Manchester Metropolitan University, have designed and woven a new silk - the first one to be created at the mill in decades.

Guided tours of the Silk Mill resumed in February. For more information follow this link: <https://www.thesilkmuseum.co.uk/>

Mills Archive Trust Launch emPOWERed Project

In late 2023 The Mills Archive Trust was awarded a grant of £198,751, made possible by the money raised by National Lottery Players, for the Reading emPOWERed research project. With funding until September 2025, The Mills Archive Trust will expand learning opportunities in the Reading area, Berkshire, about the history of wind and water power, revealing their course from traditional mills to modern turbines. Wind and water power have the potential to address present and future climate needs. With the help of local people, groups, and experts nationwide, Reading emPOWERed will explore the resurging significance of wind and water power in the Reading area. The Mills Archive Trust will collaborate with local schools, arts groups, entrepreneurs, cultural groups and academics to deepen the local understanding of these energy sources. More details on the project can be found here: <https://new.millsarchive.org/reading-empowered/>

Developing Heritage Skills in Scotland

The Skills Investment Plan for the Historic Environment (SIP) is a strategy that aims to ensure that Scotland has the skills it needs to promote, manage, and protect its historic environment.

The first SIP was published in 2019 and has recently undergone a major review to reflect the changing needs of the historic environment. The revised strategy has been developed through extensive consultation with the sector, including industrial heritage professionals.

The SIP's three priorities – Growing provision and Building Capacity; Attracting Future Talent; and Improving Access, and Fostering Innovation – will provide a focus for action to protect and nurture the skills needed in the industrial heritage sector.

For further details follow this link: <https://www.historicenvironment.scot/about-us/what-we-do/skills-investment-plan/>

National Slate Museum Secures Lottery Funding

The National Lottery Heritage Fund has awarded Amgueddfa Lechi Cymru - the Welsh National Slate Museum - £412,565 to develop a scheme to turn the venue into a world-class visitor attraction. The museum lies at the heart of the Wales Slate Landscape, which became a Unesco World Heritage Site in 2021. The National Slate Museum was among eight industrial heritage projects that the Heritage Fund awarded a total of £14.8m.

This development funding will enable the National Slate Museum to progress its plans and apply for a full grant of £9,440,414 from the Heritage Fund at a later date. The venue is managed by Amgueddfa Cymru - Museum Wales.

The Engines That Changed The World

Geoff Wallis writes: Thomas Newcomen and other pioneering engine builders are being honoured in a fascinating new display of exquisite, award-winning models of early engines in Newcomen's home town, Dartmouth.

David Hulse, former Chief Development Engineer of Royal Doulton, spent over 50 years researching the world's earliest steam-engines and making highly detailed scale models, believed to be the most accurate representations of these engines ever made. The engines are:

- Thomas Newcomen's 1712 Dudley Castle engine, the world's first commercially successful automatic engine.

View of one of the model rooms, with the patented press for making miniature bricks. Image courtesy of Geoff Wallis.





1/16th scale model of Newcomen's 'Dudley Castle' engine. Image courtesy of Geoff Wallis.

- Watt's Smethwick engine of 1778
- James Pickard's 1779 rotary beam engine
- Boulton & Watt's 1788 engine driving polishing machinery, known as the 'Lap Engine'
- The 1797 Francis Thompson engine at Arnold Mill, Nottinghamshire
- Richard Trevithick's 1804 high pressure engine which drove dye-house machinery.
- Adam Heslop's 1806 winder at William Pit in Cumbria
- Francis Thompson's 1791 pumping engine at Pentrich Colliery, Derbyshire

David Hulse's research is published in '*Mechanical Wonders, The Engines that Changed the World*', published by the author, obtainable via www.davidhulse.co.uk A summary booklet is also available.

Each engine is 1/16th scale, except the Trevithick engine which is 1/10th scale. They are modelled to the highest standards possible, with every part accurately reproduced and operable, taking 5-6,000 hours each to create. David Hulse made every bolt, nut, wedge and nail, some as small as 40 thousandth of an inch (1 mm) diameter. Even the grain of the timbers has been scaled by using Japanese oak. The machine tools used to make these exquisite models are those found in any good model-makers' workshop, but Mr. Hulse's 'pride and

joy' is a Vernon Machine Co., Massachusetts, lathe now over 100 years old, bought for him by his father on his 17th birthday. David refurbished the old lathe and drove it by flat-belts from a petrol engine. It proved ideal for making models has served well for tens of thousands of hours, and still cuts accurately. Mr. Hulse invented and patented a special 5.5 T press on which he made over 191,000 miniature bricks and 8,500 tiles to construct the engine houses. Each brick was fired authentically to replicate the original varying colours, and laid individually with a specially formulated cement.

A 9 minute video about the making of the models can be found at <https://davidhulse.co.uk/>

Now an octogenarian, Mr Hulse has for some years been seeking a permanent home for his life's work. He was offered a very significant sum by a prospective private purchaser, but refused it, having always seen his models as an educational resource for the public. This year he generously donated all eight models and his patent brick & tile press, to Dartmouth Museum where they are now displayed proudly, a few yards from the unique full-size Newcomen Memorial Engine.

The Lord Lieutenant of Devon officially opened the new display on 20th October 2023. This fascinating, well-designed Museum has something for everyone and is well worth visiting. It is open daily throughout the year, see <https://www.dartmouthmuseum.org/>

This new exhibition '*NEWCOMEN and THE ENGINES that CHANGED the WORLD*' is spectacular, scholarly, and accessible to non-technical people. I commend it and congratulate everyone involved in its creation.

David Hulse (centre) at the Official opening of the new exhibition. The Newcomen Society was represented by Past Presidents Professor David Perrett and Geoff Wallis. Image courtesy of Geoff Wallis.



IHSO Ironbridge Stationary Steam Engine Survey 2023

Catherine Clarke writes: The first intern partnership between Ironbridge Gorge Museum Trust and Keele University took place this summer, under the support and guidance of Dr. Mike Nevell, the Industrial Heritage Support Officer for Historic England. The project explored several aspects of stationary steam engine operation, including the impact of rising fuel costs, the potential for conversion to alternative sources of fuel and the availability of volunteers vital to maintaining and operating so many sites.

According to information published by the Office of National Statistics the cost of coal has increased from £145 a ton at the turn of the millennium to over £430 a ton in January 2022. See: <https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/czmo/mm23>

Furthermore, the price rise has coincided with the UK Government's plan for zero carbon emissions by 2050 and a reduction in the national production of bituminous, smokeless fuel, required by the heritage industry. These factors, along with other world events, have resulted not only in sites being charged much more per ton than the government figures

Industrial heritage sites and museums with stationary steam engines in England invited to take part in the study. Base map: Google maps.



would suggest, but often having great difficulty in sourcing a reliable supply of suitable coal. One site commented, 'We have sufficient coal on site for perhaps 4 or 5 years operation but after this is consumed we will have a problem sourcing suitable steam coal and affording it,' whilst another pointed out, 'the preserved railways will have a much more difficult problem as they can't burn wood'. The added effect of the covid pandemic and the cost-of-living crisis being experienced by many households, all point to difficult times ahead for the heritage sector.

Of the forty plus sites that took part in the research project, the vast majority still operated under steam, with only a handful of those surveyed using either an electric barring motor, diesel engine or compressed air. A significant number of sites were considering switching to an alternative fuel. This was largely due to environmental considerations with cost and availability being of secondary significance for most. Changing fuel source posed a number of issues for operating stationary steam engines, most notably the difficulty in achieving the high temperatures required through burning of wood or sustainable biofuels, particularly with large stationary steam engines. Maintaining efficient operation without the internal lubrication facilitated by steam operation, was another concern. However, 60% of sites were not considering alternative sources of fuel but several stated they knew they would have to address the matter in the future as existing stocks of coal dwindled and environmental pressures increased, with one remarking, '...if money were no issue, a brand-new hydrogen boiler,' would be their ideal.

It was pleasing to find that nearly 80% of the sites still held steaming days, although a quarter had been compelled to reduce the number that they held due to the rising cost of fuel and the availability of volunteers. Reliance on volunteers for their specialised skills and practical support was an overwhelming concern, with 80% of sites relying on volunteers to operate steam days. Whilst only a third of sites had seen a fall in volunteer numbers, a third had maintained their volunteers and a third had managed to recruit more, nearly 60% of sites were concerned about recruitment going forward. Many commented on the difficulty in attracting and retaining the support of younger people, as well as older, experienced, skilled volunteers. Of the sites surveyed, 40% felt that the recruitment and retention of volunteers was the greatest challenge that they had faced in the period 2020-2023. One participant noted, '[the] Lack of volunteers has made it difficult to try new things which is crucial as we try to engage new audiences and recover visitor numbers post covid.'



Mine winding engine at Black Country Museum, 2024. Image courtesy of Heritage Innovation.

Fuel issues and volunteers were not the only challenges that operators have faced during the past three years, with the covid pandemic described as having a detrimental impact not only on fundraising and visitor numbers, but also on the maintenance of the steam engines and the site more broadly, during lockdowns. Navigating covid regulations for staff, visitors and volunteers was problematic, indeed legislation and regulatory changes in general continue to be difficult to manage. Insurance costs, and the costs of maintaining and repairing buildings were also of concern, with the latter often complicated by having to negotiate with the site owner in order to address problems.

However, the picture was not all bleak and almost every site felt they had accomplishments they could celebrate. From major successes such as, 'getting the fourth of our giant beam engines to run again after fifty-years deterioration' or 'attracting over £50k in private donations', to engaging new audiences, attracting enthusiastic volunteers, and completing repairs to buildings. Many commented on the real sense of achievement they felt from simply being able to keep going, given all the challenges they had faced over the preceding three years. Sites have also been working together in partnership with larger institutions. For example, the Museum of Science and Industry, in Manchester, has been

working with other museums in the region to trial new approaches to operating stationary steam engines, and have shared their findings with the wider steam community. They have been investigating the effects on wear and tear of operating under reduced levels of internal lubrication when under low pressure, wet steam. They have had positive results with vertical engines and initial findings for diagonal marine engines is encouraging. They have also taken advantage of Government funding for the public sector, to decarbonise their power hall, converting to a smaller, more compact gas boiler.

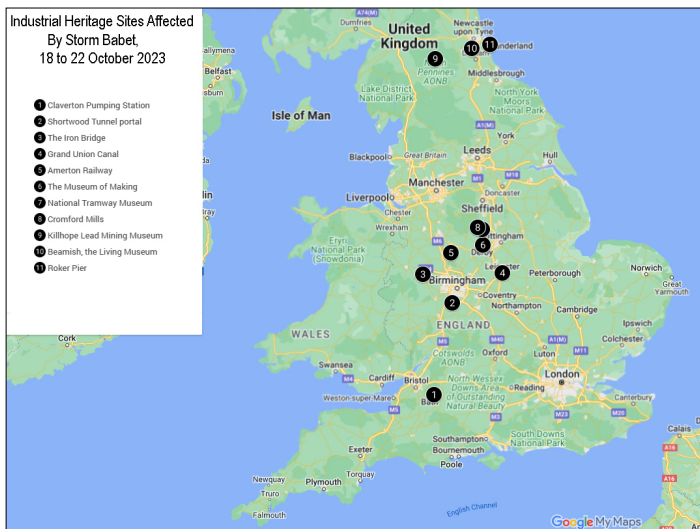
Furthermore, even institutions like the Museum of Science and Industry are having to adapt their approach to volunteers, moving away from the traditional engineer-presenter to one of professionalising the engineer role. Volunteers going forward, supported by museum staff, will be responsible for presenting and audience interaction, maintaining the experience that visitors enjoy whilst ensuring a sustainable model for the technical aspects of steam engine operation. So, although many operators do not have the benefit of large amounts of funding, the sharing of expertise and effective practice by groups of operators means that smaller sites can benefit.

Whilst it is clear from this research that those responsible for the maintenance and operation of stationary steam engines face significant challenges ahead and that without the incredible hard work and determination of everyone involved in keeping them under steam, the sector would be under even greater threat. It will be the incredible passion, dedication and enthusiasm of the guardians of stationary steam engines that will be the most decisive factor in their survival.

The Growing Cost of Climate Change for Industrial Heritage Sites: Storm Babet, October 2023, Case Study

Michael Nevell writes: The growing impact of Climate Change for the industrial heritage sector was underlined by the impact of Storm Babet in October 2023. A rapid online survey of the immediate impact of the storm was undertaken in the last week of October and the first week of November 2023 for the IHSO project, indicating that it had the largest impact on industrial heritage sites in England since the flooding caused by storms Ciara and Dennis, both in February 2020.

Storm Babet, the second named storm of the 2023-24 autumn and winter season, was an intense cyclone that affected large parts of north-western and western Europe from the 16th October, when it



Industrial heritage sites affected by Storm Babet in England, October 2023. Base map: Google maps.

was given a name, to the 22nd October 2023, when it dissipated. It crossed Britain from south-west England to north-east Scotland from the 18th to the 20th October. According to data gathered by the Met Office: 'heavy, persistent and widespread rain... affected much of England, Wales and Northern Ireland from 18th to 20th, with 100mm falling fairly widely [double the average monthly rainfall for England]...Babet also brought some very strong winds, gusting at over 50Kt (58mph) across north-east England and much of Scotland'. ([2023 08 storm babet v1.docx \(metoffice.gov.uk\)](https://www.metoffice.gov.uk/news-views/news/counting-the-cost-of-climate-change)).

The impact in England and Wales was not as severe as north-east Scotland but was still extensive, with flooding across Yorkshire, the East Midlands, and the Humber area, as well in Suffolk, and around Stafford and Wrexham. Its impact on industrial heritage sites in England was felt in three ways. The most severe impact was through flooding episodes. The ground floor of the Grade II Listed Museum of Making ([Derby Museums](https://www.derby.gov.uk/museum-of-making)) (the Old Silk Mill), in the centre of Derby, was flooded by the adjacent River Derwent on 21st October to between 0.5m and 0.7m. The redesign of the museum building at the beginning of the 2020s incorporated elements to protect the building and its archives from flooding by the adjacent River Derwent. Evenso, Derby Museum estimate that the damage runs into the tens of thousands of pounds, and the museum will not re-open until well into 2024. Other industrial heritage sites affected by flooding included the heritage narrow gauge Amerton Railway in Stafford, the National Tramway Museum at Crich in Derbyshire, and the Claverton Pumping Station near Bath on the Kennet and Avon Canal. For the latter this was the third time this year that parts of the site had been flooded by the River Avon, from which water is pumped up to the canal.

Secondly, the impact of intense rainfall was also seen in several landslip events on the canal network. A landslide occurred on the Worcestershire & Birmingham Canal by the Shortwood Tunnel west portal (near the village of Tardebigge, Worcestershire), whilst a 50m stretch of canal bank collapsed due to flooding along the Grand Union Canal in central Leicester from the adjacent river Soar (<https://canalrivertrust.org.uk/news-and-views/news/counting-the-cost-of-climate-change>).

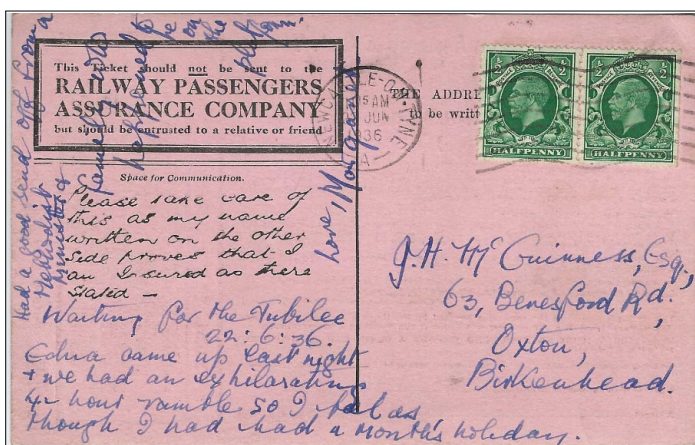
Thirdly, the impact of winds was seen at several industrial heritage sites along the north-east coast of England. In South Shields, the storm dislodged the dome of the Tyne South Pier lighthouse and sections of railings and decking were also destroyed at Sunderland's Rock Pier by large waves in conjunction with the high winds.

The IHSO project has been gathering data on the impact of climate change on Industrial Heritage sites and monuments since January 2020, and each winter and summer of this decade has brought notable weather extremes. Current Met Office projections down to 2050 suggest that Britain will experience an increase in winter storm intensity, an increase in the length of dry spells, and an increase in temperature extremes as the climate continues to warm. Since many industrial heritage sites lie in areas vulnerable to flooding, such as river valleys or along the coast, these sites are most at risk. However, all industrial heritage sites need to develop further their disaster management plans, especially early warning of weather events, and to think in detail about adaption options.

How Risky Were Train Journeys in 1936?

John McGuinness writes: I recently came across the a post card (see below) that had been sent from my aunt to her younger brother. On examination it turned out to be a certificate of insurance for rail

Railway postcard. Copyright John McGuinness.



Railway Passengers Assurance Co.'s Ticket
 Insuring against Personal Injury caused by Accident to the TRAIN
 during a RETURN RAILWAY JOURNEY in a Passenger Carriage

Sum Assured £1,000 - Premium 6d.
 No. 5228 (185)

THE Purchaser of this Ticket, if above the age of 14 years at the time of issue, is insured against Death or Injury caused by an Accident (not due to War or conditions arising therefrom) to the Train by which he or she is travelling in a Passenger Carriage, within the limits of Great Britain and Ireland, by virtue of the Railway Company's Ticket issued herewith.

The Benefits assured are as follows—
 In case of such Death within 3 calendar months from the date of such Accident £1,000
 In case of Total Disablement " " 28 a week Limited to 26 consecutive
 In case of Partial Disablement " " 22 a week " weeks in a 1.

The Purchaser should write his or her Name and Address at the foot hereof at the time of issue.

In the event of Death or Injury, notice must, within fourteen days, be given to the Railway Passengers Assurance Co., 84 Cornhill, London, E.C. 3.
 (Manager—Sir Arthur Worsley, Bt., C.B.E.)

This Ticket is subject to the conditions imposed by the Railway Passengers Assurance (Consolidation) Act, 1938. To transfer this Ticket is punishable as a misdemeanour.

THIS TICKET MUST BE PRODUCED BEFORE A CLAIM CAN BE ADMITTED BY THE COMPANY.

No other Journey Insurance Ticket of this Company may be held by the Person insured hereby

Name of Person Insured hereby: *S.M. McGinnis*

Address: *Rushbrook, Millfield, Co. Wick, Ireland.*

NOTICE: The Insurance granted by this Ticket refers only to injury to the person of the holder.

PERSONAL ASSURANCE
 The Company offers Insurance of All Risks, e.g. —
 Accidents of All Kinds
 Sickness
 Fire and Theft
 Railway Accidents
 Motor Accidents
 Motor Vehicle Accidents
 Burglary and Theft
 For which terms will be inserted and Premiums arranged on application to an Agent of the Company or to the Head Office: 84 CORNHILL, LONDON, E.C. 3.

R.P. 704
 W.B. 434 (191)

Charles Macintosh's Manchester Factory 1825 – 1982.

Ian Barclay writes: Charles Macintosh (1766-1843) was the son of George Macintosh, a Glasgow entrepreneur who made his fortune from the production of purple dye from Cudbear lichen by a secret process. To preserve the secret his factory was enclosed by a 10ft wall and all employees were Gaelic speaking highlanders.

Railway Insurance Certificate on the reverse. Copy-right John McGuinness.

travel and had cost 6d or 2½ p. It undertook to pay £1,000 upon death resulting from an "Accident (not causes by war or conditions arising therefrom) to the train by which he or she is travelling in a Passenger Carriage, within the limits of Great Britain and Ireland, by virtue of the Railway Company & Ticket issued herewith". There was also provision for compensation in the event of "Disablement". There is a place, on the side, for the certificate to be dated but this has not been done. It advised that "The Purchaser should write his or her Name and Address at the foot hereof at the time of issue". My aunt did this.

The ticket is numbered 5228 but there is also the number 185 in brackets. Does anyone know to what this might have referred or why there were two numbers? The reverse side is in the form of a post card, with places for both the name and address of the recipient and for a short message. This appears to have been filled in by two different people using different inks. The main message is advising my uncle to look after it.

My aunt posted this to my uncle; it is dated June 1936 and was posted from Newcastle-on-Tyne. This was in accordance with the note at the top which says that it should not be sent to the Railway Passengers Assurance Company but "should be entrusted to a relative or friend".

As there is no reference to a specific train journey, was this an open insurance for life or just for the date that should have been inserted? However, the note at the top of the certificate refers to "Accident to the train during a Return Railway Journey in a Passenger Carriage" and so would appear to apply to both outward and inward journeys. It would appear, that the cost of 6d was the same regardless of the length or route of the journey.

It would be interesting to know more about this form of insurance. When was it introduced and when did issue stop? Did a lot of passengers have such insurance? Were there many claims?

In 1822 Charles, a chemist, whilst trying to find uses for the waste products of gasworks, discovered that one of the by-products, naphtha, could be used to make a solution of India rubber. In 1823, Macintosh patented the idea of making cloth using rubber solution between two cloth layers and established a small business in Glasgow.

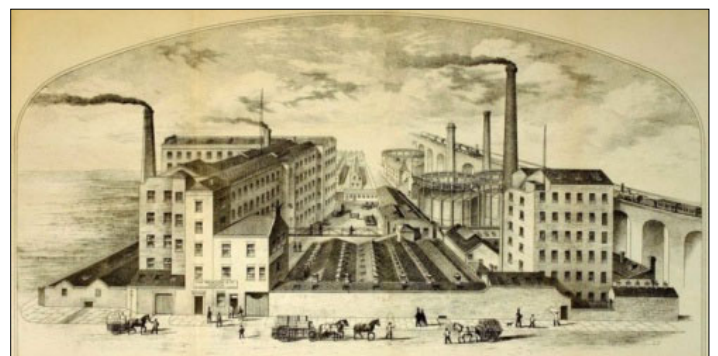
In 1824 Macintosh moved to Manchester and entered into partnership with the Birley Company to make rubberised cloth according to his patent. Birley was a mill owner and magistrate who reputedly led the Manchester and Salford Yeomanry at the Peterloo Massacre. Construction of a mill in Chorlton-on-Medlock to produce the rubberised cloth began in 1824, although the solution of rubber in naphtha continued to be made in Glasgow until 1832, and was transported to Manchester in barrels.

As this was the first mass application of a new industrial process, the mill was designed to be adapted into another cotton mill should the venture prove unsuccessful. A new mill (Mill No 1) was completed in 1825 with a 20hp side-lever engine installed by Boulton and Watt.

The figure below shows the Mill No. 1 in 1857, next to the Manchester to Liverpool railway line. Commercial production began around 1832. By June 1836, net sales reached £125,758.

A fundamental problem with the Macintosh process was that the rubber remained liable to melt or stiffen

The Macintosh factory in 1857.





The Dunlop Cambridge St Factory in 2002. Image courtesy of OAN.

process. Charles Macintosh died in 1843, leaving Hancock in charge. In 1844 Hancock discovered the secret of Goodyear's vulcanisation process and was granted a UK patent for this. He thus acquired the English rights to 'vulcanisation'. This new process involved the addition to rubber of sulphur and steam heating the rubber coating a process which removed the problem of temperature sensitivity.

This discovery was used in a variety of rubber products which greatly facilitated the expansion of the Macintosh works, leading to a proliferation of products; the firm's advertisements in connection with the Great Exhibition listed over 100 lines. In 1845, a vulcanising boiler was added to the site, and by 1847 a "Vulcan House" had been constructed (and can be seen on the excavation plan to the right on page 13).

with changes in temperature. For this reason, the waterproof cloth did not become popular amongst the fashionable classes, although a large market existed within the armed forces and the merchant navy. Thomas Hancock had patented a process for softening rubber and came into conflict with Macintosh's patent, and the dispute was resolved whereby Hancock got a free licence on condition of acknowledging the patent. In 1830, Hancock was taken into the Macintosh Company as a partner. This proved to be fortuitous for the Macintosh

During the 1890s, Macintosh began manufacturing tyres, leading to the alteration and expansion of the buildings on the west side of Cambridge Street. Between 1885 and 1923, manufacturing sheds and engineering shops were constructed as part of this expansion. It has been estimated that, in 1911, 70% of the national rubber industry's 10,700-strong workforce were based at Manchester and Salford.

By the beginning of the twentieth century, tyres had become the leading product, not only of the Macintosh Company, but also of other rubber-

Mill No 1 Excavation Site in 2002. Image courtesy of OAN.



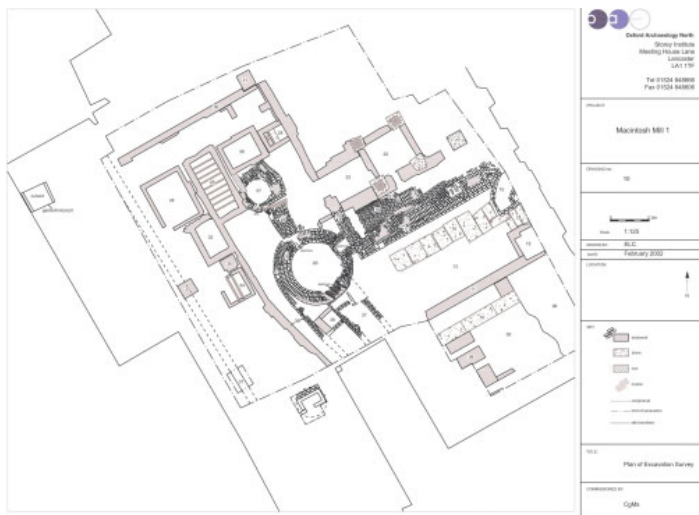


Figure 01: The original remains of Macintosh Mill 1 from the Excavation.

Details of the Chimney and Vulcanising Pans. Image courtesy of OAN.

producing companies, particularly the Dunlop Company. The Macintosh Company promoted normal air pressure tyres as a reply to the Dunlop pneumatic ones, a decision which eventually led to the Dunlop Company take-over in 1923.

Macintosh Mill 1 was destroyed as a result of bombing raids during 1940, although the manufacture of rubber products continued until 1992.

The excavation, by Oxford Archaeology North (OAN), was conducted in 2002. The Plate 1 shows the full extent of the final factory, with every building shown being part of it.

The original site of Mill No.1 is in the foreground. The six stories building in the back left had a natural underground lake beneath it which was used as a water source. So much water was abstracted that by the 1960s it had become saline; it was 30 miles from the sea and the Cheshire salt mines.

The image at the bottom of page 12 shows a more detailed view of the excavation which covered an area equivalent to 454,233 square metres and as such, the report is extremely detailed, so only highlights are given here. All the component bricks were handmade and wire cut. They were mortar-bonded, and laid on-bed in regular courses, and all but the uppermost surviving course were very well preserved. Several cast iron support pillars were exposed at the point of juncture between two walls. The foundation of a chimney stack (see image on page 12) was exposed and this had an internal diameter of 3.2m, and the walls had an average thickness of 0.86m. The chimney is shown on an 1831 map of Manchester and in the 1857 etching. The use of circular chimneys was gradually replaced by hexagonal ones and two such chimneys still exist on the site. Nearby were the remains of vulcanising

pans probably added after Hancock's "discovery" of vulcanisation about 1844.

One of the rooms was clearly a later addition, possibly associated with the documented arrival of Hancock's machinery from London in 1834. However the Boulton & Watt Portfolio mentions an engine bought by Macintosh between October 1835 and August 1837, and implies that it was installed alongside the 1825 engine. A Boulton & Watt steam engine was still in use in the late 1950s.

There was a substantial wall built across the site which was in keeping with the trend of a full-height internal cross-wall segregating the engine house from the main part of the building in order to provide a fire barrier. This type of construction became known as "fireproof mills".

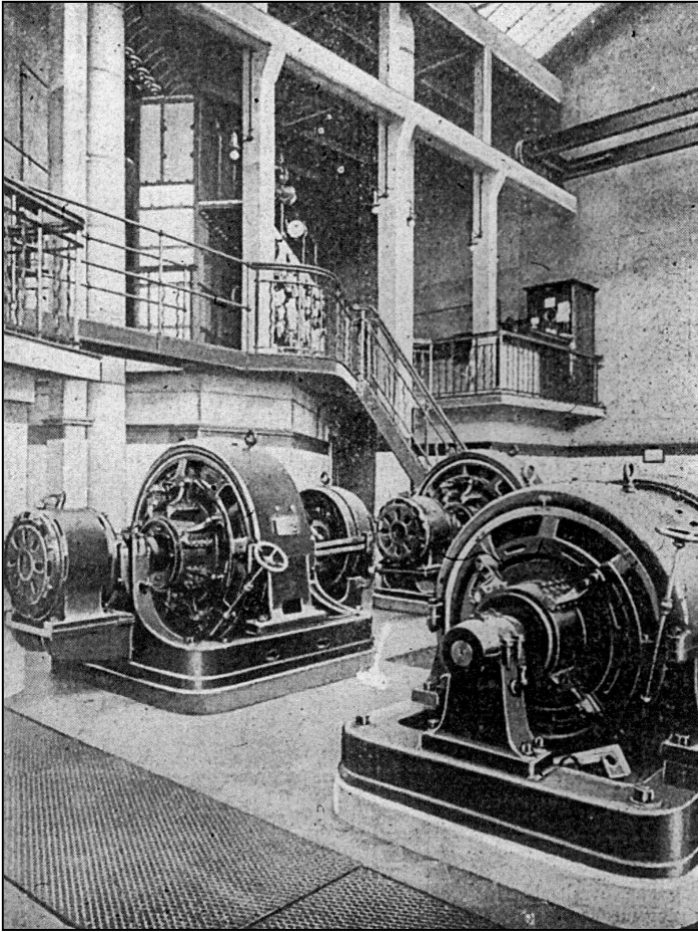
The author wishes to acknowledge Oxford Archaeology North's (OAN) permission to use parts of their survey report.

Underfall Yard Substation, Bristol

Peter Lamb writes: It is surprising to hear that an electricity substation has received listing status by English Heritage. It must be highly unusual for this to happen! It is in Bristol at Avon Crescent, Cumberland Basin, BS1 6XH. It has been designated because it is an early and innovative use of concrete construction and as a rare survivor from a pioneering period of electricity development. It was built by LG Mouchel of the Hennibique Concrete Company in 1906 to provide a DC supply to Bristol Docks. Bristol Corporation Electricity Department had installed their first Alternators in 1902 generating at 2kV at Feeder Road, but by 1904 realised that a higher voltage output to supply Bristol would be necessary, thus raising it to a 6.6kV output with the next installation.

The Exterior of the building, which shows the arched windows, now blocked-in. Copyright Peter Lamb.





The Rotary Machines in the early 20th century.

In 1907, the Docks Committee decided to convert the Underfall Yard Complex, which had been built in 1887, to be powered by electricity instead of the Dock's hydraulic system.

Then three 6.6kV cables were laid to the new substation building in Avon Crescent, which was fitted out with Rotary Convertors to change AC to DC. DC cables were laid across the road to the Underfall Yard Complex to feed new DC motors connected to new pumps situated in the Pump Room, pumping water out of the Floating Harbour. This was an up-to-date method for an early creation of Brunel, using a hydraulic system to operate pumps, which he had designed. His idea was to remove water from the harbour bottom in order to remove any silt build up brought about by the River Frome pouring into the Floating Harbour, hence the word "Underfall".

In the early 1900's AC motors were not suitable to drive machines due to the fact that they couldn't then be varied in speed and so DC motors were much in demand everywhere particularly in industrial complexes. At that time Bristol had a 500volt DC network supplying hotel lifts and Bristol Cathedral's organ and the Arc Lighting, but the network didn't stretch so far as Underfall Yard.

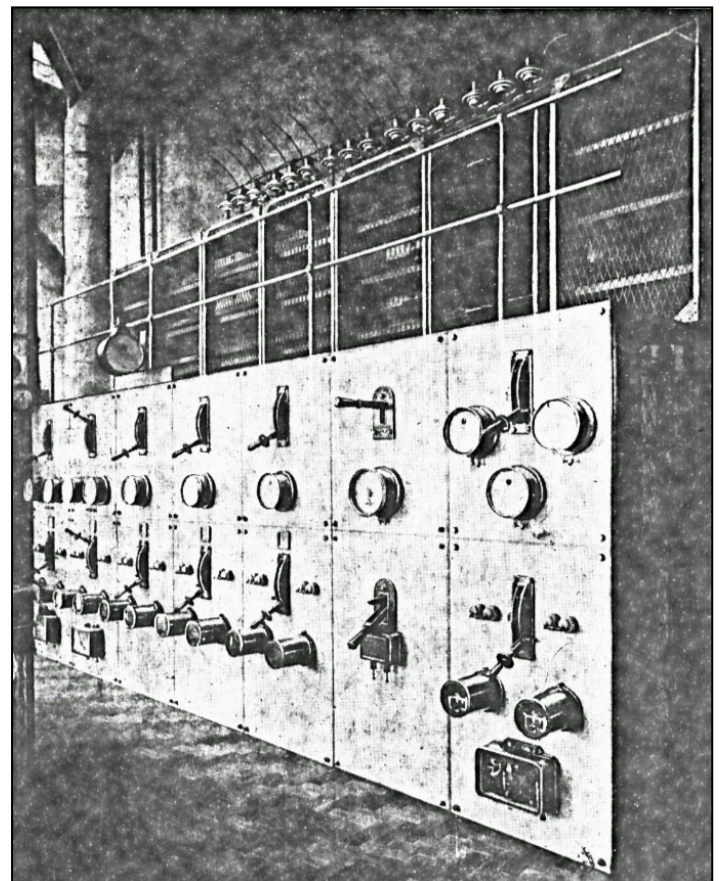
Not only Bristol Docks was supplied with a DC supply, but also Avonmouth Docks, where a similar Rotary Converter station was set-up in 1908. These Docks had recently been purchased by Bristol Corporation and they wished to shut down the small DC generating station that had been established there.

In Bristol, the Underfall Yard Substation building housed three Rotary Convertors, two – 300kW Westinghouse machines and one – 300kW Peebles machine with an output of 500-550volts DC. They were controlled from Siemens switchboards mounted on a mezzanine floor with cables across the road to the Underfall Yard complex.

Unfortunately, the rotary converter machines have long gone. They were made redundant when Underfall Yard was converted from DC to AC in October 1938 according to the Minute books of the Underfall Yard Complex with the DC motors being replaced with AC machines, which are still in use today, see picture. The machines in the substation building thus became redundant, but we believe they were not removed until the wartime, when they would have been sent to a scrap yard to aid the war effort.

The site of the Underfall Yard Substation is interesting because it is built on an awkward

The Controlling Switchboard in the early 20th century.





The New Pumps installed in 1907. Image copyright Ian Barclay.

triangular piece of land in Avon Crescent being then restricted by the Bristol Harbour Railway. More details of the building are interesting because the front façade is finished to a high standard with arched windows and mouldings. Also inside the design is quite special with free-standing columns supporting a mezzanine gallery on which is situated the controlling switchgear. Not content with such architectural merit, the walls are covered in tiles and the balustrades consist of wrought iron-work and polished wood.

After the War the empty building had a small local substation installed in it as now, and in the 1960's was used for storing domestic electrical appliances. Much later it was used as a workshop for servicing the engines that powered the small so-called "Pocket Power Stations", which were remotely controlled power plants that had been established throughout the South West between 1959-1965 as a pilot project for peak-opping and supporting fragile networks. The engines serviced were also aero-engines, compact Bristol Proteus type, the idea for which had been devised by the then Chairman of SWEB, Bill Irens, who had been previously the Chief Electrical Engineer of Bristol Aero Engines.

So one may ask, having saved the building for posterity, what use can the building be to anyone? It will be interesting to see, who may decide to offer the empty building for a specific use, since it seems unclear, who owns the site at the moment?

Portugese Watermills Query

Linda and Stewart Shuttleworth write: We were touring through Spain and northern Portugal in May 2023 when our first stop Tordesillas on the Douro had the remains of several watermills. The one in the photograph on the town side of the river was quite intriguing. We understood that it had at least three waterworks but couldn't quite work out its complex construction. We wonder if any of the readers of IA News can throw further light on this



A watermill on the banks of the river Douro at Tordesillas, Portugal. Image copyright Linda & Stewart Shuttleworth.

type of Mill?

By the river in Braganca, there were several half-ruined buildings which looked to have been small mills. Also the Science and Technology Centre was said to be on the site of the city's first electricity supply; we wondered if this could have been hydro? And the Silk House Museum had apparently been a silk mill (and now has a demo hydro setup), but there was no further info other than general education about silkworms and silk processing.

Also, by the river in Villa Real, we found the conserved remains of two mills, one vertical and one horizontal axle, but no information about their ownership or operation.

We also found the extensive remains of the ceramics industry in Porto, on the Novo Gaia (south) side of the river. Devezas was one of the names here. The building frontages and kiln remains look quite vulnerable to soon disappearing

Watermill at Vila Real, Portugal. Image copyright Linda & Stewart Shuttleworth.





Pottery kiln remains at Portugal. Image copyright Linda & Stewart Shuttleworth.

under redevelopment, even though there is some historic designation (Industrial Patrimony). There was also a funicular railway in the area of the port houses, we discovered! On the north side of the river, towards Foz on the estuary, there was a board to mark the site of the Massarelos Ceramics works. In both cases there is some information about the history of the companies online.

Later we came through Vila Nova de Famalicao, and saw indications of some interpretation of the city's textile heritage, in the form of a textile museum; need to go back there next time! There looks to be more recording and interpretation of the River Ave industries than we saw elsewhere, plus an active contemporary textile industry.

Industrial Heritage Sites in England Resurvey Project

Dr Michael Nevell writes: The Industrial Heritage Support Officer (IHSO) project, at Ironbridge Gorge Museum Trust, is pleased to announce that Heritage Innovation have been appointed to undertake a re-survey of the c.600 publicly accessible industrial heritage sites in England. This appointment follows an open tender process. Funding for the project has been provided by Historic England, for which IGMT is very grateful.

The 2024 resurvey follows on from earlier projects delivered by PLB Consultancy in 1998, and by Sir Neil Cossons in 2008. These bodies of work have shaped the past 25 years of industrial heritage management; analyzing the state-of-play and informing recommendations for England's portfolio of industrial sites.

The 2024 survey will gather data on these sites which can be compared with the earlier reports. The

main focus will be visitor numbers, conservation and maintenance, funding models and community engagement. The survey will also consider how sites are responding to the challenges of Covid-19, the cost-of-living crisis and climate change. Any parties who receive an invitation to complete the survey are urged to do so where possible, as this will help to build a truer picture of the experience of sites and people and can inform the subsequent management recommendations.

Following the online survey a series of interviews will be undertaken with selected representatives from a variety of sites across all regions of England and the IHSO Steering Group. These interviews will capture the unique challenges faced by particular site types and take a deep-dive into the management models and mitigation options utilized, or not, across the varying site types and regions. A report will be produced with an analysis of the data collection, recommendations for sector resilience and opportunities for future research. The report will provide a snapshot of the state-of-play today, framing the current landscape of England's industrial heritage, showcasing the people and frameworks which keep the sector moving and signposting the networks and resources available to support the individuals and organizations that manage industrial sites.

The location of c. 600 industrial heritage sites preserved and open to the public in England in 1998. Image courtesy of Historic England.



The project will run from March 2024 until July 2024. Two online seminars will bookend the project to inform stakeholders of progress and open the lines of communication for feedback from interested parties. These will be supplemented with regular online updates via the IHSO website and social media channels. Heritage Innovation welcomes comments, suggestions and feedback throughout the project.

The contact email for the project is IHSO@ironbridge.org.uk and contact can also be made via the IHSO webpage: <https://industrialheritagesupport.com/>

This work is being led by Dr Paul Belford, CEO of Heritage Innovation. Paul has rich experience of the management and governance of industrial heritage sites in the UK and internationally. He will be supported by Zoe Arthurs MSc, who has a research background in industrial heritage sustainability and who is current Chair of the Association for Industrial Archaeology. Together they bring over 30 years of knowledge and experience of industrial heritage and hope this project furthers understanding and appreciation of the industrial resource.

For more details or to contact the project team visit www.heritageinnovation.org

European News

Recommendations from the Conference "Industrial Heritage in the Heart of Green Europe"

The conference took place on November 16-17 at the Silesian Museum in Katowice. The organizers were: the National Heritage Institute of Poland, the Polish TICCIH Committee, and the Foundation for the Protection of the Industrial Heritage of Silesia. The conference was attended by 130 participants, researchers, scientists, employees of monument protection offices and administration related to monument protection.

Based on research results, exchange of views and discussions, Conference participants from 8 countries made arrangements, the application and implementation of which will affect the preservation of industrial heritage and will also contribute to environmental protection by reducing CO2 emissions into the atmosphere.

1. Industrial heritage is part of the common identity of the people of Europe. It is a testimony to the dynamic development of European countries.

2. Industrial heritage, as a collective term for immovable and movable heritage, is the basis for identifying the inhabitants of various industrial regions of Europe. It is a testament to meeting citizens' desires for increasing mobility and the need for efficient manufacturing solutions.

3. Information policy conducted by independent media plays a key role in raising awareness of the need to preserve industrial heritage in Europe.

4. Preserving industrial heritage through its adaptation and reuse is environmentally friendly, saving huge amounts of energy already invested in buildings and structures. It generates significantly less CO2 than is used in the case of demolition and construction of new similar facilities.

5. Coal should be treated as an essential component of Europe's industrial heritage, driving its development during the industrial revolution. This has already been recognized by the UNESCO inclusion of several coal-related sites and landscapes in Europe.

6. Maintaining our coal-dependent mobile heritage is essential if current and future inhabitants are to understand their history and learn from past patterns. For this reason, it is important to maintain and preserve coal mining capacity in Europe to ensure that the needs of technical museums presenting heritage in motion, such as locomotives, steam engines, steam-powered ships and other historic coal objects, are met.

7. Taking into account the importance of coal in the economic history of Poland and the fact that several mines producing suitable coal are still operating, it is worth considering nominating one of the mines in Poland as a historic mine, the aim of which is to secure future coal supplies for Europe's industrial heritage.

On behalf of the conference participants, the text of the recommendation was edited by:

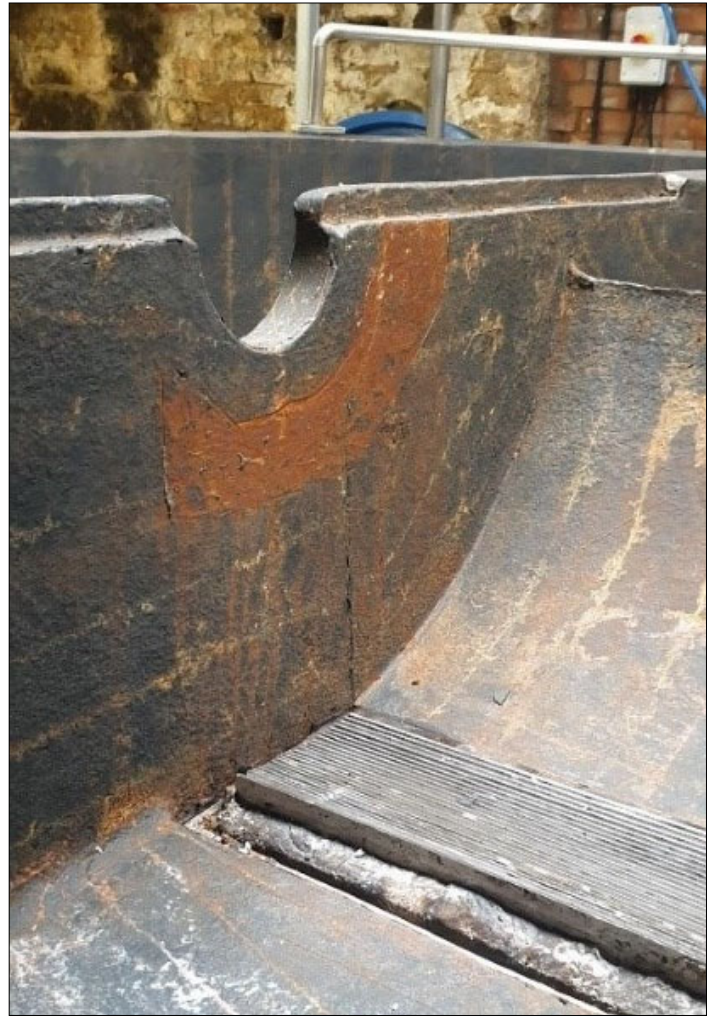
Hildebrand de Boer
Tiddo Bresters
Piotr Gerber
Jaap Nieweg
Miles Oglethorpe

Apsley Paper Trail

Elena Lewendon, CEO of the Apsley Paper Trail, writes: In 2023, The Apsley Paper Trail (APT) successfully secured a grant of £5000 from the Association of Industrial Archaeology to restore a rare 1930s Hollander Beater. Before its invention in the early 17th century, paper production was laborious, but the Hollander enabled efficient mass production, leading to cheaper and more readily available paper. Together with the first Fourdrinier installed at Frogmore in 1803, these innovations spurred the communication and education revolutions of the 19th and 20th centuries which changed the course of human history.

This Hollander, dating back to 1937, had a broken flange, degraded coating contaminating the pulp and a broken bearing. Thanks to the grant, repairs and re-coating were successfully completed with the help of volunteers. Junior paper makers have learned to operate it, preserving historic skills at risk of extinction. The restored Hollander can process tougher fibres, including denim, allowing for the recycling of unwanted clothing into paper, significantly increasing our ability to produce sustainable papers and demonstrate recycling to visitors.

The project also contributes to the creation of a new visitor experience, following an arson attack on the Mill's visitor centre in January 2022. The restored Hollander will serve as a major attraction on the new tour route, enriching the visitor experience with working machinery. It is now the only operating Hollander of its age and size in the UK. Additionally, volunteer tour guides have been trained to include this new feature in guided tours, further enhancing their knowledge and skills. APT extends its gratitude



Interior detail of the Hollander before restoration. Image copyright Apsley Paper Trail.

to the AIA for their generous support in conserving industrial heritage and transferring invaluable knowledge.

The Hollander after restoration. Image copyright Apsley Paper Trail.

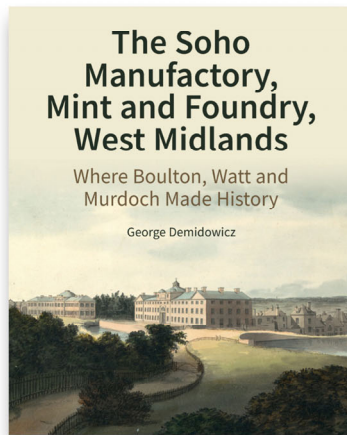




Historic England



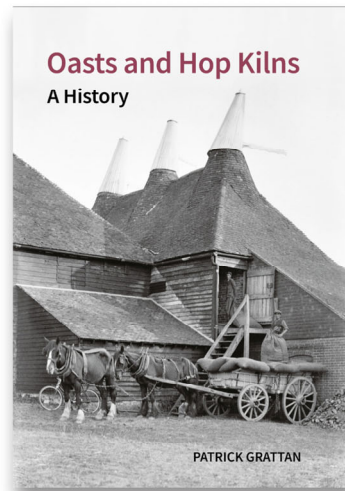
Historic England is partnered with Liverpool University Press for the long-term running of the Historic England imprint, the leading list on heritage issues.



The Soho Manufactory, Mint and Foundry, West Midlands
George Demidowicz

FEBRUARY 2022
HB 9781800349285
~~£44.00~~ **£35.20**

An illustrated volume that provides a fascinating insight on a ground-breaking eighteenth-century historic industrial complex.



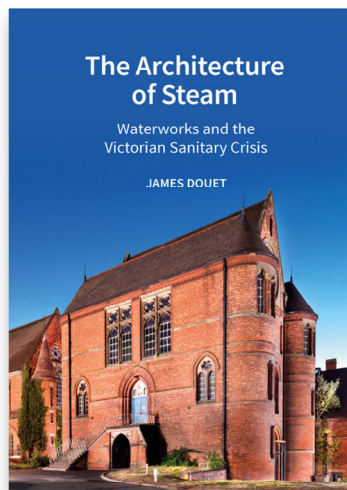
Oasts and Hop Kilns A History
Patrick Grattan

NOVEMBER 2021
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This book is the first comprehensive account of the 400-year history of hop drying buildings, oasts and hop kilns, unique to England. Pieced together from multiple sources, the charm of oasts and hop kilns is captured in sketches, diagrams and photos.

Winner of the Association for Industrial Archaeology's 2023 Peter Neaverson Award for Outstanding Scholarship

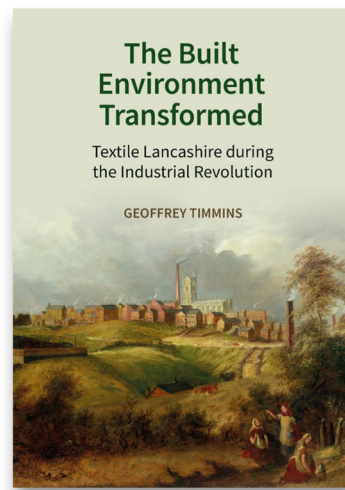
Winner of the Association for Industrial Archaeology's 2023 Publications Award



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PUBLISH

AIA Conference, Bath 2023. Report of Visit to Air Salvage International

Geoff Wallis writes: For me the highlight of the conference was our visit to Air Salvage International at Cotswold Airport, formerly RAF Kemble, now a thriving private airport with a runway long enough for 'jumbo jets' to land and depart.

Founded in 1997 by Mark Gregory who kindly conducted our tour, ASI was the first company in Europe to offer aircraft dismantling services. Customers include component-stockists, banks, lessors, insurers, airlines and UK Government agencies. Private individuals also buy components as souvenirs! Planes perhaps only 20 years old but at the end of their economic life or with time-expired frames fly in to be dismantled. 80% of a plane's value is its engines, so these are usually tested, removed and packed for re-leasing by their owners, often a funder such as a bank. The Air France Airbus A318 we visited during the tour is worth about \$50K at auction, but \$1.2million as parts. A brake unit would be worth \$36K and an engine

thrust-reverser unit \$150K. Almost everything can be recycled, from the escape chutes (worth \$7K each) to the toilets. The aluminium structure is cut up and re-melted, and the small amount of residual waste material is Incinerated at Gloucestershire Councils incinerator to generate electricity, with the residual ash used for road fill.

Our party of twenty could easily stand inside one undercarriage bay: the scale of a wide-bodied jet is awe-inspiring. Air Salvage International has completed over 1000 projects in 26 years across the globe including in Togo, New Zealand, Dubai, Sudan, Ecuador, USA, Libya, and Costa Rica. It handles 10% of the global disassembly market at its Cotswold facilities where they employ over 60 people.

MD Mark Gregory inspires interest in the next generation by sponsoring scholarships and conducting groups of young people around the fast workshops. He makes no charge for tours but invites donations to the Wiltshire Air Ambulance Service, for which he has raised nearly £6,000 this year. Tours are very popular and are fully booked through to 2025.

An Air France Airbus A318 visited by the AIA in 2023 at Cotswold Airport. Image copyright Geoff Wallis.



The 5th East-West Workshop on Industrial Archaeology (The Architecture of Industry)

Guihua Bu and Xi Zhao (University of Science and Technology Beijing) write: The 5th East-West Workshop on Industrial Archaeology was successfully held online on November 25, 2023. The event gathered more than 70 participants from Africa, the Americas, Asia and Europe, consolidating itself as one of the most popular international virtual events on industrial archaeology and heritage. The East-West Workshops on Industrial Archaeology are organised by the Institute for Cultural Heritage and History of Science & Technology of the University of Science and Technology Beijing (ICHHST/USTB, China) together with the British Association for Industrial Archaeology (AIA) and its Young Members Board. The 5th edition explored the architecture of the industrial society and how the post-industrial society transforms and reuses it. In doing so, cases from Spain, China, England and Greece were presented to discuss current issues, trends, theoretical and methodological frameworks, and creative

approaches in the research, protection, and activation of historical industrial architecture.

Dr Juan M. Cano Sanchiz (ICHHST and AIA) welcomed the participants on behalf of the organising institutions. He clarified that this series of workshops focuses on the materiality of the industrial past and gives prominence to archaeology, although with plenty of flexibility and dialogue with other disciplines. In that sense, he continued, for the first since the workshops started to run in 2021, this edition featured no archaeologists among its speakers. Instead, the 5th workshop counted on architects and technology historians/content producers. Cano Sanchiz also explained that the diversity pursued by this series of workshops is not limited to geographies, disciplines or chronologies. It covers different profiles and backgrounds too: the speakers of this meeting represented the professional, academic and volunteer sectors.

The first talk, “The Imprint of the Spanish Tobacco Industry on the Urban Landscape: Permanencies and Absences of an Industrial Memory”, was delivered by Dr Carolina Castañeda from Spain (TICCIH-International and TICCIH-Spain). In her

Chinghuayuan railway station in Beijing, from 1910, after its restoration in 2022/23. Image copyright Xi Zhao.



presentation, Castañeda delved into the social, cultural and spatial landscapes of the Spanish tobacco industry throughout time, and scrutinised the multiple relationships of these production centres with their surrounding built environments. She explained the different typologies of tobacco factories in Spain within its wider historical and urban contexts, and how monumentality prevailed over functionality in these buildings for symbolic reasons. Castañeda paid special attention to the tobacco workers from a gender perspective, explaining that cigar-makers were mostly women and formed a social group with a strong sense of identity. She argued that the post-industrial society cannot treat the buildings of the past tobacco industry as empty containers when reusing them in the present, and defended that the memories and social values embodied in these constructions must be preserved together with their architectonic features.

Dr Fanlei Meng (Beijing University of Civil Engineering and Architecture) from China talked about his "Research on the History and Architectural Heritage Value of Industrial Construction in Modern Beijing". Meng recalled the history of industrial architecture in Beijing from the mid-19th century to 1949 to introduce China's early industrialisation from the perspective of East-West exchanges. He analysed the industrial development of Beijing during the Qing Dynasty, the Beiyang Warlord period and the Republic of China period. In doing so, he scrutinised the designs and styles of the local industrial architecture paying attention to aspects such as the fusion of modernity and tradition, the combination of foreign and indigenous building techniques, and the incorporation of new building materials. After that, Meng reflected on the multiple values of industrial architectural heritage and concluded by summarising Beijing's early industrial development and its related heritage from social, economic and cultural perspectives.

The last presentation was offered by Dr Gordon Davies (Cambridge Museum of Technology) from Britain, who delighted the audience with an immersive documentary entitled "An Industrial Tales of Two Cities: Filming the Architecture of Industry around Cambridge Museum of Technology (UK) and Athens Technopolis (Hellas)" (HD copy here <https://youtu.be/IP5i4PJN7dk>). Dr Davies developed perspectives little explored in industrial archaeology and industrial heritage studies and produced a narrative modelled by creative and sensorial approaches to the architecture of the industrial past. His attractive and thought-provoking presentation compared the situation and similarities between industrial architecture in Cambridge and Athens to raise questions such as what industrial architecture really means or why industrial architecture and ancient architecture are so differently perceived and treated in heritage-making. Gordon closed his

presentation with some practical directions on how to produce immersive documentaries in industrial archaeology. He also prepared for the workshop a 'visualography' with additional resources and materials that can be downloaded here:

https://cambmot.squarespace.com/s/Visualography-AIA-Aol-Workshop-Filming-the-Architecture-of-Industry_v11-Nov-2023.pdf

The presentations were followed by an interesting debate that discussed, among other questions, the kind of labour and sources of energy used in the tobacco industry of Spain; the combination of foreign and national building materials, techniques and traditions in the early industrial architecture of China; how to raise funds for the long-term maintenance and operation of industrial museums; or how to engage the community with industrial heritage sites, especially when these are shadowed by World Heritage monuments such as the Parthenon in Greece or the Machu Picchu in Peru. In short, the East-West Workshop on Industrial Archaeology provided again a platform for international exchange and for discovering different cases and approaches from around the globe. More to come in May 2024 with the 6th East-West Workshop on Industrial Archaeology. Don't miss it!

Newsletters and Bulletins (paper and e-format)

- GI Gas International (incorporating The Historic Gas Times), October 2023.
- GI Gas International (incorporating The Historic Gas Times), February 2024.
- GI Gas International (incorporating The Historic Gas Times), March 2024.
- Greater London Industrial Archaeology Society Newsletter 229, December 2023.
- Greater London Industrial Archaeology Society Newsletter 330, February 2024.
- Midland Wind & Water Mills Group Newsletter 137, December 2023.
- Northamptonshire Industrial Archaeology Group Newsletter 169, January 2024.
- Somerset Industrial Archaeological Society Bulletin No. 154, December 2023.
- South West Wales Industrial Archaeology Society Bulletin, No. 147, January 2024.
- Surrey Industrial Heritage Group Newsletter, No. 233, December 2023.
- Sussex Industrial Archaeology Society Newsletter, Number 201, January 2024.
- Sussex Mill Group Newsletter 201, January 2024.
- The Trow. Cotswold Canal Trust newsletter No. 201, Autumn 2023.
- The Trow. Cotswold Canal Trust newsletter No. 202, Winter 2023.
- The Trow. Cotswold Canal Trust newsletter No. 203, Spring 2024.

- Yorkshire Archaeological & Historical Society, Industrial History Section Newsletter 119, Autumn 2023.
- Yorkshire Archaeological & Historical Society, Industrial History Section Newsletter 120, Winter 2023/24.

Please send future Journals, Newsletters, and Bulletins to Dr M Nevell, 3, Baxter Road, Sale Cheshire M33 3AJ, or electronic copies to ianews@industrial-archaeology.org

A Warm Welcome to the Following New Members

Mark Adams, Liverpool
 John Ashley, Swansea
 Tony Ball, South Yorkshire Industrial History Society
 Ian Baxter, Cleckheaton
 Nick Baxter, Morecambe
 Christopher Bolt, Stratford-upon-Avon
 Beatrice Boucher, Nottingham
 Neal Buckley, Llanrwst
 Paul Chaplin, Chelmsford
 Arthur Cunningham, Hemel Hempstead
 John Curtis, Swansea
 Amy Federman, Silver Spring, Maryland, USA
 John Freeman, Kingswinford
 Sandra Garside-Neville, York
 David Hall, King's Sutton
 David Hardwick, Wooton-under-Edge
 Tim & Eileen Heaps, Forres
 Alan Hill, Harborne, Birmingham
 John Hudson, London
 David Hughes, Leyland
 Andrew Keating, Penicuik
 Victoria Kerrigan, Falkirk
 Sophie Koch, Andover
 Yoon Ah Kwon, Issaquah, Washington, USA
 Jane McCreath, Cornhill-on-Tweed
 Charles McGuinness, Finglas, Dublin
 Lynda Merrill, Millom
 Andrew Milsom, Ulverston
 Jane Paisley, Knaresborough
 Richard Preston, Great Bedwyn
 Tim Ralph, Pulborough
 Rob Renton, Bideford
 Lou Renwick, Rothbury
 Philip Rowett, Birmingham
 Michael Sage, Bradenham
 Michael Shaw, Shrewsbury
 Philip Skipper, Lincoln
 Jim Summers, Falkirk
 Karl Taylor, Chorley
 Rebecca Trow, Winsford
 Adam Valentine, Meals
 Xi Yang, Rome, Italy
 Fraser Yates, Ipswich
 Richard Young, Batheaston
 Peter Youngs, Woodbridge

We were saddened to hear of the death of Derek Brumhead.

Industrial Archaeology News

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The views expressed in this newsletter are not necessarily those of the Association for Industrial Archaeology.

Final Copy dates are:

1 January, for February mailing

1 April, for May mailing

1 July, for August mailing

1 October, for November mailing.

The AIA was established in 1973 to promote the study of Industrial Archaeology and to encourage improved standards of recording, research, conservation and publication. It aims to assist and support regional and specialist groups and bodies involved in the preservation of industrial monuments, to represent the interests of Industrial Archaeology at national level, to hold conferences and seminars and to publish the results of research. The AIA publishes a twice yearly Review and quarterly Newsletter.

Notes for Contributors

IA News, being the main paper communication organ for the AIA, is issued quarterly. It covers the Association's activities, including the work of AIA Council and the Young Members Board and that of our Affiliated Societies, together with both regional and international news.

Items for inclusion should be emailed as attached **Word** documents. The number of words will naturally depend on the nature of the report. Typically, a short news item could be up to 250 words. A large report could be up to 1,500 words. If necessary a report will be edited to fit the space available. If an author feels that editing may detract from the substance of the report, please include a note to this effect.

Photographs accompanying a report should be sent as separate **jpg** files (for best quality printing). Please do not embed them in the text. Short captions should be provided. For copyright reasons the origin of all reports must be credited and, where appropriate, the author's name and position included. Photographs, too, should indicate to whom credit should be given.

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Summerlee Museum of Scottish Industrial Life



Two steam cranes on display at the Summerlee Museum of Scottish Industrial Life, March 2024. Image copyright Dr Michael Nevell.

Michael Nevell writes: Summerlee is the museum of Scottish industrial life and is situated on the site of the Victorian Summerlee Iron Works and the former Hydrocon Crane factory. The main Hydrocon factory building is the museum's exhibition hall. The museum aims to show Lanarkshire's contribution to engineering, mining, steel working, weaving, and farming, and also show the lives of the people of the area. It includes interactive displays and a temporary exhibition space and covers covers 22 acres. Entry is free of charge. The museum incorporates several railway steam locomotives (including a Garratt loco) and preserved carriages from a 1960s-era Glasgow Blue Train. There is also

a short working electric heritage tram line. The museum includes two scheduled monuments (the Summerlee Iron Works and the Monkland Canal), as well as a row of miners' cottages, and outdoor exhibits including, a boat, several steam cranes, and the Farne Colliery engine (dating from around 1810).

The museum hosted the third International Early Engine Conference in March 2024, which was sponsored by the Association for Industrial archaeology, the International Stationary Steam Engine Society, Northern Mines Research Society and the South Gloucestershire Mines Research group.