

Job Description

Engine Technician

Service:	Cultural Services	Team:	Museums
Location:	Queen Street Mill Textile Museum, Burnley		
Salary range:		Grade: 5	
Reports to:	Museum Manager	Staff responsible for:	Boiler technician, Casual boiler technician, Casual engine technician

Job Purpose

To be responsible for the safe and efficient operation and maintenance of the steam plant and line shafts which power the Lancashire weaving looms and related training and supervision. To engage with visitors to the mill on its engineering history and historical significance to Lancashire.

Accountabilities/Responsibilities

To oversee the safe and efficient operation of a Lancashire boiler, steam engine and related machinery, including being the 'engine tender' during times the engine is running and powering the weaving looms.

To engage and inform visitors on the history and significance of the textile industry and Queen Street Mill and particularly its historic steam plant– in line with Queen Street's role as a museum celebrating Lancashire's heritage. This includes giving talks and demonstrations about the engine and boiler and your role to visitors to inspire learning and appreciation for the site and the museum service.

To work closely with the Museum Manager to plan and promote events around the operation of the steam plant.

To oversee the annual cleaning and safety inspection of the boiler which includes periodically inspecting the interior of the boiler and the flue, necessitating entry into severely confined spaces.

To maintain the historic steam plant machinery including dismantling, repairs and reassembly as required, in consultation with Museum Manager, Weaving Technician, Curator of Industry and advisors.

To maintain and re-equip where necessary the workshop and inventory of tools, equipment and supplies

To work with the Museum Manager and onsite technical team to share knowledge and experience in order to manage the safety of staff, visitors, and users in relation to the steam plant and the weaving machinery. To report any concerns in a timely manner.

To carry out administration for the steam and power generation plant and maintain accurate records, including operation manuals, maintenance schedules and health and safety risk assessments and report any changes and concerns to the Museum Manager in a timely manner.

To liaise and work with internal and external contractors for the maintenance of historic working machinery and engineering plant within the building.

To order and oversee the delivery of fuel and other necessary supplies and work closely with the Museum Manager to monitor the fuel supply, costs and legislation and help to develop a long-term preservation and power plan for the engine and the line shafts.

To assist with the training and supervision of staff members and volunteers, including development of volunteer roles to support the operation and interpretation of the steam plant and machinery.

To support the museum service development by participating in networks and relevant partnerships including contacts across the heritage stationary steam sector, both locally and regionally.

To undertake training and development identified as necessary for the role and maintain professional knowledge and skills.

To act as key holder and perform front of house duties as required.

To work weekends and Bank Holidays as required, subject to rota.

Other

- **Equal Opportunities**

We are committed to achieving equal opportunities in the way we deliver services to the community and in our employment arrangements. We expect all employees to understand and promote this policy in their work.

- **Health and safety**

All employees have a responsibility for their own health and safety and that of others when carrying out their duties and must help us to apply our general statement of health and safety policy.

- **Customer Focused**

We put our customers' needs and expectations at the heart of all that we do. We expect our employees to have a full understanding of those needs and expectations so that we can provide high quality, appropriate services at all times.

Our Values

We expect all our employees to demonstrate and promote our values:

- **Supportive**

We are supportive of our customers and colleagues, recognising their contributions and making the best of their strengths to enable our communities to flourish.

- **Innovative**

We deliver the best services we possibly can, always looking for creative ways to do things better, putting the customer at the heart of our thinking, and being ambitious and focused on how we can deliver the best services now and in the future.

- **Respectful**
We treat colleagues, customers and partners with respect, listening to their views, empathising and valuing their diverse needs and perspectives, to be fair, open and honest in all that we do.
- **Collaborative**
We listen to, engage with, learn from and work with colleagues, partners and customers to help achieve the best outcomes for everyone.

Person Specification ***[Engine Technician]***

All the following requirements are essential unless otherwise indicated by *

Your ability to meet the job requirements will initially be assessed by the information provided on your application but further assessment will be undertaken at interview and, in some cases, by using other types of assessment(s).

	Qualifications
E	Qualification in Mechanical engineering or similar subject or demonstrable experience
D	Mathematics GCSE or equivalent
	Experience
E	Operating and maintaining machinery
E	Working with steam engines and power generation
D	Operating a riveted boiler
D	Health and safety procedures in relation to the operation of machinery
D	Working with historic machinery in a historic environment
D	Experience of communicating with visitors
D	Training and supervision of staff and volunteers
	Essential knowledge, skills & abilities
E	Knowledge and interest in steam power and power generation
E	Good level of engineering skills
E	Good physical fitness and manual dexterity
E	Ability to work in confined spaces
E	Good ICT skills
E	Good written and verbal communication skills

E	Ability to remain calm and take effective measures in an emergency
E	Ability to work on own and as part of a team
Other essential requirements	
E	Commitment to equality and diversity.
E	Commitment to health and safety.
E	Display the LCC values and behaviours at all times and actively promote them in others.
	<i>[To be included if the post is an essential car user post – delete if this requirement does not apply]</i>
	Weekend and Bank Holiday working will be required.
	To be available for emergency callouts
	This is an essential car user post
	<i>You will be required to provide a car for use in connection with the duties of this post and must be insured for business use. In certain circumstances consideration may be given to applicants who, as a consequence of a disability, are unable to drive</i>

Queen Street Mill – information for candidates

Overview

Queen Street Mill is a historic cotton weaving shed in Briercliffe in Burnley. It is a Grade I listed building and an Accredited Museum housing a unique collection of original machinery used in the production of cotton cloth, including a working steam plant which powers the weaving looms. It is a unique survivor of an industry and factory system that once dominated the UK's economy until the mid-Twentieth Century.

Queen Street Mill is owned by Lancashire County Council (LCC) and managed by its Museum Service, which is part of LCC Cultural Services – a vibrant and audience focused service which include libraries, local history, archives, outdoor learning and the music service.

Lancashire County Museum Service also operates Helmsore Mills in Rossendale, which is partly owned by Higher Mill Trust. Consisting of a wool fulling mill and cotton spinning mill, this site also houses original machinery in situ and displays of historic textile machines. Lancashire County Council also care for additional historic textile machinery and archives illustrating the Lancashire Textile Industry. Together with the machinery at Queen Street Mill, these collections are Designated by Arts Council England for their outstanding historical significance.

Brief History of Queen Street Mill

Queen Street Mill began operations in August 1895 weaving calico cloth, known as grey cloth. This was the main type of cotton cloth made by the Lancashire cotton industry.

It was established by **Queen Street Manufacturing Company** which promoted the scheme in 1894 and raised £20,000 from shareholders to build the mill. In its prospectus published in the Burnley Express on 3 March 1894 it advertised 4000 shares at £5 and it had already raised more than half the capital for the scheme. The company's bankers were **The Manchester and County Bank**, Burnley, Nelson and Colne and the architect was **Smith Whitehead, Nelson**. The secretary was **James Corrin**, National School House, Briercliffe who was a local Headteacher.

The first board of provisional directors in the prospectus published on 3 March 1894 were all local men as follows

- **Thomas Pickles**, Quarryman, Hope Terrace, Haggate
- **George Law**, Mason, Granville Street, Briercliffe
- **Brierley Edmondson**, Weaver, Haggate
- **John Taylor**, Blacksmith, Cobden Terrace, Briercliffe
- **John Nuttall**, 55 Bright Villa, Briercliffe
- **Whitaker Whitaker**, South View, Briercliffe
- **William Kippax**, Postmaster Harle Skyke

Their aim was to build a shed that would provide much needed employment for young people in the area. They also stated in their prospectus that they had been encouraged in the project by the great success of other companies in the immediate neighbourhood.

The plans for the weaving shed which would hold 1000 looms were approved on 5 July 1894 by the Rural Sanitary Authority and work started soon afterwards. The mill was built on land formerly on Bend Hill Farm in Harle Skyke and the first looms arrived on 14 June 1895. The mill then held a christening ceremony on 30 July 1895 for the steam engine which had been made and installed in by **William Roberts and Sons, Nelson**. The ceremony was performed by Dr Burns of Fulledge House, Burnley who commented that he hoped the mill would be 'of great benefit not only to the shareholders but to all the district as well. During the 36 years he had been coming into the locality he had never known a strike to take place, except once. That was only for a day and then the people simply wanted a holiday. He hoped the undertaking would be worked harmoniously as between master and men, and he had great pleasure in naming the engine *Nellie*. This event marked the beginning of mill operations. Later the engine was renamed *Prudence* and then given its current name *Peace* in 1919.

The Queen Street Manufacturing Company and local board and shareholders ran Queen Street Mill until 1982. It was typical of mills built in the 1890s, making calico cloth for the UK and export markets. Ordinary and unremarkable for most of its history when most mills where emptied and swept away in the 1970s it became a unique survivor and the last original steam powered textile mill in Lancashire and then the world. Largely unmodernised, and with original machinery intact it was saved by Burnley Borough Council who reopened it in 1983 and continued to operate it until a plan was put together to turn it into a museum. It opened as a museum in 1986 and then transferred to Lancashire County Council who now operate it as part of its museum service.

A working mill

Queen Street Mill is a time capsule from the Industrial Age and a unique visitor attraction. It is the only place where you can see and experience a complete Victorian cotton factory and see demonstrations of weaving on Lancashire looms that once employed millions of people and dominated the British economy.

When it opened in 1895 the original shed had 1000 looms and although now much smaller it still houses 300 looms made by Pemberton & Company and Harling & Todd Limited in Burnley. When powered the noise is incredible and it immediately takes you back in time, to how people worked in Lancashire over 100 years ago.

As a working historic mill it has been used in documentaries, TV dramas and feature films, such as *The Kings Speech* in 2010.

The mill also weaves and sells cloth made on historic machines and products made from the cloth including tea towels and aprons. It uses cotton yarn made on mule spinning machines at Whittaker Mill, part of Helmshore Mills Textile Museum.

The Steam Plant

Another unique aspect of Queen Street Mill is the original steam plant. This consists of two Lancashire boilers and a steam engine. When in steam the plant powers the line shafts which power looms in the shed.

The two Lancashire boilers are coal fired boilers made by Tinker, Shenton and Company in Hyde, Cheshire. The first was installed in 1895 and the second in 1901. Water is fed into the boiler via a pump taking water from a nearby mill pond. Currently only the 1901 boiler is used and is manually stoked. The older boiler has automatic stokers fitted. Both ran through a Green's economiser which was taken out of service in 2015.

The steam engine, now named *Peace*, is an original tandem compound horizontal stationary steam engine and provides 500 horsepower (370kw). It was made by William Roberts and Company of Nelson. It was upgraded in 1913 with new Corliss rotary valves.

Link to film about Peace <https://www.youtube.com/watch?v=fWARvgoQwRw>

Future sustainability of steam power

Queen Street Mill is the last steam powered weaving shed in the world.

We have been working with the National Trust to define the Spirit of Place for Queen Street and the results of this have clearly demonstrated the importance of steam to the site and its cherished part in the visitor experience.

When Queen Street Mill opened coal for the boilers was provided locally with main supplies coming from Bank Hall Pit in Burnley until 1971. Today coal supplies come from outside the UK and have included the USA, Russia and most recently from Columbia.

One of the key challenges facing the continuation of steam power at Queen Street Mill is the fuel, its supply, cost and the amount of fuel used to heat the water to make steam.

The coal is a key risk to operations as restrictions on its production and use of fossil fuels are likely to increase and impacted by changing global market conditions. We need to tailor our operations of the looms to provide the most efficient use of resources for the benefit of visitors to the museum and also to plan and develop and pilot new ways of operating. This could include using alternative fuel, power supplies or ways to heat the water required to power the steam engine. This would form part of work to reduce the carbon footprint of Lancashire County Council premises.

A key role of the Engine Technician will be to work with the museum team to find a more sustainable future for steam at Queen Street Mill.

We have also made new connections with museums facing similar challenges. We will work together to not only find a sustainable future for steam but also build education programmes to inform the public on the on-going story of power generation placing the steam plant as a key part of its story.