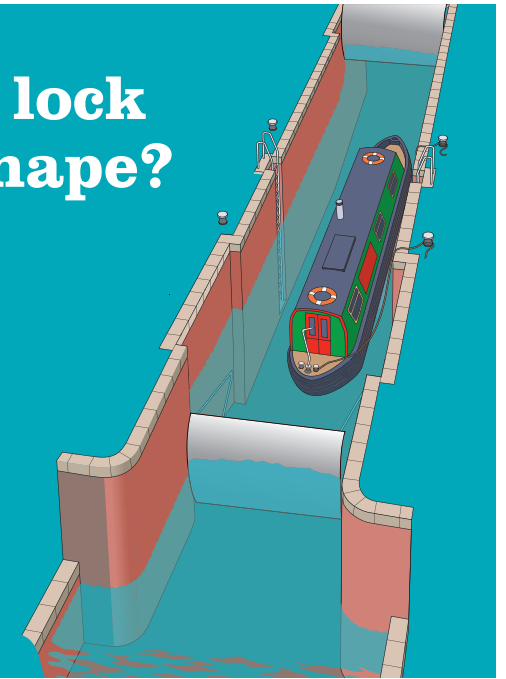


**Can I bring my boat
through the lock?**



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**Why are the lock
gates this shape?**



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**Why is one gate higher
than the other?**



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**How long does it
take to go through
the lock?**



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Radial gates are good for regulating water levels because once you start lifting them, the water can flow through the whole width of the lock.

Yes, as long as it has under 5m of clearance to go under the gate. However, there are no moorings on the other side, so you'll have to come out again.

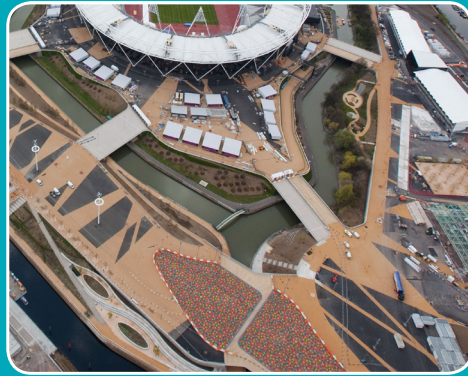
Cycling the lock should take about 15 minutes.

The important height is the one closer to the Waterworks River, which could flood if there was heavy rain in Hertfordshire. If the water rises to a certain height, the lock gates open automatically to let water into the lock. The water then flows over the second (lower) gate and into, City Mill River and beyond to reduce flood risk downstream of the Waterworks River.

What happened to the lock during the Olympic games?



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What was here before the park?



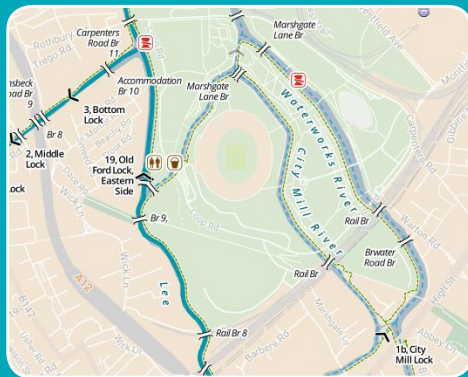
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Where does the City Mill River go?



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Why did they build the first lock?



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There was a waste transfer station on the side nearest Westfield, and factories on the far side of the Waterworks River.

Before the Waste Transfer Station it was the Wolsey Works (later part of Spillers, who made 'Winalot' dog food for greyhounds) which made animal feed. Initially it was made from the fish offal brought in from Billingsgate Fish Market, so the smell would have been remarkable, especially on a hot day.

In WWII they were pioneers in converting waste food into animal feed.

#CODE ERA2



There were terrible floods in 1928 when the river was still tidal.

The 1928 floods caused a lot of damage to the industrial premises along the rivers, including the giant Stratford railway works. Then the Wall St Crash happened in 1929 and unemployment went up. The building of the lock was part of a flood relief programme to create better flood defences/ water management and to create employment.

It was covered up by the Diamond Bridge.

There wasn't time to restore the lock and build the bridge, so they built the bridge and infilled the gaps in the zig-zag shape with flooring. The lock was completely covered, and the bridge was made wide enough to deal with the Olympic Crowds.

#CODE STOP4 (Modern Park)



City Mill River goes past the Stadium and then loops back to join the River Lee at Bow roundabout. But by then it is called Bow Back River.

**Are these rivers
still tidal?**



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**What was the area around
the Aquatics Centre
used for?**



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**What was the area around
the Orbit used for?**



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**What was the area around
Mandeville Place used for?**



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There was a long line of factories between Carpenters Road and Waterworks River, including an engineering works and a varnish works and a distillery.



#CODE ERA2

External resource:

URL: maps.nls.uk/geo/explore
view the OS 25 Inch 1892-1905 map

The area between Carpenters Road Lock and Lee Navigation was mostly filled with Gliksten's Timber Yard, one of the largest timber yards in the UK.

The north end of Mandeville Place was also the site of an Italian Prisoner of War camp in WWII. The German prisoners were kept in a separate camp further along Carpenters Road.

The extensive contact between the prisoners and local people was seen as a vital part of their rehabilitation away from fascist politics.

#CODE ERA2

Not in this part since 2009.

The tides are stopped at Three Mills Lock, and the Bow Back Rivers are kept with about 7.5ft above ordnance datum (i.e. above normal sea level discounting tides).

The level of Waterworks River is variable, but this is because of two reasons:

At high tide, the level of the Thames is above the level of the Bow Back Rivers, so the water cannot flow out for half the tide cycle.

If there is heavy rain north of London the level of the River Lea rises.

The island between Waterworks River and City Mill River was called Thornton Fields and was a railway siding for commuter trains coming in and out of Liverpool Street Station between rush hours.

#CODE ERA2

What was the area of the London Stadium used for?

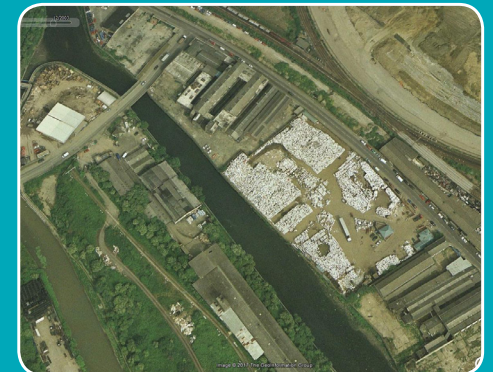


How badly contaminated was the soil?

Why did they have tidal mills here?



Where was Fridge Mountain?





So bad that they had to send it to a 'soil hospital' before it could be used.

The cleanup operation was carried out by Atkins, and they drilled over 3000 test holes and analysed the soil and water. There was a lot of heavy metals (mercury, lead, arsenic) and chemicals such as cyanides and tars left over from the industrial period.

The soil hospitals were constructed on site and treated 1.7m tons of soil, and set new records for successful soil recovery. The treated soil is the topsoil of the park.

Fridge mountain was on the waterfront near where the Lee and Stort jetty is today.

The section of land near where the Lee and Stort Boats are moored was a dump for fridges when it became known that the CFCs in their cooling system were bad for the ozone layer. Hundreds of fridges and freezers were stored here while they worked out how to dispose of them safely.

Nothing. the area was waste ground, but the southern end of the stadium near the Northern Outfall Sewer had a mixture of Bone Works (for glue, animal food, etc) Soap Works, an oil refinery and chemical works.

Tides are more predictable than windmills for grinding corn. The wind may not blow, but the tide will always flow twice a day.

The number of people in London requiring flour is so great that before steam power, it was a challenge to get the work done. Grain barges from Hertfordshire could float down to the tidal mills and unload.

Water on the tidal rivers was impounded. Once the river level had dropped, the water was diverted through waterwheels to drive the millstones. You can see the size of the tidal mills at Three Mills.

Where was Clarnicos?



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**Where was
Percy Daltons?**



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**Where was Glikstens
Timber Yard?**



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**Where was Lee
Valley Distillery?**



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Percy Daltons peanut roasting was on Fish Island on Dace Street.

You can still see the factory today, with Percy Dalton written on the side. Dalton's famous Monkey Nuts were a popular choice in the football grounds around the East End

#CODE ERA2A

The distillery was on the site of the London Aquatics Centre. The distillery closed in 1905 and had the distinction of being the last English single malt whisky distillery at that time. It produced 150,000 gallons of malt and 300,000 gallons of grain whisky each year.

Clarnicos was where the Copper Box Arena is today.

Clarnico was at one time the largest confectionary manufacturer in the UK and made a wide range of sweets and chocolates. The name was the combination of the founders Clarkes, Nikolls and Coombs.

By 1899 they employed 2,000 people.

Today the name is remembered in the Clarnico Mint Cream brand. The company was bought out by Trebor.

#CODE ERA2A

Gliksten's timber occupied the site of the Sweetwater development. It had huge travelling cranes that could carry imported tree trunks off the barges and into the site, to be sawn into planks.

The site was popular with local kids to play in (they could get in off the railway embankment) despite warnings from their dads that there were rats the size of mastiffs!

#CODE ERA2A

What was made at Three Mills?



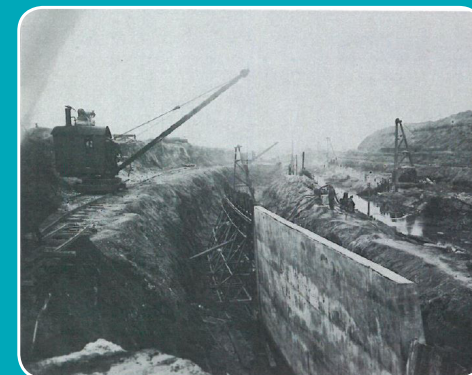
What cargoes came up the Lee?



Where does the Lee go to?



Were these rivers all man-made?



Coal and logs/timber were the main cargoes seen on the river. Coal could be carried to the factories, many of which were steam powered, or to the gas works and electricity generators.

Wood was carried to the timber yards to be made into timber, and then to the furniture factories.

Not man made, but man-aided.

Rivers in low-lying marshy areas tend to split into multiple channels anyway (like a delta) which shift over time. Man intervenes when we want the water to go to a particular place, which may mean dredging and straightening an existing channel, blocking up others, or digging an entirely new branch to take the water to the right place. Water was channelled by the mill owners to ensure that they could power their millstones, and they fought over these water rights fiercely.

The large tidal mills at Three Mills were used to grind corn, but not always for bread. One of the mills was used by Nicholson's Gin to grind corn for distilling.

William Nicholson gave so much money to the Marylebone Cricket Club that they changed their colours to red and yellow to match the Nicholson's brand.

One of the mills on the site was also used as a Gunpowder Mill. Gunpowder needs to be a mixture of saltpetre, charcoal and sulphur. The mixture had liquid added to it during milling so it didn't explode.

#CODE ERA2A

The river Lee is the second longest tributary of the Thames and goes north to Hertford then turns west to Hatfield and then northwest to Luton.

Why did the area get so scruffy before 2005?



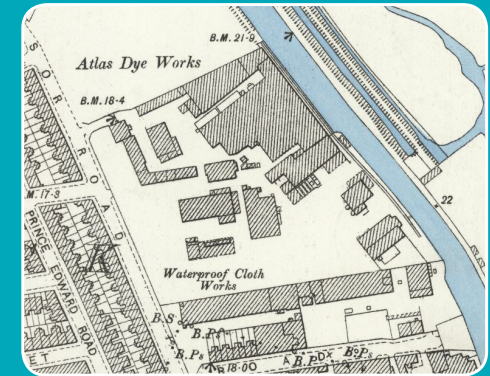
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What industries were here in the old days?



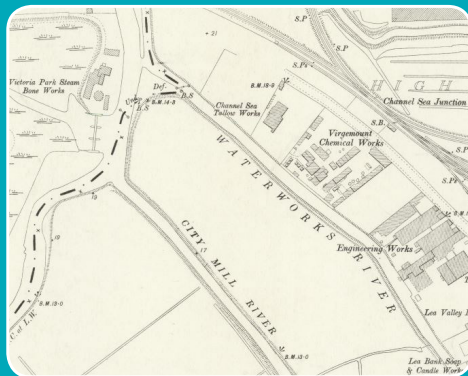
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Why did Stratford get all the noxious industries?



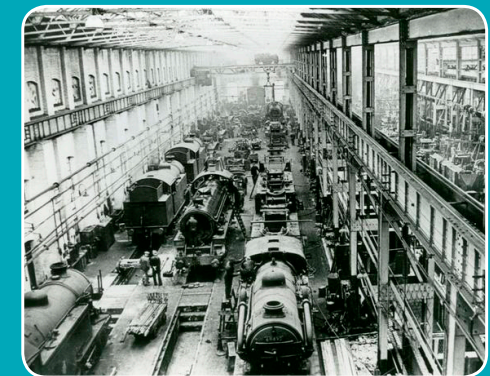
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What was made at Stratford Works?



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The area was known for timber, chemicals, paint, varnish, soap, animal food, patent food (e.g. tinned or potted), distilling, waterproofing, clothmaking, ironwork, cosmetics and sweets.

The best way to see the old industries is to look at the old maps. The link <http://maps.nls.uk/geo/explore/#> allows you to compare old and new maps on a screen.

Stratford Works and the nearby Temple Mills Works were a huge site for building railway locomotives and carriages. They were well placed for the Eastern Counties railway and later the Great Eastern Railway. In 1912 there were 6,500 people at the works. Making a single passenger carriage required a wide range of craft skills from making mirrors, stitching seat fabrics, stuffing upholstery with horsehair, painting and varnishing the woodwork.

Stratford Works still has the record for the fastest build of a locomotive, at 10 hours.

The site of Stratford Works is now the Stratford International station and the Westfield Mall.

The canals lost out to the road and rail transport, and factories were redesigned.

Canals were highly effective for transportation in the 18th and the first half of the 19th century, but lost ground to the railways which were faster and could deliver according to a timetable. To stay competitive canals could only cut prices, putting a squeeze on wages and maintenance. Road transport then did to railways what railways had done to canals.

The popularity of the fork lift truck from the 1930s onwards also changed the way that factories and warehouses were designed, with more 'big shed' type buildings instead of factories with several floors. Companies moved to places where they could build new facilities.

Stratford was outside the residential area of the City of London and safely down wind.

Before the industrial revolution most manufacturing was done on a small scale, and you found workshops for everything inside London. However, some industries needed more space (cloth dying and fulling needed space to spread out cloth while it dried) and others were so smelly (tanning, soap making, glue making) that nobody could live next to them. These industries liked Stratford because it had lots of empty land, you could get boats there from the Thames, and there were few people to offend.

**Where are the nearest
public toilets?**



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**What is in the wire
cages under the bridge?**



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**Why was the Old River
Lea important in law?**



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**What happened here in
the second world war?**



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Over 200 industrial buildings and structures were demolished when the Park was created. The concrete was crushed, cleaned and put in these 'gabions' to help with landscaping, slope stabilisation and ornamentation.

The Podium Cafe has public toilets open from 10am.

The building next to Old Ford Lock has toilet that are open when there is a lock keeper at the site.

The area was bombed as it was an industrial district as well as an important railway line. You can see the known bombs at www.bombsight.org which plots all the reported incidents during the Blitz.

Later in the war there were two prisoner of war camps on Carpenters Road, one for Italians and one for Germans. The prisoners were used as labour in agriculture and ground clearing and on construction. They were not returned until 1948, as the government found it useful to have a large unpaid workforce to help with post-war repairs.

Some of them even became West Ham fans.

In the 9th century King Alfred had to deal with Saxon and Norse invaders who pushed in from the east looking for lands to settle. He signed a treaty with one Norse king, Gudrun, which set the boundary between their kingdoms along the Lee. To the west was Alfred's kingdom under English law. To the east was the Danelaw, under Norse law and control.

Who made the original lock gates?

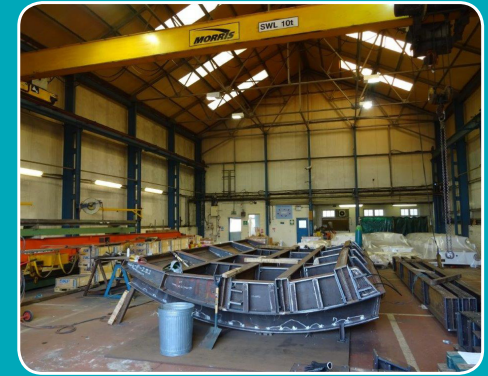


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Who made the new lock gates?



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How is the radial gate lifted?



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How was the radial gate lifted in the past?



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The new gates were made in Sheffield by Mayflower Engineering Limited who also worked on the Falkirk Wheel.

The gate's were made by Ransomes and Rapier of Ipswich, who were known for agricultural engineering and locomotives. They had a patented 'Stoney Sluice' which was widely used but couldn't be scaled up to act as a lock gate.

However, because the gates were designed for flood relief, it was sensible to employ a manufacturer of agricultural sluice gates. Ransomes developed a new lock gate design.

In fact only one gate needed to be a radial gate, the other could have been an ordinary gate. But as Ransomes and Rapier knew how to make radials, they made two of them.

The old gates were electric but the lock keeper also had a winding handle and a gear system. The gear system had two settings, 'fast' and 'slow' depending on how strong the lock keeper was feeling and how urgent the job was.

In many cases it was not necessary to open the lock gate all the way, just to life it to provide flood relief.

There is an electric Rotork winch in the gantry that turns the cable drums. The cable connects to the lifting arm at one end and the counterweights at the other.

**How heavy are
the gates?**



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**How has the area
changed physically?**



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**Did people live on the
canal boats here?**



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River Trust

**What was Gatti's
Power Station?**



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River Trust



The landscaping operation changed the profile of the river banks, which tended to be precipitous (mainly as a result of generations of dumping). The landscapers went for an angle of 22 degrees as being the optimum balance between space and

stability. Where steeper banks were needed, they were terraced.

The wetlands areas are entirely new, and were difficult to get right. Wetlands that are not washed by tides tend to turn into dry land as silt gets deposited, and need exactly the right amount of flooding to survive.

Atkins have an extensive article on the riverside landscaping.

Each gate weighs 14 tons

The Gatti family were ice sellers (a big trade in the days before refrigeration) who then moved into fancy cafes, restaurants and playhouses in the West End. They were early adopters of electric lighting to draw in the crowds, and built their own power station at Bow to provide electricity to the Strand and Charing Cross.

The Gatti Ice Warehouse behind Kings Cross Station is now the London Canal Museum.

#CODE ERA2A

Probably not as much as elsewhere. Most canal journeys were quite short e.g. coal from the docks to the power stations. The really long journeys were between cities.

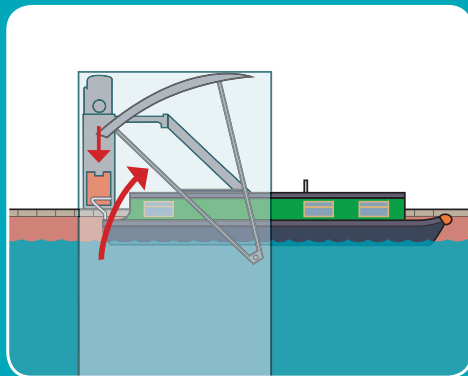
Families didn't start living on the narrowboats until quite late in canal history. It was a result of falling canal cargo revenues, which meant falling wages, so barge owners couldn't afford to rent a house for their families.

**Who liked the area
the way it was?**

**How were the riverside
habitats laid?**



**How does a radial
gate work?**



Creating reedbeds and riverside habitats is difficult especially in tidal/flood areas where water can wash away immature rootlings.

They solved the problem by growing the riverbanks on coir matting in Norfolk and then transporting the entire mat on a palette when work was completing. The mats were laid into the river margins with the semi-mature plants embedded. As the mats rot away, the plants will secure their roots systems into the river mud.

According to boys who grew up here, it was a fantastic playground with lots of out of the way places you could camp or scavenge. The only problem was that if you fell into the water the doctor gave you a powerful laxative to get any water out of you, and there were lots of bits of rusty metal that might scratch you.

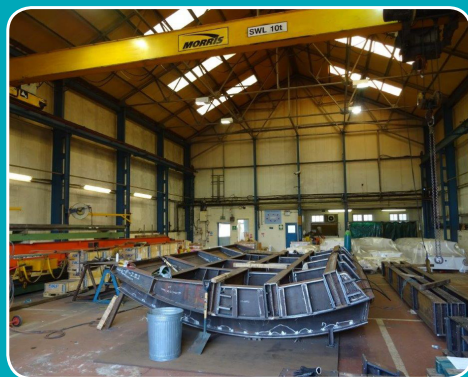
The best way to get into the yards was by going along the railway embankments, according to George Brown.

The radial gate is similar in shape to the Thames Barrier gates, except that they lift up rather than drop down. The gate sits across the lock, with one edge resting on the seal at the bottom. When it is lifted up, it rises out of the water to allow the boats to pass underneath.

Who made the new lock gates?



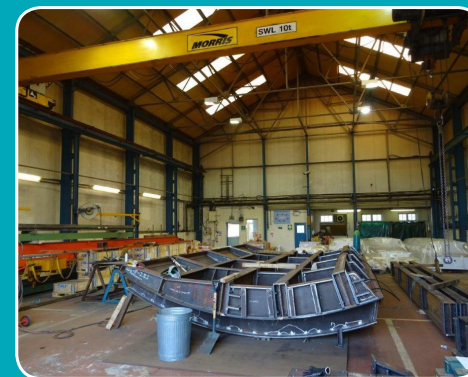
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Who made the new lock gates?



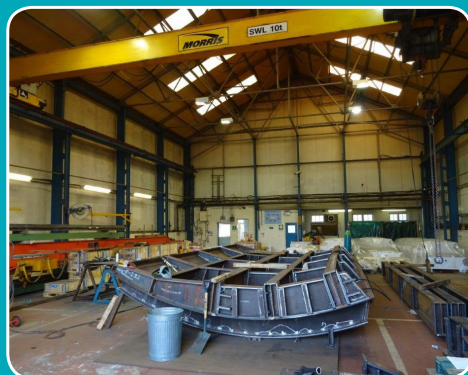
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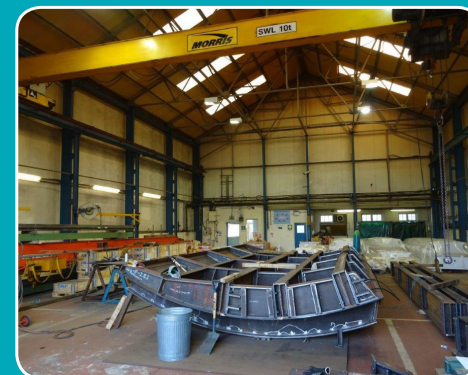
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