



STUDIEREIS 2018 SCHOTLAND



HISTEchnica

STUDIEREIS SCHOTLAND

24 – 30 mei 2018

Vereniging HISTEchnica
KIVI afd. Geschiedenis der Techniek



HISTEchnica

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Hotels

24-27 mei

Premier Inn, Glasgow-Stepps
Cumbernauld Rd, Stepps, Glasgow G33 6HN
0044-871 527 8452

27-28 mei

Premier Inn, South Queensferry
Builyon Rd, South Queensferry, Edinburgh EH30 9YJ
0044-871 527 8364

28-29 mei

The Salutation Hotel, Perth
30-34 South St, Perth PH2 8PH
0044-1738 630066

29-30 mei

New Lanark Mill Hotel
Mill No.1, New Lanark Mills, Lanark ML11 9DB
0044-1555 667200

Reisleiding

Ton Boele
tel 0031-651625496
e-mail tboele@box.nl

Programma Schotland 24 t/m 30 mei 2017

Exacte tijden worden tijdens de reis gespecificeerd.

Donderdag 24 mei

09:25 Vertrek Schiphol met KL 1473
09:55 Aankomst Glasgow Int. City Airport
12:30-13:30 Lunch Colbrie Inn, Bo'ness
14:00-15:00/15:00-16:00 Ballantyne Foundry
14:00-15:00/15:00-16:00 BK-Railway museum
17:40 A: Premier Inn, Glasgow-Stepps
18:45 Gezamenlijk diner

Vrijdag 25 mei

08:15 V: Hotel
09:45-12:00 Boat Tour Union Canal
12:30-13:30 Falkirk Wheel (+ lunch)
13:50-14:45 Skelpies
15:20-17:00 Summerlee, Coatbridge
17:30 A: Premier Inn, Glasgow-Stepps

Zaterdag 26 mei

08:45 V: Hotel

09:40 Quay Science Center, Glasgow

10:00 Vertrek PDS "Waverley"

11:45 Aankomst Custom House in Greenock

13:00-13:45 Lunch in Balloch

13:45-14:30 Steam Slipway Balloch

15:00-16:00 Bowling Harbour

16:20-16:30 Dalmuir Droplock

17:15/17:30 A: Glasgow City Centre

21:00 V: Meeting Point George Square

21:30/40 A: Premier Inn, Glasgow-Steps

Zondag 27 mei

08:00 V: Hotel na uitchecken

10:00-11:50 National Mining Museum Scotland

12:00-13:45 Guided Tour Mark Watson

13:45-17:30 Edinburgh City Centre

18:15 A: Premier Inn, South Queensferry

Maandag 28 mei

08:20 V: Hotel na uitchecken

09:15-10:50 Firth of Forth Bridge, North Queensferry

12:15-13:15 Lunch Bridgeview Station

13:15-14:00 Guided Tour Mark Watson

14:00-15:30 Verdant Works, Dundee

15:40-16:55 RRS “Discovery”, Dundee
17:45 A: Salutation Hotel, Perth
18:30-19:00 Presentatie John Rodgers (ERIH)
19:15 Gezamenlijk Diner

Dinsdag 29 mei

08:30 V: Hotel na uitchecken
09:25-10:30 Whiskey Distillery Glen Turret, Crieff
12:00-12:45 Lunch Pier Café, Trossachs N.P.
13:00-14:00 SS “Sir Walter Scott”, Loch Katrine
15:00-16:00 Stop in Stirling
17:30 A: Hotel New Lanark Mill
19:15 Gezamenlijk Afsluitingsdiner

Woensdag 30 mei

09:00-11:00 Uitchecken hotel
09:30-11:30 Groep 1 New Lanark Mills
10:00-11:30 Groep 2 New Lanark Mills
11:35 V: Hotel
12:30-13:40 Riverside Museum (lunch)
14:00-14:30 Fairfield Museum, Govan (optioneel)
15:00 A: Glasgow City Airport
17:00 ETD Vlucht KL 1478
19:30 ETA Schiphol

Donderdag 24 mei 2018

Bo'ness & Kinneil Railway Museum



The **Scottish Railway Museum** is a railway museum operated by the Scottish Railway Preservation Society. It is based on the Society's large collection of railway artefacts from across Scotland. The museum is based at the Scottish Railway Preservation Society's headquarters at Bo'ness, and is the largest building on site.

It is the largest railway museum in Scotland, consisting of three large buildings which contain heritage locomotives, carriages and other exhibits. Een uitgebreid overzicht op [https://en.wikipedia.org/wiki/Bo%27ness and Kinneil R
ailway](https://en.wikipedia.org/wiki/Bo%27ness_and_Kinneil_Railway)

Ballantine Foundry



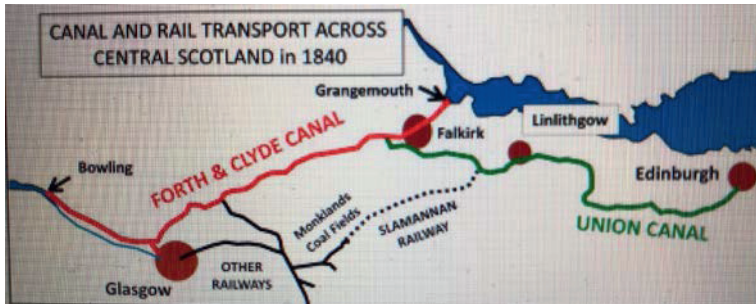
Metalgieterij Ballantine Foundry werd in 1820 in Bo'ness gevestigd en maakt nog gebruik van de traditionele werkwijzen van 200 jaar geleden. Het bedrijf heeft zich gespecialiseerd in het gieten van ornamenten van de meest uiteenlopende aard en beschikt daarvoor over ca 100.000 ontwerpen en gietvormen. In bijna alle Britse steden is gietwerk van Ballantine aanwezig. Of het nu originele of identiek vervangen ornamenten van historische gebouwen betreft. Sierlijke, luxueuze hekwerken, lantaarnpalen, balcon, poorten worden

authetiek vervangen in het belang van het behoud van historisch erfgoed. Of het nu restoraties van Victoriaaanse of andere architectuur betreft Ballantine heeft zich een unieke plaats als gieterij verworven die niet alleen in Groot-Brittannië levert maar ook elders in de wereld een afzetmarkt heeft. Met dank aan mr. Mark Watson van Monumentenzorg Schotland, Conservation Directorate, die het mogelijk maakte dat Histechica en Geschiedenis der Techniek deze nog immer actieve gieterij kunnen bezoeken.

Noot: de directeur/eigenaar mr. Gavin Ballantine zal ons rondleiden in twee groepen die inmiddels elk uit meer personen bestaan dan voorzien(22). Daar de gieterij niet op bezoekers is ingericht en wellicht open vuren aanwezig zijn wordt om de groots mogelijke voorzichtigheid en discipline verzocht.

Vrijdag 25 mei 2018

Union Canal Linlithgow - Avon Aqueduct



In ruim een uur vaart de Linlithgow Union Canal Society met de “Saint Magdalene” Histechica/KIVI vanaf het Canal Centre in westelijke richting naar Falkirk tot na de passage van het Avon Aqueduct. Ooit een kanaal met industriële bedrijvigheid, nu wordt gevaren door een rustiek landschap. Op het kaartje is dit het gedeelte tussen Linlithgow en de aansluiting met de Slamannan Railway. Bij Falkirk sluit het Union Canal aan op het Fort & Clyde Canal. Op zaterdag 26 mei wordt o.a. het begin van dit laatste kanaal bij Bowling bezocht.

The Union Canal—took four years to build and opened in 1822. From Edinburgh to Falkirk it is 31.5 miles long. Other than its link to the Forth & Clyde (F&C) Canal it has no locks and follows the 240 feet contour. This required three major aqueducts and a half mile tunnel. Originally the Union and F&C canals were connected by 11 locks at

Falkirk. These closed in the 1930s and have now been replaced by the Falkirk Wheel and its locks. The Union Canal can take boats 3 ½ ft deep, 12 ½ ft wide and 70 ft long. The canal replaced the bone-jarring journey over rough roads by stagecoach to transform passenger travel between Glasgow and Edinburgh. Before the Edinburgh and Glasgow Railway opened in 1842, hundreds of thousands of passengers were carried on Swift boats pulled by galloping horses which did the journey in 8 hours via the Forth & Clyde Canal and 4 hours via the Slamannan Railway. The Union canal has two significant claims to fame. In 1834, shipbuilder John Scott Russell first noticed a wave on the canal that maintained its shape at constant speed. This phenomenon is now the basis of long-distance communication in fibre optic cables.

Miles Feature Details

0 Canal Basin When built around 1820 the basin was originally a coal depot with two cottages and two stables for four horses. The iron pillar by the tea room was part of an old crane. The house in the trees is Canal House which was the Canal Engineer's house. It is now privately owned. On the north side of the basin is Learmonth gardens and its dovecote built in the 16th century for the local Baron Ross to ensure he had a fresh pigeon meat through the winter. It has 370 nesting boxes. Leaving the basin To the south is Rosemount Park, a public park. The house by the north bank used to be an Inn and a row of canal workers' houses. Beyond these can be seen the 17th C Town Hall, behind that the 13th century Parish Church of St Michael with its 1960's 'Crown of Thorns' and behind that the Royal Palace of the Stuart Kings where Mary Queen of Scots was born.

0.2 Bridge 44 - Friarsbrae East of this bridge north of the canal is a house with a false window, which some say is be from the days of Window Tax. The bridge is one of the original 62 fixed bridges: each

of these usually has its number in the centre of the arch. West of the bridge is a winding hole to turn boats around. This may be so-called from the term “wynd” - to turn or it to be derived from the use of the wind to assist turn the boat

0.5 Bridge 45 - Preston Rd When this new bridge opened in 1992 to replace a culvert, the canal was given a dog-leg to provide sufficient height under sloping road above. To the West of this bridge can be seen Linlithgow Primary School and behind it St Joseph's RC Primary School. To the west of them is Linlithgow Academy.

0.8 Bridge 46 This is an accommodation bridge that enabled farmers to get to their fields when the canal was built. It is called Katie Shaw's bridge. To the south between here and the old quarry can be seen the golf course: to the north, an overflow weir just beyond the water pipes crossing the canal. To the north is the Edinburgh—Glasgow railway viaduct and Grangemouth petro-chemical plant

1.4 Old Quarry The quarry provided whinstone for road building, which was mainly transported by canal to Edinburgh.

1.8 Bridge 47 This bridge carries a road to a farm. West of the bridge and to the south is another overflow weir. **2.0 Woodcockdale** These buildings used to be canal stables with storage above and living accommodation at each end. They are now used by West Lothian Sea Scouts.

2.1 Bridge 48 – Lanark Rd Carries the A706, Linlithgow to Lanark road. Under the bridge can be seen grooves for modern stop planks to allow sections of the canal either side to be emptied. Immediately west of the bridge is a large winding hole where lime was loaded from a quarry on Bowden Hill to the south.

2.5 to 2.6 Avon Aqueduct The canal aqueduct over the River Avon is the 2nd largest in the UK. The largest is - also from Telford - the famous Pontcysyllte Aqueduct on the Llangollen Canal. It has 12 arches, is 810 ft long and 86 ft above the River Avon. Built to a Thomas Telford design it carries water in an iron trough which is covered with dressed stone so it's not so visible.

It's possible to scramble down to the grass by the river to see the impressive sight of the 12 arches striding across the valley, but not recommended in wet conditions.

At east the end of aqueduct is a staging stone to mark the division "betwixt the third and fourth stages" and, to the south, an old canal barge abandoned in an old dry dock when the canal was closed in the 1930s

2.9 Bridge 49 Carries to B825 to Muiravonside Park. West of this bridge on the south bank is the Bridge 49 bistro

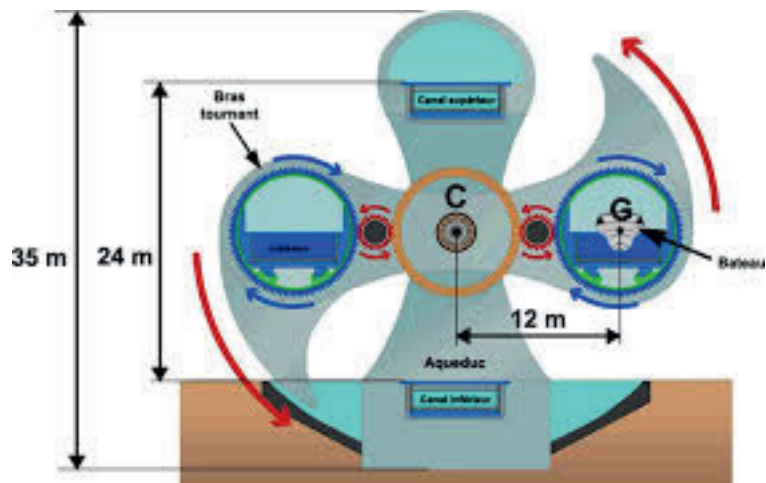
3 Causewayend Basin Your cruise turns around in the 150 ft square Causewayend Basin. Built in 1837 as the terminus of the new Slamannan Railway, it was used as a rail / barge transshipment basin for coal from the emerging North Lanarkshire coalfields. Compared with previous route via the Forth & Clyde canal this was half the distance to Edinburgh and took a quarter of the time as there were no locks on this route. From 1840 it also became a key Glasgow-Edinburgh passenger route, until the completion of the Edinburgh-Glasgow Railway in 1842. The Slamannan railway closed in 1930 and the remains of its embankment can be seen to the east of the basin. One either side of the canal can be seen the abutments of a dismantled railway bridge built for the extension of the railway to Bo'ness in 1851.

Falkirk Wheel

The Falkirk Wheel is a rotating boat lift in Scotland, connecting the Forth and Clyde Canal with the Union Canal. The lift is named after the town Falkirk where it resides in central Scotland. It opened in 2002, reconnecting the two canals for the first time since 1933 as part of the Millennium Link project.

The wheel raises boats by 24 metres (79 ft), but the Union Canal is still 11 metres (36 ft) higher than the aqueduct which meets the wheel. Boats must also pass through a pair of locks between the top of the wheel and the Union Canal. The Falkirk Wheel is the only rotating boat lift of its

kind in the world, and one of two working boat lifts in the United Kingdom, the other being the Anderton Boat Lift.



Pre-1933 link

The two canals served by the wheel were previously connected by a series of 11 locks. With a 35-metre (115 ft) difference in height, it required 3,500 tonnes (3,400 long tons; 3,900 short tons) of water per run and took most of a day to pass through the flight.

By the 1930s these had fallen into disuse, and the locks were dismantled in 1933. The Forth and Clyde Canal closed at the end of 1962, and by the mid-1970s the Union Canal was filled in at both ends, rendered impassable by culverts in two places and run in pipes under a housing estate. The British Waterways Board (BWB) came into existence on 1 January 1963, the day the Forth and Clyde Canal was closed, with the objective of finding a broad strategy for the future of canals in the United Kingdom.

Construction

In March 1999 the Secretary of State for Scotland cut the first sod of turf to begin work at lock 31 on the Forth and Clyde Canal. Over 1000 people were employed in the construction of the wheel, which has been designed to last for at least 120 years.

The wheel was fully constructed and assembled at the Butterley Engineering plant in Ripley, Derbyshire. The structure was then dismantled in the summer of 2001, and transported on 35 lorry loads to Falkirk, before being reassembled into five sections on the ground and lifted into place. Construction of the canal required 250,000 m³ (8,800,000 cu ft) of excavation, a 160 m (520 ft) canal tunnel of 8 m (26 ft) diameter, aqueducts of

20 m (66 ft) and 120 m (390 ft), three sets of locks and a number of bridges, as well as 600 m (2,000 ft) of access roads. The 180 m (590 ft) Rough Castle Tunnel was driven in three stages, with the two upper quarters being drilled with a standard excavator before the lower half was dug using a modified road planer in 100 mm (4 in) layers. This technique was 15% cheaper and reduced the build time of the tunnel by two weeks.

Technical considerations

The ground on which the wheel is built was previously used as an open cast fire clay mine, a coal mine, and a tarworks, resulting in contamination of the canal with tar and mercury. 20 m (66 ft) of loosely packed backfill from the mining operations containing large sandstone boulders was not considered adequately solid foundation for the size of the structure, so deep foundations with thirty 22 m (72 ft) concrete piles socketed onto the bedrock were used.

Due to the changing load as the wheel rotates in alternating directions, some sections experience total stress reversals. In order to avoid fatigue that could lead to cracks, sections were bolted rather than welded, using over 14,000 bolts and 45,000 bolt holes.

The aqueduct, engineered by ARUP, was originally described as "unbuildable", but was eventually realised using 40 mm (1.6 in) rebar. The original plans also showed the canal being built straight through the Antonine Wall, but this was changed after a petition in favour of two locks and a tunnel under the wall.

Structure

The wheel has an overall diameter of 35 m (115 ft) and consists of two opposing arms extending 15 m (49 ft) beyond the central axle and taking the shape of a Celtic-inspired, double-headed axe. Two sets of these axe-shaped arms are connected to a 3.8 m (12 ft) diameter central axle of length 28 m (92 ft). Two diametrically opposed water-filled caissons, each with a capacity of 250,000 litres (55,000 imp gal; 66,000 US gal), are fitted between the ends of the arms.

The caissons or gondolas always carry a combined weight of 500 tonnes (490 long tons; 550 short tons) of water and boats, with the gondolas themselves each weighing 50 tonnes (49 long tons; 55 short tons). Care is taken to maintain the water levels on each side, thus balancing the weight on each arm. According to Archimedes' principle, floating objects displace their own weight in water, so when the boat enters, the amount of water leaving the caisson weighs exactly the same as the boat. This is achieved by maintaining the water levels on each side to within a difference of 37 mm (1.5 in) using a site-wide computer control system comprising water level sensors, automated sluices and pumps. It takes 22.5 kilowatts (30.2 hp) to power ten hydraulic motors, which consume 1.5 kilowatt-hours (5,100 BTU) per half-turn, roughly the same as boiling eight kettles of water.

Each of the two caissons is 6.5 metres (21 ft) wide, and can hold up to four 20-metre-long (66 ft) canal boats.

Watertight doors and locks

Watertight doors at each end match doors located on the upper structure and lower dock pit. Due to space concerns, where a normal hinged door would dramatically reduce the useful length of the caisson, vertically rising hinged doors were chosen. The doors are raised from a recess in the base of the caisson and powered by a hydraulic lance when docked.

After the wheel arms are moved into the vertical position, the locking mechanisms are activated. These include securing pins that are protruded into the caisson bases, and hydraulic clamps that are raised to hold the caissons in place. Additionally, a set of larger securing pins at the lower structure is used to hold the wheel. Although the door of the upper caisson and the the door that holds the water at the upper aqueduct are aligned, there is a gap between them. The upper aqueduct door has a U-shape watertight frame which can be extended to push against the caisson door to seal the gap. The water is pumped into the gap to fill to the water level. Once the water in the gap is equalized, the door on the aqueduct side is lowered, followed by the door on the caisson side, allowing the boat to pass. On the reverse direction, when the boat is in the caisson, the caisson door is raised, followed by the upper aqueduct door. The water is pumped out of the gap. Then the U-shape watertight seal is recessed back closer to the upper aqueduct door. Finally, the locking mechanisms are removed before the wheel is turned. This process is similar for the door at the lower canal basin as well.

The Skelpies



Standing 30 metres (100ft) tall, The Kelpies stand majestically above all around them and pay homage to the working horses of Scotland which used to pull barges along Scotland's canals and worked in the fields in the area where they now stand. Towering over a new canal extension which links the Forth & Clyde Canal to the North Sea, The Kelpies are the result of a unique collaboration between the partners and Glasgow-based artist Andy Scott. Almost a decade in the making, the project has transformed 350 hectares of underused land between Falkirk and Grangemouth.

The sculptures were opened to the public in October 2013
This canal extension reconnects the Forth and Clyde Canal

with the River Forth near the river Carron and improves navigation between the East and West of Scotland.

Structure

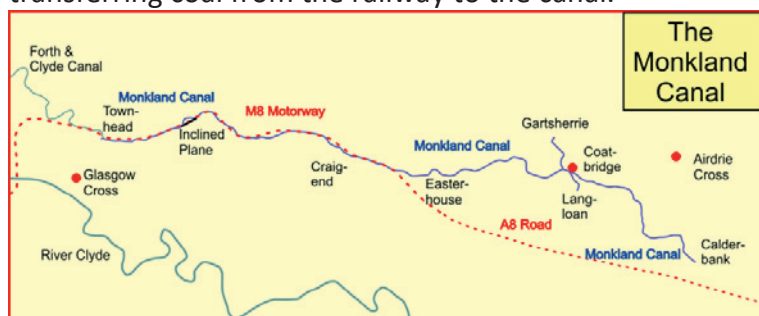
Built of structural steel with a stainless steel cladding, The Kelpies are 30 metres high and weigh 300 tonnes each. Construction began in June 2013, and was complete by October 2013. However the process of fabricating the steel was several years in the making. SH Structures, of Yorkshire, carried out this fabrication and also managed the erection of the sculptures on site. The Kelpies are positioned either side of a specially constructed lock and basin, part of the redeveloped Kelpies Hub.

Summerlee Industrial Heritage Museum



Summerlee Museum opened in 1988 on the site of the Summerlee Iron Works of 1836, one of the first ironworks to use the new 'hot blast process'. The town of Coatbridge rapidly became an important centre for the manufacture of iron.

The site contains a restored branch of the Monkland Canal of 1791. The canal was built to carry coal from this mineral-rich area to Glasgow but later would facilitate the development of the iron industry. An early public railway, the Monkland and Kirkintilloch Railway (1826) runs alongside the museum and you can see coal drops for transferring coal from the railway to the canal.



The museum features a short vintage tramway and reconstructed mine with miners' housing representing different time periods. The mine area contains the partially reconstructed Farme Colliery Engine, a Newcomen atmospheric engine of 1810 while a larger two cylinder horizontal winding engine can be seen in the museum's exhibition hall. The hall has exhibits showing the social and industrial history of this highly industrialised area of central Scotland.

Zaterdag 26 mei 2018

Scheepsbouw langs de Clyde van Glasgow tot Greenock

Tijdens de industriële revolutie ontwikkelde het centrale deel van Schotland - en met name de regio om Glasgow - zich tot één van de meest industrieel ontwikkelde gebieden van Groot-Brittannië. Waar het de scheepsbouw betreft stond deze sector langs de oevers van de Clyde in het Verenigd Koninkrijk in de tweede wereldoorlog zelfs op de eerste plaats. Tot het midden van de vijftiger jaren was de bedrijvigheid hier immens. Vanaf het centrum van Glasgow tot Greenock volgde de ene scheepswerf na de andere, fabrieken van toeleveringsbedrijven en andere nijverheid. In die jaren varende van Glasgow naar Greenock moet een bijzondere ervaring geweest zijn: de grootste schepen in aanbouw op scheepshellingen, honderden kranen in bedrijf en fabrieksschoorstenen zo ver het oog reikt, op het water van de Clyde een levendige wirwar van schepen en bootjes en ...de ongeveer tienduizend mensen die men hier aan werk zag. In de hele regio vonden een paar honderdduizend mensen werk. Dit panorama is te bedenken bij een vaartocht met het Paddle Steamship "Waverley" want zichtbaar van al deze bedrijvigheid is in deze tijd in feite niets meer. Nog vier reusachtige Cantileverkranen - in de volksmond Hammerheadkranen genoemd - moeten het verleden levend houden. Een geoefend oog ontdekt aan de oever af en toe waar een

scheepshelling ooit in de Clyde eindigde of een ander artefact uit die tijd.

Bekende schepen gebouwd aan de Clyde:

Cutty Sark, Empress of Britain, RMS Hood, Lusitania, Queen Mary, Queen Elizabeth I en II, Royal Yacht Britannia.

Scheepswerven o.m.

Beardmore in Dalmuir
John Brown in Clydebank
Charles Connell in Scotstoun
Denny Bros. in Dumbarton

Fairfields in Govan
Ferguson in Port Glasgow
John Scott in Greenock

The River Clyde has been a center for shipbuilding for hundreds of years, with boats being built in the area possibly as early as the 15th century.

However, it was during the 19th century, in places such as Bowling Harbour, Denny's Shipyard in Dumbarton, John Brown's Shipyard at Clydebank and Govan Graving Docks, that shipbuilding became a real source of commerce for Glasgow.

The advent of the steam engine marked massive opportunities for Glasgow to expand its heavy industry. Between 1844 and 1963, Denny's shipyard alone built over 1500 ships. The Denny family was involved in building the first steamship that crossed the Channel (1814), the first turbine steamer (1901), and the first diesel-electric paddle (1934), to name a few. Also well-known from Dumbarton

was the fast clipper Cutty Sark, currently a visitor attraction in London.

For many, though, the heart of the shipping industry in Glasgow lay in Govan and the Fairfield Shipyards. At Fairfield, Robert Napier, known as 'the father of shipbuilding on the Clyde', trained many of those who went on to establish leading shipyards, including John Brown's Shipyard in Clydebank. These shipyards grew towards the end of the nineteenth century to become some of the leading suppliers of the Royal Navy, as well as building liners and steamers, and the tradition continues today with BAe Systems yards at Govan and Scotstoun.

A shipbuilding landmark on the Clyde is the Finnieston Crane at Yokhill. Completed in 1931, it was primarily used to load large steam locomotives for exportation. In addition, it was used to fit large ships' engines. This impressive machine is still in working order.

After World War Two the shipping industry went into decline and by the 1960's, Fairfield had collapsed.

Recently, however, regeneration of the Clyde Waterfront has attracted new industry to the area, including financial services, digital media and tourism. However, the long tradition of Shipbuilding in the area continues.

Paddle steamer “Waverley” van Glasgow naar Greenock

PS Waverley is the last seagoing passenger carrying paddle steamer in the world. Built in 1946, she sailed from Craigendoran on the Firth of Clyde to Arrochar on Loch Long until 1973. Bought by the Paddle Steamer Preservation Society (PSPS), she has been restored to her 1947 appearance and now operates passenger excursions around the British coast.

Since 2003 the *Waverley* has been listed in the National Historic Fleet by National Historic Ships UK as "a vessel of pre-eminent national importance

| | |
|----------------|---|
| Builder: | A. & J. Inglis, Glasgow |
| Launched: | 2 October 1946 |
| Maiden voyage: | 16 June 1947 |
| Tonnage: | 693 grt |
| Length: | 239 ft 11 in (73.13 m) s |
| Beam: | 57 ft 3 in (17.45 m) s |
| Draught: | 6 ft 3 in (1.91 m) s |
| Propulsion: | Diagonal triple expansion steam engine built by Rankin & Blackmore Ltd, Greenock |

| | |
|-----------|---|
| Speed: | <ul style="list-style-type: none"> ●14 knots (26 km/h; 16 mph) in service ●Trials speed in 1947 18.37 knots (34.02 km/h; 21.14 mph) at 56 rpm |
| Capacity: | Up to 925 passengers in Class V waters. |

Balloch Steam Slipway

The Balloch Steam Slipway consists of a ramp, carriage and steam powered winch located on the shores of Loch Lomond by which ships or boats can be moved in and out of the loch, usually for repairs and general maintenance. It is owned and operated by the Loch Lomond Steamship Company. It is thought to be Europe's last steam operated winch and it is contained within a railway-style winch house that is category A listed.



The steam engine

History

The slipway construction started in 1900 and it was opened by the Dunbarton & Balloch Joint Line Committee in 1902 and finally fell out of use circa 1989. Following a £620,000 restoration project the Balloch slipway complex was officially reopened by the Princess Royal in 2006.

The PS *Maid of the Loch* was re-assembled on the slipway in 1953 following its construction, disassembly and transport by rail to a siding lying parallel to the slipway and launched on 25 May 1953.

Working details

The boiler

The present reconditioned vertical water-tube boiler was taken from a steam crane built in 1953 that had been converted to diesel. To reduce smoke nuisance it was converted to burn light oil by McEwen Ltd. of Keighley in Yorkshire. It was built by Cowans, Sheldon of Carlisle and is a Spencer-Hopwood pattern, with has an operating pressure of 100 pounds per square inch (7 bar).

The steam engine

The steam engine installed is a twin horizontal single-expansion design built in 1902 by John Bennie of Glasgow with a rated power of 50 bhp (37 kW) and an actual or shaft power output of 33 brake horsepower (25 kW). The length of the piston stroke is 20 inches (51 cm). On the last few occasions that the winch was used prior to restoration the steam engine was powered by compressed air to save buying a new boiler.

The winch

Three sets of gears on the winch create a gear ratio of approximately 1:113 so that 113 turns of the steam engine are required to turn the winding drum with its steel cable just one full rotation, however this gives enough force to pull even a ship the size of the *Maid of the Loch* slowly out of the water.

The carriage or cradle

The carriage was badly damaged when the PS *Countess Fiona* was broken up on the slipway in 1999 and a new deck was made from Douglas Fir at Bellshill in Lanarkshire. As many components as possible of the old carriage were re-used. Twenty-four two-wheeled bogies run on either side of the central rails that have 41 four-wheeled bogies and the whole carriage structure runs upon these.

The four cast iron rails run over 300 feet into the waters of the loch and this section was badly corroded. Two central rails have a locking rack between them so that pawls on the central bogies can drop down and lock the carriage or cradle firmly in position as required. The gradient of the slip is 1 in 18 and the total length of the rails is 560 feet or 171 metres. The angle on the carriage, combined with the angle of the slip gives the suitable overall gradient of 1 in 44.5 for a ship.

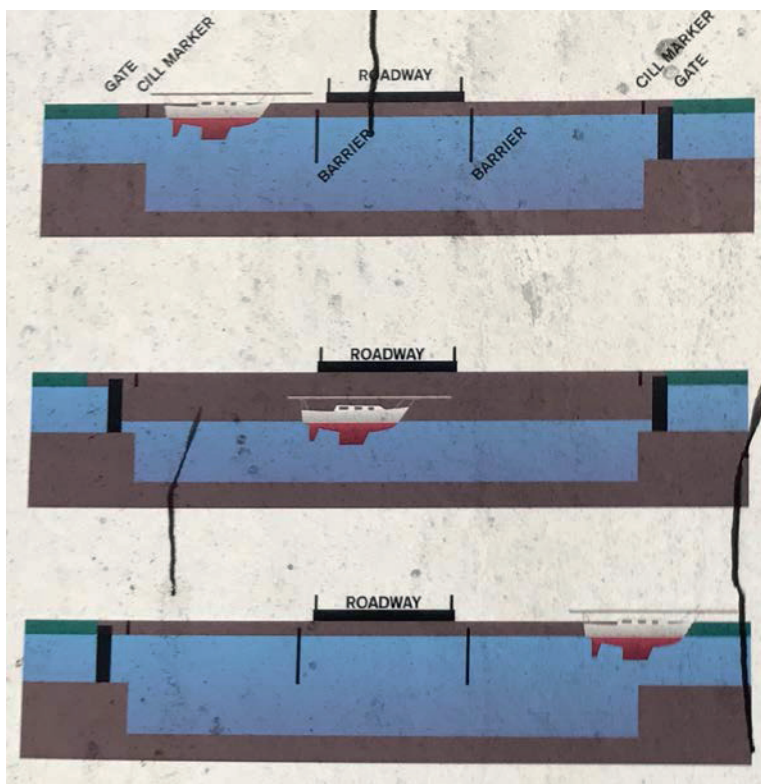
Bowling Harbour

Sluis 39 bij Bowling vormt de laatste schakel van het Forth-and-Clyde kanaal voordat de rivier de Clyde per schip bereikt wordt. Het is een markant knooppunt van industrieel transport erfgoed. Bij droog weer wordt een korte wandeling gemaakt om het bassin over de deuren van de sluizen 37, 38 en 39, over de 120-jaar oude draaibrug en onder de bogen van de geklonken spoorbrug door van de spoorlijn die het kanaal hier kruist.

Tot nu toe werd 3,2 miljoen pond geïnvesteerd in dit gebied om het te herontwikkelen voor toerisme, het aantrekken van passende kleine start-ups en het behoud van het aanwezige erfgoed.

Dalmuir Drop Lock

Na de sluiting van het Forth-and-Clyde Kanaal in de zestiger jaren was bij de verbreding van de autoweg A814 de oude smalle beweegbare brug over het kanaal verwijderd en werd de weg over een afdamming aangelegd. Toen in het kader van het Millennium-project het kanaal gerenoveerd en weer opengesteld werd, is gekozen voor het aanleggen van een schutsluis die onder de nieuwe vaste brug de waterstand verlaagd. Hiervoor dient 2.000 m³ water uit de sluiskom te worden gepompt. Aan de eis van een minimale doorvaarthoogte in het kanaal van 3,00 meter wordt daarmee voldaan.



In ieder geval in Groot-Brittannië is dit de eerste sluis van deze soort. In Nederland is dit type weliswaar overwogen maar nog nooit gerealiseerd.

Zondag 27 mei 2018

National Scottish Mining Museum



The National Mining Museum Scotland was created in 1984, to preserve the physical surface remains of Lady Victoria Colliery at Newtongrange, Midlothian, Scotland. The colliery, sunk by the Lothian Coal Company in 1890, came into production in 1894. It was nationalised in 1947 with the formation of the National Coal Board, and had closed in 1981.

The buildings were recognised as being of outstanding interest as they formed an almost complete survival of a major Victorian colliery, with later additions. Some demolition, such as the 1950s canteen and medical centre, has occurred but the vast bulk of the structures stand. The winding engine is by Grant, Ritchie and Company and the colliery headstocks were built by Arrols of Glasgow. From

1998 onwards several of the main structures were stabilised and new visitor facilities opened.

Some interesting exhibits. The winding machine engine, largest in Scotland, is by Grant Ritchie and Co. of Kilmarnock. The engine has four cylinders and Cornish drop valves. Baum Washer of 1905, tub circuit and picking tables for sorting coal by hand (women's work) over the rail sidings.

The Museum developed collections, such as a library, and exhibitions that were housed in a visitor centre which has previously formed part of the colliery offices.

Van Newtongrange naar Edinburgh

Tijdens deze rit hebben wij mr. Mark Watson van Monumentenzorg Schotland Department Industrial Heritage bereid gevonden ons te leiden langs plaatsen die onze aandacht waard zijn. We rijden vanaf Newtongrange via Dalkeith naar Prestonpans. Hier bevindt zich een Prestongrange beam engine, een Cornish engine. Deze maakte vroeger deel uit van het Mining Museum maar valt nu onder de zorg van het council van zijn herkomst. Al in 1184 werden in Prestongrange kolenvoorraden geëxploiteerd. In 1829 werd een nieuwe schacht in gebruik genomen. Voor het afpompen van het water werd in deze schacht in 1874 de eerdergenoemde Cornish beam engine geïnstalleerd van Harvey's uit Hayle (bezocht tijdens de studiereis naar Cornwall van Histecnica-KIVI in 2012). Deze had een enkele, tweedehands, cylinder van 70 inch uit 1853 met een excentrische gegoten arm van 33 voet

lang, waaraan trekbanden werden toegevoegd in 1895. De machine werd in 1954 uit bedrijf genomen maar geconserveerd door manager Davie Spence en deels gefinancierd door Historic Scotland.

De route wordt verder vervolgd langs de kust via Musselburgh en de haven van Leith naar het centrum van Edinburgh. Vanaf ca 13:30 vindt zowel de lunch als de verkenning van het centrum op eigen gelegenheid plaats.

Edinburgh

“Athens of the North”

A4-Plattgrond van het centrum beschikbaar

Edinburgh is the capital city of Scotland and one of its 32 council areas. It is located in Lothian on the Firth of Forth's southern shore.

Recognised as the capital of Scotland since at least the 15th century, Edinburgh is the seat of the Scottish Government, the Scottish Parliament and the supreme courts of Scotland. The city has long been a centre of education, particularly in the fields of medicine, Scots law, literature, the sciences and engineering.

Edinburgh is Scotland's second most populous city and the seventh most populous in the United Kingdom. The official population estimates are 464,990 (2012) and 1,339,380 (2014) for the city region.

Edinburgh's Old Town and New Town together are listed as a UNESCO World Heritage Site. Reported:

The remarkable juxtaposition of two clearly articulated urban planning phenomena. The contrast between the organic medieval Old Town and the planned Georgian New Town of Edinburgh, Scotland, provides a clarity of urban structure unrivalled in Europe. The juxtaposition of these two distinctive townscapes, each of exceptional historic and architectural interest, which are linked across the landscape divide, the "great arena" of Sir Walter Scott's Waverley Valley, by the urban viaduct, North Bridge, and by the Mound, creates the outstanding urban landscape.

The Old Town stretches along a high ridge from the Castle on its dramatically situated rock down to the Palace of Holyrood. Its form reflects the burgage plots of the Canongate, founded as an "abbatial burgh" dependent on the Abbey of Holyrood, and the national tradition of building tall on the narrow "tofts" or plots separated by lanes or "closes" which created some of the world's tallest buildings of their age, the dramatic, robust, and distinctive tenement buildings. It contains many 16th and 17th century merchants' and nobles' houses such as the early 17th century restored mansion house of Gladstone's Land which rises to six storeys, and important early public buildings such as the Canongate Tolbooth and St Giles Cathedral.

The Old Town is characterized by the survival of the little-altered medieval "fishbone" street pattern of narrow closes, wynds, and courts leading off the spine formed by the High Street, the broadest, longest street in the Old Town, with a sense of enclosed space derived from its width, the height of the buildings lining it, and the small scale of any breaks between them.

The New Town, constructed between 1767 and 1890 as a collection of seven new towns on the glacial plain to the north of the Old Town, is framed and articulated by an uncommonly high concentration of planned ensembles of ashlar-faced, world-class, neo-classical buildings, associated with renowned architects, including John and Robert Adam (1728-92), Sir William Chambers (1723-96), and William Playfair (1790-1857). Contained and integrated with the townscape are gardens, designed to take full advantage of the topography, while forming an extensive system of private and public open spaces. The New Town is integrated with large green spaces. It covers a very large

area of 3,288 ha, is consistent to an unrivalled degree, and survives virtually intact.

Some of the finest public and commercial monuments of the New-classical revival in Europe survive in the city, reflecting its continuing status as the capital of Scotland since 1437, and a major centre of thought and learning in the 18th century Age of Enlightenment, with its close cultural and political links with mainland Europe.

The successive planned extensions from the first New Town, and the high quality of the architecture, set standards for Scotland and beyond, and exerted a major influence on the development of urban architecture and town planning throughout Europe.

The dramatic topography of the Old Town combined with the planned alignments of key buildings in both the Old and the New Town, results in spectacular views and panoramas and an iconic skyline.

The renewal and revival of the Old Town in the late 19th century, and the adaptation of the distinctive Baronial style of building for use in an urban environment, influenced the development of conservation policies for urban environments.

Bezienswaardigheden

Eén van de bekendste bezienswaardigheden van de stad is Edinburgh Castle, dat is gebouwd op een vulkanische rots. Op Calton Hill staat een onafgebouwde kopie van het Atheense Parthenon als Nationaal Schots Monument ter ere van de Schotse deelname aan de Slag bij Waterloo (Edinburgh wordt daarom wel het Athene van het Noorden genoemd.)

Edinburgh heeft verder een dierentuin, Edinburgh Zoo en een botanische tuin, Royal Botanic Garden Edinburgh.



Monument te Edinburgh ter ere van Sir Walter Scott

In Edinburgh heeft zich het ware verhaal afgespeeld van de skyeterriër Bobby, ook wel "Greyfriars Bobby" genoemd. Nadat zijn baasje John Gray, een politieman te Edinburgh, overleed op 15 februari 1858, sliep Bobby gedurende 14 jaren bij het graf van zijn baasje op Greyfriars Kirkyard bij Gryfriaars Kirk. Bobby werd door veel mensen op de klokslag van één uur 's middags gezien waarop hij naar het koffiehuis ging en daar zijn middagmaal van de eigenaar kreeg. Bovendien werd de licentie (een voorloper van hondenbelasting) betaald door de provoost van Edinburgh, Sir William Chambers, die een groot dierenliefhebber was. Bobby overleed in 1872. Een gedenkteken ter ere van Bobby, geprezen om zijn trouw, staat in Greyfriars Place, vóór het voormalige koffiehuis, nu pub. De Kirkyard ligt er direct achter.

Hop-On-Hop-Off Sight Seeing Tour met open dubbel-dekker, 14 stops, zonder uitstappen 60 min. Prijs GBP 15,00.



Maandag 28 mei 2018

Forth Bridge



Als de weers- en alle andere omstandigheden meewerken zal Mr Mark Watson ons meenemen naar het noordelijkste van de drie uitkragende uitkragende brugdelen waaruit de Forth Bridge bestaat. Een lift die (nog) niet algemeen toegankelijk is voor het publiek brengt ons naar een platform op hoogte. Deze konstruktie kwam in 2015 gereed. Kosten 15 mio pond. De documentatie voor UNESCO over de bijzondere universele waarde van de brug werd door Mark Watson van Monumentenzorg Schotland, leider van de afdeling konserveringen, opgesteld.

De Forth Bridge is een spoorbrug die de oevers van de Firth of Forth in Schotland verbindt. Dit type brug staat ook wel bekend als cantileverbrug (uitbouwbrug). De brug ligt tussen de plaatsen North Queensferry en South Queensferry.

De bouw De werkzaamheden aan de brug begonnen onder leiding van Thomas Bouch, maar werden gestaakt toen de Tay Rail Bridge, een ander ontwerp van Bouch, instortte tijdens een storm in december 1879 wat leidde tot de ramp met de Tay Bridge. Het werk werd overgenomen door John Fowler en Benjamin Baker en uitgevoerd tussen 1883 en 1890. De brug werd geopend door de prins van Wales, de latere koning Eduard VII. De eerste vier jaar werden besteed aan de bouw van caissons (waterdichte kamers) en de bouw van de pijlers. Door het instorten van de Tay Bridge werd de Forth Bridge zo berekend dat zij een orkaan zou moeten kunnen weerstaan. In totaal heeft de bouw van de brug aan 54 mensen het leven gekost.



De brug werd in 2015 op de Werelderfgoedlijst van de UNESCO geplaatst. Dit gebeurde nadat jaren van omvangrijke en zeer grondige conserveringswerkzaamheden waren afgerond.

Cijfers De brug is 2,528 kilometer lang en het spoor bevindt zich 45 meter boven het wateroppervlak. In de brug is ongeveer 54.860 ton staal en 7 miljoen klinknagels verwerkt. Voor het onderhoud heeft de brug een eigen onderhoudsploeg. Het te schilderen oppervlak bedraagt 59 ha en daarvoor is 31.800 liter verf nodig.

Forth Bridges voor wegverkeer In 1964 kwam – op geringe afstand - de bouw van de eerste wegverkeersbrug

over de Firth of Forth gereed, een “klassieke” hangbrug met twee pylonen en een vrije overspanning van 1106 m, indertijd de grootste overspanning buiten de Verenigde Staten. De veerdienst voor voertuigen die sedert de 11^e eeuw dienst had gedaan kwam hiermee te vervallen. De veerdienst werd indertijd ingesteld door Margaret, Queen Consort van King Malcolm III, vandaar de namen Queensferry.

Op 2 september 2017 werd een tweede verkeersbrug in gebruik genomen. Deze heeft veel gelijkenis met de eerste brug uit de 19^e eeuw. Wederom bestaat deze uit drie pijlers elk met uitbouwbrug. Echter is deze niet als vakwerk ontworpen maar hangend vanuit de pyloon op de pijler. De eerste verkeersbrug is daarna voor onderhoud voor langere periode afgesloten.



Tay Rail Bridge, Dundee

The Tay Bridge carries the main-line railway across the Firth of Tay in Scotland, between the city of Dundee and the suburb of Wormit in Fife. Its span is 2.75 miles (3.5 kilometres). The present structure is the second one on its site. From about 1854, there had been plans for a Tay crossing, to replace an early train-ferry.



Northern segment of the second Tay Bridge, showing stumps of the original bridge's piers poking above the Tay

The first bridge, opened in 1878, was a single-track lattice design, notable for lightness and low cost.

Its sudden collapse in a high wind on 28 December 1879 was one of the great engineering disasters of history, and its causes are still debated today.

The second bridge was a double-track construction of iron and steel, opened in 1887 and still in service. In 2003, a strengthening and refurbishing project was recognised by a major award for the scale and difficulty of the work.

Verdant Works

Jute en Vlas museum

Verdant Works, is a former jute mill in the Blackness area of Dundee, Scotland. It was purchased in 1991 by the Dundee Heritage Trust. The trust restored the buildings and opened them in 1996 as a museum dedicated to the textile industry, an industry that once dominated the city's economy.

History

The Verdant Works was given Category A listed building status by Historic Scotland (Monumentenzorg) in 1987. This is the highest category for listing in Scotland, denoting a building of national architectural importance. It is a rare surviving example of a courtyard-type mill, with its original building layout and many original features remaining. It is one of a declining number of industrial premises in Dundee and east-central Scotland remaining little-changed from the 19th century.



Museum

The Verdant Works are the only dedicated jute museum in the United Kingdom. As a museum, the Verdant Works tell the story of Dundee's textile industries, focusing primarily on the jute and linen industries. The production of textiles was the dominant industry in Dundee for many years, directly employing 50,000 people in the city (half the working population) by the end of the 19th century, as well as many more thousands in associated trades such as shipbuilding, transportation, and engineering. At the time Dundee supplied the majority of the world's demand for jute products, meaning it was also of importance for both Scottish and British histories.

The jute collections cover the entire history of the jute industry. It covers topics such as manufacturing, research and development, end products, quality control, textile engineering, the industry's Indian connections, and the lives of the workers. Objects include machinery patterns, jute and flax products, small tools, technical drawings, plans, and quality control and testing equipment.

The archives and photographic records of various mills and their workers have considerable historical research value. As well as the large machinery objects, the collections cover the fields of industrial history, social history, fine art, archives, business papers, photographs, costumes, and numismatics.

Verdant Works is a fully accredited museum and has won numerous awards, both national and international, as well

as being a 5-star-rated tourist attraction with Visit Scotland. In 2008, the Jute Collection was named as a Recognised Collection of National Significance.

In September 2015, a new section of the museum was opened in the High Mill, after an extensive restoration of this building. The High Mill was built in 1833, and is the oldest part of the complex.

Royal Research Ship Discovery

Builder: Dundee Shipbuilders Company, Dundee **Laid down:** 1900

Launched: 21 March 1901 **Sponsored by:** Royal Geographical Society

Class and type: Wooden Barque; 1 funnel, 3 masts

Tonnage: 736 GRT **Displacement:** 1,570 tonnes

Length: 172 ft (52 m) **Beam:** 33 ft (10 m)

Propulsion: Coal fired steam engine and sail

Speed: 8 knots (15 km/h; 9.2 mph)

Crew: 11 officers and 37 men

Het schip is wereldberoemd geworden door de Poolexpeditie van 1902-1904 o.l.v. Captain Robert Falcon Scott bijgestaan door Shackleton als ook vijf bekende wetenschappers, waaronder Wilson. In February 1904 werd de "Discovery" uit het ijs bevrijd door twee andere Britse schepen. Het resultaat van de reis was een wetenschappelijke doorbraak van de kennis over de Antarctic.

Noot: Tijdens de Terra Nova expeditie bereikten Scott en Wilson samen met drie teamleden op 17 januari 1912 de geografische zuidpool na een erbarmelijke tocht. Zij hadden gedacht als eersten te zullen aankomen. Bij aankomst bleek echter dat Raold Amundsen 34 dagen eerder de Noorse vlag op de Zuidpool had geplaatst. Op de terugtocht naar het basisstation aan de kust kwam het gehele team door ontberingen om het leven.

The main purpose of the “Discovery expedition” was to carry out scientific research – not to reach the South Pole. Among the total complement of 48 men who served the expedition were a group of scientists who had orders from the Royal Geographical Society and The Royal Society to carry out particular pieces of research. That research was carried out in very difficult and often dangerous conditions.

As a major whaling centre Dundee’s shipyards had long experience of constructing ships robust enough to travel through the Arctic pack ice. It was this expertise that Markham harnessed to build RRS Discovery, the first vessel to be constructed specifically for scientific research. While the design was based on the great Dundee whalers, there were some modifications to be made. Discovery was one of the last wooden three-masted, barque rigged sailing ships to be built in Britain. Although Discovery had coal-fired auxiliary steam engines, it had to rely primarily on sail for the simple reason that on a Polar expedition coal was a precious commodity, and conserving stocks was of prime importance. Magnetic surveys were to be an important part of the scientific work of the expedition. To be sure of complete accuracy an exclusion zone round the magnetic

observatory was created, with no iron or steel allowed within 30 feet of the area. The total working sail area of *Discovery* was 12,296 square feet. The record run under sail on the outward journey was 223 miles per day during seven days. The average speed was just over nine knots.

110 feet up at the top of the main mast, the Crow's Nest was an essential aid to navigation when breaking through pack ice. The lookout man would climb in through a hole in the base. Holes in the side allowed observation without being exposed to the elements.

Discovery's funnel was specially designed with a hinged base so that it could be laid flat to make way for the large sail which was sometimes rigged from the main mast.

Discovery is a ship with no portholes. Under the extreme pressure of ice they would have weakened the sides of the vessel. Instead, brass mushroom vents were let into the deck to provide light and ventilation below decks. They were soon renamed 'ankle bashers' for obvious and painful reasons. The rudder and two-bladed propeller could be lifted up into the main hull to avoid ice damage and allow repairs to be made more easily.

On 16 March 1900, in the context of significant donations to the approaching expedition by patrons Llewellyn W. Longstaff and the British Government, construction on the *Discovery* began in Dundee, Scotland, by the Dundee Shipbuilders Company. She was launched into the Firth of Tay on 21 March 1901 by Lady Markham, the wife of Sir

Clements Markham, President of the Royal Geographical Society.

According to Shackleton, the ship was a bad sailor, and carried too much sail aft and not enough forward; while Scott worried that the design of the ship's hull was unsuitable for work in pack ice. The ship had a massively built wooden hull designed to withstand being frozen into the ice. Iron-shod bows were severely raked so that when ramming the ice they would ride up over the margin and crush the ice with deadweight. *Discovery* rolled badly in the open sea where the flat shallow hull, built with no protuberances to work well in ice, provided minimal stability in heavy seas.

Discovery's Triple Expansion engine really came into its own when the ship was manoeuvring through pack ice. It could produce up to 450 horse power, requiring the stokers to shovel 6 tons of coal a day into the fireboxes.

Dinsdag 29 mei 2018

Glenturret Whisky Distillery

- The Famous Grouse -

The Glenturret Distillery is located on the banks of the Turret River two miles north west of Crieff in Perthshire, Scotland. The distillery is hidden in the glen and its secluded location may have contributed to its early history

as the site of several illicit bothy stills. The high hills to either side of the distillery were thought to act as lookout points for the smugglers. When Alfred Barnard visited the distillery he described the glen as “a perfect paradise to artists, who come in great numbers to transfer some of its transcendent beauties to canvas.” The distillery is located in the parish of Monzievaird and Strowan.

History

The distillery was officially established in 1775, but the distillery had previously been under the control of illicit distillers, who sought to avoid paying taxes to England, since 1717. This early history has led to claims that Glenturret is the oldest distillery in Scotland, a title contested by other establishments such as Littlemill, Glenisla, Bowmore and Glen Garioch.

The distillery was originally known as “Hosh” and was originally owned by the Drummond family. "Hosh" comes from the gaelic "cois", meaning foot. It was taken over by John McCallum in 1845 till 1875 when Thomas Stewart took it over and renamed it Glenturret in its centenary year.

The First World War saw the closure of the distillery, but following the war it reopened again under the Mitchell Brothers until 1921 when the great depression and prohibition in America saw it closed again. The buildings during this period were kept as storage by the Murrays of Ochertyre. It did not reopen again to production till 1957 when it was revitalised by James Fairlie. Fairlie was a whisky enthusiast and his intention was to create a malt

whisky created in traditional fashion and to preserve the craft of distilling. The distillery was bought by Cointreau in 1981 and from there passed to Highland Distillers in 1990. Since then it has become the home of “**The Famous Grouse Experience**”, which was nominated for an Interactive Entertainment Award at BAFTA in 2002.

Production and Character

The water supply for the Glenturret comes via its own pipeline from Loch Turret. As the water used contributes much of the taste and character of the whisky, the purity and quality of the water is essential in the whisky making process. The geology of the mountains has resulted in the extreme softness of the water of Loch Turret making it a suitable source for the whisky.

Barley is soaked in water from the source for two to three days then spread over the floor of the malting house. The green malt is then dried in a kiln over peat smoke. The malt is then milled into grist, which is like a coarse flour. Grist is then mixed with hot water in the mash tun at about 70 °C for about an hour. This is drained off and the second water, which is hotter, is added and allowed to run straight through. The third water is even hotter and is used as the first water for the next batch. The sugary wort is collected, cooled and then fermented in large pine vessels called wash backs. Yeast is added and after 48 hours of fermentation the wash is made. The wash is then pre-heated in a wash-charger and from there goes to the wash still. This is a traditional pot still made of copper and is of a shape unchanged in the history of Scotch whisky making. The wash is heated in the pot still so

the alcohol vapour rises up and cools and condenses in the low wines receiver. The low wines then pass through to the spirit still where it is distilled again. The spirit running through the pot and spirit stills is subject to Her Majesty's Customs and Excise Duty and so is kept under lock and key. It can be sampled and tested by the stillman via the spirit sample safe. The spirit from the spirit still is divided in three parts, but only the middle cut or "Heart of the Run" is suitable to be made into malt whisky. The other two parts are fed back into the low wines receiver to be re-distilled. The middle cut then goes to an oak spirit receiver and from there to the filling vats in the spirit store.

At this stage more water is added to reduce the concentration of alcohol from 75% to 64%. Each oak cask is handmade and therefore unique, so each must be weighed before and after filling to determine how much spirit is in each. Each cask is stencilled with the name, year, cask number and number of litres. The casks are then laid aside in the warehouse for a minimum of three years when it can be used for blending. But for the malt whisky range it is matured for 8, 10, 12, 15 or 21 years or longer for very special bottlings.

Philip Hills has described Glenturret with the words:- "Its nose has the floweriness which is characteristic of such [bourbon cask]; it opens up with water and yields scents of elderflower and liebfraumilch. It is entirely honest, not appearing to be anything it isn't, but what it is, is sufficient; an entirely pleasing and agreeable whisky."

Steamship Sir Walter Scott

- Lake Katrine –

Builder: William Denny and Brothers, Dumbarton

Cost: £4,269

Launched: 1900

Tonnage: 115 Tons

Length: 110 ft (34,00 m)

Beam: 19 ft (5,80 m)

Installed power: 3-cylinder triple-expansion steam engine

Propulsion: Propeller



1981 on Trossachs Pier

SS Sir Walter Scott is a small steamship that has provided pleasure cruises and a ferry service on Loch Katrine in the scenic Trossachs of Scotland for more than a century, and is the only surviving screw steamer in regular passenger service in Scotland. It is named after the writer Walter Scott, who set his 1810 poem *Lady of the Lake*, and his 1818 novel *Rob Roy* around Loch Katrine.

In 1859 Loch Katrine became Glasgow's main water supply, connected by aqueducts and tunnels to the city more than 30 miles (48 km) away through a hilly landscape. The Trossachs became very popular in the Victorian era, and there were early steamship services on the loch. The Loch is surrounded by wooded mountains, and has romantic historical connections including the birthplace of the outlaw Rob Roy MacGregor. Queen Victoria had a holiday house built overlooking the loch.

William Denny and Brothers built *Sir Walter Scott* as a "knock-down" ship; that is, it was assembled with bolts and nuts at Denny's shipyard at Dumbarton on the River Leven, the pieces numbered and dismantled again, transported in pieces by barge up Loch Lomond and overland by horse-drawn cart to Stronachlachar pier on Loch Katrine and there rebuilt with rivets and launched. Denny's assembled *Sir Walter Scott* at their yard in 1899 and completed its reassembly and launch on the loch in 1900.

All ships in the UK must record a measured mile for seaworthiness. *Sir Walter Scott* completed its measured mile on the Firth of Clyde when bolted together, before being disassembled, transported to Loch Katrine and riveted together again.

Its original cost was £4,269, which included a delivery charge of £2,028.

Sir Walter Scott is powered by its original three-cylinder triple-expansion steam engine and has two locomotive-type boilers which until the end of 2007 were fired by solid fuel fed into the firebox by a stoker. At

a time when most steamers changed to oil-fired boilers, the *Sir Walter Scott* kept using solid fuel to meet the requirement of ensuring that Glasgow's water supply is not polluted, changing from coal to coke to reduce air pollution. In a refit at the end of the 2007 season the boilers were altered to run on biofuel. During this refit, the superstructure was rebuilt and a forward deck cabin was added. Some consider the modified superstructure an abomination, destroying the classic lines of this Victorian era steamer. The vessel has a crew of five.

New Lanark



Het dorpje Lanark werd in 1975 door David Dale als een totaal nieuwe industriële nederzetting gesticht. Met het plaatselijke zandsteen werden er katoenspinnerijen, die door het water in

de Clyde aangedreven werden, en eenvoudige rijtjeshuizen voor de arbeiders gebouwd. Tegen 1820 bedroeg het aantal inwoners van het dorp zo'n 2.500 en in die tijd was het het grootste katoen fabricerende centrum in het land. Het is nu een geliefde toeristenattractie.

Van 1800 tot 1825 werd New Lanark onder de verlichte leiding van de schoonzoon van David Dale, Robert Owen, beroemd als een modelgemeenschap. Owen begon met de verbetering en uitbreiding van het bedrijf en hij gebruikte de winst om een reeks sociale en educatieve veranderingen te financieren die erop gericht waren om de levenskwaliteit van zijn werkers te verbeteren. Hij stond niet toe dat jonge kinderen in de katoenspinnerijen werkten. In een gebouw dat bekend stond als het Institute for the Formation of Character richtte hij scholen voor het dorp op, waaronder de eerste kleuterschool ter wereld en een avondschool. Er werd een grote nadruk gelegd op muzikale activiteiten, kunst, natuurstudie, geschiedenis en aardrijkskunde, evenals op lezen, schrijven en rekenen; straf was niet toegestaan. Daarnaast was er voor de dorpsbewoners gratis medische verzorging, een ziekenfonds en een spaarbank, de werkuren werden teruggebracht en de dorpswinkel leverde levensmiddelen en huishoudelijke artikelen tegen lage prijzen.

De katoenspinnerijen bleven tot 1968 werkzaam. In reactie op de veranderingen in de technologie werden de waterraden die de machines aandreven geleidelijk vervangen door waterturbines en de spinnerijen produceerden van 1898 hun eigen hydro-elektriciteit. Het dorp, dat tijdens de Industriële Revolutie gesticht was, overleefde met slechts een klein aantal fysieke veranderingen; het is nu tot een Outstanding Conservation Area benoemd en wordt beheerd door een onafhankelijke liefdadigheidsinstelling, de New Lanark Trust. Het dorpje heeft nog steeds een inwonersaantal van ongeveer 180 personen, die

in prachtig gerestaureerde Georgian gebouwen wonen. Deze zijn inwendig gemoderniseerd, maar hebben hun historische karakter behouden. In december 2001 werd New Lanark aan de lijst van World Heritage Sites van de UNESCO toegevoegd.

De New Lanark Trust heeft tevens bekroonde tentoonstellingsruimtes en bezoekersfaciliteiten in een aantal van de dorpsgebouwen gecreëerd. De bezoekers kunnen een gerestaureerd huis van een arbeider in de spinnerij bezichtigen, dat de leefomstandigheden in de periode rond 1820 en 1930 laat zien. De dorpswinkel is gerestaureerd met een tentoonstelling over de oorspronkelijke winkel van Robert Owen en in het huis van Robert Owen kunnen bezoekers een tentoonstelling over de levensstijl van de beroemde eigenaar van de spinnerij en zijn werk als een sociaal hervormer bezichtigen, terwijl er in het voornaamste bezoekerscentrum werkende textielmachines te zien zijn en men een fascinerende audiovisuele rit, The Anne McLeod Experience, kan meemaken.

The importance of New Lanark has been recognised by UNESCO as one of Scotland's six World Heritage Sites, the others being Edinburgh Old and New Towns, Heart of Neolithic Orkney, St Kilda, the Antonine Wall and the Forth Bridge. The mills and town were listed in 2001 after an unsuccessful application for World Heritage listing in 1986.

Unesco reports: Outstanding Universal Value

Brief synthesis

New Lanark is an exceptional example of a purpose-built 18th century mill village, set in a picturesque Scottish

landscape near the Falls of Clyde, where in the early years of the 19th century, the Utopian idealist Robert Owen (1771-1858) inspired a model industrial community based on textile production. It was there that Owen first applied his form of benevolent paternalism in industry, building on the altruistic actions of his father-in-law, David Dale. It was there, too, that he formulated his Utopian vision of a society without crime, poverty, and misery. New Lanark prospered under his enlightened management.

The village was founded in 1785, and the cotton mills, powered by water-wheels, were operational from 1786 to 1968. At the turn of the 19th century the mill buildings formed one of the largest industrial groups in the world.

The creation of the model industrial settlement at New Lanark, in which planning and architecture were integrated with a humane concern on the part of the employers for the well-being of the workers, is a milestone in social and industrial history. The moral, social and environmental values which underpinned Robert Owen's work at New Lanark provided the basis for seminal material and intangible developments that have had lasting influences on society over the past two hundred years.

New Lanark is a unique reminder that the creation of wealth does not automatically imply the degradation of its producers. The village offered a cultural response to the challenges presented by industrial society and was the test-bed for ideas that sought to improve the human condition around the world. The nature and layout of New Lanark inspired other benevolent industrialists to follow his example, and this movement laid the foundations for the work of Ebenezer Howard (1850-1928) in creating the

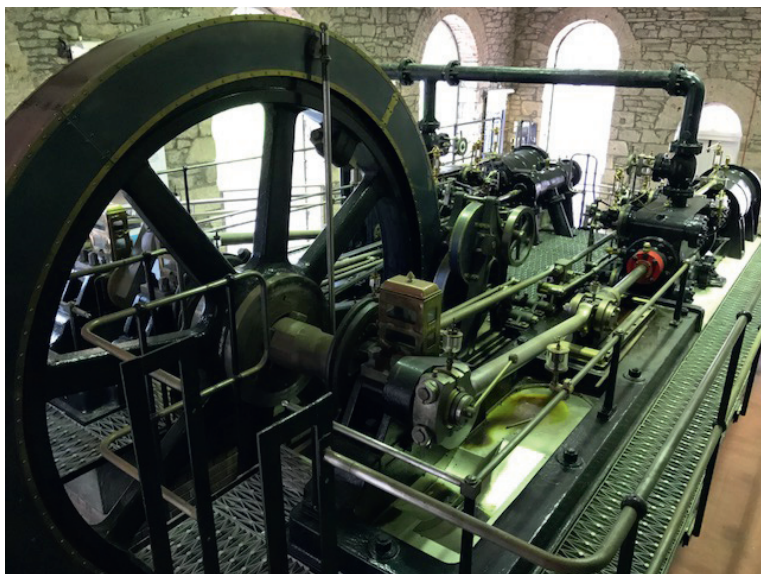
concept of the Garden City. The social and economic systems that Owen developed were considered radical in his own time but are now widely accepted in modern society.

The imposing mill buildings, the spacious and well designed workers' housing, and the dignified educational institute and school still survive to testify to Owen's humanism.

Criterion (ii): When Richard Arkwright's new factory system for textile production was brought to New Lanark the need to provide housing and other facilities for the workers and managers was recognised. It was there that David Dale and Robert Owen created a model for industrial communities that was to spread across the world in the 19th and 20th centuries.

Criterion (iv): New Lanark saw the construction not only of well designed and equipped workers' housing but also public buildings designed to improve their spiritual as well as their physical needs.

Criterion (vi): The name of New Lanark is synonymous with that of Robert Owen and his social philosophy in matters such as progressive education, factory reform, humane working practices, international cooperation, and garden cities, which was to have a profound influence on social developments throughout the 19th century and beyond.



Petrie Steam Engine 1911, tandem compound 250 pk, slag 838, vlieg wiel
gegoten in 2 delen, gewicht 9,4 ton

The New Lanark mills depended upon water power. A dam was constructed on the Clyde above New Lanark and water was drawn off the river to power the mill machinery. The water first travelled through a tunnel, then through an open channel called the lade. It then went to a number of water wheels in each mill building. It was not until 1929 that the last waterwheel was replaced by a water turbine. Water power is still used in New Lanark. A new water turbine has been installed in Mill Number Three to provide electricity for the tourist areas of the village.

In Owen's time some 2,500 people lived at New Lanark, many from the poorhouses of Glasgow and Edinburgh. Although not the grimmest of mills by far, Owen found the conditions unsatisfactory and resolved to improve the

workers' lot. He paid particular attention to the needs of the 500 or so children living in the village (one of the tenement blocks is named Nursery Buildings) and working at the mills, and opened the first infants' school in Britain in 1817, although the previous year he had completed the Institute for the Formation of Character.

More historical facts

The mills thrived commercially, but Owen's partners were unhappy at the extra expense incurred by his welfare programmes. Unwilling to allow the mills to revert to the old ways of operating, Owen bought out his partners. In 1813 the Board forced an auction, hoping to obtain the town and mills at a low price but Owen and a new board that was sympathetic to his reforming ideas won out.

New Lanark became celebrated throughout Europe, with many statesmen, reformers and royalty visiting the mills. They were astonished to find a clean, healthy industrial environment with a content, vibrant workforce and a prosperous, viable business venture all rolled into one. Owen's philosophy was contrary to contemporary thinking, but he was able to demonstrate that it was not necessary for an industrial enterprise to treat its workers badly to be profitable. Owen was able to show visitors the village's excellent housing and amenities, and the accounts showing the profitability of the mills.

As well as the mills' connections with reform, socialism and welfare, they are also representative of the Industrial Revolution that occurred in Britain in the 18th and 19th centuries and which fundamentally altered the shape of

the world. The planning of employment in the mills alongside housing for the workers and services such as a school also makes the settlement iconic in the development of urban planning in the UK.

In 1825, control of New Lanark passed to the Walker family when Owen left Britain to start settlement of New Harmony in the US. The Walkers managed the village until 1881, when it was sold to Birkmyre and Sommerville and the Gourock Ropeworks (although they tried unsuccessfully to sell the mills and the town in 1851). They and their successor companies remained in control until the mills closed in 1968.



New Lanark is gelegen in het “Clyde Valley Woodlands National Reserve”. Juist stroomopwaarts van de spinnerijen en hotel zijn de Falls of Clyde. Deze stroomversnellingen mogen niet gemist worden. Het looppad langs de Clyde is eenvoudig te begaan tot de waterkrachtcentrale Bonnington in ca 20 min, de “watervallen” in 10 min. De centrale kwam gereed in 1927 en is nog steeds in gebruik. Er volgden vele centrales naar

dit ontwerp. Architectonisch is het geen hoogstandje en niet toegankelijk.

Woensdag 30 mei 2018

Guided Tour New Lanark

Histechnica-KIVI wordt in twee groepen opgesplitst:

Groep 1

| | |
|-----------------|---------------------|
| Eng Andy Dimond | van 09:30 tot 10:30 |
| Guided Tour | van 09:30 tot 10:30 |
| VC/McLeod | van 10:30 tot 11:30 |

Groep 2

| | |
|-----------------|---------------------|
| Free time | van 09:30 tot 10:00 |
| VC/McLeod | van 10:00 tot 10:30 |
| Eng Andy Dimond | van 10:30 tot 11:30 |
| Guided Tour | van 10:30 tot 11:30 |

Riverside Museum

The Riverside Museum is the current location of the Glasgow Museum of Transport, at Pointhouse Quay in the Glasgow Harbour regeneration district of Glasgow, Scotland. The building opened in June 2011. On 18 May

2013, the museum was announced as the Winner of the 2013 European Museum of the Year Award. It received 1,131,814 visitors in 2017, making it the fourth most popular attraction in Scotland.

Concept and Design

The Riverside Museum building was designed by Zaha Hadid Architects and engineers Buro Happold. The internal exhibitions and displays were designed by Event Communications. The purpose-built Museum replaced the previous home for the city's transport collection. The location of the museum is on the site of the former A. & J. Inglis Shipyard within Glasgow Harbour, on the north bank of the River Clyde and adjacent to its confluence point with the River Kelvin. This site enabled the Clyde Maritime Trust's *SV Glenlee* and other visiting craft to berth alongside the museum.



A panoramic view of the front of the building.

Construction

On 13 November 2007 the Lord Provost of Glasgow, Bob Winter cut the first turf. During the summer of 2008, foundational work was carried out, with massive underground trenches created to house the services for the building. By late September 2008, the steel framework of the building was taking shape. During 2010 the

cladding of the building was put in place and internal fitting-out work continued along with external landscaping works. The building was structurally completed by late autumn 2010 and work continued to prepare the Riverside Museum for its opening on 21 June 2011.

The main contractors for the project were BAM Construct UK Ltd (een Nederlands bouwbedrijf). The building was completed on 20 June 2011 and the next day it opened to the public.

Collection

Apart of the existing collections of the Glasgow Museum of Transport, the city has acquired additional items to enhance the experience as the SAR Class 15F 4-8-2 steam locomotive, No.3007 the locomotive was bought in late 2006 from Transnet built by the Glasgow-based North British Locomotive Company at its Polmadie Works in 1945.

The Fairfield Heritage Centre (optioneel)

The Centre is situated on Govan Road, Glasgow, Scotland. Built as the offices of Fairfield Shipbuilding and Engineering Co Ltd between 1889-1891 the building was used as the principal offices for successive owners of the adjacent shipyard until 2001, when it was vacated by BAE Systems Marine. After deteriorating unused for 8 years it was bought by social enterprise charity Govan Workspace in

2009. Following a restoration costing over £5.8m it was re-occupied as a heritage centre and commercial offices in 2013.

At the time it was built the yard was one of the leading shipbuilding yards on the River Clyde and this was reflected in a prominent exhibition stand in the Main Hall at the first Glasgow Exhibition in 1888. Amongst the early special events held in the offices were the launch parties for the Cunardliners Campania and Lucania in 1892 and 1893.

It was designed by Honeyman and Keppie, an architectural practice which survives as Keppie Design and is now headquartered in 160 West Regent Street, Glasgow in the former John Ross Memorial Church. John Keppie is thought to have been the lead designer of the building. Charles Rennie Mackintosh was a junior member of staff at the firm from 1888 and is thought to have worked on the project.

It was built for the Fairfield Shipbuilding and Engineering Co. Ltd. The driving force behind the business at that time and probably the initial advocate for commissioning the new offices was Sir William Pearce whose painting hangs in the boardroom and who was sole owner of the business from 1878 and local member of parliament from 1886 but who died before it was completed.

The name of the company was changed from Randolph Elder and Co. to Fairfield Shipbuilding and Engineering Co. Ltd. in 1885 by Pearce. Named after the former farm he re-structured in order to be able to bid for naval tenders.

The building was planned to be both functional and to impress visiting clients and potential clients. It includes many Italianate and Beaux Arts elements. There are also Art Deco features which would have been added later. As a functioning hub of the business it included large, light spaces for the draughtsmen working on both shipbuilding and engineering drawings. The building is protected by a Category A listing. John Keppie studied in Paris with the academic atelier architect Jean Louis-Pascal during the 1880s. Although it was probably Honeyman who secured the commission as he had benefitted previously from the patronage of John and Isabella Elder the project was led by Keppie. Its external features include figures of a shipwright and an engineer sculpted above the main entrance. These were by Glasgow-based sculptor James Pittendreich Macgillivray who also collaborated with Keppie on other work.

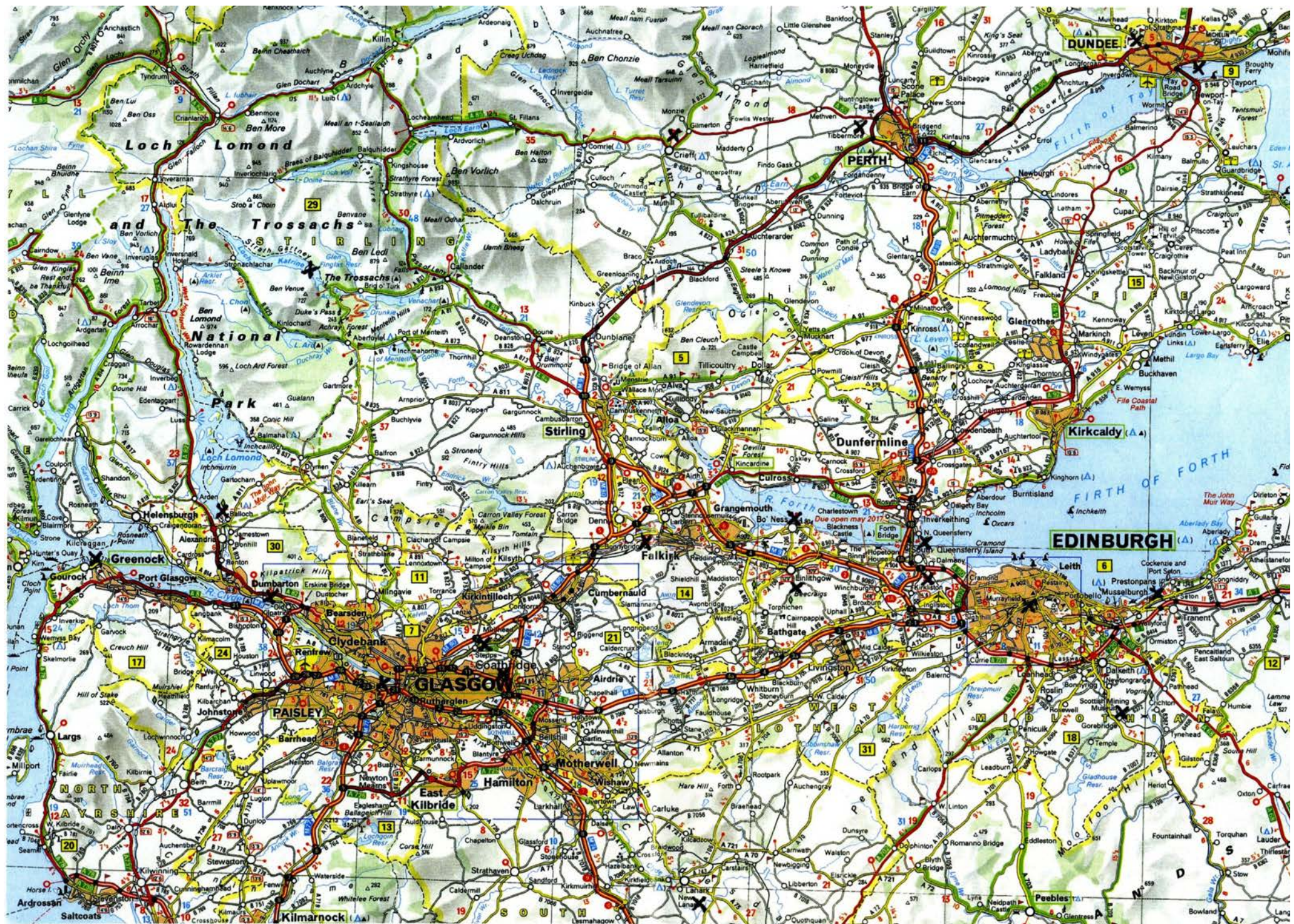
The Fairfield Heritage Centre includes the former boardroom, management offices and directors dining room as well as the main entrance and lobby.

The heritage area tells the story of over 150 years of shipbuilding at the yard using artefacts, graphic panels, interactive media and audio-visual presentations. Exhibits and information address technical innovation, the period of building ships to contest the Blue Riband for fastest Atlantic crossing, the two world wars, the 1960s Fairfield Experiment in management/labour relations and the Upper Clyde Shipbuilders era. In 2006, BAE launched the 750th vessel to be built at Fairfield. The yard was built on the former Fairfield farm between 1864 - 1871

Midden-Schotland

1 : 400 000

X = Bezoeklocaties



 Clydesdale Bank

£20



£20

New Lanark - Scottish World Heritage Site
inscribed 2001

New Lanark