

Discover what makes Sheffield civilised.

We all need to be protected from the elements, to have a safe water supply and effective sanitation. A civilised society needs more than this – transport, power, buildings and disposal of waste.

Civil engineering is the name we give to this infrastructure; dams, reservoirs and other aspects of water supply; drainage and sewerage; transport by road, rail, water and air; bridges for vehicles, trains and pedestrians; seaports, docks, airports, canals and aqueducts; power stations, renewable energy, pipelines and the structures that support towers and buildings.

Originally, any engineering that was not military was civil, but now there are many specialised professional engineers who work together, and with scientists and other professions, to create, improve and protect the environment in which we live. Engineers provide the facilities for everyday life in a civilised society by designing, constructing, maintaining and, eventually, removing them.

Sheffield is a civilised city and this walk shows something of how this has been achieved. You will see buildings and structures, various forms of transport (road, rail, tram and water) and the bridges they need. You will not see hidden essentials like water supply and drainage but you will learn something about where they are. You will see different materials being used in different forms - all designed and constructed by engineers applying science and using engineering principles.

Further Information

Information on Historical Engineering Works including basic leaflets of this and other trails available as a pdf to download can be found at:
<https://myice.ice.org.uk/knowledge-and-resources/historical-engineering-works>



There are also audio guides featuring the author and Paulette Edwards of BBC Radio Sheffield including an audio described version with guest appearances by Lord David Blunkett.



Listen online or download at: <https://audio.com/ice-yorkshire-and-humber-1/collections>

For more information on this discovery trail or any civil engineering enquiry, please contact the Institution of Civil Engineers in Yorkshire and Humber:

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Cover image: Butterfly Bridge, Cutlers Bridge to Wicker viaduct over River Don.

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Sheffield - A Civilised Place, a history and gazetteer of the making of the city by Duncan Froggatt explores these and many more places of interest across the city. It also provides a thematic history of the development of Sheffield from pre-history to the present day.
Isbn 978-1-5272-3241-9



Sheffield: A Civilised Place City centre circular walk

Distance: up to 2.75 miles

Duration: up to 2 hours

Discover how engineering has developed the city of Sheffield

The Institution of Civil Engineers (ICE) is the oldest of the world's engineering institutions with origins going back to 1771.

Established in 1818, and granted a Royal Charter in 1828, the ICE was founded to ensure professionalism in civil engineering. It is now composed of some 97,000 individual members around the world.



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The Institution of
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ice.org.uk/yorkshireandhumber

VISITOR INFORMATION

The whole of the route is suitable for both pushchairs and wheelchairs, and there are bus and tram stops along some sections of the route.

For council parking and bus gate information, call 0114 273 4567 or visit: www.sheffield.gov.uk/parking and www.sheffield.gov.uk/roads-pavements There are many route restrictions in the city centre. Alternatively : <https://en.parkopedia.co.uk/> for more options.

For public transport information including park and ride, call 0800 952 0002 or visit: www.travelsouthyorkshire.com

For information and leaflets on walking in Sheffield and local walking initiatives visit: www.sheffield.gov.uk/walking

For additional copies of this leaflet please contact ICE Yorkshire and Humber at iceyandh@ice.org.uk or call in to Sheffield's central library on Surrey Street, S1 1XZ. (Use S1 2LH for main public entrance.)

... continued from overleaf.

From the bottom of the steps, cross Wharf Street and enter Victoria Quays in front of the Terminal Warehouse. At the end of Merchants Crescent, ahead, note the sign to Furnival Road where we will leave under the archway.



23. Although the River Don had been made navigable to Tinsley by 1751, the extension to the town, the **Sheffield Canal** by William Chapman, was not begun until 1815 and was completed in 1819.

The original Terminal Warehouse remains and has been sympathetically restored. The other buildings around the canal basin are mid to late 19th century, the Straddle Warehouse being notable.



24. Parkway Viaduct carries the Supertram beyond the Park Square roundabout and alongside the Sheffield Parkway link road to the M1.

It is a post-tensioned glued segmental reinforced concrete structure 295 m long with spans of 55 m.

Return to the Quays' entrance, cross Furnival Road and walk up Blonk Street to the bridge over the river.

If desired turn right at the end of the bridge onto the river side path. Proceed for approximately 270 m for items 25, 26 and 27.

Otherwise, cross the road at the pedestrian crossing. Note the preserved crucible furnace stack in the building lobby. Turn left and re-cross the bridge to reach the newly landscaped Castlegate. Turn right and proceed ahead to reach (28) Lady's Bridge. Look at the river and bridges as you pass.

25. The **Cobweb Bridge** carries the Five Weirs Walk, a 3 m wide cycle and pedestrian route over the River Don. It is suspended from the Wicker Arches Viaduct.



Turn left into the passageway by the Cobweb Bridge and emerge onto Wicker in front of the Wicker Arches.



26. The **Wicker Arches** were completed in 1848. At 603 m long with 42 arches, this was the largest masonry viaduct in Europe when it was built. It is a grade II listed structure and Historical Engineering Work.

Walk away from the viaduct towards the city centre.

27. The **Sheffield Inner Relief Road** extensions of 2001 and 2009 linked Sheffield Parkway and the Shalesmoor area of the city. They include a 40 m span railway bridge, a 35 m and two 39 m span river and canal bridges and 15 m high retaining walls.

Cross Derek Dooley Way and continue along Wicker.

28. **Lady's Bridge** is also Grade II listed and an Historical Engineering Work. This 5-span ribbed arch bridge was built in 1486. It was widened on its upstream side in 1760-1. After the Sheffield flood in 1864, which resulted from the failure of the Dale Dyke Dam on the moors above Sheffield, it was repaired and widened on its downstream side. In 1909 it was widened again, using cast iron beams and lattice girders on cast iron columns.



Cross Castlegate/Bridge Street.

29. Below here a sewer has been tunnelled from Shalesmoor to the Sewage Treatment Works at Blackburn Meadows near Meadowhall. Parts of the tunnel are up to 5.5m in diameter (large enough to take a double decker bus).

Now walk up Waingate.

30. On the corner with Castle Street is **The Old Town Hall**. It was built in 1807-8 for the Town Trustees and court. The trustees carried out many of the functions of a local council. It became entirely a court with tunnelled links to the police station by 1897.



Opposite is the site of the former market buildings. In 2013, these were replaced with a state-of-the-art building at Moorfoot, ending a centuries old association with this area. The site had various uses after the post civil war clearance of the mediaeval castle before the Victorian and 20th century market buildings. Exciting plans are in place to redevelop the site and uncover parts of the **Sheffield Castle** and the River Sheaf.

Continue up Haymarket to Commercial Street and turn right up High Street.



31. Sheffield's first tram network began in 1872, growing over the following 40 years and finally closing in 1960. Work began on the Supertram in 1991 with the first section being opened in March 1994 and the last part of the three-line network opening in October 1995. "Tram-trains" were introduced in 2018, a U.K. first.

A mobile phone transmitter is visible at street level here, most are hidden on or in roofs in the city centre.

Continue up High Street and Church Street to reach the Cathedral forecourt.

32. The Foster's Buildings on the south side of High Street were the first in Sheffield, in 1894, to have a lift. (The lift shaft is catching the sunlight in this photograph.)



Sheffield: A Civilised Place

The circular walk can be started at any point - we suggest the Cathedral forecourt, with item 1 and 2.

1. Part of the Cathedral is recorded as being built in 1101, making it, arguably, the oldest building still in use in Sheffield, although possibly only fragments of the 1280 rebuild survive. It was also the first building to use electricity for powering a motor in the city, in 1892.



2. The Cutlers' Hall has been on this site since 1638, 14 years after the foundation of the company. The present building dates from 1832. The Company of Cutlers in Hallamshire promotes and supports manufacturing industry in South Yorkshire as well as Sheffield cutlers and silversmiths.



From the forecourt turn right up Church Street, cross Church Street and turn left into Leopold Street, cross the road.

3. Originally built as a school and education offices, the listed buildings have been cleverly refurbished while retaining as much as possible of the original buildings to create the Leopold Hotel and Leopold Square.



Continue along Leopold Street towards the Town Hall and turn right into Barker's Pool.

4. The Barker's Pool, after which the area is named, was a large cistern holding rain and spring water for use by the



people of the 16th century town.

The water supply of the pool had been enhanced in the late 17th and early 18th centuries. However, it was demolished in or around 1796 as supplies improved.

9. The Crucible Theatre (1971) was designed for theatre-in-the-round, and is constructed mainly of reinforced concrete and concrete block masonry. It received a makeover in 2008/9 with new spaces within the old, a small extension and new more efficient heating, ventilation and lighting.



10. The Lyceum Theatre, originally built in 1893, was extensively refurbished in 1991. New spaces were created, in, under and around the old to vastly improve conditions for all users. Both theatres are listed buildings.



If open, enter the Winter Garden (point 11) and turn left into the Millennium Galleries emerging onto Arundel Gate. If closed, turn left along Surrey Street, pass the central library and follow the ramp down to Arundel Gate to the front of the galleries.

11. The Winter Garden (2002) has an inverted catenary form to the arches. This is very efficient. It is heated, as are many city centre buildings, by the Sheffield District Heating scheme.



16. From the bottom of Howard Street there is a good view across to the internationally famous Park Hill Flats. Completed in 1961, these now-listed buildings provided "streets in the sky" for the people of Sheffield. Park Hill Flats recently underwent a major facelift while retaining the original structure.



At the bottom of Howard Street, go straight across to Sheaf Square. Follow 'The Cutting Edge' stainless steel water sculpture to the station.



renewed in 2003 to improve the quality of access.

Use the crossing near the bottom of the steel sculpture to cross Sheaf Street and walk along the covered walkway into Sheffield Interchange.

18. Sheffield Passenger Transport Interchange serves mainly longer distance bus routes and coaches.

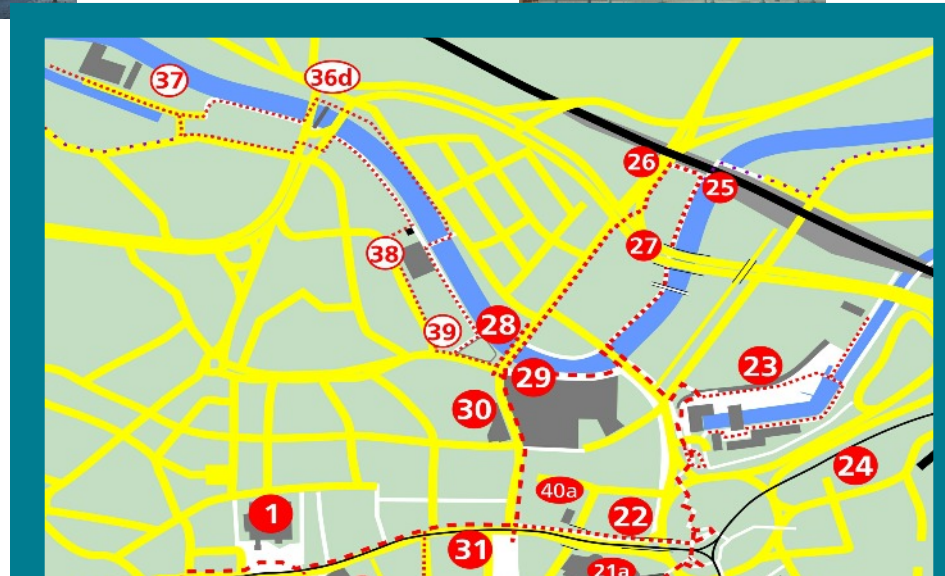
Go all the way through the interchange to Pond Hill and turn sharp right.

19. Adjacent to the modern buildings, on Pond Hill, is the Old Queen's Head, a 15th century timber-framed hall. It was carefully restored in 1992.



20. The culverts carrying the River Sheaf are visible here. It was culverted in the 1860s as the city expanded into the river valley with the development of the railway and market area.

At the bottom of Pond Hill, turn left on to Sheaf Street.



5. The **City Hall** was built in 1932 and employed some of the longest span reinforced concrete beams in Europe to support the roof. It was extensively refurbished in 2003.



Continue past the City Hall to the start of Division Street.



6. The Palazzo style building of 1867 to the west of the City Hall is the former offices of the **Sheffield Waterworks Co**. The building is representative of a continuation of this area as the focus of water supply for the city.

Go back down Barker's Pool, cross Pinstone Street and turn right. Turn left at Cheney Row to the side of the Town Hall. If you wish turn right into the Peace Gardens.

7. The present **Town Hall** was completed in 1897. Built to house the increasing number of staff needed to cope with the new duties the council had taken on over the previous decade or so, including roads and water supply.



An extension was planned in the 1930s, but war preparations intervened and the site became the Peace Gardens. Their landscaping in 1998 as part of the Heart of the City project was widely acclaimed. The walls used the same stone as the Town Hall. There is a set of standard measures set into the side of Cheney Row adjoining the Town Hall.

At the pedestrianised section of Norfolk Street, turn left past the rear of the Town Hall and cross Surrey Street and continue along Norfolk Street.



8. The **Upper Chapel** was originally built in 1700 and is the earliest surviving building to be built substantially of brick as opposed to timber or stone.

Continue down Norfolk Street and turn right into Tudor Square.



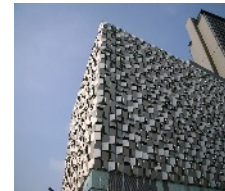
12. **Millennium Galleries** are integrated with the Winter Garden. They won a national award for the extensive use of high quality reinforced concrete.



Cross Arundel Gate and turn right. At the top of the ramp to Howard Street stop and look right along Arundel Gate to view items 13 and 14.



13. **St Paul's Tower**, since 2010 the tallest building in Sheffield, is 32 storeys and 101 m high plus the basement levels. In-situ reinforced concrete was used for the frame of the building providing a robust core, to which modular cladding was added.



14. The Charles Street **"Cheese Grater"** Car Park extensively used precast concrete to allow rapid high quality construction.

Now proceed down Howard Street.

15. This area was laid out by the Duke of Norfolk's agent in the late 18th century. It came to provide the workspaces for the burgeoning steel and cutlery trades. It is now designated as Sheffield's cultural

21. **Ponds Forge International Leisure Centre** provides Olympic standard swimming and diving facilities. The main roof consists of exposed tubular steel trusses forming a shallow arch.



In addition to the anonymous forge, the site was also home to the city's first electricity power station and company offices. These generators were replaced with sets by the River Don initially upstream, then downstream, of the city Centre. Later the national grid replaced all local generators.

21a The footbridge into Ponds Forge Swimming Pool building was required by the client to be "interesting and imaginative".



Tensioned cabling is used to stiffen the slender structure.



40a Opposite, on the corner of Commercial Street and Shude Hill are the former offices of The Sheffield United Gas Light Company of 1874, described as one of the finest 19th century buildings in the city. The first gas works was nearby on Shude Hill. It was later replaced as demand grew with works in The Don Valley and the subsequent establishment of the national grid.

Go up the ramp, bearing right, and follow it all the way to the seating area at the top.

22. **Commercial Street Bridge** spans one of the busiest traffic roundabouts in Sheffield and carries two tracks of the Supertram and a pedestrian walkway. The bridge consists of a tied arch span of 74 m and two simple side spans of 12.5 m and 18 m.



Turn left at the top of the ramp and cross the tram tracks. To cut short your walk you can return to the city centre by turning left and crossing the bridge. Otherwise follow the signs for Victoria Quays - follow the ramp to the bottom of the steps.

continued overleaf ...