

## REFERENCE

### GENERAL INFORMATION

Sheffield is a city in the centre of England (South Yorkshire metropolitan county). To the north-east, the city of Rotherham adjoins Sheffield; together they form a major centre of heavy and military industry in the UK, an important transportation hub. Located in the foothills of the Pennine Mountains on the River Don, within the Yorkshire coalfield, country's largest. The population is 620,000 (1971), the area about 150 square km.

### NEIGHBORHOOD OF THE CITY

At the nearest approaches to the city from the north-east and east, the terrain is hilly, crossed by small rivers and streams. The height of the hills is 40-120m; their tops are flat, the prevailing slope is up to 5° (in the lower part, sometimes up to 10°). The river valleys are wide (600-2,000 m) with a flat bottom. Further east, the terrain becomes level with individual hills (slopes do not exceed 5°); in the west the terrain gradually increases, becomes low-mountain (maximum height 400-600 m). The general height of the mountains is 200-300 m. Their crests are wide, undulating, dome-shaped with flat tops; the prevailing slope is 10–16°, sometimes reaching 20° or more; there are rocky cliffs. The river valleys are narrow (width up to 120m) and deep, often having the appearance of gorges. The movement of motor transport in the mountains is very difficult. Soils in the mountains are crushed sandstone, up to 4m thick, below that bedrock. Boulder clays with a thickness of up to 40m dominate in the rest of the area; when wet, they soak, and the movement of wheeled vehicles is difficult.

Rivers around the city are small, their width is up to 20m, depth is up to 1m. In the mountains, they are often blocked by dams; the reservoirs formed occupy the entire valley floor. The largest water obstacle is the River Don. Below Sheffield this is navigable for vessels of up to 60 tonnes. The channel is meandering, its width is 20-60m, the depth of 1.5-2m. The river banks are mostly high and steep. Within the city limits the river has been canalised for a long time. The Chesterfield canal is available for smaller vessels. Channel width 11-19m, depth 1-3m; with many locks. As a rule, rivers and canals are not frozen; in very cold winters, they are covered with thin ice for a short time. Rivers and canals are full of water all year round. The highest water levels are in the period November-February.

The terrain is open. There are small, mostly mixed (pine, fir, birch, oak) forests of park type. Barley, oats, potatoes are grown on ploughed lands; many cultivated pastures and fields are planted with fodder grasses.

On the flat part of the territory there is a dense network of roads, providing traffic in all directions all year round; there are few roads in the mountains. Motorways have two carriageways with a width of 7-10m each with concrete surface and a dividing strip of 4.5m. Improved highway are asphalt; the width of the

carriageway part is 8-12m, the overall widths are 17-27m; in some areas they are similar to motorways. The roadway of the improved highway is edged with stone curbs; there are up to 10 exits per kilometre. Other highways have stone or macadam base, the width of the carriageway is 6-8m (on local roads 3-6m), overall width 10-12m. The bridges on the roads are metal or reinforced concrete, less often stone, with a carrying capacity of 60-80 tons (some up to 180 tons).

The surroundings of the city, especially in the flat part, are densely populated. From north to south from Leeds to Nottingham (80km) through Sheffield stretches a strip of width up to 30km of almost continuous development of towns having from 2000 to 40,000 inhabitants.

As a rule, their building is unsystematic; the layout of their individual areas is close to rectangular. The building in the centre is solid, outside the centre is dense or sparse. The houses are stone, in the centre are 3-5-storey (in large cities there are buildings of 10-15 and more floors), on the outskirts there are mostly 2-3 storey. The main streets are straight and wide, the others are often crooked and narrow (especially in the centre).

In rural areas, farms and small (up to 100 houses) dispersed villages are typical. Stone houses, 1 or 2 storey. Household plots are usually surrounded by hedges or enclosed by stone walls. All settlements are electrified and provided with all types of communication. Cities and many villages have running water; the remaining settlements are supplied with water from wells (the depth of the wells is 3-20m). Major cities have a gas supply.

From the air, Sheffield is recognized by its position near the base of the Pennine Mountains in the bend of the River Don and by the Leeds-Nottingham motorway and Newcastle-London motorway approaching the city.

Reliable shelters in the vicinity of the city include railway tunnels, such as Totley, 5.2km long (object 70) and Broadway, 1.8km long (C,T-6.7), as well as numerous mines for the extraction of coal in the vicinity and within the city (the depth of the mines 300-500m).

## CITY TERRITORY

The general layout of the city is close to radial; inside the sectors, building is unsystematic, sometimes random. Trunk streets are straight (less often winding) and wide, the rest are crooked and narrow. The administrative and business centre is located in the old part of the city, directly at the confluence of the Don and Sheaf rivers; here are the town hall (object 59), the main post office (object 58), the police (object 57), the court (object 69). The building here is dense, multi-storey stone buildings. From the west, adjacent to the centre are industrial districts, where small enterprises for the manufacture of cutlery and tools are concentrated, small foundries; many 2-3 storey houses of cottage-type, the first floors of which are occupied by workshops, with living accommodation in the upper floors; some streets are entirely occupied by industrial buildings. Medium-sized plants (production of steel, machine tools, tools, wire, food processing

enterprises) stretched to the west and along the Don and Sheaf rivers and their tributaries. A new industrial area has developed along the River Don towards Rotherham; here are concentrated large steel and rolling mills, heavy engineering enterprises. The main residential development of the city is occupied by its western sector, between the Don and Sheaf rivers. Its oldest part, especially densely populated, adjoins directly to the old industrial centre, and the newer one rises higher in the foothills. On the riverside industrial zones on both sides are suitable working quarters.

Old residential areas of the city are densely built up with multi-storey stone buildings, working quarters and barracks. In other areas of Sheffield buildings are mostly sparse, with 1-2 storey houses dominating. The city has a university (object 71), an institute (technical college object 52) and other educational institutions. Most of the city has few green areas, only on its western outskirts inside the quarters there are tree plantations.

#### INDUSTRIAL AND TRANSPORTATION OBJECTS.

Sheffield's main industry is ferrous metallurgy (mainly steelmaking and rolling). About 4 million tons of steel, mainly of high-quality (2/3 of all British production, including over 2/5 of electric steel), is produced at the enterprises of the city annually, about 1/4 of steel sheet is produced, almost half forgings and castings, machine-building, especially heavy, machine tools, electrical engineering. The machine-building plants produce diesel-electric locomotives, railway cars, equipment for the metallurgical, nuclear, gas and chemical industries, excavators, cranes, electric motors and electric motors, electrodes for smelting furnaces, precision machine tools, and cutting tools. The UK military obtains most of its high-quality steel, as well as a heavy-metal casting from Sheffield; armour-plating is manufactured here at the plant of River Don artillery weapons (object 6). Sheffield is known far beyond the country's borders for the production of metal products, drills, cutters, saws, razors, etc. Chemical, silicate and brick factories, paper mills, and light and food industries operate in the city. Sheffield is a major railway junction, with 11 railway lines. The largest stations: cargo and passenger (objects 61, 62), marshaling yard (object 64), goods yards (objects 60, 63); there is a locomotive depot (object 3).

#### UTILITIES AND MEDICAL AND SANITARY INSTITUTIONS.

The city receives electric power from the country's unified energy system, which includes local power stations (objects 1, 73, 74). The city has a gas supply; gas comes from local gas plants, as well as from the West Sole gas field (in the North Sea off the coast of Yorkshire). City transport is by bus and tram. Sheffield has all modern communications. Long-distance communication over long distances is carried out via radio relay and underground cable lines. Telephone communication is automated. There is a broadcasting station. The city has a large number of hospitals in different parts of the city, as well as a sanatorium (E-17) and other medical and sanitary institutions