

Industrial

Areas within this Zone

'Stocksbridge Don Valley', 'River Don Works', 'Saville Street to Attercliffe', 'Sheepcote Lane'.

Summary of Dominant Character

This zone is made up of the character areas where large scale industrial activities, principally the production of steel and its processing by casting, forging and rolling, form an ongoing dominant influence on the built environment.



Figure 1: The 'River Don Works' of Sheffield Forgemasters straddles 'Brightside Road' and represents one of the last working survivals of a large scale steel works established in the late 19th century. ©2006 SYAS

From the mid 19th century onwards Sheffield's heavy trades of steel making and processing began to outgrow the traditional workshop based industrial sites of the '18th-19th Century Industrial Grids' zone. This development was largely enabled by technological advances in steel-making and transport and was driven by, and helped to develop further, the growth in national and international demand for railway products, ship-building, construction materials and engineering castings. From the 1860s onwards much of the expansion of the Sheffield steel industry was driven by a concomitant

development in the technological sophistication and increases in the scale of the armaments industry. Sheffield's industries particularly focussed on the production of shell casings, guns to deliver these shells and amour plate intended to resist similar projectiles (Hey 1998, 154).

A characteristic of the development of heavy industry is one of continual re-investment in plant and machinery, with the result that the present complexes in this zone are often the result of many phases of renewal, expansion and rebuilding.

Typical forms within this zone are industrial complexes of large sheds with wide roof spans, built to accommodate a range of processes, and often forming linear complexes (reflecting the flow of work through a production line). Building materials have developed through time with early examples consisting of brick built gable and side walls, through to entirely steel framed sheds clad in corrugated steel sheet materials. Roof lines are frequently punctuated with chimneys, ventilation louvers and extraction vents. Most of the character areas in this zone are (or were) provided with substantial railway links in order to facilitate the supply of raw materials and the delivery of products to their markets.

The zone represents a dramatic change of scale compared with the smaller urban industries from which they developed¹. Production of steel in Sheffield up to the mid 18th century had involved two main processes; the conversion of Swedish pig iron to blister steel in cementation furnaces, and its further refining in crucible furnaces. The landscapes associated with these earlier processes were most often based around courtyard plans (see 18th - 19th Century Industrial Grid Zone) with movement between different processes across a shared central courtyard. These buildings were generally narrow by later standards (allowing for natural light to illuminate working areas). The later bulk processes however demanded bigger covered working spaces, themselves made possible by the larger rolled products which enabled wider roof spans to be constructed using fireproof steel beams. “[T]he building became simply a shell that sheltered a processing area...” (Wray *et al* 2001) with the open spaces facilitating the movement of large castings around the working area by cranes.

The zone is closely related to the ‘Post Industrial’ zone - much of which has developed its present character from as a result of the regeneration of sites previously occupied by 19th and 20th century heavy industries. As in that zone, much of the character areas to be discussed here are to be found located on the alluvial flood plains of river valleys. As well as being a location traditionally associated with the metal trades due to the location of water powered industries, these locations provided significant areas of level ground, an essential component of the spatial organisation of large complexes. As a result there is considerable overlap in character between these two related zones. Characteristics of 19th and 20th century heavy

¹ A full account of typological stages in the development of industrial architecture in the Sheffield steel industry has recently been made by Alan Williams (2003)

industrial development form the dominant legible character of the 'Post Industrial' zone, whilst recent development in character areas still dominated by heavy industry is tending towards post industrial development.

Inherited Character

Prior to its industrial development, much of this area was marked by the Ordnance Survey as *liable to flooding*. The characterisation project has generally interpreted the medieval land-use of the majority of this zone as being 'valley floor meadow', an interpretation based on its location within the areas of alluviation related to the Don and Rother. Historically these meadows are likely to have been managed without annual ploughing, as wet meadowland - cut for hay late in a dry summer, when conditions were suitable. In wetter years when the hay could not be successfully harvested the land would be grazed. Where they survived in the 19th century, much land in the valley floors shows signs of drainage and improvement as well as straight boundaries often indicative of parliamentary enclosure of former common land. This may suggest that in South Yorkshire meadow land was generally held and operated in common. Within this zone, later industrial development has generally not fossilised legibility of this early meadowland landscape, or its later rationalisation by 18th and 19th century enclosure acts.

Of equal importance to the economic exploitation of the valley floors, was the growth in the use of water power from the medieval period onwards. Along the course of the river Don a number of features associated with water management are retained. These date from the late middle ages onwards and include weirs, goits, culverts, dams and other features of the systems developed to bypass and harness the energy of these rivers. Until the late 19th century, water power continued to be utilised along the Don by craftsmen involved with the forging or grinding of edge tools (See Crossley et al 1989; Miller 1949 for site by site accounts). It is generally considered that the early use of water power in the region was largely for the milling of corn. The earliest reference to metal grinding (thought to relate to Moscar Wheel on the Sheaf) was made in 1496 (Crossley *et al* 1989, vii) although Crossley has pointed out that this may be a result of the local non survival of manorial rental records before 1581 (*ibid*). Within this zone three sites seem to have directly influenced the siting and development of later heavy industries. The industrial complexes at Stocksbridge Works, Royds Mills (Thessco), and Attercliffe Steel Works (Stevenson / Newhall Road), have all evolved directly from water powered sites with early post medieval origins. At most of these sites industrial expansion has removed evidence outside of the banks and bed of the river itself (where a number of weirs, and goit culverts can still be seen), however, at Attercliffe Steel Works a lengthy open goit survives, cutting off an area of scrubland between it and the river. The later development of Attercliffe Steel Works has also fossilised the outline of the former mill dam in the form of an open courtyard surrounded by buildings originally built around it in the early 20th century.

Crucial to the development of the heavy industries of the east end was the introduction of means of bulk transport. Prior to the 19th century, the only means to import materials into and products out of Sheffield was by road transport. This limiting factor to the growth and scale of the industries of the town began to be overcome in the 18th century with the development of first the turnpike network (see Smith 1997), and the progressive extension of the navigable limits of the River Don by the new channels of the South Yorkshire Navigation which reached Tinsley Wharf by 1751 (Hey 1998, 108). The extension of water navigation to the city centre by the construction of the Sheffield Canal by 1819 first enabled the transition from predominantly urban light production, to out of town bulk production - within 4 years of its completion this industrial expansion was initiated by the construction of William Greaves' Sheaf Works, one of the world's first integrated steam powered steel and cutlery works (Harman and Minnis 2004, 158). The canal remains significantly legible along its length. The 1851 OS map shows, remarkably clearly, the effect of the new canal - land between the canal and the River Don, from the Sheaf Works, east to Attercliffe, becoming known as Long Island. Despite heavy post war investment in new industrial buildings, this area retains significant legibility of this early industrial development, particularly in its early street pattern and where early buildings such as the Canal Street Works survive. To the north of the River Don, the 'Saville Street to Attercliffe Character Area' largely developed from the mid 19th century onwards. This character area is marked by smaller sizes of company than the others within this zone. As a result there is more variety in the styles, ages and ownership of this area.

The remaining three character areas are the product of much larger consolidated industrial concerns. 'Stocksbridge Don Valley' character area is dominated by Stocksbridge Works (founded as Samuel Fox and Co. in 1842), which is currently owned in its entirety by the Corus Group. 'Shepcote Lane' Character Area includes the massive integrated steelworks of Outokumpu PLC as well as surviving buildings of the Imperial Steelworks of the former Edgar Allen Company, and the smaller works of Tinsley Wire Industries Ltd. 'River Don Works' is made up of present and former buildings of Sheffield Forgemasters International Ltd, based on the site of the east end works established by the Vickers company in 1864. These industrial complexes, which have come under repeated threat over recent decades due to continual fluctuations in the global price of steel and the ownership structure of its businesses, are generally of a variety of dates, reflecting many stages of modification. Large corrugated sheds are a common theme, although most include earlier brick built (or in the case of Stocksbridge stone built) early phases.

Later Characteristics

Later landscapes in this zone are largely the result of the clearance or replacement of earlier industrial buildings. A notable 21st century intrusion to the Saville Street to Attercliffe Area has been the rebuilt Bernard Road

Incinerator. Major parts of both Corus's Stocksbridge and Outokumpu's Shepcote Lane facilities have closed since 2000 including the closure of the arc-melting shop at Stocksbridge (and the end of a 150 year tradition of primary steel making at the site) and of the cold rolling mills at Shepcote Lane. The Stocksbridge site is currently subject to plans for mixed use redevelopment.

Bibliography

- Crossley, D. (ed) with, Cass J., Flavell, N. and Turner, C.**
1989 *Water Power on the Sheffield Rivers*. Sheffield:
Sheffield Trades Historical Society with University of
Sheffield Division of Continuing Education.
- Harman, R. and Minnis, J.**
2004 *Sheffield: Pevsner Architectural Guide*. New Haven and
London: Yale University Press.
- Hey, D.** 1998 *A History of Sheffield*. Leicester: Carnegie Publishing
Ltd.
- Miller, W.T.** 1949 *The Water Mills of Sheffield (Fourth edition)*. Sheffield:
Sheffield Trades Historical Society.
- Smith, H.** 1997 *Sheffield's Turnpike Roads*. In: M. Jones (ed.), *Aspects
of Sheffield*. Barnsley: Wharncliffe Publishing Ltd.
- Williams, A.** 2003 *The Typology of Industrial Buildings with Reference to
the Steel Trades in Sheffield, 1750-1900*. Thesis (PhD).
University of Sheffield.
- Wray, N., Hawkins, B. and Giles, C.**
2001 *One Great Workshop: The Buildings of the Sheffield
Metal Trades*. London: English Heritage.