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**INDUSTRIEARCHÄOLOGIE IN DER REGION MANCHESTER**

Der Großraum Manchester ist weltweit als klassisches Beispiel für die Industrielle Revolution des 18. und 19. Jahrhunderts bekannt. Die Archäologin Robina McNeil beschreibt in ihrem Artikel welche baulichen Veränderungen im Zuge der Entwicklung der Baumwollindustrie in der ehemals landwirtschaftlich genutzten Region unternommen wurden.

**THE INDUSTRIAL ARCHAEOLOGY OF GREATER MANCHESTER**

Greater Manchester is known world wide as a classical example for the Industrial Revolution of the 18<sup>th</sup> and 19<sup>th</sup> century. The archaeologist Robina McNeil describes in her article which structural changes took place in the course of the development of the cotton industry in a formerly agricultural region.

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## THE INDUSTRIAL ARCHAEOLOGY OF GREATER MANCHESTER

*Robina McNeil*

"Manchester ... is the capital, in every sense, of the North West of England, where the modern world was born. The people know their geography is without equal. Their history is their response to it." So exclaimed the late 20<sup>th</sup> century broadcaster and social commentator Brian Redhead. His definition of Manchester embraced Blackpool, Chester, Buxton and the Pennines. This essay confines itself to the conurbation of Greater Manchester. This conurbation includes the 19<sup>th</sup> century *cotton towns* of Ashton-under-Lyne, Bolton, Bury, Hyde, Leigh, Oldham, Rochdale and Stalybridge as well as the older settlements of Altrincham, Salford, Stockport and Wigan, which had grown around Manchester, the commercial centre of the Lancashire textile industry.

Greater Manchester is one of the classic areas of industrial and urban growth, the result of a combination of forces that came together in the 18<sup>th</sup> and 19<sup>th</sup> centuries; a phenomenal rise in population, the appearance of the specialist industrial town, a transport revolution and weak local lordship. Nationally, the proliferation of the specialist industrial towns was one of the most distinctive and novel elements of the Industrial Revolution. Daniel Defoe had proclaimed in 1728 that for the great towns, including Manchester "there are few or no Families of Gentry among them; yet they are full of Wealth, and full of People, and daily increasing in both; all off which is occasioned by the meer Strength of Trade, and the growing Manufactures established in them". He was one of the first to use the term *manufacturing town*, which was in growing currency from the 1750s onwards and recognized that they owed their wealth and growth not to gentry or patronage, but to an expanding industrial and commercial life. Late 18<sup>th</sup> century maps show the burgeoning cities of Manchester and Salford and the rise of the surrounding *manufacturing towns*.

The most significant dynamic in the region's industrial economy, is the role played by the transport revolution of the late 18<sup>th</sup> and 19<sup>th</sup> centuries and the trade this generated, firstly, through the development of the canal network and secondly with the building of the railway system. For Manchester, the need to transport raw materials at low cost resulted in the construction of a number of pioneer transport systems, including the Bridgewater Canal and the Liverpool Manchester railway line, which were viewed from their inception as momentous achievements in transport history. Without a doubt the development of a vastly improved infrastructure was one of the most widespread features of the industrial revolution and few inventions have had so vast an impact on the landscape as canals and railways.

The Bridgewater Canal was the first arterial canal in Britain. The initial stretch, built between 1759 and 1761 by the Duke of Bridgewater, enabled coal to be transported cheaply from the Duke's mines at Worsley to the growing industrial town of Manchester. It also successfully crossed a number of river valleys, most spectacularly with the Barton aqueduct over the River Irwell. Opinion was mixed: "Every man how great soever his genius has a certain hobby horse that he likes to ride; a large aqueduct bridge over a large river does not happen to be mine", but most wondered at this engineering achievement: "At Barton Bridge he has erected a navigable canal in the air ... whilst I was surveying it with a mixture of wonder and delight, four barges passed me in the space of about three minutes" wrote an anonymous correspondent to the Annual Register in 1763. At its terminus in Manchester, where "the dukes agents hath made a wharf and are selling coals" it was considered a prodigious engineering feat. The canal was a remarkable commercial success which served as a model

for canal entrepreneurs throughout Britain and the following decades saw a period of *canal mania*.

As early as the 1800s Manchester was already the hub of a considerable canal system which included not only the Bridgewater Canal, but also the Ashton Canal, the Rochdale Canal and the Manchester, Bolton and Bury Canal, all built in the 1790s. Other canals such as the Huddersfield Canal, the Leeds and Liverpool Canal and the Peak Forest Canal were connected to this inner core and gave the county a pre-eminence in the cheap transportation of fuels and raw materials. It also linked the burgeoning cotton towns of the region with other industrial heartlands such as the mill towns of West Yorkshire, the manufacturing centres of the Potteries and the Midlands, as well as London and the seaports of Hull and Liverpool.

Canal building in Britain is marked at its beginning and at its end by two major engineering works both from the Manchester area; the Bridgewater Canal, opened as far as Manchester in 1761, heralded the birth of the industrial canal and led to the development of a national canal network, whilst the Manchester Ship Canal opened in 1894 transformed the city into an inland port 55 miles from the sea and marked the final flourish of industrialised water transport. The *Great Ditch* survives as a significant piece of industrial archaeology and is associated with a number of new archaeological sites, notable amongst which are the Barton Swing Aqueduct, a structure possibly unique in the world and, Trafford Park, the archetypal *urban village* with houses, libraries, schools, the streets laid out on a grid pattern, and an industrial enclave, with warehouses, granaries and engineering works.

Manchester maintained its role as a transport hub throughout the development of the railways even though the first railway in the region was the Bolton & Leigh, engineered by George Stephenson in 1829. Inevitably it has been overshadowed by the Liverpool and Manchester railway line of 1830, the first mainline passenger carrying service, which from its inception was viewed as a momentous achievement in transport history. Manchester has the distinction of having the first mainline passenger station in the world. Quasi-domestic in appearance it was the prototype for later developments. However the most famous building at Liverpool Road is the 1830 Warehouse, a striking piece of industrial archaeology, cathedral like in its proportions and spaces and a remarkable historic building. The Warehouse was the first building on the site to be completed and is therefore the earliest railway building in the world.

The county's railway system was constructed in two main phases between 1830 and 1880 linking Manchester to other major industrial centres such as Birmingham, Glasgow and London. Yet as early as 1849 there were three lines over the Pennines; the Manchester and Leeds through Rochdale, the London & North Western line to Huddersfield via Ashton-under-Lyne and the Manchester, Sheffield & Lincolnshire via Ashton and Glossop. Embankments, cuttings, viaducts and tunnels were used to deal with the geographical features of a particular route. These engineering works have now become a familiar part of the landscape, although at the time of construction they excited admiration and wonder. The substantial remains of the two inclines of the Bolton & Leigh at Bolton and Chequerbent and the great 4 & 3/4 mile embankment over Chat Moss, 5 feet above the surface but with considerable depth below, received much acclaim. The principle tunnels are on the trans-Pennine routes. The construction and length of the Summit Tunnel on the Manchester & Lancashire Railway and the Stanedge Tunnel on the London & North Western Railway are a tribute to the Victorian attitude to civil engineering. Railways, like canals, involved the construction of large numbers of bridges and viaducts to carry the line over obstacles and to

accommodate existing roads. Two stand out through their scale and architecture. The great brick viaduct at Stockport, a magnificent landmark straddling the Mersey, is the largest brick structure in Europe. At Castlefield the cast iron viaducts combining brute strength with romanticism are spectacular features of the landscape around the Bridgewater canal and serve as enduring symbols of the power and majesty of the railway.

Prior to the 18<sup>th</sup> and 19<sup>th</sup> centuries Greater Manchester had been predominantly an agricultural area of isolated farmsteads, hamlets and market towns. Cloth manufacture had long been important, and the area still has hundreds of weavers cottages, but by the 1780's the national demand for textiles, particularly cotton and the range of natural and economic advantages of the area resulted in a dramatic increase in mill building and transformed the area into the great centre of the factory-based cotton industry. The period 1780 to 1820 saw a dramatic expansion of the cotton trade and the emergence of the multi-storeyed steam-powered mill. Some of the most significant mills date from this period and the greatest concentrations of these is found in Manchester, in particular in Ancoats, which was laid out as part of a planned expansion of Manchester. Ancoats was the first industrial suburb based on steam power and contains a notable grouping of mills, whose architecture, design, fireproofing, innovations and improvements in processes span the industrial revolution. At one end are the 18<sup>th</sup> and early 19<sup>th</sup> century mills - Murrays, McConnel & Kennedys and Beehive - rare survivals of early mill construction, and at the other end Paragon and Royal Mill, two spinning mills of advanced design driven by electric motors.

The resurgence of the cotton industry in the late 19<sup>th</sup> century in Greater Manchester accounted for a high proportion of the mills surviving today. These mills were built during periods of economic boom in the surrounding towns, with little mill construction in Manchester itself. The new mills were larger and there was considerable development in their form and detailed design under the influence of specialist mill architects. Improvements in machinery and power systems achieved a more efficient internal layout of processes. Cavendish Mill in Ashton-under-Lyne and Houldsworth Mill in Reddish are typical of these advances. The final stage in the development of the cotton mill in Greater Manchester, during the early years of the 20<sup>th</sup> century, was characterised by the construction of numerous huge spinning mills and containing over 100,000 spindles. Often on new sites they dominated the landscape and many incorporated electric power for driving textile machinery. Examples of this late mill landscape can still be seen along the canal in Leigh, Wigan, in Oldham and Stockport town centres and at Chadderton. Most of these late mills were designed by specialist architects, notably the Stotts of Oldham who accounted for the highest number of mill buildings in all parts of Greater Manchester, as well as abroad, and the Bolton firm of Bradshaw, Gass and Hope. The mills are distinguished from earlier mills by their massive size and flamboyant embellishments in red brick and terracotta, reflecting Edwardian fashions and the prosperity of the industry.

There has been much debate about *cottonopolis*. Manchester and the *cotton towns* gained an international reputation for the cotton factory system and the distribution and export of cotton goods; the mills representative of the former and the warehouses of the latter. The number of industrial towns in Europe and the Americas, some 100, named after Manchester are testament to the region's international reputation. The mills in Greater Manchester are a unique grouping covering the origins, growth, development and maturity of this monument type. Collectively the surviving mills demonstrate why the region was at the forefront of the industrial revolution in cotton manufacture and the surviving mill buildings include a wide

variety of architectural types and dates and represent diversity, continuity and development in the cotton industry. Textile mills have thus been central features of this industrial landscape for over 200 years and consequently mills are the most distinctive type of historic building in the region.

*Cottonopolis* was at the centre of the world, but as early as 1795 Manchester had assumed the style and manners of one of the commercial capitals of Europe. More than any other buildings the Manchester warehouses collectively represent the *Florence of the 19<sup>th</sup> century* in a city which espoused the enterprise, daring and success of the medieval Florentine merchants. As early as 1806 there were 1,182 warehouses and by 1815 there were 1,819. At first these were concentrated around King Street but by 1850 they had spread to Portland Street and by the early 20<sup>th</sup> century to Whitworth Street. One of the best concentrations is along Charlotte Street demonstrating the "flamboyant facades and very plain rears" and consistent proportions of the *palazzo* warehouse blocks. Other notable triumphs include Richard Cobden's building in Mossley Street, the first palazzo warehouse, the exuberant Watts warehouse of 1854, and the later packing warehouses, built on an imperial scale and centred around Whitworth Street. Covering a square mile of Manchester, *warehouse city* is arguably the finest expression of a Victorian commercial centre in Britain.

Although cotton dominated these new manufacturing centres coal and engineering were also very significant elements of the industrialised economy. Perhaps the most significant of these two industries was that of coal. The crescent-shaped Lancashire coalfield, running from Wigan, Leigh and Bolton in the West to Ashton-under-Lyne, Hyde and Poynton in the south-east, is almost completely encompassed by the modern county. Extensively exploited since the 16<sup>th</sup> century by 1854 there 362 collieries in this area, and the numbers peaked at 480 in 1880, the mines employing tens of thousands of people. In the Wigan area a number of colliery communities grew around the pit heads such as Atherton, Leigh and Tyldesley. However, the rapid decline of the mid-20<sup>th</sup> century and subsequent regeneration efforts has meant that little of this industry now remains.

Greater Manchester also became a major engineering centre during the 19<sup>th</sup> century. Events in these areas began as a spin-off from cotton, but soon developed their own momentum. The main products from about 1780 included textile machinery, power equipment, steam engines, water wheels, boilers, mill gearing, iron pillars, beams and girders for mill building and bridges. Initial engineering centres included Park Bridge near Ashton-under-Lyne, Bolton and Manchester. From 1830 the region played a lead role in the development of machine- tool production and of precision engineering with new centres emerging in Bury, Oldham, Salford and Stockport. After the 1870s the region also developed a significant manufacturing expertise in electrical power plant and cables with notable centres in Broadheath, Dukinfield and above all Trafford Park. Although engineering has declined greatly in the last 20 years the Clarington Forge in Wigan and the Kenyon Rope Works in Dukinfield are examples of 19<sup>th</sup> century works which are still operating in the 21<sup>st</sup> century.

Professor Owen Ashmore pioneered the study of industrial archaeology in North West England during the 1960s and 1970s, and his work has been continued by a variety of local societies and full time archaeologists. This has led directly to the saving and opening to the public of a number of important industrial sites; from the Liverpool Road Station (now the Museum of Science and Industry in Manchester), and the East Lancashire Railway to the

Elland Road Mill steam engine. In Greater Manchester nearly 3500 industrial sites are known, grouped into the following classes:

textile mill sites	1.089	glass	6
print & bleach works	528	paper	15
metal industry	109	hat making	33
engineering	15	roads	248
coal	342	rivers and canals	43
stone	110	railways	203
salt	5	canal warehouses	31
chemicals and soap	231	warehouses	475

Industrial sites are perhaps more vulnerable than any other class of archaeological monument because of their frequent urban location in *shrinking cities* and the continuing pressure for re-use. Where the traditional industry has declined the buildings and structures are at particular risk. For instance, over 2.400 textile mills and cloth-finishing works were built between 1732 and 1924 in the Greater Manchester area, an area covering 25 square miles. By 1988, when the Greater Manchester Cotton Mills Survey was completed, the absolute decline of the cotton industry had resulted in the loss of over half these mills, and this figure is today further reduced with only about 800 mills extant. Across the county it has been calculated that the loss of significant recorded industrial sites and buildings between 1982 and 2004 is about 40%. These losses are not evenly spread but are greatest in two industrial sectors with the highest attrition rate being amongst the remains of the coal industry, which have largely disappeared. Astley Green colliery has the last remaining pit head gear in the Lancashire coalfield, and elsewhere remains of what was once the county's second industry after cotton are rare. Engineering works, an industry which has witnessed a dramatic collapse in the last 20 years, have suffered a similar fate.

Despite this loss there remains a huge industrial legacy and the challenge is how best to manage this rich heritage resource in the future. The success of town centre projects such as the Castlefield Canal Basin and Wigan Pier, and the preservation and presentation of a number of important industrial sites such as the Liverpool Road Station in Manchester. The Burrs textile sites in Bury and the Park Bridge Ironworks and Portland Basin Canal Warehouse, both in Tameside, demonstrate that industrial archaeology is a heritage asset and can make a real contribution to urban regeneration and sustainable tourism.

The archaeological heritage is Manchester and the concept of Manchester resonated around the world. Manchester is the exemplar of the integration of key elements such as capital, transport, application of power, the factory system and commerce. Its virtuosity of achievement was a precursor for similar cities elsewhere and the Manchester model was exported worldwide. With such a legacy, Manchester and Salford have been included on the United Kingdom Tentative List of World Heritage Sites. The citation reads "Manchester is the archetype city of the Industrial Revolution. It witnessed the creation of Britain's first industrial 'true' canal, Britain's first mainline, inter-city passenger railway and the country's first industrial suburb based on steam. Manchester the first modern city of the industrial revolution deserves the accolade of World Heritage Site."

## WORKING PAPERS

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## VII VERMISCHTES / MISCELLANEOUS

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Im Frühjahr 2006 erscheint außerdem *Shrinking Cities: Complete Works 2, Interventionen/Interventions*, die die zweite Phase des Projekts dokumentieren.

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*Shrinking Cities: Complete Works 2, Interventionen/Interventions*, a documentation of the second phase of the project, will be published in spring 2006.

**Editorische Notiz/Editorial note**

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